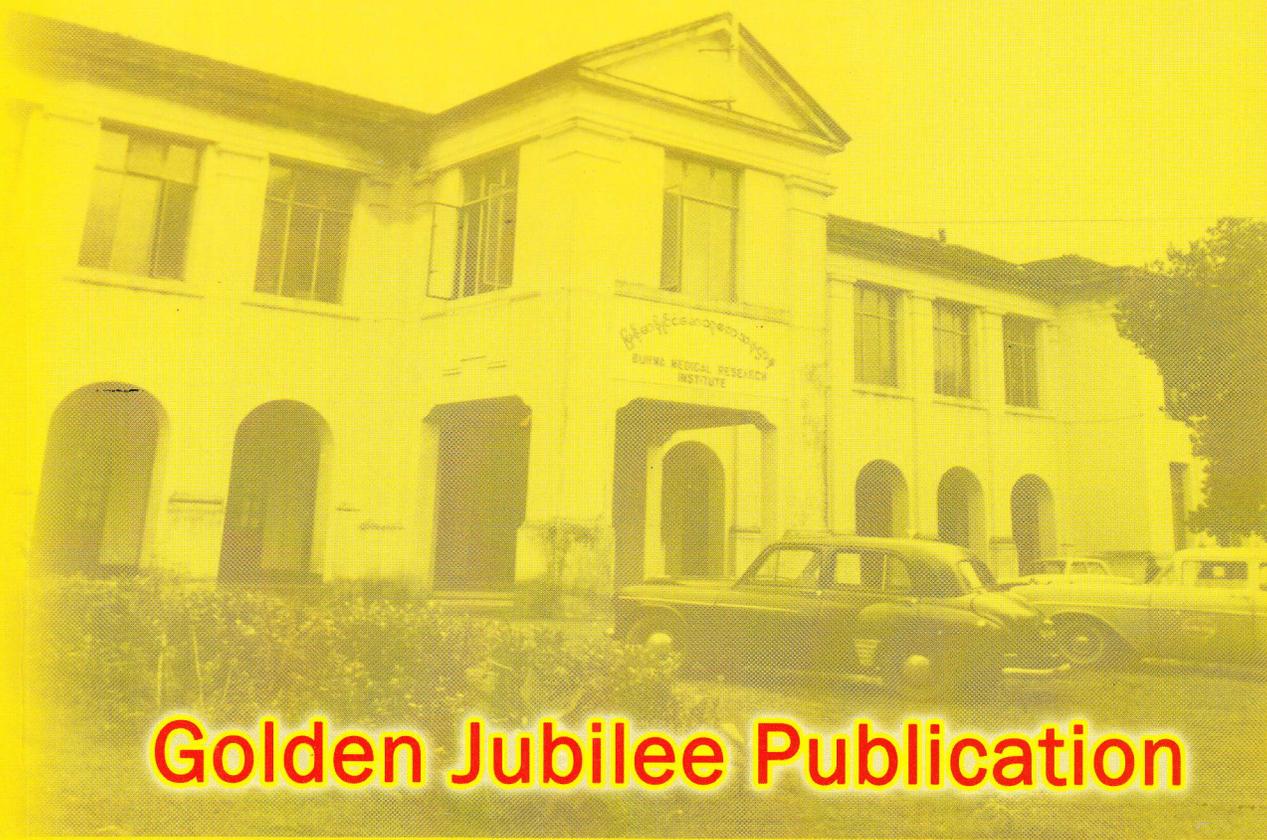


**MINISTRY OF HEALTH
DEPARTMENT OF MEDICAL RESEARCH
(LOWER MYANMAR)**



**Bibliography of Research Findings on
Gastrointestinal Diseases in Myanmar**



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Ministry of Health
Department of Medical Research (Lower Myanmar)

**Bibliography of Research Findings on
Gastrointestinal Diseases in Myanmar**

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PREFACE

Diseases affecting the gastrointestinal tract, which includes organs from the mouth to the anal orifice along the alimentary tract, are common in Myanmar. Among them, diseases of infectious origin are commonest, notably diarrhoea and dysentery. Other diseases related to the gastrointestinal tract include among others; intestinal helminthiasis, gastrointestinal ulcers, and malignancies. Many research studies ranging from laboratory experiment to field surveys had been carried out on gastrointestinal diseases in the country. The present bibliography was compiled to describe the findings of research studies which were carried out during 1960 to 2010. The compiled abstracts are arranged according to the year of publication for each decade and research findings were summarized for each decade.

This collection was published to provide pertinent information on the status of diseases and disorders of gastrointestinal tract research in Myanmar to the scientists, health care personnel, administrators and decision-makers. The compilers simply wish that it will of benefit to those who want to learn about gastrointestinal problems in the context of Myanmar people.

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Overview - Study of GI diseases in Myanmar

GI diseases studied

The scientific study of gastro-intestinal diseases in Myanmar began early in the colonial regime. Epidemics of cholera were rampant in the Kingdom of Myanmar since the 18th century and global pandemics of cholera invaded the Kingdom of Myanmar and also British Burma from time to time, the 6th pandemic reaching Myanmar in 1901. They were a threat to the health of the colonial army, the administrators, their families and the European community which followed the British flag into Myanmar, as well as to the proper conduct of administration and trade. Cholera therefore was the GI disease first taken up by the colonial medical administration for public health action and study and continued to be kept under surveillance and studied till the end of colonial rule. By the time Myanmar Kingdom was annexed to the British Empire in 1886, the *cholera vibrio* had already been discovered by Koch in 1883 and the water borne nature of the disease was known. The classic studies of Snow in London in 1855 and others in India had shown that it is possible to prevent cholera by providing clean water.

After Independence in 1948, the Myanmar health authorities continued to focus attention on and study different aspects of cholera, according to need and opportunity. Diarrhoea (non-choleric or non-specified diarrhoea) became gradually recognized as a highly prevalent and important cause of mortality and morbidity in Myanmar, especially in children including neonates and was listed among the top priority diseases in successive National Health Plans. Although people in the community and general practitioners would have always been aware of its pervasiveness and health impact, it was only from around the 1960's that the focus of attention of the health authorities shifted from cholera to diarrhoea and it became the subject of intense scientific study in scope and depth, from the medical as well as socio-economic aspects, throughout the later decades.

Intestinal helminthic infections are easily recognized and known to be highly prevalent in children in Myanmar and like diarrhoea, they have been the subject of intense scientific study from about the 1950's onwards. Dysentery is also easily recognized, very common and has been scientifically studied to some extent and depth from about the 1950's onwards. Other common GI diseases and disorders, medical and surgical, must have been diagnosed and treated in hospitals and by general practitioners throughout the colonial period but were not particularly studied or reported.

After Independence, from 1950's onwards, common GI diseases studied (other than cholera, diarrhoea, dysentery and intestinal helminthiasis) were medical diseases including peptic ulcer, tropical sprue and intestinal tuberculosis; and surgical diseases/conditions including acute abdominal emergencies and non-acute conditions such as piles, cancer stomach and a variety of others. Although numerically large in total, none or very few of these individual GI diseases were investigated in broad scope, depth and continuity as in the case of diarrhoea and intestinal helminthiasis. The exception was Peptic ulcer, where the new concept

regarding etiology (*Helicobacter pylori* infection) gave the stimulus and theme for a series of in-depth studies.

Aim of the GI studies

The aim of the GI studies undertaken were one or more of the following:-

- to describe and characterize them
- to describe how they were being diagnosed, treated, prevented and to improve such measures
- to understand better their nature, their etiology, their causation and origin
- to understand and describe their pathogenetic mechanism
- to describe their effect on the patient and community

Types of Study and Methods

The types of study and the methods used to study and achieve the intended aims were:-

- clinical
- epidemiological
- laboratory – microbiological, biochemical, pathological
- imaging – by radiology, ultrasonography, endoscopy
- genetic
- socio-economic

Clinical methods used and described were routine, simple and qualitative in most of the studies. However, quantitative methods were added later, such as assignment of scores and weightage to GI clinical signs and symptoms.

Epidemiological methods were at first elementary and descriptive but soon progressed to analytical epidemiological methods to find causal relationships, like between intestinal helminthiasis and nutrition, diarrhoea and climate. Epidemiological modeling methods were used to predict and confirm the results of public health interventions such as mass chemotherapy on intestinal helminthiasis.

Microbiological methods used and studied progressed from routine methods available in hospital diagnostic laboratory to special, newly acquired technology to determine etiological agents - such as cell culture assay systems including Chinese Ovarian Cell and HEP 2 cell culture to isolate ETEC and Shigella, ELISA to identify EPEC, and EIA to detect Rota virus.

Special techniques were used to investigate the action of microbial toxins - such as invasiveness, adherence and intestinal secretory response. Radio-labeled tracers were used to investigate the effect of cholera toxin on cyclic AMP and on amino-acid uptake.

A big step forward was the introduction and use of genetic methods like plasmid profile analysis and gene probes and PCR to identify and characterize DNA of micro-organisms such as Rota virus.

Biochemical and physiological methods advanced from those routinely available in hospital and medical college laboratories to new methods for the study of intestinal carbohydrate absorption and malabsorption including xylose absorption test, lactose tolerance test and breath hydrogen test. New microbiological assay systems were used to investigate folic acid absorption. Novel methods were introduced to investigate food iron absorption:- such as radioactive labeling of rice grown by hydroponic culture, double radio-labeled iron tracers to measure rice iron absorption and quantification of intestinal mucosal iron content. Radio-active tracers were used to investigate biochemical activity in intestinal mucosal cells such as effect of cholera toxin on amino-acid uptake by the gut.

Anatomical methods - for study of gross and microscopic gut structure for academic purposes were those routinely available in college anatomy departments.

Pathological methods ranged from routine histological methods to hitherto unused approaches like dissecting microscopy of intestinal villi obtained by Crosby intestinal capsule; and special histological stains to detect and measure intestinal mucosal cell contents like lactase enzyme.

Imaging and endoscopy of the gut. A major advance in the diagnosis and treatment of GI diseases was the introduction of endoscopy to visualize and access the gut lumen and bile duct, and ultrasonography to reveal the gross and detailed structure of solid internal organs related to the gut like the liver and pancreas.

Genetic studies of the microorganism responsible for GI disease started with plasmid profile and later progressed to more advanced methods including gene probes, PCR and reverse PCR to characterize and genotype microorganism particularly rotavirus.

Prof. Aung Than Batu

Introduction

This bibliography was compiled with the aim to accumulate all available data on diseases and disorders of gastrointestinal tract research studies carried out in Myanmar. An extensive literature review was carried out to collect all published data on diseases and disorders of gastrointestinal tract research in country. In collection, literature written in English with research findings on human gastrointestinal diseases, and conducted by a research team which included at least one Myanmar investigator was compiled. Articles published in the local medical and scientific journals, WHO publications and internal journals were included. Abstracts published in international and local conference/ seminars/ symposium/ were also compiled. Relevant research findings were searched from abstracts/ full text throughout the years from 1966 to 2010 through online medical journal information systems such as; PubMed, PubMed Citation, CMR online, Science Direct, etc. The following Medical Subject Headings (MeSH) words: Gastrointestinal Diseases (C06.405), Biliary Tract Diseases (C06.130), Pancreatic Diseases(C06.689), Digestive System Neoplasms (C06.301), Nutrition (G02.513, G06.696), Intestinal absorption (G10.261.576) were used. All publications on diseases and disorders of the gastrointestinal tract recorded by biographies as mentioned in Who's Who in Medicine in Burma (1972) and Who's Who in Health and Medicine in Myanmar (2003) were included. Theses and dissertations for the degrees (diploma, masters, doctorate) relating to gastrointestinal diseases were searched primarily in the following areas; Medicine, Paediatrics, Surgery, Obstetrics and gynaecology, Public Health, Pathology, Microbiology, Physiology and Biochemistry. The search was further extended to all medical subjects and to related science theses such as Zoology. Available fugitive literatures were also included. Contact with libraries at Medical Universities, Arts and Sciences Universities, Myanmar Medical Association were made through visits, postal and email services. Available fugitive literatures were included.

The information obtained were recorded and analyzed by place of research work, category of research, and type of information provided. The compiled abstracts are arranged according to the year of publication and are arranged according to the name of the first authors. The abstracts are numbered consecutively and continuously from 001 to 537 throughout all decades. Also, there is an "Overview and Summing up" at the end of each decade describing the nature of studies and the progress of scientific methods during that decade.

Studies in 1960-70. Summing up

During this decade, studies were done on some of the common, readily recognizable gastro-intestinal (GI) disorders – chiefly, vomiting, abdominal pain, passage of loose stools, blood with mucus in stools and worms in stool. An Expert Technical Committee for the Study of Intestinal Helminthic Infection in Burma was appointed by the Burma Medical Research Council in 1968. Although there have been several previous prevalence studies of intestinal helminths in Myanmar this Technical Committee conducted the first systemic attempt to review the situation and assess the health impact of intestinal helminthiasis in Myanmar. Its Report provided the framework and guidance for further research on the subject for many years to come. Descriptive epidemiological studies of intestinal helminthiasis were carried out in different urban and rural communities especially among school children. These studies and many more in the following decades provided base-line data on the extent of intestinal helminthiasis in the country.

Cholera in epidemic form had been the main concern of the health administration and the people since colonial times. Now, the importance of acute (non-cholera) diarrhoea as a cause of high mortality and morbidity, especially in children, became better recognized and the subject of epidemiological and bacteriological studies. A large, well designed, well executed analytical, epidemiological investigation of diarrhoea, comprising a series of interrelated retrospective studies at different locations, was carried out in 1969, to determine the effect of climate and environmental factors on diarrhoea incidence. Bacteriological investigations of the responsible etiological agents for diarrhoea in children and cholera were done, using simple routine laboratory methods including serology. Anatomical studies of the stomach and gut were started in human cadavers beginning with description of variation in vascular supply. Physiological studies were begun on apparently healthy subjects - gastric acid secretion was measured using routinely available laboratory method. Clinical trials were undertaken - uncontrolled study of reputed traditional herb (Let-htoke-kyi) on acute amoebiasis and comparative study of two antihelminthic drug on helminthiasis. Field trial was done on cholera vaccine produced locally. Surgical studies were undertaken – clinical survey of gastro-duodenal hemorrhage in the large teaching hospitals.

The types of studies undertaken were descriptive, except for the large analytical epidemiological investigation of diarrhoea. Clinical and field trials were quasi-experimental. Most of the studies were done by scientists from Burma Medical Research Institute (BMRI), and public health professionals, clinicians and bacteriologists from Department of Health (DOH). Some were by students from the few post-graduates courses which had started at Institutes of Medicine.

Prof. Aung Than Batu

Abstracts of Papers 1960-70

- 001 Aye Kyu
TITLE Cholera in Irrawaddy Basin
SOURCE DPTM, Institute of Medicine I, Rangoon, 1967
Summary available: Truncated by the book editors
Cholera is endemic in Irrawaddy Division, especially in Bassein Township. Existence of cholera has been demonstrated in Burma in 1783 and in Irrawaddy Division during second pandemic in 1842. There was cholera every year in Burma and every year Irrawaddy Division was affected. In those days cholera was caused by "classical" cholera vibrios till 1963 a new strain, *El Tor vibrio* was imported. All ages are susceptible and the highest incidence is observed in adults (age-groups 21-50 years). Males are affected more than females and urban areas are affected more than rural and the fatality higher in rural than urban. Cholera usually starts at the beginning of summer in March and reached epidemic proportion in April and May with peak in May, and subsides when the rain fall in June.
- 002 Hpay, *Daw*; Ronald Dein Dwe; Than Sein, *U*; Lily Tong; Khin Mar Mar; Mala Maung; Mya Mya Lin; M. Moneim; Ei Zawwahry; Ohn Kyi, *Daw*; Kyaw Win, *U*
TITLE Epidemiological features of intestinal parasitoses in a representative population sample, Dayebo village, Burma
SOURCE *Burma Res Congr.* 1970, Medical Sciences Research Division, Abstract of Papers; p37
Union Burma J Life Sci. 1970(3); pp289-307
ABSTRACT: During April 1969, the authors and the physicians of the D. P. and T. M. Course undertook an epidemiological investigation of parasitoses in Dayebo Village, Hlugu Township. A representative sample of 130 households (50 percent of the population) composed of 645 individuals were investigated. Of the latter, 631 individuals (97.8 percent) were interviewed concerning history of diarrhea and of passing worms, and about a 2 gram specimen of stool was submitted from each of 571 individuals (88.5 percent). These were preserved in well marked containers containing 5ml of 5 percent formal- saline preservative. The specimens were examined by
(a) Direct method.
(b) Concentration method using Ridley and Hawgood's modification of Ritchie's formol ether method.
(c) Egg count of *Ascaris lumbricoides* and *Trichuris trichiura* by stoll and Hausheer method. Of the total specimens the prevalence rates for specific helminthic infections were: 69 percent for strongyloidiasis. The prevalence rates for specific protozoal infections were 14.1% for *Entamoeba coli*, 7.5 percent for *E. histolytica*, 3.0 percent for *Giardia lamblia* and about 0.2 percent for *Iodoamoeba butschlii*. On the average there were 90.4 helminthic infections, 25 protozoal infections and 115.3 helminthic and /or protozoal infections per 100 persons. It should be borne in mind that these estimates are minimum estimates as they are based on a single preserved stool specimen. Had more specimens been taken, some of the negatives would have been found positive. Age, sex, family size and patterns of these infections were analyzed and discussed. Age and sex patterns for egg counts and worm loads for asariasis and trichuriasis (the commonest helminthic infections) are reported. In conclusion intestinal parasitoses constitute a major health problem in this community. It is recommended that a nationwide investigation of parasitoses in Burma be organized, has accordingly long term and short term preventive and curative measures be undertaken.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

- 003 Hla Myint
TITLE Intestinal parasitisms in primary schoolchildren in Greater Rangoon
SOURCE *Union Burma J Life Sci.* 1970; 3(2); pp141-145
ABSTRACT: A survey for intestinal parasites was carried out on 2,220 schoolchildren aged 5-17yrs from 21 primary schools in Greater Rangoon from June 1967 to January 1968. Stool specimens were examined directly and after concentration by the formal-ether method of Ritchie (1948) as modified by Ridley and Hawgood (1956). The overall parasite rate was found to be 98.6 per cent. In the helminthes, the highest infection rates were for *Ascaris lumbricoides* (86.7 per cent) and *Trichuris trichiura* (87.4 per cent). In the protozoa, *Giardia lamblia* led with an infection rate of 21.1 per cent followed by *Entamoeba histolytica* with 5.7 per cent. A four factor analysis of variance for parasite, region, age, and sex and their interaction showed no significant differences.
- 004 Hla Myint
TITLE Intestinal parasitisms in primary schoolchildren in greater Rangoon
SOURCE *Burma Res Congr.* 1969, Medical Sciences Research Division, Abstract of Papers, p35
ABSTRACT: A survey for intestinal parasites in 2,220 schoolchildren from 21 primary schools in greater Rangoon was carried out from June, 1967 to January, 1968. Coverglass preparations of faces were examined directly in normal saline, 1 percent eosin and Lugol's iodine respectively. Each specimen was re-examined after concentration by the formal ether method of Ritchie as modified by Ridley and Hawgood (1956). 98.6 percent of the children harboured one or more parasites. Of the 12 species found, *Trichuris trichiura* (87.43 percent) and *Ascaris Lumbricoides* (86.71 percent) were the most prevalent. Hookworm infection was found in 7.21 percent and *Entamoeba histolytica* infection in 5.68 percent. Male students had higher rates of infections with hookworm and *Strongyloides stercoralis*. Older age groups also showed higher rates of infections with hookworm and *S. stercoralis*. The findings are compared and discussed.
- 005 Hla Myint; Margaret Tu and Ba Aye
TITLE Intestinal parasitic infection in Bassein Township
SOURCE *Union Burma J Life Sci.* 1969; 2(3): pp359-363
ABSTRACT: A survey of intestinal parasitic infections was made at Bassein Town and Kozu village, South West Division, Burma in April - May 1967. Out of a total 393 individual examined, ranging a age from 5-25 years, 215 were from Bassein town and 178 individuals from Kozu Village. 90.3 per cent of all the individuals examined carried one or more parasites. Of the 10 species found, *A. lumbricoides* was the most prevalent (68.4 per cent) with *T. tricurua* second (51.4 per cent). There was no significant difference between the overall prevalence of parasites at Bassein town and Kozu village. The prevalence of helminth infections was found to be significantly higher in the urban group, while protozoa infection were significantly more prevalent in the rural group. Among the helminthes, *A. lumbricoides* and *T. truchiura* infection were higher in the urban group, while the hookworm infection was higher in the rural group significantly. Younger age groups have a higher helminth infection rate in Bassein Town as well as Bassein Township. Polyparasitism was common both in urban and rural groups. The findings of survey was compared with those of other studies in Burma and discussed.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

- 006 Khin Ma Ma and Pe Thein
TITLE Measurement of gastric secretion
SOURCE *Burma Res Congr.* 1966, Medical Research Division, Abstract of Papers, p18
ABSTRACT: Customary methods for measurement of Gastric Acid Secretion are described and their short comings disussed. The Augmented Histamine Test carried out by the Department of Physiology, Institute of Medicine, Mandalay, during the last two years is described. Results of such tests on students and patients described and discussed. Short coming of this test are also described. The Histamine Infusion test which promises to be a better and more reliable test of gastric secretory activity is described. Result of this test and its modifications to suit local conditions are described.
- 007 Khin Ma Ma and M. P. Thein
TITLE Measurement of gastric acid secretion
SOURCE *Union Burma J Life Sci.* 1968; 1: pp104-107
ABSTRACT: To measure effectively with simple equipment, the gastric acid secretion, the Continuous Subcutaneous Histamine Test has been devised. Trials have been conducted on radiologically proven duodenal and gastric ulcer patients as well as normal subjects. The reliability of the test has been compared against that of the Augmented Histamine Test. The continuous Subcutaneous Histamine Test has been found to possess the same range of applicability as Augmented Histamine Test with the added advantage of requiring only simple equipment. The test can safely be used as a routine test in district hospitals where elaborate equipment is not available.
- 008 Khin Nwe
TITLE Cholera antibody titre study
SOURCE *Burma Res Congr.* 1967, Medical Research Division, Abstract of Paper, p32
ABSTRACT: Sera of 600 individuals after vaccination with Cholera vaccines manufactured by B. P. I. were tested serologically for the presence of cholera anti bodies at various intervals for period of 3 months. Each group of 200 persons were vaccinated with classical cholera vaccine *El Tor cholera* vaccine and mixed cholera vaccine respectively. The purpose of this sera study is to assess the antigenicity levels of antibodies response with the 3 types of vaccine.
- 009 Khin Nwe
TITLE Cholera antibody titre study
SOURCE *Union Burma J Life Sci.* 1968; (1); pp261-266
ABSTRACT: To assess the immunizing properties of 3 types of cholera vaccines prepared by the Burma Pharmaceutical Industry, a trial programme was conducted by Rangoon Health Division in 1966. A total of 15,000 working people from various factories were grouped into 3 groups and were inoculated and rise response in each individual varied considerably in all 3 groups. The prospective period in all the 3 groups did not last than 3 months. Of the 3 kinds of vaccines tested, El Tor vaccine showed a better response to the local strain prevalent in Rangoon.
- 010 Khin Nwe; Tin Oo and H. A. K. Rowland
TITLE The effects of climatic and environmental factors on the incidence of diarrhoea in Burma, II
SOURCE *Burma Res Congr.* 1968, Medical Sciences Research Division, Abstract of Papers, p41
ABSTRACT: Not available

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- 011 Khin Than Yee
TITLE Variations in Arterial Pattern Supplying the Gastro-Intestinal Tract in Burmese Subjects
SOURCE *Burma Res Congr.* 1966, Medical Research Division, Abstract of Papers, p14
ABSTRACT: Many workers in the field of Anatomy and Surgery have reported on the pattern of origin, course and distribution of arteries supplying the gastro-intestinal tract (Michels, 1951, 1952; Daesler *et al*, 1947; and Browne, 1940). Various patterns not conforming to descriptions given in standard text-books on Anatomy are frequently reported together with statistical figures for each pattern. In an attempt to compile such a statistical record of the various patterns prevalent in our country, we have maintained a close observation on the manner of origin, course and distribution of all arteries supplying the gastro intestinal tract of subjects made available to our Dissection laboratory. Forty cases were investigated by a process of gross dissection. The results are presented.
- 012 Kyeew Paw; Kyaw Maung; Myint Aung and Aung Nyunt
TITLE Gastroduodenal haemorrhage
SOURCE *Burma Res Congr.* 1966, Medical Research Division, Abstract of Papers, p5
ABSTRACT: The incidence of haematemesis and malena as the result of Gastroduodenal Bleeding is on the increase in recent years. Younger age groups are included in larger proportion and many lives were lost due to the bleeding. It is time to survey the etiological factors of the disease thereby prevention can be done, early diagnosis and prompt treatment can be given, as such can prevent the loss of lives. The factors and data on which our preliminary survey is based are: - sex, age, habital, actual work or occupation, ethnic group of indigenous races of Burma, history of alcohol consumption, the duration; amount and the kind, peptic ulcer history and duration, the drugs taken recently and the amount, such as asparin, steroids etc, history of liver infection, ascites, episodes, bouts and amount of haematomosis and malena history of piles, findings at the investigations and the operations if done. The survey is based on the figures availed from principle hospitals all over the country and as such could be taken as whole Burma statistics.
- 013 Kyeew Paw; Kyaw Maung; Myint Aung and Aung Nyunt
TITLE Survey of gastroduodenal haemorrhages
SOURCE *Union Burma J Life Sci.* 1969; 2(1); pp115-120
ABSTRACT: A Total of 761 cases of gastrointestinal haemorrhages were studied to obtain information on incidence, causes, diagnosis and management of the condition. Peptic ulcer was found to be the cause of bleeding in 61.5 percent of the group studied. The male - female ratio was 112: 43. Age - wise incidence was found to be highest in the 31-40 age groups. Seasonal prevalence was noticed, the peak period being the beginning of the cold season and beginning of the monsoon. Sex-wise mortality rate was 7.5 percent for males and 5 percent for females.
- 014 Margaret Tu and Hkun Saw Lwin
TITLE Intestinal parasitisms in the Inthas
SOURCE *Union Burma J Life Sci.* 1968; 1: pp255-256
ABSTRACT: Stool samples of 107 adult Inthas were examined first at the place of collection and then at the Burma Medical Resaerch Institute laboratory. *Entamoeba coli* cysts were found in 10.29% (*Ascaris* eggs in 3.63%) hookworm eggs in 2.71% and *Taenia* eggs in 2.71%. The incidence of intestinal parasitisms in the Inthas is compared with incidence in Taronas and Htalus (Tu, 1967) and in the case of hookworm, also with incidence in a Burmese village group. It is concluded that the intestinal parasitisms of the Inthas should not constitute a health problem because of their low incidence.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

- 015 Margaret Tu and Hkun Saw Lwin
TITLE Intestinal parasitisms in the Inthas
SOURCE *Burma Res Congr.* 1967, Medical Research Division, Abstract of Paper, p31
ABSTRACT: The purpose of the investigation was to determine the incidence of intestinal parasitisms in the Inthas, as part of a countrywide survey of indigenous groups. Coverslip preparations of stool from 107 adult inthas ranging in age from 18 to 65 years were examined in normal saline, 2% eosin, and Lugol's iodine on the day of collection. The samples were reexamined at a later date after preservation in 5% normal saline. Entamoeba coli cysts were found in 11 samples (10.29%), *Ascaris* eggs in 4(3.63%), hookworm eggs in 3(2.71%) and *Taenia* eggs in 3(2.71%). The incidence of *Ascaris*, hookworm and *taenia* is not considered high. The incidence of intestinal parasitisms in Inthas is compared with the incidence in Tarons and Htalus (Tu, 1967) and in the case of hookworm, also with the incidence in Burmese Village group (Ko K0 and Ba Tun, 1961). The low incidence of intestinal parasitisms in Inthas is discussed. It is concluded that the low incidence of intestinal parasitisms in Inthas should not constitute a health problem.
- 016 Margaret Tu; Hkun Saw Lwin and Aye Maung
TITLE The bacteriology of diarrhea in children
SOURCE *Union Burma J Life Sci.* 1969; 2: pp225-231
ABSTRACT: 75 samples of stools from children under 5 years at the Children's Hospital, Rangoon were examined bacteriologically using MacConkey agar and desoxycholate citrate agar as primary plating media and selenite F broth and tetrathionate broth as primary enrichment media. 25 non- diarrhoeic stools from children from an urban quarter in the same group served as a control. *Salmonella typhi* was the only well defined bacterial enteropathogen isolated (1.3 per cent). The parasites *Ascaris lumbricoides*, *Tricuris tricura* and *Giardia lamblia* were found in respectively 13.5, 5 and 5 per cent. It is concluded that in the group studied, bacteria did not play a major role in aetiology of diarrhoea, but the parasites found may have been involved. It is recommended that a survey for enteroviruses in diarrhoeic stools from Burmese children be made. It is also suggested that the role played by other possible aetiological agents in diarrhoea be investigated.
- 017 Margaret Tu; Hkun Saw Lwin and Aye Maung
TITLE Bacteriology of diarrhoea in children
SOURCE *Burma Res Congr.* 1968, Medical Sciences Research Division, Abstract of Papers, p38
ABSTRACT: Seventy five samples of diarrhoeic stools from children under 5 years at the Children's Hospital, Rangoon, were examined bacteriologically using Mac Conkey agar and desoxycholate citrate agar as primary plating media and selenite F Broth and tetrathionate broth as primary enrichment media.
- 018 Margaret Tu; Khin Ohn Lwin and Aye Maung
TITLE Intestinal parasitisms in Mandalay town dwellers
SOURCE *Burma Res Congr.* 1970, Medical Sciences Research Division, Abstract of Papers, p38
Union Burma J Life Sci. 1971; 4: pp315-322
ABSTRACT: Survey for intestinal parasitisms in a random sub-sample of 305 Mandalay town dwellers in the 5-25 year age group was carried out in June 1968. Frozen stools were examined, after testing by direct and post-concentration methods. The prevalence rates for the helminthes *Ascaris lumbricoides*, *Trichuris trichiura*, *Enterobius vermicularis* (corrected prevalence) and *Hymenolepis nana* were 47.5, 23.0, 6.0 and 3.6 percent respectively. The rates for the protozoa *Entamoeba coli* and *E. histolytica* were 1.0 and 0.3 percent respectively. The findings of the survey are discussed.

- 019 Margaret Tu; M Moneim; EL-Zawahry; Ohn Kyi; Khin Hlaing; Salome Hla Gyaw; Kyaw Myint; Kathleen Sann Myint; Aung Than; Kyi Kyi Khin and Lei Lei Win
TITLE Epidemiological features of intestinal parasitoses in the inhabitants of Okpo Village Burma
SOURCE *Burma Res Congr.* 1970, Medical Sciences Research Division, Abstract of Papers, pp36-37
Union Burma J Life Sci. 1970; 3: pp247-267
ABSTRACT: A survey for intestinal parasites was carried out in March/April 1969 at Okpo Village in Greater Rangoon. Of a total population of 753 individuals, 671 (91.7 percent) were examined. Preserved stools were examined by both direct and post concentration methods and egg counts for *Ascaris lumbricoides* and *Trichuris trichiura* were made. The 24-hour stool output was also estimated from a random sub-sample of 97 individuals. The prevalence rates for the helminths *A. lumbricoides*, *Enterobius vermicularis* (corrected prevalence), *T. trichiura*, hookworm, *Hymenolepis nana* and *Strongyloides stercoralis* were 59.2, 40.0, 8.6, 3.4, 0.7 and 0.2 percent respectively. The rates for the protozoa *Entamoeba coli*, *E histolytica*, *Giardia lamblia*, *Iodamoeba buetschlii* and *Trichomonas intestinalis* were 9.2, 3.0, 2.7 and 0.3 percent respectively. The average infection rates per 100 persons examined were 74.1 for helminths, 15.5 for protozoa and 89.6 for both. The average worm load for the most common helminth, *A. lumbricoides*, was 2.7 per infected person. The average worm load per infected person was higher in the 5-14 year age group. It was also higher in males and in members of larger household. The patterns for specific infection by age, sex and family size are described and discussed.

- 020 Myint Thein
TITLE Intestinal helminthic infections in the population in certain areas of Burma
SOURCE DPTM, Institute of Medicine I, Rangoon, 1969-70
Abstract/Summary not available: Abstract written by the book editors

The prevalence of intestinal helminthics infection in Tanintharyi coastal strip, western or northern hills region and delta regions have a higher prevalence rates. The prevalence rate in shan plateau and dry belt region is relatively lower. Intestinal helminths found commonly in the population are *Ascaris lumbricoides*, *Enterobius vermicularis*, *Trichuris trichura* and *Taenia* species. *Ascaris lumbricoides* was found to be the most highly prevalent worm. *Trichuriasis* affects the population in every region and it is also highly prevalent worm infection in Burma. Enterobiasis infection rate varies in different parts of Burma. Ankylostomiasis endemicity is highest in delta regions. High prevalence of *Taenia* species was found in Shan states; Inle. Strongyloidiasis is not frequently detected. Intestinal helminthic infections in Burma are a problem nearly of the same magnitude as other developing countries.

- 021 Myo Min
TITLE Practical management of diarrhoea and vomiting in childhood
SOURCE *Burma Med J*, 1967 Oct; 15(4): pp159-162
ABSTRACT: The most important part of treatment of diarrhoea and vomiting is fluid and electrolyte therapy. In our country, it still constitutes one of the most serious and common problems confronting paediatricians. Derangements in diarrhoea are due to (1) in-sufficient intake of food and water. (2) excessive loss of water and electrolytes. (3) continued obligatory loss of water and electrolytes (especially in a tropical country). (4) tissue break down.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

- 022 Myo Thwe; Tin Ohn and Tin Oo
TITLE Drug trial in intestinal amoebiasis
SOURCE *Burma Res Congr.* 1970, Medical Sciences Division, Abstract of Papers, p38
ABSTRACT: In a double blind comparative trial carried out at the Defence Services General Hospital and the Contagious Diseases Hospital, the effect of oral DEHYDROEMETINE (Roche) the racemic 2 dehydroemetine Hydrochloride and INTESTOPAN (Sandoz) a combination of Broxyquinoline and Brobenzoxaldine was assessed on 60 patients with Acute Amoebic Dysentery. A strict criterion was laid down for the selection and inclusion of the cases for trial. The side-effects of these drugs including possible damage on the liver were watched. The observations indicate that both drugs have amoebicidal effect and Dehydroemetine is much more potent than Intestopan.
- 023 Ohn Kyi and H. A. K. Rowland
TITLE The effects of climatic and environmental factors on the incidence of diarrhoea in Burma, III
SOURCE *Burma Res Congr.* 1968, Medical Sciences Research Division, Abstract of Papers, p41
ABSTRACT: Not available
- 024 Po Po
TITLE Diarrhoea and vomiting in childhood
SOURCE *Burma Med J*, 1962 Oct; 10(4): pp153-158
ABSTRACT: Not available
- 025 R Lwin; Hla Myint; Pe Than Myint; Myint Than and Kyi Win
TITLE Clinical trial of Let-Htoke-Kyi total alkaloids hydrochloride in acute intestinal amoebiasis
SOURCE *Burma Res Congr.* 1968, Medical Sciences Research Division, Abstract of Papers, p31
ABSTRACT: 100 cases of acute amoebic dysentery proved parasitologically, were given *Let-htoke-kyi* hydrochloride in dosages of 300mg and 400mg daily for 14 days and 10 days respectively, by the oral route and the efficacy of the drug in comparison to known standard drug *vis*: Emetine hydrochloride and Emetine Bismuth Iodide, and its toxicity if any were studied. In the present series the parasitological as well as clinical cure rate was 98%. The results are found to be comparable to that of Emetine Hydrochloride, Emetine Bismuth Iodide, and Dehydroemetine and found to be better than furamide and Dioxylin. No toxic effect was observed on the liver, heart and peripheral nerves, but minimal side effects such as insomnia and loss of appetite with 300mg dosage regime and 400mg dosage regime showed giddiness and palpitation in addition to the above symptoms. In no patients is there a need to discontinue the treatment on this account. The drug is found to be purely amoebicidal and has no parasitocidal action in other protozoa namely *Giardia lamblia* and *Tricho minus hominis*.
- 026 Rawland H. A. K.; Ne Win and Tin Nyunt Pu
TITLE The effect of climatic and environmental factors on the incidence of diarrhoeic disorders in Burma 4. Data from the State Mental Hospital, Rangoon
SOURCE *Union Burma J Life Sci.* 1969; 2: pp85-90
ABSTRACT: The incidences of diarrhoea amongst different categories of patients in a mental hospital have been examined over a 12 months period. Rainfall was negatively correlated with the incidence and the supply of mangoes directly related to the prevalence of diarrhoea. The floor space per patient in the ward area and the ward population were without

effect. The number of admission and transfer into a ward had a profound effect on the incidence of diarrhoea and largely accounted for the marked variation observed between the classes of patients- acute, subacute and chronic. The way in which these factors exerted their effect cannot be elucidated from the data. After all the effects of other factors have been removed there still remains a highly significant and unexplained variation in the incidence of diarrhoea between the different wards of hospital, and a smaller variation between the months of the year.

027 Rawland H. A. K. and Ohn Kyi
TITLE The effect of climatic and environmental factors on the incidence of diarrhoeic disorders in Burma 1. Data from Rangoon dispensaries

SOURCE *Union Burma J Life Sci.* 1969; 2: pp67-74

ABSTRACT: The incidence of diarrhoea and of dysentery was calculated for the population attending 25 Rangoon dispensaries for each of the 12 month in 1967. The effect of 14 climatic and environmental factors was investigated by mean of multiple regression analysis. It was found that climatic factors had no effect but the prevalence of mangoes was an important cause of variation in diarrhoea incidence between months. Water supply had a profound effect on both incidence of diarrhoea and dysentery and population per medical officer and attendance of patients suffering from non-diarrhoeic illness greatly influenced the recorded attendance of patients suffering from non-diarrhoeic illness greatly influenced the recorded attendance of those with diarrhoeic disorder. The floor space per person in their homes was thought to exert its effect though its relationship with some other unidentified factors and was perhaps related to the attending habits of the dispensary populations which were themselves thought to influence the incidence of both diarrhoea and dysentery attendance. Other measures of congestion, sewage disposal and income had no effect on the incidence of either diarrhoea or dysentery.

028 H. A. K. Rawland and Yin Mya
TITLE The effect of climatic and environmental factors on the incidence of diarrhoeic disorders in Burma 2. Data from 30 hospitals

SOURCE *Union Burma J Life Sci.* 1969; 2: pp75-80

ABSTRACT: The effect of 5 widely varying climatic factors, altitude, prevalence of mangoes and pressure on beds on incidence of 4 diarrhoeic disorders in 30 hospitals in Burma in 12 successive months has been examined by means of multiple regression analysis. The findings that in general the incidence of the 4 disorders were not closely correlated suggests that they were distinct entities and not effected similarly by certain factors. Temperatures, relative humidity, and rainfall and altitude had no effect and the pressure on beds seemed only to influence the admission rate for amoebic dysentery. Mangoes had a profound effect on all disorders with the exception of amoebic dysentery, and in general the variation between months was accounted for. After the effect of all other factors had been taken into account there remained a marked difference in the populations drained by these hospitals. The factors responsible for this variation between hospitals have not been identified and the reason for the profound effect of mangoes is speculative only.

029 Rawland H. A. K. and Ohn Kyi
TITLE The effect of climatic and environmental factors on the incidence of diarrhoeic disorders in Burma 3. Data from Rangoon dispensaries 1964-67

SOURCE *Union Burma J Life Sci.* 1969; 2: pp81-84

ABSTRACT: The attendance rate at Rangoon dispensaries per 1,000 populations in the city, for diarrhoea and for dysentery has been calculated for each month over the period 1964-67 and effects of climatic factors, mango supply and attendances of all illnesses

examined. No effect for the 5 climatic factors could be demonstrated nor the total attendances for all ailments. Mangoes exerted a marked effect on the incidence of diarrhoea and smaller effect on the incidence of dysentery. All variation in the incidence of diarrhoea between the 12 months of the year was accounted for but there remained some variation in the incidence of dysentery between the months after the effects of all other factors had been removed. Between the 4 years of the study there remained variation in the incidence of both disorder due to some factor (s) not considered in this investigation.

030 Thein Mg Myint
TITLE Epidemiology and control of intestinal amoebiasis
SOURCE DPTM, Institute of Medicine I, Rangoon, 1967

Abstract/Summary: Not available

Conclusion: Amoebic dysentery is one of the commonest intestinal disorder and has continued to be a leading hazard to the life and health of the people in many underdeveloped and developing countries. Despite the fact that amoebiasis has long commended the attention of investigators throughout the world.

031 Thein Than; Hla Pe; Khin Kyi Nyunt and Aung Than Batu
TITLE Intestinal absorption in the Burmese
SOURCE *Union Burma J Life Sci.* 1969; 2(3): pp365-372

ABSTRACT: The xylose absorption test using 5g of xylose, the vitamin A absorption test and modified folic acid absorption test of Butterworth (1962) was performed on 55 apparently healthy Burmese adults, 41 subjects with recent diarrhoea and 7 subjects during diarrhoea. Among the healthy Burmese (20 out of 55) 36 per cent had subnormal xylose absorption (10-29 per cent excretion); (3 out of 36) 8 per cent had defective vitamin A absorption with 5 hour plasma vitamin A levels less than 150µg per cent (9 out of 26) 35 per cent had defective folate absorption with 5 hour urinary excretion less than 0.87mg. Considerable variation in xylose absorption was found on repeating the test at one week intervals. Among subjects with recent diarrhoea (8 out of 41) 20 per cent had abnormal xylose absorption (less than 10 per cent excretion) and (21 out of 41) 15 per cent had subnormal xylose absorption (17 out of 30) 57 per cent had defective vitamin A absorption; (20 out of 27) 74 per cent had defective folate absorption. The incidence of defective xylose, vitamin A and folate absorption was significantly higher in those with recent diarrhoea when compared with the healthy subjects. The incidence of impaired absorption of vitamin A and folate is higher in individuals with defective xylose absorption than in those with normal xylose absorption. Apparently, improved small intestinal function exists in a considerable proportion of apparently healthy Burmese as revealed by defective xylose and to a lesser extent vitamin A and folate absorption. Also, that defective small intestinal function occurs during and up to one week after an acute episode of diarrhoea. The presence of predominately leaf shaped jejunal villi in Burmese subjects not suffering from diarrhoea is noted.

032 Thein Than; Hla Pe; Khin Kyi Nyunt and Aung Than Batu
TITLE Intestinal absorption in the Burmese
SOURCE *Burma Res Congr.* 1969, Medical Sciences Research Division, Abstract of Papers, p27

ABSTRACT: The xylose absorption test using 5g of xylose, the vitamin A absorption test, and the modified folic acid absorption test of Butterworth (1962) was performed on 55 apparently healthy Burmese adult, 41 subjects with recent diarrhoea, and 7 subjects during diarrhoea. Among healthy Burmese (21 out of 55) 40% had subnormal xylose absorption (10-20% excretion); (3 out of 36) 8% had defective vitamin A absorption with 5hr plasma vitamin A levels less than 150µg%; (9 out of 26) 35% had defective folate absorption with 5 hr

urinary excretion less than 0.87mg. Considerable variation in xylose absorption was found on repeating the test at one week's interval. Among subjects with recent diarrhea (8 out of 41) 20% had abnormal xylose absorption (less than 10% excretion) and (20 out of 41) 51% had subnormal xylose absorption; (17 out of 30) 57% had defective vitamin A absorption; and (20 out of 27) 74% had defective folate absorption. The incidence of defective xylose, vitamin A and folate absorption was significantly higher in those with recent diarrhoea when compared with the healthy subjects. The results of similar tests on the 7 subjects with diarrhoea as well as plasma protein, serum carotene, and creatinine clearance values of all the subjects are also given. The incidence of impaired absorption of vitamin A and folate is higher in individuals with defective xylose absorption than in those with normal xylose absorption. It is concluded that impaired small intestinal function exists in a considerable proportion of apparently healthy Burmese as revealed by defective xylose and to a lesser extent vitamin A and folate absorption. Also, that defective small intestinal function occurs during and up to one week after an acute bout of diarrhea. Similar experience in other tropical countries are cited and compared. The presence of predominantly leaf-shaped jejunal villi in Burmese subject not suffering from diarrhea is noted.

033 Tin Aung; Tha Hla Shwe and Saw Naing
TITLE Prevalence of ascariasis in hostel students of Institute of Medicine 2, Rangoon and comparative evaluation of the treatment of ascariasis with piperazine citrate (Burazine, B. P. I.) and Ketrax (Tetramisole)
SOURCE *Burma Res Congr.* 1970, Medical Sciences Research Division, Abstract of Papers, p38

ABSTRACT: A study on the prevalence of ascariasis in the hostel students of Institute of Medicine 2, Rangoon, was undertaken. Altogether, stools from 420 students (266 male and 154 female students) were examined using hypersaturated saline concentration method. The prevalence rate was found to be 47.36 percent in male students and 46.76 percent in female students. Comparative evaluation of the treatment of ascariasis with Piperazine citrate (Burazine, B. P. I.) and Ketrax (Tetramisole) had to be temporarily suspended as the Institute was closed down on 10th December 1969. This evaluation can be resumed with satisfaction only when the Institute reopens on 5th January 1970.

034 Tin Nyunt Pu; H. A. K. Rowland and Khin Maung Tin
TITLE The effects of climatic and environmental factors on the incidence of diarrhoea in Burma, I
SOURCE *Burma Res Congr.* 1968, Medical Sciences Research Division, Abstract of Papers, p41
ABSTRACT: Not available

035 Tun Si
TITLE Epidemiology of enteric fevers in Burma
SOURCE DPTM, Institute of Medicine I, Rangoon, 1969-70
SUMMARY: Although enteric fever had been known since the days of Hippocrates, the first classical description of this disease done by Thomas Willis in 1643. Pierre Louis, in 1829, was the first to use the word 'typhoid', and the next major advance could be attributed to Gerhard in 1837, who was first to differentiate typhus and typhoid. William Budd in 1856 recognised the excremental rules of typhoid and outlined the regional hygienic principles in control of epidemics. Carl Joseph discovered the typhoid bacillus in 1884. Archard isolated *Salmonella typhi* in 1896 and in the same year Widal described Widal reaction. In the same year, the first prophylactic inoculation against typhoid was introduced. Chloramphenicol was discovered and manufactured in the year 1947 which is still the best

available drug at present in the treatment of enteric fever. The history of enteric fever in Burma dates back only in 1910, when it was discovered that the disease was prevalent among the natives. The disease was confirmed by Widal reaction. Mild epidemic had been reported from Mandalay and Moulmein in 1913. The death rate was extra-ordinarily high in Rangoon during the same year. Most admissions being from districts, the high mortality of which was attributable to journey to Rangoon. Enteric fever was widely distributed throughout the country by 1921. At present, the cases are still on the increase and sporadic outbreaks have been reported from many parts of Burma. The morbidity of enteric fever during the period 1910-1966 shows the trends of increase. However, the case fatality ratio declined rapidly since 1949 following introduction of chloramphenicol in the treatment of enteric fever. This dissertation is based on available data concerning the epidemiological data of enteric fever in Burma. Much effort to bring to light some aspects of the epidemiological feature of this problem, all possible sources of data were compiled and analysed. As data from all reporting hospitals other than 46 district towns are thought to be incomplete, detailed analysis is attempted for 46 district towns only. In this study, an effort is made to describe the occurrence and distributions of enteric fever by time, place and some other host characteristics in 46 district towns 9 including Greater Rangoon. 5 years average annual morbidity of enteric fever cases per 100,000 population in 46 district towns was a trend of moderate decrease. It was observed that the high year for the district was not high year for Rangoon. Also the rates of other towns was almost 4 times that of Rangoon. 4743 deaths from typhoid fever occurred with annual of 431 cases in reporting urban towns during 11 year period, 1954-1964. The overall mortality rate during the period was 13.8, that of Rangoon was 7.8 and the corresponding rate for other towns was 19.3. The trend of mortality rate declined significantly in Rangoon, but in other towns, the trend was fluctuating, showing occurrence of epidemics. Enteric fever occurred throughout the year. The disease, however, was highest during rainy season, May to October, with a peak in July and August. February had the lowest number of cases. Two peaks in July and October were observed in Lower Burma. The rise in incidence started from the dry month of April and the peak in July and August coincided with fly season as well as ripening of fruits. Enteric fever was distributed throughout the country. Generally, Upper Burma had the highest incidence rate, Lower Burma had the lowest. However, high endemicity of the disease was observed in certain towns such as Kyaukse, Lashio, Myitkyina, Sandoway, etc. Males had markedly the higher rate than females, since they are more gregarious and range more widely in their activities and are consequently exposed to greater risk of infections. The highest incidence is seen in an age group of 15-44 years in both sexes. The sex differences are minimal for infants and pre-school children and are higher for old ages. Recent outbreak at Pale Township was reviewed briefly in this report.

036 Yin Mya and H. A. K. Rowland
TITLE The effects of climatic and environmental factors on the incidence of
 diarrhoea in Burma, IV
SOURCE *Burma Res Congr.* 1968, Medical Sciences Research Division, Abstract of
 Papers, p42
ABSTRACT: Not available

Studies in 1971-80. Summing up

Studies of intestinal helminthiasis now included clinical description as well as epidemiological surveys which extended to many more locations and communities throughout the country. The important role of *Ascaris lumbricoides* infection in the pathogenesis of bile duct stones became apparent when analysis of bile duct stones showed the presence of *Ascaris ova* in their core.

Study of gut infection expanded to include intestinal amoebiasis and its treatment with emerging drugs. Diagnostic methods began to be systematically studied as new methods were introduced or adapted - evaluation of tetracycline fluorescent test for diagnosis of cancer stomach; development of cholera diagnostic sera. Anatomical studies continued. Description of vascular supply of the gut was extended to include other parts of the gut – colon, etc. Histological studies were started comparing histology of stomach in vertebrates and histological description of oral mucosa in Burmese subjects. Physiological studies of intestinal absorption were introduced and carried out on healthy Burmese subjects - lactose tolerance and xylose absorption tests.

Specific gastro-intestinal diseases which were frequently encountered in hospital practice began to be studied systematically from different aspects according to scientific importance, interest and opportunity: - Peptic ulcer- epidemiology, comparison of surgical treatment, and effect of truncal vagotomy on gastric acid secretion were investigated; peptic ulcer and gastritis were studied for the first time in Myanmar from the new perspective of *H. pylori* infection as a possible etiology factor; a variety of surgical conditions were studied to record experience in a local setting - acute pancreatitis, acute appendicitis, intestinal perforation, anal and perianal infections, gastro-duodenal hemorrhage, tuberculous abdomen, prolapsed rectum.

Prof. Aung Than Batu

Abstracts of Papers 1971-80

- 037 Aung Kyi
TITLE Intestinal helminthic infections in hospitalised patients of Tropical Diseases Unit, Ward (19-20) R. G. H.
SOURCE DPTM, Institute of Medicine I, Rangoon, 1973-74
Abstract/Summary not available: Abstract written by the book editors
The prevalence of intestinal helminthic infections in 100 hospitalised patients admitted to Tropical Diseases Unit of Ward (19-20) Rangoon General Hospital, during the period of January to June 1974 was studied. The prevalence of helminthic infections by age, sex and type of parasite was described. It was found that *ascariasis*, *trichuriasis*, hookworm, *enterobiasis*, *strongliodiasis* prevalence percentages among the patients were 36.9, 22.0, 4.3, 3.4 and 1.1, respectively. *Ascariasis* was found in all age groups. *Strongliodiasis* was present only in 10-19 years age-group.
- 038 Aung Than Batu; Hla Pe and Aye Aye
TITLE Lactose intolerance among the Burmese
SOURCE *Burma Res Congr.* 1971, Medical Sciences Research Division, Abstract of Papers, p82
ABSTRACT: Lactose intolerance was tested for in 50 adult patients aged 17 to 60 years and 47 children aged 1 to 5 years who had been admitted to hospital for disorders unrelated to the gastrointestinal tract. The total of 97 patients was all Burmese and included 25 women none of whom was pregnant or lactating. Lactose intolerance was tested for by determining the rise in blood glucose level 30 minutes after an oral dose of lactose 1g/kg body weight and of glucose 0.5g/kg body weight on two consecutive days respectively. Symptoms such as abdominal pain and diarrhea were also noted. Out of 31 adults who showed a rise in blood glucose of more than 20mg/100ml after oral glucose 29(93 percent) failed to show a similar rise after lactose, therefore indicating intestinal lactase deficiency. 34 out of 50 (68 percent) developed abdominal pain and diarrhea of 2-10 times after the lactose dose but none after 8 oz of cow's milk.
- 039 Aung Than Batu; Hla Pe and Aye Aye
TITLE Lactose intolerance in the Burmese
SOURCE *Union Burma J Life Sci.* 1972; 5: pp133-135
ABSTRACT: Lactose intolerance was tested for in 50 adult patients aged 17 to 60 years and 47 children aged 1 to 5 years who had been admitted to hospital for disorders unrelated to gastro-intestinal tract. The totals of 97 patients were all Burmese and included 25 women none of whom were pregnant or lactating. Lactose intolerance was tested for by determining the rise in blood glucose level 30 minutes after an oral dose of lactose 1gm/kg body weight and of glucose 0.5g/kg body weight on two consecutive days respectively. Symptoms such as abdominal pain and diarrhoea were also noted. Out of 31 adults who showed a rise in blood glucose of more than 20mg/100ml after oral glucose 29(93 per cent) failed to show a similar rise after lactose, therefore indicating intestinal lactose deficiency. 34 out of 50 (68 per cent) developed abdominal pain and diarrhoea of 2-10 times after the lactose dose but none after 8oz of cow's milk. Out of 17 children who showed a rise in blood glucose of more than 20gm/100ml after oral glucose 11 (64 per cent) did not show a similar rise after lactose, indicating lactose deficiency. 3 out of 47 children (6 per cent) developed diarrhoea after lactose but none after 8oz of cow's milk.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

- 040 Aung Than Batu
TITLE The intestinal iron content of the Burmese, and its relation to the control of iron absorption
SOURCE *Burma Res Congr.* 1973, Medical Sciences Division, Abstract of Papers, p100
ABSTRACT: Not available
- 041 Aung Than Batu; Sein Myint; Aung Myint; Myint Oo and Tin Aye
TITLE Ascaris larvae and ova in the core of bile-duct stones in Rangoon
SOURCE *Trans R Soc Trop Med Hyg.* 1975; 69(1): p167
ABSTRACT: Not available
- 042 Aung Than Batu; Hla Pe and Thein Than
TITLE Validity of the d(+)-xylose absorption test as an index of intestinal absorption
SOURCE *Clin Chim Acta.* 1971 Mar; 32(1): pp145-6
ABSTRACT: No Abstract
- 043 Hla Yee Yee; Mya Tu M and Aung Than Batu
TITLE Reliability of the xylose tolerance test as an index of intestinal absorption
SOURCE *Am J Clin Nutr.* 1973 Jul; 26(7): pp688-9
ABSTRACT: No Abstract
- 044 Hoke Khin
TITLE Helminthic infection in Burma
SOURCE DPTM, Institute of Medicine I, Rangoon, 1975
SUMMARY: The effects of helminthic infections in Burma are studied by analysing the prevalence, morbidity, mortality and distribution in this country. Commonly encountered helminthic infections are certain intestinal helminths and *Wucherera bancrofti*. Other helminths such as schistomas are not noted. Among the intestinal helminths *Ascaris*, hook-worm and *Tricuris* are three most prevalent infections. The average prevalence rates of studied surveys are: 55.91 percent for *Ascaris*, 16.07 percent for hook-worm, and 15.38 percent for *Trichuris*. *Ascaris* infection is found in all age groups, with high incidence in pre-school and school children. Hook-worm infection rate is low in children and it is high in young adults and old people. Delta Region, Kachin State and Tenasserim Division are areas with high prevalence rates of hook-worm infection, where as it is low in dry zone and parts of Shan states. No geographical variation seems to present for *Ascaris* infection. The hospital proportional morbidity rate ranges from 0.3 to 3.13 percent in different region of Burma. Mortality from helminthic infections is negligible. The prevalent rate of filariasis in this country was found to be 2.34 percent. No relation between hook-worm and anaemia had been established. This fact needs further investigation. Ascariasis may be a contributing factor in malnutrition, but direct evidence is not yet available. Many features of filariasis are encountered in hospital practice, but no consolidated information is available. Present control measures for intestinal helminthiases are just a part of general health measures. No control had yet been achieved, and this reflected in high prevalence rates. Filariasis control is available Rangoon only, and mass chemotherapy, and anti-vector measures are vigorously applied. Various recommendations are presented.

- 045 Khin Maung Nyunt
TITLE Five years study of gastroduodenal pathology with special reference to haematemesis in M. G. H.
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay, 1976
ABSTRACT: A retrospective 4 years and prospective one year study on patients with gastroduodenal pathology with special reference to haematemesis admitted into surgical units of Mandalay General Hospital from 1st January 1971 to 31 December 1975. Also a statistical survey on incidence of the gastro-duodenal lesions in general with special reference to haematemesis and the evaluation of the results of surgery on bleeding peptic ulcers of both duodenal and gastric.
- 046 Khin Maung Win; Tin Shwe and Franco Tin
TITLE Intestinal parasitoses in the inhabitants of Htaukkyant Leprosy Sanatorium and Hospital
SOURCE *Burma Res Congr.* 1973, Medical Sciences Division, Abstract of Papers, pp94-95
ABSTRACT: The fresh stool samples belonging to six hundred and forty three adult patients of Htaukkyant Leprosy Sanatorium and Hospital were examined by direct and formal ether concentration technique. Sixty two adults with no leprosy were also included in the study as controls. Among patients with lepromatous leprosy the prevalence rates for helminthes and protozoa *Ascaris lumbricoides*, *Trichuris trichura*, Hookworm, *Enterobius vermicularis*, *Strongyloides stercoralis*, *Entamoeba coli*, *Entamoeba histolytica*, and *Giardia lamblia* were 59.5 percent, 6.5 percent, 4.1 percent, 4.0 percent, 5.0 percent, 4.1 percent and 2.0 percent respectively. Among patients with non lepromatous leprosy the prevalence rates for helminthes and protozoa, *Ascaris lumbricoides*, *Trichuris trichura*, Hookworm, *Enterobius vermicularis*, *Strongyloides stercoralis*, *Entamoeba coli*, *Entamoeba histolytica* and *Giardia lamblia* were 54.6 percent, 6.0 percent, 6.5 percent, 0.0 percent, 0.0 percent, 4.3 percent and 3.2 percent respectively. The prevalence of helminthes and protozoa among leprosy patients belonging to the sanatorium was equally high as these patients belonging to hospital and out patients department, though the sanatorium had a comparatively high sanitary environment. The prevalence of *Strongyloides stercoralis* among patients with lepromatous leprosy is significantly high when compared to those with non lepromatous leprosy and controls. This may be due to impaired cell mediated immunity which is associated with lepromatous leprosy. Thus in patients with lepromatous leprosy especially those on steroids, stools should be examined for *Strongyloides stercoralis* and prompt treatment should be given to infested individuals to prevent the loss of such patients.
- 047 Khin Maung Yi
TITLE The pre-peritoneal approach and iliopubic tract repair of all groin hernias
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1977
ABSTRACT: Describes the repair and restoration of posterior inguinal wall, i.e. the transversalis fascia lamina. The most important components for the repair are a group of ligamentous and aponeurotic structures closely associated with the transversalis fascia. They are (1) iliopubic tract (2) transversalis fascia crura and sling of the internal abdominal ring and (3) arch of transversus abdominis aponeurosis.

- 048 Khin Myo Chit
TITLE A study on the gastric secretory response and ABO blood groups
SOURCE MMedSc(Physiology), Institute of Medicine II, Rangoon, 1980
ABSTRACT: Gastric secretory response to an alcohol test meal and its association to ABO blood groups were studied in a group of 193 medical students aged 19 to 22 years. Volume of fasting gastric juice and maximal acidity obtained after an alcohol test meal were found to be higher in male subjects than in females. But, the difference was statistically not significant. In 60 per cent of the subjects, the volume of fasting gastric juice and maximal acidity were found to lie within the range of 20-50ml and 20-50mEq/1 respectively. The maximal acidity in subjects of blood group O (53.98 ± 5.26 mEq/1 in male and 45.74 ± 9.58 mEq/1 in female) was significantly higher than group A subjects (42.18 ± 6.56 mEq/1 in male and 31.33 ± 10.58 mEq/1 in female) at 1 per cent and 5 per cent level respectively. Similar significant difference was also found between female subjects of blood group A and B at 5 per cent level (31.33 ± 10.58 mEq/1 in group A subjects and 45.69 ± 7.98 mEq/1 in group B subjects). A weak correlation ($r = +0.293$) between body weight and maximal acidity was found. However, acidity could not be correlated to the height of the individual.
- 049 Khin Ohn Lwin
TITLE Ecology of *Ascaris lumbricoides* in Burma
SOURCE DPTM, Institute of Medicine I, Rangoon, 1972-73
SUMMARY: Results of the various surveys and experiments performed on parasitological, clinical and epidemiological aspects of ecology of *Ascaris lumbricoides* done by various authors in Burma were collected, and discussions made on these findings. Information on the projects done is given and suggestions made for more studies to be carried out in the future.
- 050 Khin Ohn Lwin; Margaret Tu; Than Saw, Ma and Htay Aung
TITLE Intestinal parasites in a rural subpopulation of Loikaw Township, Burma
SOURCE *Union Burma J Life Sci.* 1972; 5: pp335-339
ABSTRACT: 92 Kayah, Taungthu, Shan, Danu, Pa-oh and Kaypar children and adults both sexes in the 5 to 25 years age group of Chike, Thaysoele, Frusoe, Ywartanshe, Pankan, Mineloneyat and Sintaung villages of Loikaw Township were surveyed for intestinal parasites in May 1969. Stool samples were collected in screwcapped plastics containers of 50ml capacity, preserved in 5 per cent formal-saline and then transported in Rangoon for microscopic examination. Coverglass preparation of faeces were examined directly in normal saline, 1 per cent eosin and lugol's iodine respectively. Each specimen was also examined after concentration by Ritche's (1948) formal - ether method as modified by Ridley and Hawgood (1956). The prevalence rates for *Ascaris lumbricoides*, *Trichuris trichiura*, hookworm, *Enterobius vermicularis* (corrected prevalence), *Hymenolepis nana* and *Entamoeba coli* were 46.73, 25.00, 13.00, 22.00, 1.09 and 1.09 per cent respectively.
- 051 Khin Thet Nyo
TITLE The histology of oral mucosa in Burmese subjects
SOURCE MMedSc(Anatomy), Institute of Medicine I, Rangoon, 1979
ABSTRACT: Part I describes a general review of literature concerning gross anatomy of the mouth, microscopic appearance, general layers of mucous and submucous structures of the oral mucosa muscles, blood supply and nerve supply. Part 2 described materials investigated. Part 3 reported the results obtained during the study. Part 4 described the results and present conclusion drawn from the study.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

- 052 Kyaw Nyunt
TITLE Blood supply of caecum, appendix and colon
SOURCE MMedSc(Anatomy), Institute of Medicine II, Rangoon, 1976
ABSTRACT: Not available
- 053 Kyaw Nyunt
TITLE Clinical study of intestinal perforation in Rangoon General Hospital
SOURCE MMedSc(Surgery), Institute of Medicine I, Rangoon, 1979
ABSTRACT: Efforts had been made to get reliable data on the actual incidence and outcome of the treatment to present clinical study of intestinal perforation in R. G. H. from November 1978 to October 1979.
- 054 Kyaw Win
TITLE A report on intestinal helminthic infections in Mon State
SOURCE *Burma Med J* (1976); 22(3&4): pp29-36
SUMMARY: A series of stool survey among plantation workers was carried out and compared with the general rural community. It was found that hookworm infection is an occupational hazard for the plantation workers. Hookworm infection is found not to be associated with anaemia in population studied. The intensity of *Ascaris* infection and the distribution of intestinal worm infections were studied and discussed.
- 055 Mary Hmway
TITLE A comparative histology of stomach of certain vertebrates
SOURCE MMedSc(Anatomy), Institute of Medicine I, Rangoon, 1974
ABSTRACT: The morphological and histological features of the stomach wall of different species of vertebrates and a comparison of the different layers of the stomach according to different dietary habits were described.
- 056 Maung Maung Aye
TITLE Preparation of cholera diagnostic sera
SOURCE *Burma Res Congr.* 1972, Medical Sciences Research Division, Abstract of Papers, p135
ABSTRACT: A preliminary pilot experiment on the preparation of Cholera Diagnostic Sera was being carried out with a view to saving foreign exchange. An additional but equally important object was to provide that the National Health Laboratory, being a Reference Centre, should aim at preparing diagnostic sera, not only of Cholera, but also other commonly used sera like *E. coli*, *Shigella*, *Pertussis*, *Salmonella*. Within a seven year period (1964-1971) the Central Medical Store imported 980 ampoules (one ml) from Burroughs Wellcome Co. (UK) which amounted to a sum of money £2,450 in terms of foreign exchange (equivalent to K30,948 approximately). Therefore, yearly the country has been spending about £350 (K4,421). The cost of one ml ampoule if imported is £2-10 shillings. The cost of one ml ampoule if produced locally is K1.25. In other words we would have saved foreign exchange amounting to sum of £2,352 yearly (K29,723). Hence, the local product could be cheaper and it would save foreign exchange which is an important consideration and thus the money could be used for various purposes of high national importance. Therefore, Cholera diagnostic sera preparation is an important matter and the present piece of research work should be extended further as well.

057 Maung Maung Khin
TITLE An evaluation of tetracycline fluorescence test in the diagnosis of carcinoma of the stomach
SOURCE MMedSc(Internal Medicine), Institute of Medicine I, 1976
ABSTRACT: The evaluation of the reliability of the use of tetracycline fluorescence test in the diagnosis of carcinoma of stomach and the performance of tetracycline fluorescence test on cancer stomach cases and the evaluation of the results by laparotomy were described.

058 May Saw Myint
TITLE Clinical aspects of intestinal amoebiasis
SOURCE DPTM, Institute of Medicine I, Rangoon, 1972-73
SUMMARY: For the study on clinical aspect of intestinal amoebiasis in Infectious Disease Hospital, Rangoon, the available data from above hospital was analysed. Out of the total admission 6831 cases in Infectious Disease Hospital, there are 861 cases of amoebic dysentery and 25 death, giving a case fatality rate of 2.90 per cent and proportional mortality ratio of 13.3 per cent. It ranks third in number following gastroenteritis and unspecified dysentery. Intestinal amoebiasis is endemically prevalent in Rangoon. It occurs throughout the year, with no definite seasonal variation. In an endemic place, intestinal amoebiasis can occur at any age, but the highest incidence lie in the age group of 35 to 44 years. There was no significant difference in both sex. Admission at the Infectious Disease Hospital of Rangoon, mainly come in with primary diarrhoeal complaints. Out of 159 sampled cases, 133(84 per cent) and 26(16 percent) were admitted for dysentery and diarrhoeic complaints respectively. Most of the case(66.04 percent) were of acute onset. Beside diarrhoea or dysentery other symptoms like fever, tenesmus, dehydration or tenesmus together with dehydration were also occurred in some patients, but majority of cases had no other symptoms besides diarrhoea or dysentery. On stool examination, different consistency was noted. Commonest abnormal contents were blood and mucus. The causes of death among 25 deaths showed that some time death is not directly attributable to amoebiasis although it acts as a contributing factor. Here malnutrition status was superadded by secondary bacterial infection of lungs and lead to death. The common and very dangerous complication was found to be colonic perforation and peritonitis. For treatment of intestinal amoebiasis injection emetine, dehydroemetine, emetine bismuth iodide, diiodo-hydroxyquinoline group and antibiotic tetracycline in different form of combination. Metronidazole, a new preparation was also found to be effective in all sites of infection without severe toxic effects.

059 Myint Tun
TITLE A comparative study on surgical treatment of chronic duodenal ulcer
SOURCE MMedSc(Surgery), Institute of Medicine II, Rangoon, 1975
ABSTRACT: A total of 50 post-operative patients with chronic duodenal ulcer, 25 patients after truncal vagotomy plus gastrojejunostomy and 25 patients after Polya partial gastrectomy are assessed clinically and experimentally, the results are compared and contrasted at a comparable stage within four months to one year after the operations. Post-operative symptoms of alimentary dysfunction occur in equal frequency after both types of operation. 40 per cent incidence of transient post-vagotomy dysphagia is recorded. The incidence of post-vagotomy diarrhoea is extremely rare and is noted only in one patient. Majority of patients, 68 per cent after truncal vagotomy and 76 per cent after partial gastrectomy appreciably reported improvement in their bowel habit after the operations. Body weight gain is seen in a large number of patients, 80.9 per cent after truncal vagotomy and 82.6 per cent after partial gastrectomy. The mean weight gain of 12.57lb after partial

gastrectomy is more than 9.29lb mean weight gain after truncal vagotomy. The tendency of eight loss in post-gastrectomy patients is not seen. The pentagastrin test for gastric acid output are successfully done in 18 patients showing a mean pre-operative basal acid output (B. A. O.) of 4.71mEq/hr and mean pre-operative maximal acid output (M. A. O.) of 20.11mEq/hr. Maximal acid output reduced for 59.05 per cent after truncal vagotomy and 61.25 per cent after partial gastrectomy. The low range of pre-operative gastric acid output in chronic duodenal ulcer patients and variations in percentage reduction of M. A. O. after the two operations are discussed. Oral hypertonic glucose test for provocative dumping induces dumping in 60 per cent patients after truncal vagotomy and 40 per cent after partial gastrectomy. Eventhough dumping is very rarely reported clinically, the liability to dumping still exist among patients after gastric surgery. Food and barium meal studies of gastric emptying provide evidence of rapid gastric emptying after both operations and more so after partial gastrectomy than truncal vagotomy. Small bowel transit time is abnormally fast after truncal vagotomy than partial gastrectomy. Because of the comparable results of almost equal frequency, no final comprehensive verdict can be drawn on a more satisfactory operation between the two treatment methods. The place of each operation in the treatment of chronic duodenal ulcer is discussed.

060 Nyi Linn
TITLE A five year epidemiological study of acute peptic ulcer
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1975
ABSTRACT: 438 cases of acute gastriduodenal perforation cases treated at Mandalay General Hospital in 1970 to 1974 are described. Most of patients are males in the age group of 30-40 years which is the age group where the Burmese population lead the most active earning life. They are also manual and agricultural workers or of low income group, and they usually have chronic ulcers. Most of the patients are treated by simple suture, and this type of operation would not be suitable for many of the patients, and reviewed the management and reevaluate.

061 Ohn Khaing
TITLE Clinical study of tuberculous abdomen in Surgical Unit I, M. G. H.
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1978
ABSTRACT: Described the assesement of the magnitude of the problem of tuberculosis abdomen in SUI, MGH; some epidemiological feature by incidence, age, sex and mode of transmission; the clinical presentation of tuberculosis abdomen; the place of peritoneal biopsy in the diagnosis of the disease; and the treatment of the disease.

062 Oo Kyaw
TITLE A study of common causes, epidemiology and clinical features of intestinal obstruction
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1976
ABSTRACT: Described the epidemiology of intestinal obstruction, the different cases of intestinal obstruction admitted to Mandalay General Hospital or in other words cases prevalent in Central Burma, the various clinical presentation of different types of intestinal obstruction, and the proper management in different types of intestinal obstruction.

- 063 Sa Kham Kaw
TITLE Study of anal and perianal infections
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1977
ABSTRACT: It is a retrospective four years and prospective one year study on patients with anal and perianal infections with special reference to fistula-in-ano admitted into surgical units of Mandalay General Hospital from 1st January 1972 to 31st December 1976. Also included the study of statistical survey on the incidence of perianal infections in general with special reference to Fistula-in-ano, and the evaluation of the result of surgery and the cause of infection of the Fistula tract.
- 064 Saw Lwin Aung
TITLE A controlled trial of nimorazole in the treatment of acute amoebic dysentery
SOURCE MMedSc(Internal Medicine), Institute of Medicine I, Rangoon, 1975
ABSTRACT: Describes a controlled trial of nimorazole carried out on 30 patients with acute amoebic dysentery. A dosage of 40mg/kg body was used. The drug of reference was oral Emetine Biomuth Iodide with injection Emetine hydrochloride 60mg given for 3 days initially. 27 out of 30 patients were apparently cured.
- 065 Saw Naing
TITLE Diarrhoeal diseases in Rangoon
SOURCE DPTM, Institute of Medicine I, Rangoon, 1971
SUMMARY: As an attempt to study the problem of diarrhoeal diseases in Rangoon, available data from various sources were analyzed and studied. The diarrhoeal diseases were responsible for 56.82%, of total admissions and 78.15% of total deaths at Infectious Diseases Hospital in 1969, and 59.93% and 50% respectively in 1970. Out of a total 4844 diarrhoeal patients admitted to Infectious Diseases Hospital in Rangoon, 3264 were due to gastroenteritis, 671 cases of bacillary dysentery, 607 cases of amoebic dysentery, 237 cholera, 33 enteric fevers and 32 were due to food poisoning. Common bacteriological agents isolated from patients with diarrhoeal diseases in Rangoon were *Vibrio cholera* biotype El Tor, *Salmonella*, and *Shigella* and enteropathogenic *Escherichia coli*. Commonest phage type of vibrio cholera was Mukerjee Phage type IV. During 1970, 25 serotypes of *Salmonella* were isolated. Among them, *Salmonella paratyphi* B and *S. derby* were commonest. Among *Shigellae*, *Shigellae flexneri* was commonest. 10 serotypes of enteropathogenic *Escherichia coli* were isolated. Overall isolation rate for bacterial agent was 6.78%. Certain age characteristics are noted. Gastroenteritis is a disease of the young. 70% of the cases were below 5 years of age. As for dysentery, the incidence increased with increasing age. The highest is among old people above 65 years of age with hospital admission rates of 151.04 per 100,000 population in 1970. All age groups were affected more or less uniformly with cholera. Persons at the two extremes of age, were found to be little affected from food poisoning. In all diarrhoeal diseases, no significant sex difference was noted. People of low socioeconomic group was most frequently attacked. This was found in survey, where the majority of cases were among labourers. Patients with diarrhoea and dysentery came from all areas of Rangoon. Marked differences in the geographical distribution was noted. No comparable difference was found in other diarrhoeal diseases. All diarrhoeal diseases showed seasonal variation. Usually, peaked period for all diarrhoeal diseases occurred in June and July. 438 cases of diarrhoeal diseases from Infectious Diseases Hospital were randomly selected and studied for clinical features. Usual clinical features observed in diarrhoeal diseases were diarrhoea and vomiting. These two symptoms occurred in association with abdominal pain, fever and dehydration. Diarrhoea was watery in 55.3%, blood and mucus were present in 24.9%, blood alone in 18% and the remainder contained mucus alone. About 5% of all cases

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were severely dehydrated. But in bacteriologically confirmed cases of cholera, 50.4% were severely dehydrated. Rehydration is the single most important therapeutic measures. Ringer lactate solution is being used with success as a rehydrating fluid at Infectious Diseases Hospital. Tetracycline is also used as an adjunct in severely dehydrated patients, no antibiotic is given to mild or moderate cases. Specific drugs are given to diseases like enteric fever, helminthiasis, amoebic dysentery and etc. Methods of control practised in Rangoon were discussed. Patients are isolated at the Infectious Diseases Hospital. An epidemiological surveillance programme is in operation in Rangoon. Surveillance of contacts, disinfection of environment and health education are principal parts of this programme. Various recommendations were presented.

066 Than Win
TITLE Clinical study of acute pancreatitis
SOURCE MMedSc(Surgery), Institute of Medicine I, Rangoon, 1978
ABSTRACT: The clinical presentation of acute pancreatitis as encountered in R. G. H.; the diagnostic criteria, the possible underlying aetiologic factors, the complication, the morbidity and mortality of acute pancreatitis as a whole were described.

067 Thein Aung
TITLE Clinical study of prolapsed rectum in M. G. H.
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1980
ABSTRACT: Described a clinical study of prolapsed rectum in Mandalay General Hospital, the prevalent causes of the prolapsed rectum and the assessment of the effectiveness of the therapeutic methods used in Mandalay General Hospital.

068 Tin Maung Oo
TITLE Acute appendicitis in M. G. H.
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1975
ABSTRACT: Described that appendicitis is no less common, a disease among working class of people as compared to westerners; that late diagnosis leads to more complications in form of (a) wound sepsis, (b) wound disruption, (c) prolonged stay in the hospital with more expenditure increases to the Government; that the earlier it is diagnosed, the better is the prognosis; that difficult appendix gives wound infection and every effort must be devoted to prevent bursting of the organ during operation and the abdominal wound should be well covered with gauze.

069 Tin Ohn
TITLE A study of gastric acid analysis in some chronic duodenal ulcer cases subjected to truncal vagotomy
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1980
ABSTRACT: Described the gastric acidity out-put before and after truncal vagotomy and the completeness of vagotomy by Hollander's test.

070 Thaung, U; Ming, C Khai; Hla Tin; Tun Oo and Khin Saw Khine
TITLE An outbreak of cholera in Kengtung in 1973
SOURCE *Burma Med J*, 1975 Apr; 21(2): pp71-74
ABSTRACT: Not available

Studies in 1981-90. Summing up

The study of intestinal helminthiasis increased in scope, depth and complexity. The epidemiology of *Ascariasis* as well as the biology of *Ascaris lumbricoides* was studied in depth. Cross-sectional and longitudinal surveys were carried out in villages to determine distribution of worm load, the basic reproductive rate and transmission dynamics. Epidemiological models of *Ascaris* infection and theoretical simulation of the effect of mass chemotherapy were done, followed by a pilot experiment to examine the possibility of reducing *Ascaris* transmission to insignificant level by mass chemotherapy. The impact of periodic age-targeted mass chemotherapy on prevalence, intensity and morbidity due to *Ascariasis* was studied in village children. The impact of regular de-worming on nutrition and growth of school children was studied in a large experiment covering 21 villages. Result of these studies helped to fill the gap in contemporary scientific knowledge about the interrelationship between *Ascaris* infection and nutrition and provided information helpful in choosing between various public health options for preventing and controlling *Ascaris* infection in the community in Myanmar.

It was realized that diarrhoea as distinct from cholera was one of the foremost causes of mortality and morbidity in Myanmar especially in children, and it became the first priority disease in People's Health Plan (1982-86). Prior to 1981 little was known regarding the etiology of acute diarrhoea in Myanmar apart from the fact that *V. cholerae*, *Salmonellae*, *Enteropathogenic E. coli* (EPEC) and sometimes *Entamoeba histolytica* and *Shigellae* were the micro-organisms mostly associated with diarrhea, during this period, extensive research was carried out on the epidemiology and etiology of acute diarrhoea in urban and rural communities. Important etiological agents, hitherto not known to be present in Myanmar were identified including *Enterotoxigenic E. coli* (ETEC, both heat labile and heat stable strains) *Campylobacter jejuni*.

Rotaviruses as etiological agent of diarrhoea in children was studied for the first time in Myanmar and found to be prevalent during the cold season. The relative frequency of these etiological agents for diarrhoea was studied in children including neonates. Contemporary advanced methods were introduced and set up in order to be able to conduct these studies - including tissue culture such as Chinese Hamster Ovary (CHO) cell culture to detect ETEC. The biological properties of these pathogens were studied such as invasiveness and adherence. The effects of their toxins were also studied such as intestinal secretory response to ETEC, effect of cholera toxin on cyclic AMP and on amino-acid uptake, using radio-labeled tracers.

The application of microbial genetics to the study of pathogenesis of gastrointestinal infections was started beginning with plasmid profile analysis of *E. coli*. Epidemiological studies of diarrhoea broadened in scope. Seasonal and geographical variations in incidence were investigated. Personal hygienic practices that affect diarrhea incidence were studied – in particularly home and hand contamination in relation to diarrhoea and demonstration that hand washing with soap and water

after defecation and before meals reduced diarrhoea incidence; The role of fomites such as paper currency notes in the person to person transmission of diarrhoeas was investigated. The effect of diarrhoea on gut function, bio-availability and pharmacokinetics of drugs was studied.

An important shift in the focus of diarrhoea research took place - from etiological agents to treatment modalities - when Oral Rehydration Therapy (ORT) emerged in the 1970's as effective treatment of diarrhoea, as a result of crucial discoveries in basic research and clinical demonstration of efficacy at top research centers abroad. Trials were undertaken to test the operational feasibility and acceptability of ORT under local conditions in the villages, communities and at home in Myanmar. Studies ranged from whether village mother could properly measure water and prepare acceptable concentrations of Oral Rehydration Solution (ORS) to tests of cheaper substitutes for home use and investigations into suitable foods to be given during diarrhoea including breast milk and rice gruel. Also, clinical trials were done of traditional herbal remedies like berberine and commonly used home remedies like activated charcoal for the treatment of diarrhoea.

During this period, scientific studies of patho-physiological mechanism related to gut function and nutrient absorption were carried out in the laboratory, hospital and in the field. The breath-hydrogen test was set up and used to determine carbohydrate (CHO) absorption in normal village children. CHO absorption and malabsorption in relation to growth in children was studied. Anatomical and histological studies of different parts of the gut continued.

Many specific diseases were studied from the medical and surgical perspectives – clinical and epidemiological surveys of GI diseases include typhoid, shigella dysentery, abdominal tuberculosis and surgical conditions such as acute pancreatitis, acute intestinal obstruction. The study of recurrent cholangitis showed the importance of bile duct stone, rather than gall stones, as a cause of obstructive jaundice. Previous studies in the 1970's have shown the importance of ascaris infection as etiology of bile duct stones. Previous reports have also mentioned that *Ascaris* adult worms may sometimes be found in the common bile duct.

Furthermore, the application of newly introduced diagnostic methods and new technology was studied - in particular, the utility under local conditions of endoscopy of the stomach and gut and ultrasonography of the hepato-biliary system; and the experience from the performance of large series of such investigations were reported.

New laboratory techniques were introduced including cell culture for bacteriological studies, plasmid profile analysis for genetic studies and radioactive tracers for biochemical studies.

Overall, this decade was one in which great leaps were made in the study of gastrointestinal diseases as a result of many research programs in the DMR made possible by large expansion in facilities and also due to a big surge of post graduate courses at Institutes of Medicine as well as due to the transfer of up-to-date medical technology into YGH, the main teaching hospital of IM I.

Prof. Aung Than Batu

Abstracts of Papers 1981-90

071 Ah Mar
TITLE The profile of common intestinal helminthiasis in children admitted to Rangoon Children's Hospital
SOURCE MMedSc(Paediatric), Institute of Medicine I, Rangoon, 1981
ABSTRACT: Describes the prevalence of common intestinal helminth infections per se and in relation to socioeconomic status, sanitary and housing conditions, and nutritional status in a medical unit and a surgical unit of R. C. H. Also describes the clinical manifestation and presentations of common intestinal helminth infections in the hospitalized children.

072 Aung Htay
TITLE Gastric juice analysis on pre and postvagotomy of chronic duodenal ulcer
SOURCE MMedSc(Surgery), Institute of Medicine II, Rangoon, 1982
ABSTRACT: Truncal Vagotomy and drainage procedure is mostly used in chronic duodenal ulcer with stenotic cases in North Okkalapa General Hospital. Basal hour secretion of volume, pH, and acidity in preoperative and postvagotomy in chronic duodenal ulcer 14 cases were studied. The result shows that the cases fall into three groups. There are 14 cases in Group I in which study is done on preoperative and postoperative cases after 2 weeks. There are 8 cases in Group II in which study was done on preoperative and postoperative cases containing both complete and incomplete vagotomy after 2 weeks and after 3 months. Out of the 8 cases Group II there are 6 cases of group III where the completeness of the truncal vagotomy is confirmed by the Hollander test and gastric analysis is done on reoperative and postoperative cases after 2 weeks and after 3 months. In a comparative study of pre and post-vagotomy. Basal hour secretion, there is a statistically significant reduction in volume and acidity and also in pH change. In Group I, incomplete vagotomy, 14.29 per cent there is reduction of volume and acidity of Basal hour secretion of 29.87 per cent (p is 0.01) and 46.16 per cent (p is 0.01) respectively. In group III, complete vagotomy confirmed by the Hollander Test, reduction of volume and acidity of Basal hour secretion is 45.5 per cent (p is 0.05) and 58.54 per cent (p is 0-01) respectively 2 weeks after vagotomy. Therefore completeness of vagotomy is an important factor in reduction of the volume and acidity of the gastric juice. In group II incomplete vagotomy 25.0 per cent, there is no difference between results after 2 weeks and results after 3 months in either the volume or acidity of Basal hour secretion as they are 9.88 per cent (p is 0.2) and 9.74 per cent (p is 0.1) respectively. But there is a slightly greater increase in volume and acidity after 3 months than after 2 weeks but it is not statistically significant. Age incidence is between the third and fourth decade of life (29.93 to 34.35 years). Male and female ratio is based on the number of subjects as 6:1, 3:1, and 2:1 in Group I, II and III respectively.

073 Aung Kyi
TITLE A comparative study of the Amylase/Creatinine Clearance Ratio (ACCR) in patients with acute pancreatitis and other common acute abdominal conditions
SOURCE MMedSc(Surgery), Institute of Medicine II, Rangoon, 1984
ABSTRACT: Twenty-eight out of 77 patients with acute abdomen (36.36 per cent) had hyperamylasemia (more than 200 Somogyi Units). Serum amylase determinations are nonspecific and not diagnostic for acute pancreatitis even when the values were more than 1000 Somogyi Units, Renal clearance of amylase from the blood, expressed as a proportion of simultaneous creatinine clearance, is 2.35 per cent \pm 0.68 in normal persons. In patients with acute pancreatitis the amylase/creatinine clearance ratio rises regularly and significantly.

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- 074 Aung Mon and Tin Tun
TITLE Widal test and clot culture in the diagnosis and treatment of enteric fever
SOURCE 28th *Burma Med Conf.* 1981; p39
ABSTRACT: Blood samples were taken from 4560 cases of pyrexia of uncertain origin and clinically suspected enteric fever, admitted to hospitals in Rangoon. Each sample was tested for Widal reaction and clot culture was performed. *In vitro* testing for antibiotic sensitivity was carried out for those samples with positive clot culture. The significance of these findings is discussed.
- 075 Aung Myint
TITLE A study of usefulness of the plain x-ray abdomen in common acute abdominal conditions
SOURCE MMedSc(Surgery), Institute of Medicine II, Rangoon, 1985
ABSTRACT: Not available
- 076 Aung Myint and Ni Le Win
TITLE A study of bowel habit in medical students
SOURCE *Fourth Med Spec.* Burma Medical Association, 1988, Abstract of Papers, p19
ABSTRACT: Inquires about bowel habit was made on 309 students selected to enter Institute of Medicine I, Rangoon. They are not seeking medical advice, without known gastrointestinal disease and attending a routine physical and mental check-up. 93% fell with the frequency limits of five to seven bowel actions weekly, up to three actions daily.
- 077 Aung Myo Han
TITLE Prospects of prevention of acute diarrhoea by immunization
SOURCE *Burma Med J.* 1984 Sept; 30(3): pp282-291
ABSTRACT: Not available
- 078 Aung Myo Han
TITLE Personal hygiene and incidence of diarrhoea and dysentery
SOURCE *Burma Res Congr.* 1988, Medical Sciences Division, Abstract of Papers, p10
ABSTRACT: To determine the maternal Knowledge, Attitude and Behaviour (KAB) on personal hygiene and to relate these KAB scores to the diarrhoeal and dysentery incidence of their children, a study in a low socioeconomic community in Rangoon was conducted. A pre-tested schedule was used to collect information on KAB and a daily monitoring scheme was employed for determining diarrhoea and dysentery incidence. Although high percentage of correct responses were obtained for the knowledge statements (66 – 95%), there were a lot of respondents who did not wash their hands after defecation or clean a defecated child before food handling (80%). The risk of diarrhoea and dysentery in children whose mothers had low KAB scores was found to be generally greater than that of the children whose mothers had higher score. For those with low behaviour scores, the adjusted relative risks for diarrhoea (IDR=1.58; 95% CI=1.10-2.27) and dysentery (IDR=1.95; 95% CI=1.01-3.75) were statistically significant. To increase the community awareness of the personal hygiene importance there should be more emphasis on the specific education about personal hygiene.

- 079 Aung Myo Han; Mi Mi Khin; Tin Aye and Thein Hlaing
TITLE Measles-associated diarrhoea in the Infectious Diseases Hospital, Rangoon
SOURCE *J Trop Med Hyg.* 1990 Jun; 93(3): pp205-9
ABSTRACT: A study was conducted in the Infectious Diseases Hospital in Rangoon to determine the magnitude of measles-associated diarrhoea morbidity and mortality in children under 6 years of age contributing to the overall diarrhoeal morbidity and mortality, and to determine the bacterial pathogens of measles-associated diarrhoea cases. Measles-associated diarrhoea cases occur most frequently in younger age groups (12-23 and 0-11 months). Although not directly comparable, their contribution to the total diarrhoeal cases (8%) was high but the proportion of measles-associated diarrhoeal deaths contributing to total diarrhoeal deaths was lower than the theoretical estimates. A low fatality rate (2%) among the measles-associated diarrhoea cases was found and this suggests a much lower rate in the community. This implies that measles-associated diarrhoeal mortality is probably not a major public health problem in Burma. Chest infection was the most common complication (32%) and was found in the majority of deaths resulting from complicated measles. A definite seasonal distribution of measles and measles-associated diarrhoea cases was found. Only 10% of the stool samples examined were positive for bacterial pathogens and all were shigellae. We found that a significant number of measles-associated diarrhoeal cases were malnourished.
- 080 Aung Myo Han; Khin Nwe Oo; Tin Aye and Thein Hlaing
TITLE Personal toilet after defaecation and the degree of hand contamination according to different methods used
SOURCE *J Trop Med Hyg.* 1986 Oct; 89(5): pp237-41
ABSTRACT: Transmission due to contaminated hands is one of the important routes by which diarrhoea pathogens spread. The hands commonly become contaminated while cleaning the anus after defaecation. This study deals with the commonly used methods of anal cleansing in a low socioeconomic community in Rangoon, Burma and with the degree of hand contamination that results according to the method used. A cross-sectional survey was employed for collection of behavioural and hand contamination data. The incidence of acute diarrhoea and dysentery among under-fives in this community was monitored for 1 month and was correlated with the cleaning method used by their mothers. Water was the principal method used for cleaning the anus in all age groups. No one used toilet paper and only 4 to 9% used paper other than toilet paper. The level of education seemed to be a factor in determining the use of paper or water. The hands of mothers using water were more contaminated than those using paper. However, thorough hand washing with soap and water was found to be effective in decontaminating the hands. Furthermore, there was a relation between the incidence of diarrhoea and dysentery and the method of cleaning.
- 081 Aung Myo Han; Khin Nwe Oo; Tin Aye and Thein Hlaing
TITLE Contamination of food and water and risk of acute diarrhoea: Lack of a correlation
SOURCE *Burma Res Congr.* 1987, Medical Sciences Division, Abstract of Papers, p10
ABSTRACT: During July and September 1986 a short prospective study on a fixed cohort of 210 - 6 to 29 months old children - was conducted in a suburban community (North Okkalapa) in Rangoon to see if there is any association between child's food and water contamination and diarrhoeal incidence in children during the rainy season. The contamination of food and water as judged by the faecal coliform isolation and the occurrence of diarrhoea in these children were monitored and the two were correlated. Although the food samples were about 3 times more contaminated than water samples ($p < 0.001$), it was found that the risk of diarrhea for children who were in the medium and

high contamination groups (Food, RR=0.78-1.04; Water, RR=0.72 – 0.73) were not significantly different from those who were in the low contamination group. The risk ratios remain more or less the same after controlling the confounding variables (0.76 – 1.10 & 0.71 – 0.88 for food and water respectively). The reasons for the lack of a correlation are discussed.

082 Aung Myo Han and Kyaw Moe
TITLE Household faecal contamination and diarrhoea risk
SOURCE *J Trop Med Hyg.* 1990 Oct; 93(5): pp333-6
ABSTRACT: We conducted a study in a low-ranking socioeconomic community in Yangon, Myanmar to determine the source of Household Faecal Contamination (HFC), devise an index, and associate this index with diarrhoeal incidence in children. Observation was used to collect information on the sources of Household Faecal Contamination (HFC) and a twice-weekly monitoring scheme was employed for determining diarrhoea incidence. A valid Household Faecal Contamination Index (HFCI) was developed using three sources of HFC: going about without footwear, indiscriminate defaecation near or under the house, and absence of latrine. The risk of diarrhoea significantly increased from 4.21 to 8.66 per 1000 child-days (P less than 0.001) when HFCI increased from 0 to 3. Although the adjusted rate ratios for the three levels of HFCI were approximately equal to 2.00 (2.16, 1.77, 2.14), they were not statistically significant. Further studies are needed to corroborate the results of what seems to be the first study attempting to associate HFC with diarrhoea incidence.

083 Aung Myo Han and Thein Hlaing
TITLE Prevention of diarrhoea and dysentery by hand washing
SOURCE *Trans R Soc Trop Med Hyg.* 1989 Jan-Feb; 83(1): pp128-31
ABSTRACT: A 'non-blind' randomized hand washing intervention study was conducted in a low socioeconomic community in Rangoon to determine if hand washing by 494 children under 5 years old and their mothers could reduce the incidence of diarrhoea and dysentery in these children. Children and mothers in the intervention group were asked to wash their hands after defaecation and before preparing or eating their 3 main meals; 2 bars of plain soap were provided. The control group was left to follow customary practice. Diarrhoea and dysentery incidences in the 2 groups were monitored during 4 months by comparing the *incidence density ratios* (IDR). The diarrhoeal incidence among the children in the hand washing households was significantly lower than that among those in the control households (IDR=0.70, 95% confidence interval (CI)=0.54-0.92). For dysentery incidence, although there was a 40% reduction (IDR=0.58, 95% CI=0.22-1.55) in the children under 2 years, there seemed to be no impact in older children (IDR=1.2, 95% CI=0.52-2.80). The study indicates that hand washing is effective in reducing the morbidity from diarrhoea and dysentery.

084 Aung Myo Han and Thein Hlaing
TITLE Hand washing intervention to reduce ascariasis in children
SOURCE *Trans R Soc Trop Med Hyg.* 1988; 82(1): p153
ABSTRACT: No Abstract

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- 085 Aung Myo Han; Thein Mg Myint; Thein Hlaing and W Tun Lin
TITLE Incidence of acute diarrhoea in children under five years in North Okkalapa Township
SOURCE *Burma Res Congr.* 1982, Medical Sciences Division, Abstract of Papers, p14
ABSTRACT: A four week community based study on the incidence of acute diarrhoea was studied in North Okkalapa Township, Rangoon, during January 1981. The study was on a 20% sample from the aetiological survey undertaken by the Department of Medical Research. The study population comprised of under five year olds and the data was collected by weekly household interview. The overall incidence was 16.7 per 100 <5 population and the Sa-lone and Ta-tar-gyi wards had the highest incidence. A high incidence was found in under 6 months olds, with the males being more preponderant than the females. Correlation between the diarrhoea incidence, the relative humidity and the environmental temperature was attempted.
- 086 Aung Myo Han and Thein Maung Myint
TITLE Some risk factors for diarrhoea among children in suburban Burma
SOURCE *J Diarrhoeal Dis Res.* 1986 Sep; 4(3): pp153-6
ABSTRACT: Not available
- 087 Aung Myo Han and Thein Maung Myint
TITLE Epidemiological model of acute bacterial and viral diarrhoeal diseases
SOURCE *J Diarrhoeal Dis Res.* 1985 Jun; 3(2): pp65-72
ABSTRACT: Not available
- 088 Aung Myo Han and Thein Maung Myint
TITLE Knowledge, attitudes and behaviour in relation to diarrhoea in a rural community in Burma
SOURCE *Southeast Asian J Trop Med Public Health.* 1986 March; 17(1): pp59-62
ABSTRACT: A study was conducted in a rural community in Burma, to determine how people perceive the importance of food, water and defecation in the causation of diarrhoea and to determine whether people wash hands or use soap after defecation or before preparing and eating food. 90% of mothers with under-five children in the community were interviewed. 53 to 86% of people were aware of the importance of food, water and defecation in the causation of diarrhoea. Although 34 to 88% practised hand washing before eating/food handling or after defecation, only 5 to 12% regularly used soap. Furthermore, drinking water for under-five children was obtained by dipping the drinking mug or cup into the drinking water pot (83%) which could result in contamination of drinking water.
- 089 Aung Myo Han; Tin Aye; Mar Mar Nyein; Kyi Kyi Khin; Mi Mi Khin; Khin Maung U; Myo Khin and Thane Toe
TITLE Incidence of acute diarrhea in hot-wet and cool-dry seasons in a rural community in Burma
SOURCE *Health Res Congr.* 1985, Programme and Abstracts, p1
ABSTRACT: The present study was done to determine the incidence of acute childhood diarrhoea in hot-wet and cool-dry seasons in rural community in Burma. The short seasonal follow-ups of 30 days each, were conducted during the hot-wet and cool-dry seasons on all the under five children living in 3 village tracts about 65km away from Rangoon, in Pegu Division. The surveillance of diarrhea was done by daily recall. There were 715 and 732 children with 280 and 150 cases of detectable diarrhea in the two seasons respectively. The overall diarrhoeal incidence rate during the hot-wet seasons was two times that of the cool-dry season and the difference was statistically significant ($p < 0.001$). Children under 2 years

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were more at risk of getting diarrhoea than those older than 2 years, in both seasons, but particularly more so during the cool-dry season probably because of increased susceptibility of these children to rotavirus infection. Other implications of the findings are discussed.

090 Aung Myo Han; Tin Aye and Thein Hlaing
TITLE An outbreak of dysentery due to *Shigella dysenteriae* type 1 in Rangoon, Burma
SOURCE *J Diarrhoeal Dis Res.* 1987 Mar; 5(1): pp30-5
ABSTRACT: Not available

091 Aye Kyaw and Khin Maung U
TITLE Correlation of fecal cAMP with fluid loss in cholera
SOURCE *Biochem Med Metab Biol.* 1990 Feb; 43(1): pp80-2
ABSTRACT: Not available

092 Aye T; Nyien MM; Kanemasa Y and Hayashi H.
TITLE Etiological agents responsible for acute diarrhea in children in an urban community in Burma
SOURCE *Microbiol Immunol.* 1983; 27(6): pp551-6
ABSTRACT: Not available

093 Aye Than; Tin Myint; Mu Mu Sein Myint; Mya Bwin and S. J. Tha
TITLE Screening the anti-peptic ulcer activity of some Myanmar traditional drugs experimentally
SOURCE *Myanmar Med Res Congr.* 1990, Abstract of Papers, pp11-12
ABSTRACT: Five Myanmar traditional medicine formulations (TMFs) namely TMF-02, TMF-03A, TMF-03B, TMF-05 and TMF-08, traditionally claimed for treating dyspepsia, were screened for anti-peptic ulcer activity by employing two experimental *in vivo* anti-ulcer test models on rats. Both negative control (no drug) and positive control (cimetidine) were included. Only TMF-02, TMF-03B and TMF-08 markedly reduced ulcer severity to the ulcer indices of 17.4, 15.6 and 14.5 respectively. The effects were comparable to cimetidine being 13.8, whilst that of the negative control was 35. A further test model of gastric juice acidity in rats, employing pyloric ligation method, confirmed these three drugs reduces gastric acidity, particularly in diminishing the free acid amount to one third and concomitantly attaining the pH of the gastric content to the value of 6-7. The promising antacid actions of the three formulations were discussed.

094 Aye Thant Zin
TITLE Behavioural determinants of reinfection with *Ascaris lumbricoides* following chemotherapy in Okpo Village
SOURCE MSc(Zoology), University of Rangoon, 1984
ABSTRACT: A sample of 302 infected subjects with *Ascaris lumbricoides* was randomly selected from an on- going epidemiological study of ascariasis in Okpo Village. The objectives were to determine the worm burden per subject at two 6 month and at one year intervals after giving chemotherapy, to test whether the wormy persons (with high worm load) acquired the same number or rank of worms post chemotherapy and to elicit the influence of socio-behavioural factors in acquisition of worms. The overall initial average number of worms per person was 9.6, and about 19.0 percent of the study sample had 15 worms or more. Correlations were positive and statistically significant when the worm numbers of individuals were ranked with those acquired after a period of 6 month and one year. This phenomenon was seen in all ages and in some of the age groups, indicating that

people with high worm load tend to have to have similar number of worms after giving antihelminthic treatment. Significant correlations were also observed between the worm numbers of individuals and their behavioral and socio economic scores. It seem that socioeconomic status of an individual has a stronger effect in having large number of worms than his behavioral characteristics.

095 Flewett TH; Arias CF; Avendano LF; Ghafoor A; Mathan MM; Mendis L; Moe K and Bishop RF.

TITLE Comparative evaluation of the WHO and DAKOPATTS enzyme-linked immunoassay kits for rotavirus detection

SOURCE *Bull WHO*. 1989; 67(4): pp369-74

ABSTRACT: Faeces obtained from 1,163 children (including 66 newborn babies) were analysed in parallel for the presence of rotavirus particles using two enzyme-linked immunosorbent assay kits. The kits had been formulated by the WHO Collaborating Centre for Reference and Research on Rotavirus (WHO-ELISA kit) and by DAKOPATTS (DAKO-ELISA kit) to be suitable for use in laboratories in developing countries. The kits were evaluated in laboratories in Burma, Chile, India, Mexico, Pakistan, Sri Lanka and the United Kingdom. Comparison of the results obtained with the two kits indicated that the DAKO-ELISA had an overall sensitivity of 97% and a specificity of 97% relative to the WHO-ELISA. In individual laboratories the DAKO-ELISA (K349) kit had a sensitivity in the range 90-100%, and a specificity of 85-100%. The kit showed a sensitivity of 100% and a specificity of 98% in assays on faeces obtained from newborn babies. We conclude that the DAKO-ELISA is as sensitive and specific as the WHO-ELISA for the detection of rotavirus antigen in faeces.

096 Han AM; Aye T and Hlaing T

TITLE An outbreak of dysentery due to *Shigella dysenteriae* type 1 in Rangoon, Burma

SOURCE *J Diarrhoeal Dis Res*. 1987 Mar; 5(1): pp30-5

ABSTRACT: Not available

097 Hla Myint Htoon

TITLE Morbidity and Mortality pattern of acute gastroenteritis in Children Hospital

SOURCE *First Med Spec*. Burma Medical Association, 1981, Abstract of Papers, p52

ABSTRACT: 575 cases, 0-4 years admitted to Rangoon Children Hospital presenting with acute gastroenteritis, over a period of 10 months were studied in the MORBIDITY and MORTALITY pattern of acute gastroenteritis. The morbidity in the form of

(1) the number of acute gastroenteritis

(2) the amount of fluid therapy

(3) duration of hospital stay

(4) Frequency of readmission (recurrence admission with in six months prior to the present one) and the mortality were observed and discussed.

098 Hlaing Mya; Aye Maung Han and Mya Mya Than

TITLE Ascariasis causing intestinal obstruction in children

SOURCE *28th Burma Med Conf*. 1981; p47

ABSTRACT: Intestinal ascariasis remains the commonest cause of intestinal obstruction in children. One hundred and sixty five consecutive cases, presenting with sign and symptoms of worm obstruction were reviewed. Over 50% of these cases were between the age of 3 and 5 years. There was no predilection to either sex. Majority were malnourished.

About one third of them gave a history of recent deworming. Conservative treatment is the mainstay in the management of these cases, and only a few percentage need surgical intervention. The factors which are likely to predispose toward worm obstruction are also discussed.

- 099 Khay Mar Yee; Aung Chein; Kyai Hmone Win; Kyaw Hla; Than Than Swe and Saw Naing
TITLE Gastrointestinal endoscopic services in Medical Unit, New General Hospital, Rangoon (1986)
SOURCE 34th *Burma Med Conf.* 1987; pp25-26
ABSTRACT: A total of 244 cases of gastrointestinal endoscopy were performed from 1st January 1986 to 31st October 1986 in the Medical unit of New General Hospital, Rangoon. Out of which (222) cases were upper gastrointestinal endoscopic studies, (8) cases were endoscopic retrograde cholangio pancreatographies, (5) were laproscopies, (3) were colonoscopies and therapeutic endoscopy (sclerotherapy) were performed in (6) case. Benign upper gastrointestinal lesions were the commonest findings among which inflammatory lesions such as oesophagitis, gastritis and duodenitis comprised 60.36% of cases with gastric ulcer accounted for 45.49% of the cases with gastric ulcer and duodenal ulcer contributing 16.21% and 29.27% respectively. Gastric malignancy cases were 8.5% and oesophageal malignancy contributing 1.8% of the upper GI series. (15) cases (6.75%) of oesophageal and gastric varices were detected. 15% of the cases were found to be endoscopically normal.

- 100 Khin Maung Aye
TITLE Estimation of serum electrolytes and haematocrit in adult patients with acute intestinal obstruction
SOURCE MMedSc(Surgery), Institute of Medicine II, Rangoon, 1984
ABSTRACT: In the study it was confirmed that there were changes in body fluids in case of acute intestinal obstruction. Fluid deficit occurred in E. C. F. due to various mechanisms among which third space loss was most significant. Haemoconcentration was noted. There was also loss of electrolytes although the serum electrolyte concentrations were within normal range. From the study the following conclusions were made. The normal serum electrolytes and haematocrit levels in normal Burmese subjects. PCV values increased significantly in acute intestinal obstruction. It showed haemoconcentration due to fluid depletion in acute intestinal obstruction. Serum electrolyte concentrations in acute intestinal obstruction were within normal control range. And also those values were within normal range irrespective of the period of suffering from the course of disease before treatment. Electrolyte concentration values were not absolute. A normal value did not mean anything if it was not corrected with PCV value. PCV values were essential. Measuring it was easy, and not costly. PCV values alone may be valuable for investigation to assess the status of body fluid, the severity and prognosis of the patient in acute intestinal obstruction.

- 101 Khin Maung Than
TITLE A clinical and endoscopic study of patients with haematemesis in Rangoon General Hospital
SOURCE MMedSc(Internal Medicine), Institute of Medicine I, Rangoon, 1981
ABSTRACT: The identification of the various causes of haematemesis and the localization of the site of bleeding by using the gastroduodenoscope were described.

102 Khin Maung U
TITLE Recent research on acute diarrhea in Burma
SOURCE *DMR Bull.* 1987, 1(4): pp1-19

Abstract written by book editors

Acute childhood diarrhea constitutes a major health problem in Burma. Accordingly, extensive research into diarrhoeal diseases has been carried out by scientists from the Department of Medical Research as well as by interested scientists from the Department of Health and the Department of Medical Education working in the hospitals, teaching institutions and various health services departments. The review consists of research findings on a) aetiology and epidemiology of acute diarrhea, b) pathophysiology, c) gut function in diarrhea, d) non-dehydration deaths from acute diarrhea, e) case management of diarrhea, and f) intervention studies.

103 Khin Maung U
TITLE Intestinal absorption of amino acid during cholera
SOURCE *Burma Res Congr.* 1986-87, Medical Sciences Division, Abstract of Papers, pp2-3

ABSTRACT: *In vitro* uptake of amino acids by 4 transport systems was studied in jejunal mucosa biopsy specimens from 69 patients with cholera (proven by stool culture) presenting within 48 hours of onset of watery diarrhoea. In time series experiments, ¹⁴C-L-glycine and ¹⁴C-lysine uptake were found to follow saturation kinetics (being saturated at 5½min.), to be blocked by uncouplers of oxidative phosphorylation (sodium fluoride and 2:4 – dinitrophenol), and that their uptake by amino acid transport system (i), amino acid transport system (ii) and amino acid transport system (iv) were active during the active purging stage of cholera. Concentration series experiments were carried out to determine the V_{mix} and K_t of these transport systems, which were not significantly different. On the other hand, transport of ¹⁴C-Proline by amino acid transport system (iii) was not operation during cholera. This study demonstrates continued absorption of amino acids by three amino acid transport systems, providing scientific basis for use of amino acids in “improved” oral rehydration solutions in the treatment of acute diarrhoea, and emphasizes the importance of maintaining feeding during acute diarrhoea in order to prevent development of malnutrition.

104 Khin Maung U
TITLE *In vitro* determination of intestinal amino acid (14C-L-glycine) absorption during cholera
SOURCE *Am J Gastroenterol.* 1986 Jul; 81(7): pp536-9

ABSTRACT: Italic uptake of 14C-L-glycine was studied in jejunal mucosa biopsy specimens from 27 patients with cholera (proven by stool culture) presenting within 48 h of onset of watery diarrhea. In time series experiments, 14C-L-glycine uptake was found to follow saturation kinetics (being saturated at 5½min), to be blocked by uncouplers of oxidative phosphorylation (sodium fluoride and 2:4-dinitrophenol), and that 14C-L-glycine uptake by both amino acid transport system 1) and amino acid transport system 4) were active during the active purging stage of cholera. Concentration series experiments were carried out to determine the V_{max} and K_t of these transport systems, which were not significantly different. This study demonstrates continued absorption of amino acids (glycine) by two amino acid transport systems, provides scientific basis for use of glycine in "improved" oral rehydration solutions in the treatment of acute diarrhea, and emphasizes the importance of maintaining feeding during acute diarrhea in order to prevent development of malnutrition.

- 105 Khin Maung U; Bolin TD; Pereira SP; Duncombe VM; Nyunt Nyunt Wai; Myo Khin and Linklater JM
TITLE Absorption of carbohydrate from rice in Burmese village children and adults
SOURCE *Am J Clin Nutr.* 1990 Aug; 52(2): pp342-47
ABSTRACT: Breath - Hydrogen Test (BHTs) were performed on 310 Burmese village children aged 1- 59 mo. After a 10g lactulose test meal, 94 (30.3%) children produced <10 ppm H₂ above basal value (nonhydrogen producers). Of 216 hydrogen producer, 210 were tested after cooked rice meal (3g cooked rice/kg body weight, equivalent to 1g carbohydrate per/kg body weight) with the BHT. Hydrogen peaks ≥10ppm above baseline concentration were produced by 133(66.5%) children who were defined as rice malabsorbers. Forty three percent to 62% of children were ≤ -3DSD of National Center of Health Statistics (NCHS) median weight -for -age and length- for-age and ≤ -2DSD of NCHS median weight - for length. There were no differences between rice absorbers (peak hydrogen<10ppm above baseline) and rice malabsorbers in the allometric indices (the Ehrenberg index and the Dugdale index) allometric indices (the Ehrenberg index and the Dugdale index) of weight-for- length. Rice - carbohydrate malabsorption was also detected by BHTs in 26.7% of 86 school children (aged 5-15y), 38.5% of 39 young adults (aged 15-39y) and 50% of 34 older adults (aged 40-70y).
- 106 Khin Maung U and Pyone Aye, *Ma*
TITLE Endotoxin in jejunal fluid of patients with acute watery diarrhoea due to *Vibrio cholera El tor* infection
SOURCE *Burma Med J.* (1989); 34(2): pp43-45
ABSTRACT: Jejunal fluids were collected from ten adults with cholera (stool culture for *Vibrio cholera El tor* positive) and ten adults with non cholera watery diarrhoea admitted to Infectious Diseases Hospital. By limulus amoebocyte lysate gelation test using chloroform extraction, “endotoxin” (lipopolysacchaide) was detected in half of patients with cholera and none of patients with noncholera diarrhoea. Patients with whose jejunal fluids endotoxin was detected were older, had smaller body weights, purged less diarrhoeal stools, fewer motions and for shorter duration, vomited 1.36 litres on the average, and required less intravenous and oral rehydration fluids than cholera patients without detectable “ endotoxin” in their jejunal fluids. The findings suggest that presence of “endotoxin” of *V. cholera El Tor* in the gut lumen did not cause more severe diarrhoea.
- 107 Khin Maung U and Pyone Aye, *Ma*
TITLE Endotoxin in jejunal fluid of patients with acute watery diarrhoea due to *Vibrio cholera El tor* infection
SOURCE *Burma Med J.* (1989); 34(2): pp43-45
ABSTRACT: Jejunal fluids were collected from ten adults with cholera (stool culture for *Vibrio cholera El tor* positive) and ten adults with non cholera watery diarrhoea admitted to Infectious Diseases Hospital. By limulus amoebocyte lysate gelation test using chloroform extraction, “endotoxin” (lipopolysacchaide) was detected in half of patients with cholera and none of patients with noncholera diarrhoea. Patients with whose jejunal fluids endotoxin was detected were older, had smaller body weights, purged less diarrhoeal stools, fewer motions and for shorter duration, vomited 1.36 litres on the average, and required less intravenous and oral rehydration fluids than cholera patients without detectable “ endotoxin” in their jejunal fluids. The findings suggest that presence of “endotoxin” of *V. cholera El Tor* in the gut lumen did not cause more severe diarrhoea.

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- 108 Khin Maung U; Myo Khin; Nyunt Nyunt Wai; Aye Kyaw and Tin U
TITLE Clinical trial of Berberine in acute watery diarrhea
SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers,
 p1
ABSTRACT: Four hundred adults presenting with acute watery diarrhoea were entered
 into a randomized, placebo controlled, double blind clinical trial of berberine,
tetracycline and tetracycline and berberine to study the antisecretory and vibriostatic effects
of berberine. Of 185 patients with cholera, those given tetracycline or tetracycline and
berberine had considerably reduced volume and frequency of diarrhoeal stools, duration of
diarrhoea, and required less intravenous and oral rehydration fluid. Berberine did not
considerably reduce an antisecretory effect. Analysis by factorial design equations, however,
showed a reduction in diarrhoeal stools by one litre and reduction in cyclic adenosine
monophosphate concentrations in stools by 77% in the groups given berberine. Considerably
fewer patients given tetracycline or tetracycline and berberine excreted vibrios in stools after
24 hours than those given berberine alone. Neither tetracycline nor berberine had any benefit
over placebo in 215 patients with non-cholera diarrhoea.
- 109 Khin Maung U; Nyunt Nyunt Wai; Myo Khin; Mu Mu Khin; Tin U and
 Thane Toe
TITLE Effect on clinical outcome of breast feeding during acute diarrhoea
SOURCE *Br Med J.* 290 (23 February 1985) pp587-589
ABSTRACT: The effects of oral rehydration fluid alone and of oral rehydration fluid plus
 breast feeding on the course and outcome of acute diarrhea were assessed in two
groups of 26 children aged under 2 years. Children who continued to be breast fed during
treatment with oral rehydration solutions passed significantly fewer diarrhoeal stools. They
also passed, on average, a smaller volume of diarrhoeal stools and recovered from diarrhea
sooner after the start of treatment. Their requirement for oral rehydration fluid was
significantly reduced. Breast feeding exercise a beneficial effect on the course and outcome of
acute diarrhea by reducing the number and volume of diarrhoeal stools.
- 110 Khin Maung U; Myo Khin; Nyunt Nyunt Wai; Aye Kyaw and Tin U
TITLE Clinical trial of berberine in acute watery diarrhea
SOURCE *Br Med J (Clin Res Ed).* 1985 Dec 7; 291(6509): pp1601-5
ABSTRACT: Four hundred adults presenting with acute watery diarrhoea were entered
 into a randomised, placebo controlled, double blind clinical trial of berberine,
tetracycline, and tetracycline and berberine to study the antisecretory and vibriostatic effects
of berberine. Of 185 patients with cholera, those given tetracycline or tetracycline and
berberine had considerably reduced volume and frequency of diarrhoeal stools, duration of
diarrhoea, and volumes of required intravenous and oral rehydration fluid. Berberine did not
produce an antisecretory effect. Analysis by factorial design equations, however, showed a
reduction in diarrhoeal stools by one litre and a reduction in cyclic adenosine monophosphate
concentrations in stools by 77% in the groups given berberine. Considerably fewer patients
given tetracycline or tetracycline and berberine excreted vibrios in stools after 24 hours than
those given berberine alone. Neither tetracycline nor berberine had any benefit over placebo
in 215 patients with non-cholera diarrhoea.
- 111 Khin Maung U; Myo Khin; Nyunt Nyunt Wai and Tin U
TITLE Clinical trial of high-dose berberine and tetracycline in cholera
SOURCE *J Diarrhoeal Dis Res.* 1987 Sep; 5(3): pp184-7
ABSTRACT: Not available

- 112 Khin Maung U; Myo Khin and Nyunt Nyunt Wai
 TITLE Small bowel bacterial overgrowth in Burmese village children
 SOURCE *Burma Res Congr.* 1988, Medical Sciences Division, Abstract of Papers, pp10-11
 ABSTRACT: Breaths Hydrogen Test (BHT) using value of H₂ normalised by computer program to a constant mean 0.2 level, were performed on 340 Burmese village children age 1-59 months following a lactulose test meal of 10g (15ml Duphalac). 195 (57.4%) children were hydrogen producers, among whom 53 (27.2%) had an early breath H₂ peak of 10ppm or more in the 20, 40 or 60 minute samples and were categorized as having Small Bowel Bacterial Over Growth (SBBO). SBBO was most frequent in children 24-35 months old, and it was 1.5 times more frequent during the monsoon than during the cool-dry season. This pattern was similar to the prevalence of acute children diarrhoea in these village children. Among 256 village children (confirmed hydrogen producers) tested with a cooked rice (3g of cooked rice/Kg body weight, equal to 1g carbohydrate/kg) meal BHT, 53 (20.7%) had an early breath hydrogen peak (i.e., SBBO) and 144 had a late peak denoting rice malabsorption (RM). In 48 children, both an early peak (denoting SBBO) and a late peak (denoting RM) were present while only 5 rice absorbers had SBBO. Thus, SBBO was significantly (p<0.0001) more frequent among rice malabsorbers.
- 113 Khin Maung U; Nilar Khin; Swe Mar Kyi; Aye Myint Swe; Kathi Aye and Khin Maung Zaw
 TITLE Intestinal secretory response to Enterotoxigenic *E. coli* heat stable (ST) toxin by different strains of suckling mice and rats
 SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, p10
 ABSTRACT: Intestinal secretory response to ST toxin of enterotoxigenic *E. coli* by different strains of suckling mice (DDY; ICR; Nut; Balb/C; C57BL; N/BL; CHO; DBA2, NVDE/X, C3H/H3) and suckling Wistar rats were recorded. All strains of mice and Wistar rats administered ST exhibited gut/carcass ratios larger than 0.085.
- 114 Khin Maung U; Nyunt Nyunt Wai and Myo Khin
 TITLE Rice carbohydrate absorption in Burmese village children
 SOURCE *Fourth Med Spec. Burma Med Assoc.* 1988, Abstract of Papers, p19
 ABSTRACT: Breath Hydrogen Tests (BHT) using values of H₂ normalized by computer to a constant mean O₂ level were performed on 310 Burmese village children 1-59 months old. Following a lactulose test meal of 10g (15ml Duphalac), 94 (30.3%) children produced 10ppm H₂ above basal values (i.e. non-H₂ producers). 210 of 216 H₂ producers were tested (compliance=92.6%) with a cooked rice meal (3g cooked rice/kg body weight, equal to 1g carbohydrate/kg) BHT. 133(66.5%) children produced breath H₂ peaks of 10 ppm or more and were defined as rice malabsorbers (RM). In these villages, RM were also present in older age groups, being 26.7% in 86 school children (5-15 years), 38.5% in 39 young adults (15-39 years) and 50% in 34 older adults (40-70 years). Among children followed up for 6 months with monthly rice meal BHT; there were no significant variations in the rice absorption state within subject from month to month by analysis of covariance. 67.9% remained RM in 5 or more of 7 BHT over 6 months. RM was observed more frequently in the dry season than during the monsoon season. In contrast, of 55 urban children (30-59 months) of high socio-economic background 2 (4%) were non-H₂ producers, and RM was detected in only 7(12.7%). On the average, urban children were 8.5 to 10.2cm taller and 1.4 to 1.9kg heavier than their village counterparts.

- 115 Khin Maung U; Nyunt Nyunt Wai and Myo Khin
TITLE Effect of rice carbohydrate mal-absorption on child growth in Burmese village children
SOURCE *Fourth Med Spec., Burma Med Assoc.* 1988, Abstract of Papers, p26
ABSTRACT: Breath Hydrogen Tests (BHT) using values of H₂ normalized by computer to a constant mean O₂ level were performed on 310 Burmese village children 1-59 months old. Following a lactulose test meal of 10g (15ml Duphalac), 94(30.3%) children produced 10ppm H₂ above basal values (i.e. non-H₂ producers). 210 of 216 H₂ producers were tested (compliance=92.6%) with a cooked rice meal (3g cooked rice/kg body weight, equal to 1g carbohydrate/kg) BHT. 133(66.5%) children produced breath H₂ peaks of 10 ppm or more and were defined as Rice Mal-absorbers (RM). Between 43% and 62% of the children whether H₂ (rice absorbers) or (RM) were at or below -3 SD of the NCHS median weight for age and length for age, and below -2 SD of the NCHS median weight for length. These were no differences between RA an RM in the allometric indices (the Ehrenberg index and the Dugdale index). 75 children (47 RA and 28 RM) on placebo treatment were followed by 3 monthly anthropometry and incremental growth rates were calculated. RM in the age-groups 36-47 months and 48-59 months had statistically diminished growth as percent gain in length per annum per child (p<0.02). Thus, RMs had a deficit in linear growth by 2.7cm (range 2.5- 2.9cm) per year for children 36-47 months old and 1.9 cm range 1.7 – 2.1cm) per year for children 48-59 months old.
- 116 Khin Maung U; Thein Kyi; Nyunt Nyunt Wai and Myo Khin
TITLE Clinal trials of "Glycine-ORS" versus "standard-ORS" in neonatal gastroenteritis
SOURCE *Burma Med J.* 1989 Mar; 34(1): pp49-51
ABSTRACT: 34 male newborns over 2.5kg admitted for watery diarrhoea were entered into a randomized, double-blind clinical trial of glycine-ORS versus standard-ORS (UNICEF). Babies on glycine-ORS were able to consume about 60 ml more than their counterparts on standard-ORS, and had less frequent diarrhoeal motions. The rate of recovery from dehydration (as demonstrated by reduction in haematocrits) were almost, identical. None died, and none needed intravenous rehydration.
- 117 Khin Maung U; Thane Toe; Ye Htut; Myo Khin; Aung Myo Han and Thein Maung Myint
TITLE Seasonal variation in acute diarrhoea in children in two village communities in Burma
SOURCE *Burma Med J.* 1989 Mar; 34(1): pp39-48
ABSTRACT : 639 under-five children at Htaukkyant villages in 1979-80, and over 700 under five children at Intakaw villages in 1982-83, were followed up by daily diarrhea surveillance and monthly anthropometry for a duration of one year. There was a definite seasonality for acute diarrhoea, the incidence rates during the monsoon months being significantly higher than those during the winter months. Bacterial agents, especially enterotoxigenic *Escherichia coli*, were the most common pathogens foracute diarrhoea during monsoon, and rotavirus was the most common pathogen detected during winter. Presumably, because of the cytopathic effect of rotavirus, children who developed diarrhoea during winter had smaller gain in body weights per month than those who developed diarrhoea during monsoon (being most commonly associated with enterotoxigenic *Escherichia coli*).

- 118 Khin Maung U; Yan Naing Tun; Ye Myint Kyaw; Khine Baw Oo and Steven Pereira
TITLE Carbohydrate malabsorption in Burmese village children
SOURCE *Burma Res Congr.* 1986-87, Medical Sciences Division, Abstract of Papers, p1
ABSTRACT: Breath Hydrogen Test (RHT) was performed on the village children given lactulose. About a third (36.2%) were non-hydrogen producers (being 82% in children under one year). Lactose and rice RHT's were performed on 74 children who were H₂ procedures. 78.9% were lactose malabsorbers and 37.2% were rice-malabsorbers. Of 29 children who were rice-malabsorber (66%) were also lactose-malabsorbers. 13 children were found to have small bowel bacterial overgrowth. The probable causes of these findings are discussed.
- 119 Khin Maung Win
TITLE Clinical study of factors influencing the incidence of resectability of gastric cancer
SOURCE MMedSc(Surgery), Institute of Medicine I, Rangoon, 1987
SUMMARY: Prospective clinical study of 50 cases of adenocarcinoma of the stomach has been made. It is found that below age 30, the disease is rare and the peak incidence being age 51 to 60. Of 50 cases, gastric resections are performed on 19 patients (38 percent), gastrojejunostomy (palliative by-pass procedure) on 24 patients (48 percent) and on 7 patients (14 percent) neither resection or palliative by-pass could be done, laprotomy and biopsy only could be done. The common clinical presentations are vague abdominal pain (mainly in epigastrium) not relieved by antacids, dyspepsia and presence of clinically palpable epigastric lump. It is found that the presence of palpable epigastric lump lessens the resectability rate. In this study, of 19 cases of gastric resection, 12 patients (64 percent) have no clinically palpable epigastric lumps. Another important factor is the time-lapse after the first significant symptom. The shorter the time-lapse, the greater the rate of gastric resections. It is found in the study that those who have their time-lapse over four months, the gastric resection rates are much reduced. In this study 80 percent of the growths are found situated in the pyloric antrum and the rest in the body and fundus. Spread of the disease also governs the resectability. In this study, of 19 cases resected, 11 cases (56 percent) have local spread and 8 cases (42 percent) have intra-abdominal spread. Extensive local spread also reduces the resection rate. Surgical skill is also an important factor that influences resectability. In this study, status of surgeon is studied. Surgeons of consultant level have the greater skill than their first assistants to perform gastric resections. When keeping controls with the same type of spread of the disease and the same sizes of growth, the resection rates are still higher in the consultant level group than those in their junior colleagues.
- 120 Khin Mg Oo; Thane Toe; Thein Than and Khin Than Nu
TITLE Electrolyte composition of stools in neonates with and without diarrhea
SOURCE *Burma Res Congr.* 1982, Medical Sciences Division, Abstract of Papers, pp9-10
ABSTRACT: Diarrhoeic neonates excreted significantly larger amounts (by weight) of the stools than non diarrhoeic babies, particularly so on the second, third and fourth days. These neonates also lost more sodium in their stools than their non diarrhoeic counterparts. On the other hand, the diarrhoeic newborns lost less potassium in stools in the first few days.

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- 121 Khin Myo Chit
TITLE A study on the gastric secretory response and ABO blood groups
SOURCE MMedSc(Physiology), Institute of Medicine II, Rangoon, 1980
ABSTRACT: Gastric secretory response to an alcohol test meal and its association to
 ABO blood groups were studied in a group of 193 medical students aged 19 to 22
 years. Volume of fasting gastric juice and maximal acidity obtained after an alcohol test meal
 were found to be higher in male subjects than in females. But, the difference was statistically
 not significant. In 60 per cent of the subjects, the volume of fasting gastric juice and maximal
 acidity were found to lie within the range of 20-50ml and 20-50mEq/1 respectively. The
 maximal acidity in subjects of blood group O (53.98 ± 5.26 mEq/1 in male and
 $45.79.58$ mEq/1 in female) was significantly higher than group A subjects (42.18 ± 6.56 mEq/1
 in male and 31.33 ± 10.58 mEq/1 in female) at 1 per cent and 5 per cent level respectively.
 Similar significant difference was also found between female subjects of blood group A and B
 at 5 per cent level (31.33 ± 10.58 mEq/1 in group A subjects and 45.69 ± 7.98 mEq/1 in group
 B subjects). A weak correlation ($r = +0.293$) between body weight and maximal acidity was
 found. However, acidity could not be correlated to the height of the individual.
- 122 Khin Myo Thu
TITLE Neurohistology of suspensory ligament of duodenum (ligament of Trietz)
SOURCE MMedSc(Anatomy), Institute of Medicine I, Rangoon
ABSTRACT: Not available
- 123 Khin Nu Nu
TITLE A study of histologically proven cases of abdominal tuberculosis admitted
 to surgical wards in Rangoon General Hospital
SOURCE MMedSc(Surgery), Institute of Medicine I, Rangoon, 1982
ABSTRACT: Describes the study of incidence, symptomatology, diagnostic aids,
 methods of treatment, result, follow-up of patients.
- 124 Khin Nwe Oo; Khin Thet Mar; Aung Myo Han and Tin Aye
TITLE Enteric bacterial contamination of some Myanmar fruit sweets
SOURCE *Myanmar Health Sci Res J.* 1989 Dec; 1(3): pp167-169
ABSTRACT: Myanmar fruit sweets are widely eaten by our people. In the process of
 making these sweets, there are many ways by which they can get contaminated. The
 purpose of the study is to determine the degree of contamination. The percentage isolation of
 enteric bacteriae was the highest in the sweet-damp types and during the hot-wet season. The
 enteric bacteriae were isolated more in tamarinds and the plums and the least in marian
 group. The Myanmar fruit sweets may be one of the potentially important vehicle to transmit
 diarrhoeal pathogens during the hot-wet season in Myanmar. Improvements in the personal
 and environmental hygiene are needed to prevent contamination during their production.
- 125 Khin Nwe Oo; Aung Myo Han; Thein Hlaing and Tin Aye
TITLE Bacteriologic studies of food and water consumed by children in
 Myanmar: 1. The nature of contamination
SOURCE *J Diarrhoeal Dis Res.* 1991 Jun; 9(2): pp87-90
ABSTRACT: To isolate major bacterial pathogens from children's food and drinking
 water, a 3-month study was conducted in a suburban community in Yangon,
 Myanmar. From the morning meals and stored drinking water of 208 randomly selected
 children, 775 food and 113 water samples were collected and were cultured using standard
 methods. *Escherichia coli*, *Vibrio cholerae* non-O1, and *Salmonella* were isolated from 505, 28 and
 6 food samples respectively, and *E. coli* and *V. cholerae* non-O1 were isolated from 29 and

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5 water samples respectively. Among the *E. coli* isolates, 8 produced heat-stable toxin (ST) and 3 were enteroinvasive. Nine *V. cholerae* non-O1 produced cholera-like toxin. Of the 29 *E. coli* isolates from the samples of drinking water, 3 produced ST. All water samples were negative for *Salmonella*. The study underscores the importance of bacterial contamination of children's food and drinking water and stresses the need to improve environmental sanitation.

126 Khin Nwe Oo; Tin Aye; Mar Mar Nyein; Myo Paing and A. A. Sebestain
TITLE Role of flies in carriage of enteric bacterial pathogens
SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, p11

ABSTRACT: In order to determine the importance of flies in carriage of enteric bacterial pathogens, the study was done at Tamwe Township in Rangoon Division from October 1984 to September 1985. Enterotoxigenic *Escherichia coli*, *salmonella* spp, *shigella* spp, and non-O1 *Vibrio cholera* were isolated from fly pools in animal pens (88.6%), bazaar (83%), kitchen (65.6%), latrines (19.7%) refuse dumps (82.4%) and food shops (52.2%).

127 Khin Than Htay
TITLE Isolation of *Aeromonas* and *Plesiomonas* strains from diarrhoea and dysentery cases

SOURCE DBacteriol, Institute of Medicine I, Yangon, 1990-91

SUMMARY: 42 samples of stools from diarrhoea and dysentery patients admitted to Yangon Children Hospital and Infectious Diseases Hospital, yield 8 isolates (approximately 19%) whose morphological and biochemical characters indicate that they belong to the genera *Aeromonas* and *Plesiomonas*. These isolates consist of 4 strains of *A. sobria*, 2 strains of *Plesiomonas shigelloides*. The gastroenteritis caused by these bacteria is accompanied by pain in abdomen, nausea and vomiting, fever and a mild degree of dehydration. This is the first report indicating the frequency and importance of *Aeromonas* and *Plesiomonas* species in causing gastroenteritis in Myanmar. It is anticipated to facilitate the epidemiological study in order to provide an effective control of the disease.

128 Khin Maung U; Myo Khin; Nyunt Nyunt Wai; Aye Kyaw and Tin U

TITLE Clinical trial of berberine in acute watery diarrhoea

SOURCE *Br Med J* (Clin Res ed.) 1985 Dec 7; 291(6509): pp1601-5

ABSTRACT: Four hundred adults presenting with acute watery diarrhoea were entered into a randomised, placebo controlled, double blind clinical trial of berberine, tetracycline, and tetracycline and berberine to study the antisecretory and vibriostatic effects of berberine. Of 185 patients with cholera, those given tetracycline or tetracycline and berberine had considerably reduced volume and frequency of diarrhoeal stools, duration of diarrhoea, and volumes of required intravenous and oral rehydration fluid. Berberine did not produce an antisecretory effect. Analysis by factorial design equations, however, showed a reduction in diarrhoeal stools by one litre and a reduction in cyclic adenosine monophosphate concentrations in stools by 77% in the groups given berberine. Considerably fewer patients given tetracycline or tetracycline and berberine excreted vibrios in stools after 24 hours than those given berberine alone. Neither tetracycline nor berberine had any benefit over placebo in 215 patients with non-cholera diarrhoea.

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- 129 Khin Maung U; Myo Khin; Nyunt Nyunt Wai and Tin U
TITLE Clinical trial of high-dose berberine and tetracycline in cholera
SOURCE *J Diarrhoeal Dis Res.* 1987 Sep; 5(3): pp184-7
ABSTRACT: Not available
- 130 Khin Maung U; Nyunt Nyunt Wai; Myo Khin; Mu Mu Khin; Tin U and
 Thane Toe
TITLE Effect of boiled-rice feeding in childhood cholera on clinical outcome
SOURCE *Hum Nutr Clin Nutr.* 1986 Jul; 40(4): pp249-54
ABSTRACT: Forty-eight children, aged 2-5 years, presenting with watery diarrhoea of less
 than 48 h duration at home prior to hospitalization, were admitted into a randomized
 controlled clinical trial, 24 children being treated during the first 24h of admission with Oral
 Rehydration Solution (ORS) alone and 24 children being given 'ORS plus boiled-rice feeding'.
 The latter group received boiled-rice to supply at least 55kcal/kg/d (about 150g boiled-rice
 per feed, given four times daily). *Vibrio cholerae* were isolated by stool culture on admission
 from all children. No antibiotics were given. Clinical characteristics of children in the two
 treatment groups were comparable. Among children given 'ORS plus boiled rice', there was a
 significant increase in volume of diarrhoea stools (P less than 0.05), duration of diarrhoea in
 hospital (P less than 0.01), and more frequent diarrhoea motions (not significant statistically).
 However, the children fed boiled rice absorbed and retained 176ml more fluid, and had gain
 in body weight comparable to that observed in children who were not fed during the first 24h
 of hospitalization.
- 131 Khin Maung U; Pereira SP; Bolin TD; Duncombe VM; Myo Khin;
 Nyunt Nyunt Wai and Linklater JM
TITLE Malabsorption of carbohydrate from rice and child growth: A longitudinal
 study with the breath-hydrogen test in Burmese village children
SOURCE *Am J Clin Nutr.* 1990 Aug; 52(2): pp348-52
ABSTRACT: Breath-hydrogen tests were performed after a rice meal (3g cooked rice/kg
 body wt, equivalent to 1g carbohydrate/kg body wt) at monthly intervals for 6mo on
 75 village children aged 1-59mo who were known hydrogen producers. The overall rate for
 rice-carbohydrate malabsorption was 46.7% (range 37.3-56.0%). Anthropometric
 measurements were made every 3 mo and growth rates were calculated. Forty-six percent to
 59% of children were less than or equal to -3 SD of the National Center for Health Statistics
 (NCHS) median weight-for-age and length-for-age and less than -2 SD of the NCHS median
 weight-for-length. Rice malabsorbers (ie., those with hydrogen peaks greater than or equal to
 10 ppm above baseline concentrations) in the age groups 36-47mo and 48-59mo had
 statistically significant diminished growth expressed as percent gain in length per annum per
 child (p less than 0.02). Thus, rice malabsorbers had a deficit in linear growth of 2.7cm/y
 (range 2.5-2.9cm/y) for children aged 36-47mo old and 1.9cm/y (range 1.7-2.1cm/y) for
 children aged 48-59month.
- 132 Khin Maung U and Pyone Aye
TITLE Endotoxin in jejunal fluid of patients with acute watery diarrhoea due to
 vibrio cholera EL tor infection
SOURCE *Myanmar Med J.* 1989 Jun; 34(2): pp43-45
ABSTRACT: Jejunal fluids were collected from ten adults with cholera (stool culture for
 Vibrio cholera El for positive) and ten adults with non-cholera watery diarrhoea
 admitted to Infectious Diseases Hospital. By limulus amoebocyte lysate gelation test using
 chloroform extraction, "endotoxin" (lipopolysaccharide) was detected in half of patients with
 cholera and none of patients with non-cholera diarrhoea. Patients in whose jejunal fluids

endotoxin was detected were older, had smaller body weights, purged less diarrhoeal stools, fewer motions and for a shorter duration, vomitted 1.36 litres on the average, and required less intravenous and oral rehydration fluids than cholera patients without detectable "endotoxin" in their jejunal fluids. These findings suggest that presence of "endotoxin" of *V. cholera El Tor* in the gut lumen did not cause more severe diarrhoea.

133 Khin Maung U; Tin Aye; Myo Khin; Nyunt Nyunt Wai; Mu Mu Khin; Tin U; Nyo Nyo Sein; Thin Thin Hlaing; San San Nwe; Shwe Zin Tun; Phyu Phyu Sein; Ba Tun and Thane Toe
 TITLE A double-blind control clinical trial of bicozamycin and tetracycline in acute watery diarrhoea in adults a Infectious Diseases Hospital
 SOURCE *Burma Med J.* 1985 Jan-Mar; 31(1,S): pp62-76
 ABSTRACT: Not available

134 Khun Soe Moe
 TITLE Clinical study of the carcinoma of the rectum
 SOURCE MMedSc(Surgery), Institute of Medicine, IM1, Rangoon, 1982
 ABSTRACT: Described the incidence of carcinoma of the rectum with regard to age, sex and site of involment, the pathology of carcinoma of the rectum with regard to microscopic appearance, microscopic appearance and spread, staging and grading according to Dukes and histology with regards to age, sex and spread, the symptomatology and clinical types of presentation, the various methods of diagnosis for carcinoma of the rectum.

135 Kyaw Hla; Than Than Swe; Swe Swe Aye and Hnin Yi
 TITLE Fibreoptic Gastroduodenoscopy: Experience with 1372 cases
 SOURCE *Med Res Congr.* 1989, Abstract of Papers, p11
 ABSTRACT: Fibre-endoscopy using Olympus GIF was performed in 1372 cases presented with various abdominal complaints; for diagnostic purposes in 1240 and therapeutic purposes in 132. The commonest indication was dyspepsia (45.04%). Abnormal findings were detected in 1204 cases (87.76%). The commonest diseases detected were 450 cases of peptic ulcer (32.9%) 145 cases of gastritis (25.15%) and 272 cases of oesophageal varices (%). Gastric biosy in 154 cases of gastric ulcer confirmed the benign nature of the lesion. Diagnostic accuracy rate in upper gastrointestinal malignancy is 66.19%. Therapeutic endoscopy (prophylactic injection sclerotherapy of oesophageal varices) was done in 132 cases of cirrhosis who had at least one but of variceal haemorrhage. There was only minor morbidity (0.07 percent) in total 1372 cases of endoscopy. Discrepancy between radiological and detecting endoscopic findings was found in 87 cases (17.12%). Fibre endoscopy is advantageous in detectiong mucosal lesions, tissue diagnosis and assessment of ulcer healing. Fibre endoscopy complements and extends radiological finding.

136 Kyaw Nyein; Ah Yu and S. J. Tha
 TITLE Clinical trial on indigenous anthelmintic drug-03
 SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, p11
 ABSTRACT: A total of sixty seven Burmese children served as subjects in the clinical trial of Indigenous Anthelmintic Drug 03. This was administered orally and the results showed that the test drug could purge worms in 57% of the moderately worm-infested subjects. There is an apparent efficacy of the drug. However, worm load purging capability was found to be 16%. The overall anthelmintic efficacy of the Indigenous Drug-03 is 16% when compared to the efficacy of the classical levotetramisole.

137 Kyaw Zaw
TITLE Clinico pathological study of dysentery
SOURCE MMedSc(Internal Medicine), Institute of Medicine II, Rangoon, 1983
ABSTRACT: Altogether 40 patients presented with dysentery were studied, 23 males and 17 females ages ranging from 15 years to 64 years, the highest incidence fall into older age group. Occupation of the patients revealed the majority of patients were of labourer class. The main presenting signs and symptoms were, passing of blood and mucus in their stool, abdominal pain and tenesmus, with duration of a few days to more than 4 weeks. Other physical signs include, colonic tenderness, rectal prolapse in one case, and signs and symptoms suggestive of Intestinal Obstruction in one case, alternating with constipation and dysentery. Mild pallor was present in most of the cases. Stool examination revealed (either from fresh specimen or from protosigmoidoscopic aspirates and scraping) haematophagus active trophozoites in 30 of the cases. Stool culture showed positive for pathogenic strains of Shigellosis in 5 of the cases. Two cases presented with clinical picture suggestive of amoebiasis although stool examination is negative for amobba and stool culture also revealed negative results. They responded dramatically to metronidazole course. Two cases of heavy infection of *Trichuris trichura* presented with dysentery syndrome, one with rectal prolapse. One male patient, presented with dysentery and intestinal obstruction found out to be *Ca* sigmoid colon on biopsy. Regarding sigmoidoscopic appearance, graded according to Prathap & Gilman (1962), the non specific and mucopanic depression are found to be pre-invasive stages, which do not appear to have been recognised before (not published in older text book). In both there stages mucosal changes included the presence of significant number of Neutrophils although crypt abscess were not seen. Presence of amoeba within tissue was accompanied by destruction of superficial tissue in every instance. In this study sigmoidoscopy has detected lesions in 95 per cent of proven cases of acute amoebic dysentery while in only 15 per cent could the amoeba be demonstrated in rectal and colonic mucosa biopsy. Regarding bacillary dysentery, haemorrhagic and mucosal oedema more marked under protosigmoidoscopic examination; and histologically the colonic mucosa shows intense inflammatory reaction in the lamina propria and more.

138 Kyaw Zin Han
TITLE A biochemical profile of serum, bile and bile duct stones
SOURCE MMedSc(Surgery), Institute of Medicine I, Rangoon, 1987
ABSTRACT: This study was an attempt to determine the biochemical composition of bile, stone and serum of study group for comparing with bile and serum composition of control group.

139 Lucy Kyaw Mya
TITLE Innervation of oesophagus
SOURCE MMedSc(Anatomy), Institute of Medicine II, Rangoon, 1983
ABSTRACT: The gross innervation of the oesophagus was studied by dissecting 3 human adult males and 2 human foetuses (both males) and 2 neonates (1 male and 1 female). The cervical part of the oesophagus was seen to be innervated directly from the right vagus nerve and from the recurrent laryngeal nerves of both vagi. Sympathetic branches were found to come from the cervical sympathetic trunks. The oesophageal plexus was seen below the root of the lung and was found to be formed by both vagi and branches from both upper thoracic sympathetic ganglia. Only a single posterior and a single anterior vagal trunks ere seen to arise from the oesophageal plexus. The histological examination of the distribution and the mode of termination of the oesophageal nerves was made in oesophagi of 5 dogs and oesophagi of 9 cats using various neurohistological and histochemical techniques. Nerve plexuses were found in advntitial, muscular and submucous layers of the oesophagus, but the

ganglia and nerve cells were found only in the muscular layer. Ganglion cells observed were all cholinergic but the nerve fibres were composed of both cholinergic and adrenergic fibres. An autonomic ground plexus of beaded axon was seen parallel to the long axis of the smooth muscle fibres. These axons were of both acetylcholinesterase-positive and formal-fluorescent. Focal single motor end-plates were found in the striated portion of the oesophagus. Only simple free nerve endings were observed in the epithelium of the oesophagus.

140 Pyone Aye, Ma and Khin Maung U
TITLE Endotoxin in jejunal fluid of patients with acute diarrhoea due to *V. cholera* *El tor* infection

SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, p9

ABSTRACT: A microassay technique to detect bacterial endotoxin in *Escherichia coli* culture filtrates and in human jejunal fluid was set up. Endotoxin was detected in culture filtrates of ST-producing enterotoxigenic *E. coli* up to $1/16$ dilution. 10 patients with acute diarrhea due to cholera and 10 patients with non-cholera diarrhoea, admitted to Infectious Diseases Hospital were studied. Jejunal fluid were collected during Intestinal Biopsy procedure using a Watson Intestinal Biopsy capsule. All non-cholera diarrhoea patients had no endotoxin in their jejunal fluids. Patient's clinical course and severity were correlated to the presence or absence of endotoxin in their gut.

141 Mar Mar Nyein
TITLE Action of enterotoxigenic *Escherichia coli*: heat Labile Toxin (LT) in chinese hamster ovary cells

SOURCE *Burma Res Congr.* 1985, Medical Sciences Division, Abstract of Papers, pp7-8

ABSTRACT: The heat labile (LT) toxin produced by *Escherichia coli* was detected by using Chinese Hamster Ovary (CHO) Cell Assay. The sensitivity of Cholera Toxin (CT) and (LT) were determined. The minimum toxin level of CT and LT for morphological changes in CHO cell assay was found to be 0.01 and 100ng/ml respectively. LT enterotoxin has been isolated in homogenous form with high specificity from 3 sources, cell free supernatant, whole cell lysate with polymyxin and the same after sonication. It was found that the whole cell lysate after sonication gave higher titre of toxin (i.e the richest yield of LT). Morphological changes of CHO cell with regard to time was also found.

142 Mar Mar Nyein; Kyu Kyu Mar and Tin Aye
TITLE Verotoxic *Escherichia coli* isolated from children under 3 years of age

SOURCE *Burma Res Cong.* 1987, Medical Science Division, Abstract of Paper, p11

ABSTRACT: *E. coli* strains isolated from children under 3 years of age from Rangoon Children's Hospital were studied for verotoxin production. 305 strains from diarrhoea cases and 276 strains from control cases were tested. Toxin was extracted as in Enterotoxigenic *E. coli* preparation and toxicity was demonstrated in microtitre plates using vero cell line. It was observed that 34 strains from diarrhea cases and 12 strains from control cases proved to be verotoxic *E. coli* and out of these 19 strains from diarrhea cases and 6 strains from control cases were neither ETEC nor EPEC.

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- 143 Mar Mar Nyein; Oku Y.; Than Saw; Tin Aye and Takeda T
TITLE Detection of *Escheriachia coli* enterotoxin from stool samples directly by
 bead ELISA method
SOURCE *Myanmar Health Sci Res J.* 1990; 2(3): pp130-134
ABSTRACT: Bacterial protein toxins as *Escheriachia coli* enterotoxigenic heat Labile Toxin
(LT), *E. coli* Shigella like toxin II (VT2) and cholera toxin were detected directly from
stool using Bead ELISA method. A total of 390 stools from adult with diarrhoea and
dysentery from No. 2 Military Hospital, Worker Hospital, Yangon General Hospital and
Infectious Disease Hospital were included in this study. It was observed that 9, 5, and 10
samples of stools showed to possess LT, VT1, VT2, toxin respectively. Some of the samples
showed to possess either 2 or three toxins in combination. Of these, 2 samples showed to
possess LT and VT1 toxins; 3 samples showed to possess LT and Vt2 toxin; 11 samples
showed to VT1 VT2 toxins and 14 samples showed to possess LT, VT1 and VT2 toxins.
Thus a total of 54 samples (13.8%) showed to possess bacterial toxins. It was also observed
28 samples out of 199 cases (14.1 percents); 20 out of 109 cases (18.3 percents) and 6 out of
82 cases (7.3 percent) showed to possess bacterial toxins in January, June and November
1988 respectively. Moreover, cholera toxin was detected from 5 out of 25 cases tested.
- 144 Mar Mar Nyein; Okuda; Than Saw; Tin Aye and Takeda
TITLE Detection of bacteria protein toxins from stool samples directly by Bead
 ELISA method
SOURCE *Med Res Congr.* 1989, Abstract of Papers, p10
ABSTRACT: Bacterial protein toxins as *Escherichia coli* enterotoxigenic heat labile toxin II
(VT2) and cholera toxin were detected directly from stool using Bead ELISA method.
A total of 390 stools from adults with diarrhoea and dysentery from No. 2 Military Hospital,
Workers Hospital and Rangoon General Hospital and Infectious Diseases Hospital were
included in this study. It was observed that 9.5 and 10 samples of stools showed to possess
either LT or VT1 or VT2 toxin alone respectively. Some of the samples showed to possess
either 2 or 3 toxins in combination and they were 2 samples showed to possess LT and VT1
toxins; 3 samples showed to possess LT and VT2 toxins and 11 samples showed to possess
VT1, VT2 toxins, and 14 samples showed to possess LT, VT1 and VT2 respectively. Thus a
total of 54 samples (13.8 percent) showed to possess bacterial toxins. It was also observed
that 28 samples out of 199 cases (14.1 percent); 20 out of 109 cases (18.3 percent) and 6
out of 82 cases (7.3 percent) showed to possess bacterial toxins in January, June and November
1988 respectively. Moreover cholera toxin was detected from 5 out of 25 cases tested.
- 145 Mar Mar Nyein; Tin Aye; Aung Myo Han and Khin Maung U
TITLE Distribution of enterotoxigenic *Escherichia coli* in children under 5 years of
 age
SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers,
 p20
ABSTRACT: The objective of the study is to find out the distribution of enterotoxigenic
Escherichia coli (heat labile and heat stable, toxin producers) in Burma during 1981 and
1983 from hospital and field studies. The subjects were diarrhoea and control children under
5 years of age. The total number of cases studied includes 1984 cases of diarrhoea and 1692
cases of control. The average isolation rate of ETEC was found to be 19.6 percent in
diarrhoea cases and 5.8 percent in control cases respectively.

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- 146 Mar Mar Nyein; Tin Aye; Phyu Phyu Win; Khin Nwe Oo; Aung Myo Han and Khin Maung U
TITLE Serogroups of *Escherichia coli* and their relationship with enterotoxigenicity in rural (Intakaw) survey
SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, p10
ABSTRACT: 283 strains of Enterotoxigenic *Escherichia coli* (ETEC) isolated from rural (Intakaw) survey in hot-wet and cool-dry seasons in 1982 were serogrouped. It was found that O126 and O114 serogroups seem to be most frequently being detected and being associated with either ST (heat stable) or LT (heat labile) toxin producing *E. coli* respectively. The other serogroups and their relation to ETEC was discussed.
- 147 Mar Mar Nyein; Kyu Kyu Mar; Tin Aye and Hayashi, H
TITLE Vero cell cytotoxic *Escherichia coli* isolated from children with diarrhea
SOURCE *Myanmar Health Sci Res J.* 1990 Dec; 2(3): pp118-129
ABSTRACT: A total of 616 isolates of *Escherichia coli* from 90 diarrhoea cases and 87 control cases were included in this study. Vero cells were cultured in microtitre plates. *E. coli* toxin was produced by growing in Trypticase Soy Broth with vigorous shaking. It was demonstrated that 17 out of 55 cases (30.9 per cent) from diarrhoea group and 7 out of 70 cases from control group (10 per cent) were verotoxic and these were not Enteropathogenic (EPEC) not Enterotoxigenic (ETEC) group of *E. coli*. It was also observed that in diarrhoea group of study, 5 out of 9 cases of (EPEC) and 2 out of 8 cases of (ETEC) and 8 out of 18 cases of both (EPEC + ETEC) were verotoxic. Other bacteria tested failed to produce toxic substances which could produce cytopathic effect on Vero cells.
- 148 Maung Maung Oo; Hlaing Mya; Htoo Han and Kyaw Nyunt
TITLE Intestinal pathology in heavy ascariasis
SOURCE *Med Res Congr.* 1989, Abstract of Papers; p8
ABSTRACT: Small intestinal biopsy from 5 patients who had been operated for acute intestinal obstructions due to heavy ascariasis were examined under light and electron microscopy. Patients were 2 males and 3 females from Rangoon Children's Hospital with the age range of 3½ to 7 years. Light microscopy showed a mild thickening of the intestinal wall, a heavy infiltration in the lamina propria by chronic inflammatory cells and distorted intestinal villi. Ultrastructural examination revealed normal appearing enterocytes with undistorted microvilli. Intraepithelial lymphocytes were frequently found. Among the chronic inflammatory cells in the lamina propria were proliferated fibroblasts and increased collagen deposition. The changes were those of nonspecific chronic inflammation of the small intestine.
- 149 Mi Mi Khin; May La Linn; Kyi Kyi Khin; Kyaw Moe; Soe Thein and Khin Maung Oo
TITLE Age prevalence and seasonality of rotavirus infection in hospitalized children in Rangoon
SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, pp12-13
ABSTRACT: Detection of Rotavirus (RV) in 923 faeces of children under 35 months seeking medical attention for acute diarrhoea at Rangoon Children's Hospital was studied from February 1982 to January 1984. RV was detected by the Enzyme Linked Immunosorbent Assay (ELISA) provided by the WHO. The frequency of RV detection was 27.1% and 19.1% in 1982 and 1983 respectively. Infection occurred as early as the 2nd month

of infancy (12.5%) to 30 months of age (20%). RV detection was found to be 16% (15/94) in the 0.5 months, 33.4% (108/323) in the 6-11 months and 15.1% (70/463) in the 12-35 months age group, indicating that the highest risk group was in the 6-11 months age group. Subgroup of RV was identified using group specific monoclonal antibody for the ELISA. The predominant subgroup was shown to be subgroup II (69.6%) and 30.4% was due to subgroup I. Although RV infection occurred throughout the year in tropical Rangoon, a striking seasonal variation was during the cooler months of the year (September-February), when the mean maximum temperature is at its lowest. Furthermore it was seen with predicatable regularity that RV peak infection occurred in the month when an appreciable decrease in rainfall was seen, which generally occurs towards the tail end of the monsoon. Although it was not possible to associate frequency of RV infection to other weather factors such as Relative Humidity (RH), it was shown that the RH was between 57-86% during the months when RV detection was more frequent. This indicates that RH within this range may be a contributing environmental factors for increase in RV infections in Rangoon.

150 Min Oo
TITLE A study of nutritional status in relation to anaemia and intestinal parasitosis in preschool children in rural area
SOURCE MMedSc(Paediatric), Institute of Medicine I, Rangoon, 1983
ABSTRACT: Described the study of nutritional status and its relation to anaemia and intestinal parasitic infections in 867 children of under fives in Indaing village. Over two-thirds of children showed anthropometric evidence of poor nutritional status by mordified Gomez classification. i.e less than 80% weight for age; one third of children showed evidence of chronic under nutrition, i.e less than 90% height for age and 10% of children were found to be acutely under nutrition i.e less than 80% weight for length.

151 Mya Mya Ohn
TITLE A study on aetiology of neonatal gastroenteritis at Neonatal Unit, Rangoon Children Hospital and special care baby unit, Central Women's Hospital
SOURCE MMedSc(Paediatric), Institute of Medicine I, Rangoon, 1983
ABSTRACT: 300 consecutive cases of neonatal gastroenteritis from R. C. H. and C. W. H. during the period from 1-11-81 to 31-3-82. (1) to determine the morbidity and mortality in relation to birth weight, socio economic condition and ranking of sibling (2) to compare the effect of breast and bottle feeding or mortality of neonatal gastroenteritis.

152 Myat Lay Kyin and Thein Hlaing
TITLE Health impact on ascariasis and anaemia in Rangoon Division: A perspective
SOURCE 33rd *Burma Med Conf.* 1986; p30
ABSTRACT: The People's Health Plan was launched in 1978 with a view to reduce the major health problems and to raise health standard in Burma. Among the epidemiological studies carried out in many rural areas of Burma, some health indicators, such as ascariasis and anaemia, had been measured twice after a lapse of 13 years or more before and after the launching of the People's Health Plan. Comparisons of the two health indicators between the study periods were made. There was no change in *Ascaris* prevalence, but significant reduction of anaemia was found when compared with their previous value. The findings were discussed.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

- 153 Myat Thi; Mya Win; Than Sein; Khin Maung U; Myo Khin; Nyunt Nyunt Wai; Nwe Oo; Aung Soe; Nyo Nyo Htwe; Aung Tun; Toe Lwin; San San Shein and Ahad, A
TITLE Clinical trial of ORS-bicarbonate in acute diarrhoea in young children
SOURCE Abstract, Research Paper Reading Session, Medical Sciences Division, Rangoon, 1986-87: p7
ABSTRACT: Not Available
- 154 Myo Han
TITLE Fibreoptic colonoscopy
SOURCE *First Med Spec. Burma Med Assoc.* 1981, Abstract of Papers, p43
ABSTRACT: Fibreoptic colonoscopy as a diagnostic aid was first introduced in this country in May 1978, at the Defence Services General Hospital. Twenty seven fibreoptic colonoscopies were carried out in Defence Services General Hospital. The importance of can selection, double contrast barium enema examination and bowel preparation for barium study as well as colonoscopy are stressed. It is also emphasized that fibreoptic colonoscopy should complement rather than supplant the barium enema. The value of fibreoptic colonoscopy in cases when barium enema shows equivocally abnormal areas or when barium enema is normal but unexplained symptoms such as rectal bleeding persists has been shown. The procedure has been shown to make diagnostic laparotomy unnecessary in 33.33% of cases.
- 155 Myo Min Aung; Phyu Phyu U and S. Kyaw Hla
TITLE Effects of sodium tetraborate and alum in the management of acute childhood diarrhea
SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, p18
ABSTRACT: Two hundred and sixty children under five years of age with acute diarrhoea of less than 72 hours duration and grade II severe dehydration were taken into the study and each patient was alternately assigned to either group A or group B. Children in group A were given a combination of sodium tetraborate 25mg/kg/day and alum 25mg/kg/day in 4 divided doses starting from the time of admission till the cessation of diarrhoea. Those children in group B were not given any drug for the acute diarrhoea. Children in both groups A and B were rehydrated with intravenous fluid and later with ORS solution and neither group was given any antibiotics or other known antisecretory drugs. Total stool out put for the first and second 12 hour periods, the duration of diarrhoea and weight gain for each children in both the groups are recorded and the results are compared and discussed.
- 156 Ni Le Win; Aung Myint and Hla Myint
TITLE A report on 113 Gastroscopic examinations
SOURCE *First Med Spec. Burma Med Assoc.* 1981, Abstract of Papers, p41
ABSTRACT: 113 gastroscopic examinations done in ward 1 & 2 Rangoon General Hospital within a period from November 1980 to July 1981 is reported and the use of gastro scope in various conditions is discussed.

- 157 Nyo Nyo Htoon
TITLE A study on impact of monitoring of standardized initial rehydration therapy regimen in gastroenteritis in children on clinical course and outcome
SOURCE MMedSc(Paediatric), Institute of Medicine I, Rangoon, 1986
ABSTRACT: The impact of monitored standardized, initial intravenous rehydration therapy on mortality and morbidity from acute gastroenteritis with grade II severe and grade III dehydration in children admitted to R. C. H. and the impact of monitored standardized initial rehydration by (a) intravenous and (b) naso-gastric routes on the clinical course and outcome from acute gastroenteritis in children is described.
- 158 Nyunt Nyunt Wai; Khin Maung U; Myo Khin; Htain Win and Nyunt Win
TITLE Eosinophil changes in blood during cholera and non-cholera diarrhea
SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, p10
ABSTRACT: Blood eosinophil counts were found to be low on admission in diarrhoea patients (both cholera and non cholera), but increased significantly by day 5 and remain elevated at day 10. At subsequent follow up, a high prevalence of eosinophilia was detected in these patients and their families.
- 159 Ohn Maung Maung
TITLE Clinical study of mass in right iliac fossa in Rangoon General Hospital
SOURCE MMedSc(Surgery), Institute of Medicine I, Rangoon, 1984
ABSTRACT: The incidence of mass in right iliac fossa due to different causes admitted to the 3 surgical wards of R. G. H.; the correlation between the cases of mass in right iliac fossa and other factors such as age, sex, and seasonal variation; and the symptomatology, diagnostic aids and outcome of management were described.
- 160 Oo Han
TITLE Clinical study of acute intestinal obstruction in Rangoon Children's Hospital
SOURCE MMedSc(Surgery), Institute of Medicine I, Rangoon, 1986
Abstract/Summary not available: Abstract written by the book editors
One hundred and two cases of intestinal obstruction operated during one year period starting from June 1984 were included in the study. The highest numbers of cases were neonates and the number decreases with increasing age. Imperforated anus, intrauterine perforation and intestinal atresia accounted for 40% of the cases. Males predominates females in the cases under study. Most cases of intestinal obstruction occurred in the lower income group. There was no seasonal variation and most of the cases (80%) were from Rangoon area. Operative mortality was 23%, 23% were discharged within 10 days. The rest had post-operative complications; 38% stayed in the hospital for one month, and 12% had to stay for more than one month. Pain and vomiting was present in 56% and 75% of the cases respectively. On examination, severe diarrhoea was present in 14% and abdominal mass was felt in 23 cases. During the study period, of 5627 cases admitted to surgical unit, 816 cases (14.5%) presented with intestinal obstruction of which only 12.5% (102 cases) needed surgical intervention.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

161 Paing Soe
TITLE A study of prevalence of clinical features in typhoid fever in M. G. H., with special reference to their possible significance in contribution towards the diagnosis
SOURCE MMedSc(Medicine), Institute of Medicine Mandalay(IMM), 1982
ABSTRACT: Determined the prevalence of various clinical features in diagnosed cases of typhoid fever and analysed these statistically with the aid of computer, in order to assign importance to their values as regards diagnosis.

162 Pe Myat Win
TITLE Evaluation of appendicectomies in two teaching hospitals of Rangoon
SOURCE MMedSc(Surgery), Institute of Medicine, II, Rangoon, 1984
ABSTRACT: This paper studied and evaluated 74 cases of appendicectomies performed in two teaching hospitals of Rangoon during a period of one year. This is the first study of its kind to be reported in Burma. The rates of diagnostic accuracy, incidental appendicectomy and prophylactic appendicectomy were compiled. The findings were compared with those reported in the Western literature and the diagnostic acumen, decision skill, attitude and philosophical concept of our Surgeons in relation to the performance of appendicectomies are discussed. Relationship between the severity of appendicitis and factors which influence its progress such as the duration of symptoms, type of appendicitis, age, sex, purgation, masage and previous antibiotic therapy were studied and discussed with a view to define a possible safe period during which doubtful cases may be observed with minimal risk of perforation.

163 Pe Thet Khin; Khin Maung Htay and Moe Mya Mya
TITLE Persistent gut dysfunction following neonatal gastroenteritis
SOURCE *Fourth Med Spec. Burma Med Assoc.* (26th -29th April, 1988), p30
ABSTRACT: Neonatal gastroenteritis is one of the common most causes of morbidity and mortality among neonates. In severe cases, it was found that persistent gut dysfunction was present, resulting in mal-absorption, disaccharide intolerance as well as food intolerance. A total of 12 patients with severe neonatal gastroenteritis were followed up to the age of 5 years or longer. In the present study, it was found out that d-xylose absorption and lactose intolerance persisted up to 5 years, although some of those patients did not show clinical evidence of mal-absorption. The findings and its clinical relevance are presented and discussed.

164 Phyu Phyu Win; Khin Nwe Oo and Tin Aye
TITLE Degree of contamination and importance of currency notes in carriage of enteric bacterial pathogens
SOURCE *Burma Res Congr.* 1987, Medical Sciences Division, Abstract of Papers, pp10-11
ABSTRACT: To determine the degree of contamination of enteric bacterial pathogens in currency notes, a study was done in the local market in Rangoon during December 1986 to July 1987. All together 60 samples were examined. Total Bacterial Count (TC) ranged from 0-10⁹ /sq.mm. Faecal coliform Counts (FC) ranged from 0-10⁸ /sq.mm. *Escherichia Coli* was isolated from 31 samples. *Vibrio* species was isolated from samples of pork and fish sellers. *Salmonella* spp. was isolated from samples of pork and beef sellers. TC and FC counts were not different between old and new notes and also in different denominations. FC count is decreased in hot dry season.

- 165 Phyu Phyu Win and Tin Aye
TITLE Shigellosis in Yangon, Myanmar: Frequency of isolation and *in vitro* drug sensitivity
SOURCE *Myanmar Med Res Congr.* 1990, Abstract of Papers, p15
ABSTRACT: One eighty samples of dysenteric stools were collected from Yangon Infectious Diseases Hospital and Children's Hospital, during the period of June, 1989 to May, 1990. The study was carried out to determine the frequency of Shigella serogroups and to have an information about seasonal pattern and *in vitro* antibiotic sensitivity pattern of shigellae. Total 40 strains of shigellae (22.2%) were isolated including 23 *sh. flexneri* (57.5%), 15 *sh. dysenteriae* (37.5%), 1 *sh. sonnei* (2.5%) and 1 *Alkalescence dispar* strain (2.5%). The serotypes most commonly isolated were *sh. flexneritype 2* (40%) and *sh. dysenteriae type 1* strains (35%). More frequent isolation of shigellae were observed in monsoon seasons. And this study also gave some information on the pattern of sensitivity to antibiotics.
- 166 Phyu Phyu Win and Tin Aye
TITLE Invasiveness and adhesive properties of some *Salmonella* strains
SOURCE *Myanmar Med Res Congr.* 1989, Abstract of Papers, p8
ABSTRACT: To estimate the virulence of *Salmonella* organisms, some *Salmonella* strains collected from various sources were examined. They were 24 strains of *Salm. derby*, seven strains of *Salm. anatum*, 3 strains of *Salm. enteritidis*, 2 strains of *Salm. agona* and one strain of *Salm. augesterberg*. In this study the ability of enteroinvasive bacteria to invade cell culture monolayer has been used as a convenient measure of invasive potential.
- 167 Phyu Phyu Win and Tin Aye
TITLE The HEP-2 cell culture assay: An alterantive approach for recognition of invasive potential of *shigella* and *Escherichia coli*
SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, p11
ABSTRACT: A total of 33 shigella dysentriae 1 strains isolated from stool samples of dysentry outbreak in Rangoon area in 1985 and 95 positive sero-groups of *Escherichia coli* strains obtained from diarrhoeal cases of a previous study (1983-84) were submitted to HEP-2 cell culture assay. All shigella strains and *Escherichia coli* strains which were detected as ETEC were utilized for Sereny test to compare and assess the efficacy of the assay. Analyzing the HEP-2 cell invasiveness and Sereny test data, a good correlation was observed between them.
- 168 San Lwin
TITLE Symptomatic analysis of gastric ulcer, duodenal ulcer and non-ulcer dyspepsia
SOURCE MMedSc(Internal Medicine), Institute of Medicine I, Rangoon, 1989
ABSTRACT: It describes the selection of a symptom and/or the symptoms which would be most helpful for the diagnosis of Gastric Ulcer (G. U.), Duodenal Ulcer (D. U.) and non-ulcer dyspepsia. The clinical features of (a) gastric ulcer and duodenal ulcer (b) non-ulcer dyspepsia and peptic ulcer were compared, the clinical manifestations accompanying chronic gastritis by utilising clinical data from patients with non-ulcer dyspepsia were noted.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

- 169 San San Aye; Aye Kyaw; Khin Maung U and Mar Mar Nyein
TITLE Effect of enterotoxigenic *E. coli* heat Labile Toxin (LT) on intestinal enzymes in rat
SOURCE *Burma Res Congr.* 1988, Medical Sciences Division, Abstract of Papers, pp12-13
ABSTRACT: LT was isolated and purified from cultures of ETEC. The purified LT was administered to 6 Wistar rats (infected group) whereas the control group, also consisting of 6 rats, were sham operated. Administration of LT was caused no changes in the activities of marker enzymes for intracellular organelles in whole intestinal homogenates except succinic dehydrogenase, the marker enzyme for mitochondria and proteinase, the soluble enzyme. The activity of succinic dehydrogenase was found to be decreased whereas the proteinase activity was increased. Differential study of the enzyme levels in intestinal mucosa and muscularis layer, LT administration did not change any enzyme levels in mucosa suggesting that the LT was not invaginated into the cell and could not directly interact with intracellular organelles. This speculation was supported by the decrease of succinic dehydrogenase activity, since the dehydrogenase is an integral member enzyme of Krebs' citric acid cycle, the energy producing system of the cell and the uptake and invagination of macromolecules (like LT) were energy dependent. Changes in some enzyme levels found in the muscularis layer (like a decrease of acid phosphatase and an increase of proteinase) could be the metabolic consequences of diarrhoea produced by LT. The non-entry of LT into intestinal absorptive cells was also supported by the finding that no lysosomal dysfunction was observed in the intestinal mucosa.
- 170 Sein Win
TITLE A clinical study of gall stones
SOURCE MMedSc(Surgery), Institute of Medicine I, Rangoon, 1981
ABSTRACT: Described the clinical aspects of cholelithiasis with regards to symptomatology and clinical presentation, a statistical incidence, types, composition and sites of gallstones; the underlying changes occurred in gallbladder with gallstones especially the histological changes; a guideline with regards to antibiotic usage which is highly effective to be given pre, intra or post-operatively and common organisms causing infection in biliary tree in association with cholelithiasis; and the evaluation of the significance of calcium bilirubinate and cholesterol crystals in the duodenal juice in association with cholelithiasis.
- 171 Soe Soe Aye
TITLE Acute diarrhoeal disease in Children Ward North Okkalapa General Hospital
SOURCE *Burma Med J.* 1980 June; 26(2): pp91-100
ABSTRACT: Not Available
- 172 Soe Soe Aye
TITLE Modalities of therapy of acute diarrhoea in children of Burma
SOURCE *Burma Med J.* 1983 June; 29(2): pp131-140
ABSTRACT: Not Available
- 173 Soe Soe Aye
TITLE Appropriate diets in acute diarrhoea in childhood
SOURCE *Burma Med J.* 1986 Mar; 32(1): pp22-38
ABSTRACT: The aim of this study was to find an appropriate diet for administration during acute childhood diarrhoea. Three diets-soft rice and fish, soft rice and pulses, baked banana were given during the acute episode to fulfil the daily caloric requirement. Allocation of dietary regimens was made in sequential order, as the children aged 6 months to

2 years with Grade II dehydration, were entered into the study. Assessment was done by measuring the volume, frequency, duration and weight difference, in the three groups (n=93, 94, 90) and the results were compared with a control (n=33) receiving no dietary therapy. The diets did not show any significant difference with regard to volume, frequency and duration but showed a significant weight change ($p < 0.025$) when compared to control. Any of these diets appear to be appropriate for administration during diarrhoea.

174 Soe Soe Aye and Ei Ei Khin
TITLE Early and residual death in acute childhood diarrhoea
SOURCE *Burma Med J.* 31(4) December 1985; pp245-252
ABSTRACT/CONCLUSION: Although this study has limitation namely being a retrospective one and having a small number of total deaths for analysis, certain pointers have been obtained from this study which could be studied in depth in later prospective studies. The findings emphasize the importance of rehydration therapy in uncomplicated case, to reduce the mortality (deaths due to dehydration) especially the early death, within first 48 hours. Prompt and adequate rehydration on admission to hospital can save lives. One further step would be to reduce the degree of dehydration, in other wards, the number of hospital admission by giving oral rehydration therapy at home. This would be done as soon as the child starts passing abnormally loose or watery motions more frequently than usual. The findings also emphasize, in children with concurrent malnutrition and respiratory tract infection, the importance of instituting continued feeding with appropriate diet/diets during acute episode of diarrhoea and in post diarrhoea period, early detection and prompt and appropriate treatment of concurrent respiratory tract infection and malnutrition, in addition to the rehydration therapy in order to reduce the early and residual deaths. These will have an impact on the mortality, reducing both the residual deaths and the early in the severely ill children and morbidity, reducing both the degree of dehydration and incidence of diarrhoea with concurrent illnesses.

175 Than Htay Maung
TITLE Duodenal fluid culture in the diagnosis of enteric fever
SOURCE MMedSc(Internal Medicine), Institute of Medicine II, Rangoon, 1986
ABSTRACT: 40 cases of typhoid fever and 10 cases of non typhoid fever who were admitted to North Okkalapa General Hospital during the period from July 1984 to March 1985 were studied. Widal test, duodenal aspirate culture, blood culture and stool culture were performed in all the test and control subjects. The results of these cultures were analysed and compared. The effect of fever duration and antibiotics taken before hospital admission on the cultures and Widal test were also analysed and compared.

176 Than Htay Maung; Kyi Kyi Ngwe; Khin Mae Ohn and Myo Thwe
TITLE The study of activated charcoal on acute gastroenteritis
SOURCE *Burma Res Congr.* 1987, Medical Sciences Division, Abstract of Papers, p10
ABSTRACT: One hundred patients who presented with acute gastroenteritis were studied. Most of the cases were due to food poisoning which occurred within hours after eating certain foods. Patients' symptomatology and severity of gastroenteritis were assessed clinically on admission to the hospital. They were then given activated charcoal for the control of diarrhoea. The clinical improvement was assessed and they were compared with the control subjects who received rehydration therapy alone or rehydration therapy plus phthal sulphathiazole or tetracycline. The duration of diarrhoea response to therapy and side-effects were compared. The properties of the activated charcoal are discussed.

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- 177 Than Saw; Htar Htar Kyi; Tin Tin Aye and Myint Lwin
TITLE The intestinal parasitoses in gastro enteritis patients of the hospitals in Yangon
SOURCE *Myanmar Med Res Congr.* 1990, Abstract of Papers, p17
ABSTRACT: The study on the prevalence of intestinal parasitic infections in gastroenteritis patients attending as the in-patients of the Infectious Diseases Hospital, the Yangon General Hospital, the Worker's Hospital and No. 2 Military Hospital was carried out during 1987-1988. The study included one thousand six hundred and ninety eight patients. The major helminthic infections examined were *Ascaris lumbricoides* and *Trichuris trichiura*. *A. lumbricoides* constituted 22 to 35 percent of the total and five to 14 percent among the diarrhoeal and dysenteric patients respectively. However, the percentage of *Entamoeba histolytica* was higher among the dysenteric patients than the diarrhoeal patients. The infection rate was 92 percent of the total.
- 178 Tin Aye; Aung Myo Han and Khin Maung U
TITLE Epidemic shiga bacillary dysentery in Rangoon, Burma, 1984/85
SOURCE *Lancet.* 1985; Jun 22;1(8443): p1442
ABSTRACT: Identical epidemiological and microbiological surveys were carried out in a rural community at Intakaw, Burma, in 2 months one in the hot wet and the other in cool dry season. The incidence of diarrhoea was highest in children under 3 years old and in the hot wet month when enterotoxigenic *Escherichia coli* was the predominant pathogen. Rota virus was the commonest pathogen in the cool dry month but was absent in the hot month. *Shigellae*, *salmonalle* and camphylobactor were isolated in both seasons, but were not significantly commoner in patients than in controls. Vibrios and *Yersinia enterocolitica* were sought but not found in any specimen.
- 179 Tin Aye; Mar Mar Nyein; Kyi Kyi Khin; Mi Mi Khin; Khin Maung U; Myo Khin; Aung Myo Han; Thane Toe and Hayashi H
TITLE Epidemiology and aetiology of acute childhood diarrhoea in Burma: A rural community survey
SOURCE *Trans R Soc Trop Med Hyg.* 1989; 83(6): pp827-30
ABSTRACT: Identical epidemiological and microbiological surveys were carried out in a rural community at Intakaw, Burma, in 2 months one in the hot wet and the other in cool dry season. The incidence of diarrhoea was highest in children under 3 years old and in the hot wet month when enterotoxigenic *Escherichia coli* was the predominant pathogen. Rota virus was the commonest pathogen in the cool dry month but was absent in the hot month. *Shigellae*, *salmonalle* and camphylobactor were isolated in both seasons, but were not significantly commoner in patients than in controls. Vibrios and *Yersinia enterocolitica* were sought but not found in any specimen.
- 180 Tin Shwe; Tin Win; Maung Maung Khin and Hla Tin
TITLE Epidemiology of gastroenteritis (Cholera) in Kengtune 1982
SOURCE *Burma Med J.* 1985 June; 31(2): pp108-114
ABSTRACT: Not Available

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- 181 Mar Mar Nyain and Tin Aye
TITLE Enteroadherent *Escherichia coli* isolated from diarrhoea and dysentery cases in Myanmar
SOURCE *Myanmar Med Res Congr.* 1990, Abstract of Papers, p18
ABSTRACT: 414 strains of *Escherichia coli*, isolated from diarrhea and dysentery cases were sub-cultured in Trypticase Soy Broth containing 1 percent D-Mannose. Adherence cell assay was done by using Lab Tek chamber slides seeded with Hep. 2 cells. It was observed that 17.3 percent of EPEC, 16.7 percent of ETEC-serogroups and 7.1 percent of untypable *E. colis* showed adherence. Some of them showed diffused adherence pattern and some showed localized adherence pattern.
- 182 Soe Soe Aye and Ei Ei Khin
TITLE Early and residual deaths in acute childhood diarrhea
SOURCE *Burma Med J.* 1985 Dec.; 31(4): pp245-252
ABSTRACT: Not Available
- 183 Than Saw; Khin Khin Swe and Myint Lwin
TITLE Study on the biological parameters on the growth of worm and survival of *Ascaris lumbricoides* eggs
SOURCE *Burma Res Congr.* 1987, Medical Sciences Division, Abstract of Papers, p14
ABSTRACT: A study on determination of two different population parameters of *Ascaris lumbricoides* was performed. The first biological parameter was the availability of *A. lumbricoides* eggs in soil at sunny site and shady site throughout the whole year. In addition the developmental process of *Ascaris* eggs in soil was also studied. The percent viability of *Ascaris* eggs decreased with the increase of time both at sunny and shady sites. At the sunny site, the percent viable egg was found to be 14.5, 5.9, 5.4, 4.2, 4.0, 3.7, 3.0, 1.4, 1.3, 1.3, 0.4, 0.3. At the shady site, it was found that, 17.8, 9.1, 8.3, 6.7, 6.4, 6.3, 4.6, 3.3, 1.7, 1.3, 0.7, 0.6 at each month for 12 subsequent months. The main factors responsible for the developmental process of *Ascaris* eggs are the temperature and media. Time taken for each stage in development process differs with different environmental temperatures and type of media. The second biological parameter of *Ascaris lumbricoides* was the relationship between the size, weight and sex ratio of the worms and the worm load. No relationship was detected either between the mean length, circumference or weight and the worm load between the sex ratio and worm numbers. The relationship between the total weight of worms and the worm burden was found to be positive.
- 184 Than Saw; Mi Mi Sein; Myo Paing; Myint Lwin and Khin Mg Mg
TITLE Study on intestinal parasitoses in 21 villages of Taik-kyi Township
SOURCE *Burma Res Congr.* 1987, Medical Sciences Division, Abstract of Papers, p14
ABSTRACT: A study on intestinal parasitoses was conducted during 1984-86 in Tail-Kyi Township, 48 miles north of Rangoon. In this study, a total of 21 villages were included. Out of which 13 villages served as the control and 8 villages served as the study. The population of individual village ranged from about 20 to 500. All together there were approximately 2000 subjects in the study. The stool examination was done using the direct smear method. Three direct smears were examined for each stool sample. The ova of intestinal helminthes especially *Ascaris*, and also that of *T. trichiura*, Hook worm, *E. vermicularis* were commonly found. Larvae of *S. stercoralis* and protozoal infection such as *Giardia lamblia*, *E. histolytic* and *E. coli* were found in some of the cases. The age and sex specific prevalence rate among studied population was presented.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

- 185 Than Saw; Tomoo Tanaka; Yoshimasa Kaneda; Tin Tin Aye and Myint Lwin
TITLE The serodiagnosis of amoebiasis by using Enzyme-Linked Immuno-
Sorbent Assay
SOURCE *Myanmar Med Res Congr.* 1989, Abstract of Papers, p11
ABSTRACT: An enzyme-linked immunosorbent assay was used to measure anti-*E.*
histolytica antibody. The sera studied were from hospital patients with gastroenteritis,
some of whom had amoebiasis, from patients with amoebic liver abscess and from persons in
whom *E. histolytica* parasite (trophozoites and cysts) could not be found. Using PBS soluble
trophozoite antigen of HK-9 strain of *E. histolytica*, serum antibodies against the parasite were
detected in all individuals from whom trophozoites were isolated, but not from others. The
results are discussed.
- 186 Than Saw; Thein Hlaing and Myat Lay Kyin
TITLE Intestinal helminthiasis in twenty one villages in Taikkyi Township
SOURCE *Myanmar Health Sci Res J.* 1990: 2(1); pp19-24
ABSTRACT: A field research project was undertaken under the title "The relationship
between the control of *Ascaris* infection and child nutritional status" in 21 villages in
Taikkyi Township. At the beginning of study in August 1984, a mass stool examination was
done on 3 whole villages (n=1052) and on 2-12 years old children (n=1070) in the remaining
18 villages. In addition, de-worming was carried out in randomly selected 8 villages, involving
different age groups. The results were confined to the baseline study. *Ascaris lumbricoides*
was the principal intestinal helminth and its infection rate was 77.38% in the population as a
whole. The prevalence of other infections were 5.63% for *Trichuris trichiura*, 2.53% for hook
worm, and 2.07% for *Strongyloides stercoralis*. By age, the prevalence of *Ascaris* infection was
conspicuously high in the 5-9, 10-14 and 5-19 years old. The mean worm burden per person
in all the ages was 6.6 and the age specific worm burden was highest in 5 to 9 years age
group, about 10 worms per child. The findings were compared with those of others studies.
It is high time to develop a community based mass chemotherapy programme to control
ascariasis in Myanmar based on national experience in previous control and research projects.
- 187 Than Swe
TITLE A clinical study of primary carcinoma of oesophagus in M. G. H.
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1983
ABSTRACT: Described the incidence of carcinoma oesophagus in relation to carcinoma
of other part of gastrointestinal tract, their age and sex distributions and their clinical
presentations among others, as the basic clinical study.
- 188 Than Swe 3
TITLE Study of acute pancreatitis in reference to epidemiology in M. G. H.
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1977
ABSTRACT: Acute pancreatitis cases admitted to Surgical Unit (1) Mandalay General
Hospital for 5 years (1972-1976) are described. There were 42 cases of acute
pancreatitis admitted. The highest age incidence lies in 39 to 48 years group; the sex
distribution is of equal proportion in this series. The season of most prevalence is a cold
season and consuming of alcohol is also most common in this season. Various clinical
manifestations are also studied.

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- 189 Than Than Win and Tin Aye
TITLE The study of ecology of enteric bacteria in the intestines of country chicken from Rangoon market
SOURCE *Burma Res Congr.* 1985-86, Medical Sciences Division, Abstract of Papers, p11
ABSTRACT: 50 samples of chicken intestine were studied for the distribution of *E. coli*, *Salmonella* and *Campylobacter jejuni*. It was found that there was carriage rates of *Campylobacter jejuni* (89%) and *Salmonella* (8%) in the chickens.
- 190 Than Than Aye
TITLE A study of recurrent cholangio-hepatitis in NOGH
SOURCE MMedSc(Internal Medicine), Institute of Medicine II, Rangoon, 1987
ABSTRACT: During the study period August 1985 to July 1986 altogether 70 cases of recurrent cholangiohepatitis were admitted to NOGH, 28 cases to medical ward and 42 cases to surgical ward. 25 cases from the medical ward were studied for clinical profile and biochemical profile. Duodenal intubation test was performed in all 25 cases and the results were compared with those of ultrasonographic findings and also those of operative finding in 10 operated cases. As a control 5 cases of non-related illness and 5 cases of other hepatobiliary diseases without gall stone, excluded by ultrasonography, were selected for duodenal intubation test to detect any false positive results.
- 191 Thaw Zin
TITLE Effect of acute diarrhoea on the bioavailability of some drugs in Myanmar subjects
SOURCE MMedSc(Pharmacology), Institute of Medicine I, Rangoon, 1989
ABSTRACT: The bioavailability of 3 commonly used drugs, namely dapsone, chloroquine and propranolol in normal healthy Myanmar subjects was examined carefully, the preliminary indication and awareness of the likelihood of adverse effects and of the type of adverse effects and of the type of adverse effects that may be encountered during acute diarrhoea were provided; and an experimental diarrhoeal model which can be used as an alternative to patients in the study of diarrhoea was developed.
- 192 Thaw Zin; Aung Naing; S. J. Tha; Khin Mg U and Khin Kyi Kyi
TITLE Effect of acute diarrhea on the bio-availability of dapsone in Burmese subjects
SOURCE *Fourth Med Spec. Burma Med Assoc.* 1988, Abstract of Papers, p24
ABSTRACT: Dapsone (Diamino diphenylsulphone, DDS) is not only a mainstay in the treatment of leprosy, but is also one of the components of the multi-drug regimen advised by the World Health Organization. Dapsone serum concentrations of 16 patients of the Infectious Diseases Hospital (age 18-50yrs) with acute diarrhoea (mean b.wt. 47.02±10.4) was compared with 10 healthy volunteers (mean b.wt. 50.02±6.7)kg after an oral administration of a single dose of 100mg of dapsone in a fasting state. The serum levels were analyzed by means of a spectrophotometer. Apparent absorption rate constants (K_{ab}), the absorption half life ($T_{1/2ab}$), peak height (C_{Max}), plasma clearance (Cl_p), volume of distribution (V_d), and the area under the curve (AUC), were not significantly different between the two groups but the time of occurrence of peak serum concentration (T_{max}) was shifted to the right (3.94±0.98hrs to 4.05±1.32hrs) ($p < 0.05$). Since absorption was unaffected and the serum concentration persisted well above the MIC level up to 48 hours, it was concluded that Dapsone dosing need not be altered even though the patient is suffering from severe diarrhea.

- 193 Thaw Zin; Aung Naing; S. J. Tha; Khin Maung U and Khin Kyi Kyi
TITLE Effect of acute diarrhoea on pharmacokinetics of propranolol
SOURCE *Myanmar Med Res Congr.* 1990, Abstract of Papers, p12
ABSTRACT: Considering the increasing use of beta blocker propranolol for the treatment
 of growing cardiovascular disorders among Myanmar population, it is necessary to
investigate its therapeutic status in acute diarrhoeal patients also very common in Myanmar.
Propranolol, 40mg, was orally administered to each of the 20 adult patients of the Infectious
Diseases Hospital suffering from acute diarrhoea and 10 healthy volunteers. The drug serum
levels at various time intervals were assayed spectrophotofluorometrically and the
pharmacokinetic profile was studied. A tendency of increase drug serum level was observed
in the acute diarrhoeal patients. The clinical applications of these findings were discussed.
- 194 Thein Han 4
TITLE Study of Lord's non-operative treatment for cases of haemorrhoids in the
 M. G. H.
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 1983
ABSTRACT: Forty patients with haemorrhoids of various degrees apart from first degree
 were treated by Lord's procedure, also known as manual dilatation of anus, M. D. A.
A comparative study was made between the two groups of patients, twenty in each group, to
demonstrate the presence or absence of significant difference between the group with post-
operative anal dilatation and the other group without dilatation. The assessment was done at
six months following the procedure. Overall success rate is 92.5 per cent and failure 7.5 per
cent. The success rate in dilatation group is cent per cent, while that in the without-dilatation
group is 85 per cent. Thus the results are comparable to those of other series, but there is no
statistically significant difference between the two groups. Regarding the complication, faecal
incontinence is minimal in this study, i.e. only in one patient out of twenty in group without
post-operative anal dilatation 2.5 per cent of total patients in this series. It was transient and
the ultimate result of that patient assessed at six months is excellent. Finally the role of the
procedure in cases of strangulated piles is also observed in this study, yielding comparable
result to that of the overall group.
- 195 Thein Han 5
TITLE Clinical study of abdominal injuries in M. G. H.
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay(IMM), 1984
ABSTRACT: Abdominal injury is one of the major health problem causing deaths of
 both adults and children. In spite of the importance of abdominal injury, a
controversial view still remains regarding its diagnosis and treatment. A prospective study was
projected: (1) to study the magnitude of the problem. (2) To study the aetiological agents and
the extent of the injury. (3) To study the diagnostic and treatment problems. (4) To analyse
the factors influencing the mortality rate. The incidence of total abdominal injury was 0.21
per cent of all the admissions to Mandalay General Hospital for a period of 1 year in which
blunt abdominal injury pertains 0.13 per cent and penetrating injury, 0.08 per cent. Male were
more often affected by both blunt and penetrating injuries in the frequency of 80 per cent
and 91 per cent respectively. Both types of injury were common in second and third decade
of life. Road traffic accidents by high speed vehicle and horse cart account approximately half
of the blunt abdominal injury. Stab wounds account three quarters of penetrating abdominal
injury. Spleen and liver were commonly implicated by penetrating and blunt injury, although
all other abdominal viscera were also involved in less frequency. The main criteria for
diagnosis depend on the clinical signs and symptoms of shock, internal haemorrhage and
peritoneal irritation which sometimes need repeated examinations. Plain X ray abdomen has a
limited value as a diagnostic aid. Positive finding provides a confirmation of intra-abdominal

injury but negative finding does not exclude it. Peritoneal lavage on patients with inconclusive clinical examinations, confirms or refutes the diagnosis of intraabdominal visceral injury with a high degree of accuracy. Positive lavage indicates 100 per cent accuracy but negative findings should correlate along with the clinical examinations. There were 17.89 per cent of cases treated by conservative treatment without complications and mortality. Unnecessary laparotomy rate was 12 per cent. The definitive surgical treatment depends upon the experience, skill and persistence of the surgeon for mature judgement in making the decision as to which procedure would be best to the management of a particular injury. The overall mortality rate was 15.79 per cent and this mortality was directly proportional to the extent of the injury reflected by multiple intraabdominal or extra-abdominal injuries, extremes of age and the nature of the injury.

196 Thein Hlaing; Thane Toe; Than Saw; Myat Lay Kyin; Myint Lwin and
 Thein Maung Myint

TITLE Impact of control of *Ascaris* infection on *Ascaris* transmission and child
 nutrition: Site selection and study design

SOURCE *Burma Res Congr.* 1987, Medical Sciences Division, Abstract of Papers, p2

ABSTRACT: Some promising areas in the townships of Rangoon Division were visited
 to select a proper site for the study. Finally an area consisting of 21 villages with
 about 1300 of 2 to 12 years old children was selected according to a set of criteria. A
 randomized controlled trial was designed to study the effect of 3-monthly chemotherapy
 on the nutritional status of 2-12 year children. In three villages of the same study area,
 3-monthly chemotherapy targeted to varied dynamic age cohorts was also
 implemented to observe the effect on *Ascaris* transmission in the communities.
 The study design was discussed especially with reference to the attainment of study
 objectives.

197 Thein Hlaing; Than Saw; Htay Htay Aye; Myint Lwin and Thein Maung Myint
TITLE Epidemiology and transmission dynamics of *Ascaris lumbricoides* in Okpo
 Village, rural Burma

SOURCE *Trans R Soc Trop Med Hyg.* 1984; 78(4): pp497-504

ABSTRACT: A horizontal study of the prevalence of *Ascaris* infection was carried out on
 the total population of Okpo Village near Rangoon, Burma, where a similar study had
 been conducted 13 years earlier. *Ascaris* eggs in faeces were counted after treatment
 with levamisole on a random sample of 50% of the infected population to give
 information to the numbers of epg of stool, the mean worm burden per host and the
 distribution of worms in the community. The information on prevalence is compared
 with that of the previous survey. Various population parameters of *Ascaris* were
 calculated to estimate the transmission dynamics of *A. lumbricoides*. In addition,
 chemotherapeutic regimes, assessed on the proportion of the human population to
 be treated and the time interval between treatments, are proposed to reduce
 transmission below a critical threshold. The findings are compared with those of
 other studies and the probable mode of occurrence and maintenance of *Ascaris*
 infection in Okpo Village are discussed.

198 Thein Hlaing; Than Saw and Myat Lay Kyin
TITLE Control of ascariasis through age-targeted chemotherapy: Impact of 6-
 monthly chemotherapeutic regimens

SOURCE *Bull WHO.* 1990; 68(6): pp747-53

ABSTRACT: A field trial of 6-monthly ascariasis chemotherapeutic regimens targeted at
 1-19-, 1-14-, and 5-19-year-olds was carried out in three communities in rural
 Myanmar to observe the effects on the prevalence, intensity, and morbidity indicators
 over 2 years. After periodic chemotherapy, the prevalence and intensity of *Ascaris*
 infection in age-

targeted and non-age-targeted groups fell in all the study areas, more markedly among the 1-19- and 1-14-year-olds. There was also a decrease in the frequency of vomiting of worms, passing of worms per anus, coughing, abdominal pain and treatment of bowel complaints, especially among the treated groups. In addition, there were reductions in the frequency of fever from nonbowel complaints and protrusion of the abdomen among children in the targeted group.

199 Thein Hlaing, Than Saw and Myat Lay Kyin
TITLE The impact of 6 monthly age targeted chemotherapeutic regimens on prevalence, intensity and morbidity of ascariasis in rural community
SOURCE *Medical Research Congr. Abstracts of Paper*, 1989: p25
ABSTRACT: Three 6 monthly chemotherapeutic regimens targeted to 1-19, 1-14, 5-19 years age groups were implemented in three villages in Lepadon Township, to observe the effect on prevalence, intensity and morbidity of ascariasis over a 2 years period. After two rounds of chemotherapeutic treatment, the prevalence and intensity of ascaris infection in age targeted and non-age targeted groups were markedly reduced in all the study area and the extent of reduction was according to the descending order of the above mentioned three regimens. In addition, marked reductions were observed in the rates of vomiting of worms, passing of worms per anus, cough, abdominal pain and treatment of bowel complaints especially in the targeted age groups. The findings are compared with those of other studies, and the public health significance of this study is discussed.

200 Thein Hlaing; Than Saw and Myint Lwin
TITLE Reinfection of people with *Ascaris lumbricoides* following single, 6-month and 12-month interval mass chemotherapy in Okpo Village, rural Burma
SOURCE *Trans R Soc Trop Med Hyg.* 1987; 81(1): pp140-6
ABSTRACT: A longitudinal study on reinfection with *Ascaris lumbricoides* was continued on a random sample of 50% of the infected population following a horizontal cross-sectional study in Okpo Village, near Rangoon. The study sample was again randomly divided into two subsamples, the six-month interval worming group and the 12-month interval worming group. Microscopic examination of stool for *Ascaris* eggs on the 7th day and 30th day, combined with counting eggs and worming with levamisole, were carried out at two successive six-month intervals on the first subsample. Stools were examined and eggs counted on the 7th day and then monthly up to 12 months, followed by worming, in the second subsample. The worms expelled in the first 72 hours after treatment were counted. The findings over a 12-month follow-up period after one treatment included: mean monthly incidence of 20%, higher and more rapid return to previous prevalence and intensity of infection in children or 'wormy' persons than in adults or 'non-wormy' persons. Six-monthly chemotherapy definitely reduced intensity of infection in the children and adults whereas 12-monthly treatment lowered intensity in adults only. Predisposition to acquisition of high or low intensity of infection was also observed. Other findings and the implications of this study for strategies for control of ascariasis are discussed.

201 Thet Tin
TITLE Human pepsinnoens
SOURCE MMedSc(Biochemistry), Institute of Medicine, Mandalay (IMM), 1987
ABSTRACT: Not Available

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- 202 Tin Aye
TITLE Antibiotic resistance pattern of enteric pathogens isolated from diarrhea children in Rangoon
SOURCE *Burma Res Congr.* 1985, Medical Sciences Division, Abstract of Papers, p7
ABSTRACT: Drug susceptibility patterns on 75 recently isolated ETEC and 27 shigella were studied by using sulphamide, tetracycline, chloramphenicol, ampicillin, gentamycin and septrin. 30-60% of these enteric pathogens were resistant to sulphamide, tetracycline and chloramphenicol, whereas, only 5% ETEC and Shigella were resistant to ampicillin. All enteric pathogens tested in this study were sensitive to gentamycin and septrin.
- 203 Tin Aye; Aung Myo Han and Khin Maung U
TITLE Epidemic shiga bacillary dysentery in Rangoon, Burma, 1984/85
SOURCE *Lancet.* 1985 Jun 22; 1(8443): p1442
ABSTRACT: Not Available
- 204 Tin Aye; Mar Mar Nyein; Kanemasa Y and Hayashi H
TITLE Etiological agents responsible for acute diarrhea in children in an urban community in Burma
SOURCE *Microbiol Immunol.* 1983; 27(6): pp551-6
ABSTRACT: Not Available
- 205 Tin Aye; Thein Kyu; K Wachsmuth; D. A. Sack; Khin Sann Aung and Shin Min Thwe
TITLE The application of microbial genetic in the study of pathogenesis in neonatal diarrhea in Central Women Hospital in Rangoon
SOURCE *Myanmar Med Res Congr.* 1989, Abstract of Papers, p10
ABSTRACT: A case/control study of pathogenesis of neonatal diarrhoea was carried out in Baby Special Care Unit in Central Women's Hospital in 1985-1986. About 70 age/sex matched pairs of each sick babies and mothers and control babies and mothers were studied. Stool samples were collected and studied for enteric pathogens by standard procedures. Throat swabs were collected for study of carriage of pathogenic *Escherichia coli*. Assays of diarrhoeagenic *Escherichia coli* were performed by DNA hybridization method using 32 labelled DNA probes to detect the presence of virulent factors in 2600 *Escherichia coli* isolates collected. The assay systems are: (i) enterotoxigenic *Esch. coli* for presence of heat stable and heat labile toxins, (ii) enteroadherent *Esch. coli* for localized and diffused adherent factors, (iii) enteroinvasive *Esch. Coli* for presence of invasive virulent and toxins producing factors. The causative agents identified as localized enteroadherent factor positive *Escherichia coli* serotype 0114: H2.
- 206 Tin Latt
TITLE A study of acute diarrhoeal diseases in M. G. H. with special regard to the causal bacterial organisms
SOURCE MMedSc(Internal Medicine), Institute of Medicine, Mandalay (IMM), 1983
ABSTRACT: Determined the bacterial organisms (especially EPEC) in stool of acute diarrhoeal cases admitted to Mandalay General Hospital from July 1981 to June 1982, and recorded the clinical features in acute diarrhoea.

- 207 Tin Maung Hla
TITLE A study of the composition of gastric juice, serum electrolytes and urinary electrolytes in adult patients with pyloric stenosis of duodenal ulcer
SOURCE MMedSc(Surgery), Institute of Medicine II, Rangoon, 1982
ABSTRACT: In this study, it has been confirmed that the loss of chloride and sodium in the metabolic disturbance of pyloric stenosis is important. The loss of gastric chloride, which may be regarded as a loss of hydrogen ion, results in an extracellular alkalosis, with characteristic changes in the anionic structure of the plasma, namely a fall in chloride and rise in bicarbonate concentration; and at the same time the rise in pH. The deficit of sodium, due to an increased renal loss of this ion, leads to a fall in extracellular fluid plasma volume, resulting impaired kidney function and finally to peripheral circulatory failure. In the initial stages, the urine is alkaline, the excess of bicarbonate being excreted in association mainly with sodium. As the resultant sodium deficit develops there is renal conservation of this ion, the sodium in the urine being replaced by potassium and hydrogen, with the result that in the later stages of the condition, there is the apparent paradox of an acid urine in the face of severe extracellular alkalosis. A potassium deficit, usually of moderate dimension, develop partly from the loss of potassium in the vomit and to a greater extent from the loss of urine, its main importance is that it exacerbate the extracellular alkalosis but it is not the main cause of this feature of disturbance. From this study the following reports were obtained. The most important electrolyte change in patient in this study is the loss of chloride and hydrogen in the gastric content. The fall in plasma sodium concentration is due to loss in the vomit and mainly in the urine. There is a close reciprocal relationship between the plasma chloride and bicarbonate concentration. Since none of the patients in this study showed neither paradoxical aciduria or circulatory failure, all the patients in the study seemed to seek medical advice in their early stage of the disease.
- 208 Tin Nu, *Mg*
TITLE Prospective study of pneumoperitoneum in cases of peptic ulcer perforation
SOURCE MMedSc(Surgery), Institute of Medicine, Mandalay(IMM), 1981
ABSTRACT: Described the incidence of radiological evidence of pneumoperitoneum in all cases of perforated peptic ulcers with due regard to time of perforation and admission, and the evaluation of the diagnostic significance of injection of air into the stomach in patients with perforated peptic ulcers, prior to Roentgenological examination.
- 209 Tin Nyunt
TITLE Intestinal parasitosis in an urban community
SOURCE DPath, Institute of Medicine I, Rangoon, 1982-84
ABSTRACT/SUMMARY: The prevalence of intestinal parasitoses of Lamadaw Township was studied. Two areas of Lamadaw Township were selected for study and designated as ward "A" and ward "B" Although these two wards are within the same township, the environmental conditions of the two wards are not the same. The residents of ward "A" have satisfactory living space, abundant available safe water supply and sanitary sewage disposal system. The residents of ward "B" do not have satisfactory living space; the available water supply is insufficient and the sewage disposal system is unsatisfactory. Moreover the living standard and educational and social status of the residents of the two selected wards are unequal, being higher for the residents of ward "A". The prevalence rate of intestinal parasitoses of ward "A" is found to be 65.5% and that of ward "B" is found to be 84%. The results so obtained were from direct microscopic examination of stool specimens. Most probably a higher prevalence rate will be obtained if the specimens are examined

by concentration methods. The intestinal parasites commonly encountered were *Ascaris lumbricoides* and *Trichuris trichiura*. Limitations due to the time factor are presented and a more extended survey for intestinal parasites is recommended.

210 Tin Nyunt and Malar Maung
TITLE Intestinal parasitoses
SOURCE *Burma Med J.* (1987); 33(1): pp3-6
ABSTRACT: The prevalence of intestinal parasitosis in the selected areas of Lanmadaw Township is presented. The general, residents of ward, a live in better environmental conditions and most have a higher financial income. The method use for examination of stool specimens was direct microscopic examination. 65.5% of the chosen population sample of ward A and 84% of the chosen population sample of ward B were found to be infected with one or more intestinal parasites. The intestinal parasites most commonly encountered in both wards were *Ascaris lumbricoides* and *Trichuris trichiura*.

211 Tin Oo; Kyi Kyi Myint; Aye Kyaw and Khin Maung U
TITLE Effect of cholera toxin on intestinal cAMP and phosphodiesterase levels in suckling rat
SOURCE *Burma Res Congr.* 1988, Medical Sciences Division, Abstract of Papers, pp11-12
ABSTRACT: An annual model was set up in which suckling rats were shown to respond a positive secretory reaction to intragastric injection of 2.5mg cholera toxin per rat at a time course of 3hr push injection. An assay system for cAMP-Phosphodiesterase Enzyme (PDE) was also developed to measure the PDE activity in intestinal homogenates using the colorimetric determination of released inorganic phosphate. The PDE activity was found to show a linear function with the enzyme concentration up to 0.45mg protein. cAMP level was found to be increased and the PDE activity was found to be reduced in intestinal homogenates during the cholera toxin induced hypersecretion whether they were expressed on the basis of mg protein or wet weight tissue or none. The results suggest that the rise in cAMP level, hypothetical intermediary in the mechanism of cholera toxin induced hypersecretion was accompanied by a reduction in the PDE activity which is the enzyme capable of degrading cAMP.

212 Tin Sabai Aung
TITLE The study of plasmid profiles of enteroadherent *Escherichia coli* in neonatal diarrhoea
SOURCE *DBacteriol*, Institute of Medicine I, Rangoon, 1987
ABSTRACT/SUMMARY: Nine EAF (Enterpathogenic *Escherichia coli* adherence factor) positive Enterpathogenic *Escherichia coli* (EPEC) from diarrhoeic neonates of special baby care unit, Central Women Hospital and 9 EAF negative *Escherichia coli* isolates from their respective control neonates are included in this plasmid profiles study. All of the 9 EAF positive Enterpathogenic *Escherichia coli* strains contain approximately 34-70 megadalton plasmids, whereas 7 of the 9 EAF negative Enterpathogenic *Escherichia coli* strains contain 34-70 meagalton plasmids and remaining 2 are plasmidless. These EAF positive *Escherichia coli* isolates were the only pathogenic *Escherichia coli* to be incriminated for acute neonatal diarrhoea in maternity hospital and show marked resistance to the commonly used antibiotics in hospital.

- 213 Tin Tin Nwe
TITLE Clinical profile of dysentery at Rangoon Children Hospital
SOURCE MMedSc(Paediatrics), Institute of Medicine I, Rangoon, 1987
Abstract/Summary not available: Abstract written by the book editors
Clinical profile of 117 cases of dysentery admitted to Rangoon Children's Hospital during one year period from 1st August to 31st July 1987 was described. Most of the children were malnourished although it is not significantly due to over-crowding. Most of them come from low social class with poor sanitary facilities and unhygienic water supply. Because 75% of cases come from urban and periurban area, they have some form of medical treatment before hospitalization. 52 percent of them have had antibiotics before admission. Age group most affected is 0-5 age group who are also the victims of malnutrition. Malnourished cases are associated with longer duration of dysentery before admission. Patients with frequent stool of more than 9 times per 24 hour have more than 60 pus cells per high power field. Common presentations were presence of fever in 71%, abdominal colic in 70% and tenesmus in 84% of cases. Proctalgia was present in 43 percent of cases. Most of the expired cases are due to consequences of associated malnutrition.
- 214 Tin Aye; Mar Mar Nyein; Kyi Kyi Khin; Mi Mi Khin; Khin Maung U; Myo Khin; Aung Myo Han; Thane Toe and Hayashi H.
TITLE Epidemiology and aetiology of acute childhood diarrhoea in Burma: A rural community survey
SOURCE *Trans R Soc Trop Med Hyg.* 1989 Nov-Dec; 83(6): pp827-30
ABSTRACT: Identical epidemiological and microbiological surveys were carried out in a rural community at Intakaw, Burma, in 2 months, one in the hot wet and the other in the cool dry season. The incidence of diarrhoea was highest in children under 3 years old and in the hot wet month when enterotoxigenic *Escherichia coli* was the predominant pathogen. Rotavirus was the commonest pathogen in the cool dry month but was absent in the hot wet month. *Shigellae*, *salmonellae* and campylobacter were isolated in both seasons, but were not significantly commoner in patients than in controls. *Vibrios* and *Yersinia enterocolitica* were sought but not found in any specimen.
- 215 Toe Lwin
TITLE Accuracy of ultrasound diagnosis
SOURCE MMedSc(Surgery), Institute of Medicine II, Rangoon, 1989
ABSTRACT: Thirty-one cases of clinically suspected intraabdominal abscesses were studied. Out of the 31 cases, 27 were diagnosed as intraabdominal abscesses by ultrasound. 26 were verified as intraabdominal abscesses. (Verification procedures included aspiration, drainage, laprotomy, postmortem examination and subsequent clinical course.) Among the 26 cases, there were 13 pelvic abscesses (50 percent), 10 liver abscesses (38.5 percent), 2 appendicular abscesses (7.4 percent) and 1 subdiaphragmatic abscess (4.1 percent). The highest incidence of intraabdominal abscess was found in the 20-30 year-age-group and 40-50 year-age-group. Intraabdominal abscesses were found to more common in females (57.7 percent) than males (42.3 percent). Accuracy of ultrasound diagnosis in pelvic abscess was 100 percent and that of clinical diagnosis was also only 83.3 percent. In both pelvic and liver abscesses, ultrasound could provide valuable information regarding to the nature of abscesses thus helping to improve the timing and approach of treatment. The false-positive result of ultrasonography for the appendicular abscess is one example of limitations of ultrasound. Proper and complete clinical findings should be provided to the radiologist whenever a suspected case of intraabdominal abscess is being investigated. This is particularly true with subdiaphragmatic abscess. Sensitivity of the ultrasound in this study was found to be 100 percent and specificity was 80 percent. The overall accuracy of ultrasound diagnosis in

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intrabdominal abscesses in this study was found to be 96.8 percent. In this study, ultrasound was found to provide information required to dictate the line of treatment.

216 Win Ko
TITLE An evaluation of peritoneal lavage as a diagnostic procedure in patients with closed abdominal trauma
SOURCE MMedSc(Surgery), Institute of Medicine II, Rangoon, 1984
ABSTRACT: Not Available

217 Win Yee
TITLE *Vibrio parahaemolyticus* among diarrhoea patients
SOURCE DBacteriol, Institute of Medicine I, Rangoon, 1983-84
ABSTRACT /SUMMARY: 170 rectal swabs from patients with acute diarrhoea admitted to the Infectious Diseases Hospital, Rangoon yields 10 isolates (6%) whose morphological and biochemical characters indicate that they belong to the halophilic vibrio group known as *Vibrio parahaemolyticus*. Serovar of the isolates consists of three O-serovar, O3, O4 and O8 and the K-serovar K5, K7, K10, K21, K29 and K 39. All the isolates are found to be Kanagawa positive and the clinical features comprise two syndromes (i) rice watery diarrhea (ii) dysenteric diarrhoea. Accompanying symptoms like dehydration, abdominal pain, nausea, vomiting and fever are also present. These Burmese isolates are resistant to Sulphonamide and Tetracycline and sensitive to Chloramphenicol, Streptomycin, Gentamycin, Septrin and Ampicillin. This study indicates that *Vibrio parahaemolyticus* also plays some role in Burma.

218 Ye Lwin
TITLE A study of surgical manifestations of intestinal amoebiasis
SOURCE MMedSc(Surgery), Institute of Medicine I, Rangoon, 1985
ABSTRACT: The incidence of intestinal amoebiasis which needs operative treatment, the presentation and clinical features of intestinal amoebiasis with surgical manifestations, the pre-operative condition of the cases of intestinal amoebiasis, the operative findings, the operative procedures and the mortality are described.

219 Ye Tun
TITLE Study of rubber band ligation method in the treatment of haemorrhoids in the M. G. H.
SOURCE MMedSc(Surgery), Institute of Medicine, Mandalay(IMM), 1984
ABSTRACT: Not available

220 Yi Yi Myint
TITLE A study of gastric acidity and peptic activity in the proven duodenal ulcer patients
SOURCE MMedSc(Surgery), Institute of Medicine, Mandalay(IMM), 1986
ABSTRACT: Not available

221 Yi Yi Myint
TITLE Effect of cholera toxin on amino acid uptake and small intestinal cell enzymes
SOURCE MMedSc(Physiology), Institute of Medicine I, Rangoon, 1989
ABSTRACT: Describes the changes in amino acid L-glycine uptake by rabbit's small intestine during a fluid accumulation response to cholera toxin, and where there was any relationship between the changes in amino acid uptake and the changes in maker enzyme

activities of different subcellular components of the enterocytes of rabbit's small intestine during a fluid accumulation response to cholera toxin were found out.

222 Yi Yi Myint; Khin Maung U; Aye Kyaw and Kyi Kyi May
TITLE Effect of cholera toxin on ¹⁴C-L-Glycine uptake and small intestinal cell enzymes
SOURCE *Burma Res Congr.* 1988, Medical Sciences Division, Abstract of Papers, p11
ABSTRACT: The uptake of ¹⁴C-L-glycine and the activities of intracellular marker enzymes of enterocytes were studied in ligated small intestinal segments of rabbits during cholera induced by intrainestinal injection of pure Cholera Toxin (CT). No significant differences were observed in the ¹⁴C-L-glycine uptake between the CT-injected small intestinal segments and the saline-injected control segments, indicating an intact active transport system for ¹⁴C-L-glycine absorption during experimental cholera in rabbits. Apart from a significant increase in the activity of a brush border marker enzyme (alkaline phosphatase), there were no significant differences in the activities of marker enzymes for lysosomes (acid phosphatase), microsomes (glucose-6-phosphatase), mitochondria (succinate dehydrogenase), and a cytosol enzyme (proteinase) in mucosal homogenates of CT-injected small intestinal segments compared to controls. This finding of an intact mitochondrial marker enzyme together with an intact ¹⁴C-L-glycine absorption system provides scientific basis for use of glycine in "Super ORS", improved oral rehydration solution in the treatment of acute diarrhoea, and also emphasizes the importance of maintaining feeding during acute diarrhoea in order to prevent development of malnutrition.

223 Zin Thet Khine
TITLE Sodium homeostasis in children in acute diarrhoea
SOURCE MMedSc(Physiology), Institute of Medicine I, Rangoon, 1989
ABSTRACT: 46 male children admitted to the paediatric ward of N. O. G. H. for acute diarrhoea of less than 48 hours duration were included in this study. The sodium balance in children with and without malnutrition, and the state of the homeostatic mechanisms controlling the sodium balance in children with and without malnutrition in acute diarrhoea were assessed.

224 Zin Thet Khine; Khin Maung U and Kyi Kyi May
TITLE Sodium homeostasis in children in acute diarrhea
SOURCE *Burma Res Congr.* 1988, Medical Sciences Division, Abstract of Papers, p10
ABSTRACT: The changes in sodium homeostasis during oral rehydration therapy in acute diarrhoea were studied in 46 male children of 12 to 59 months old. Twenty-seven were malnourished and 19 were without malnutrition. Malnourished children lost more sodium in stool and urine than those without malnutrition. The gut net sodium balance and the total body sodium balance during acute diarrhoea in children with malnutrition showed that they retained less sodium than children without malnutrition. These findings suggest reduced conservation of sodium by the gastrointestinal tract and the kidneys. The present study demonstrated that malnourished children could not conserve sodium and, therefore, ran a high risk of developing sodium depleted state during acute diarrhoea.

Studies in 1991-2000. Summing up

Most of the studies during this period were carry-over, continuation, refinement and completion of studies initiated in the previous decades and some or many of the publications were reviews, amalgamations or different presentations of previous reports at different forums. But a few were significant new ventures which brought gastro-intestinal studies to the threshold of exciting and entirely new fields of study.

The contamination of soil, water and vegetables with intestinal parasites was studied.

Screening for anti-helminthic and anti-gastric activity was done on some reputed traditional medicinal plants - including taw-kyet-thun and pineapple. Their pharmacognosy, pharmacology and efficacy as antihelminthics were investigated. Nutritional status in children with intestinal helminthic infection as related to school enrolment and to rice carbohydrate absorption was also investigated. The interactions between intestinal helminthic infection, nutritional status and rice carbohydrate absorption were further studied from various aspects.

Studies of acute diarrhoea and its determinants were extended to include persistent diarrhoea in children. Risk factors and prognostic factors in acute diarrhoea and persistent diarrhoea including socio-economic characteristics, personal hygiene, and health related behaviour continued to be investigated. Neonatal diarrhoea received more attention and was studied in detail at a maternity hospital.

Rice carbohydrate absorption and various aspects of its measurement including hydrogen and methane production in the gut and other interrelated factors such as small bowel bacteria overgrowth were further investigated.

The treatment of acute diarrhoea continued to be studied. Alternatives to the standard ORS solution such as various rice-based, rice-derived oral rehydration solutions were tested. Efficacy of traditional medical formulations on diarrhoea was tested.

The socio-economic aspect of acute diarrhoea was studied: - cost analysis was done of patient hospitalized for acute diarrhoea and compared to hospitalization for acute respiratory infection; role of general practitioners in diarrhoea management was described; characteristics and health related behaviour of diarrhoea patients seeking hospital admission through different services was compared; maternal knowledge, attitude and practice in relation to severity of diarrhoea was documented.

Studies of bacterial etiological agents in diarrhoea and dysentery were continued, including *Cryptosporida*, *Shigella*, and *E coli* infection (EPEC, ETEC, Enter-adherent strain, sero-types) in different settings, different age groups and seasons; also the antibiotic susceptibility pattern of bacterial pathogens including *Vibrio cholerae*, *Salmonella typhi* and *E. coli* was studied. Bacterial contamination of food and drinking water was investigated. Rotavirus infection in neonates was studied. *Giardia lamblia* was included among the intestinal parasites studied.

Gut function studies were continued to include:- small intestinal transit time, oro-caecal transit time in normals, pre-school children, malnourished children; intestinal permeability in normals and after deworming; bowel habit in children including stool frequency, weight and consistency.

Biochemical studies were done on the effect of cholera toxin on intestinal lysosomes and of diarrhoea on aldosterone levels.

Infection with *Helicobacter pylori* as the etiology agent responsible for peptic ulcer has emerged as a refreshing new concept in recent years and was the subject of many studies in Myanmar during this period leading to better understanding, diagnosis and treatment of gastric and duodenal ulcers and non-specific gastritis. Thus gastric acid secretory response was compared between normals and *H. pylori* infected duodenal ulcer patients; various methods of detecting *H. pylori* infection were set up including histopathological examination of biopsy specimen, urease broth test kit and serological test to detect antibodies. *H. pylori* infection in patients with gastritis and gastric ulcer and the prevalence of *H. pylori* antibodies in the community were reported; different treatment regimes to eliminate *H. pylori* were tested.

Other aspects of peptic ulcer and other medical conditions also continued to be studied –such as use of anti-secretory agents like omeprazole;

Various G.I. surgical conditions continued to be studied – recently acquired technology was used to diagnose and treat surgical conditions – such as use of ultrasonography to diagnose appendicitis and to stage oesophageal cancer; endoscopic sclerotherapy to treat oesophageal varices; other studies such as clinico-pathological study and operative staging of cancer stomach; clinical study of colostomy, study of G. I. motility in emergency appendicectomy, etc.

Polymerase Chain Reaction (PCR) and Southern Blot analysis of microbial gene was studied for the first time in Myanmar opening up a new field of microbial genetics and DNA analysis.

Prof. Aung Than Batu

Abstracts of Papers 1991-2000

- 225 Aung Kyaw Myint
TITLE Clinical study of acute gastric erosions
SOURCE MMedSc(Surgery), Institute of Medicine II, Yangon, 1996
CONCLUSION: In this study, drug induced gastric erosion is the top position requiring emergency admission to hospital with upper gastrointestinal bleeding. Various etiological concepts regarding this disease were forwarded in this century; but ingestion of gastric irritants is widely accepted predisposing factor. In this series, drug such as aspirin, indomethacin, voltaren, phenylbutazone, steroids and various indigenous Myanmar Medicine and alcohol were found to be the main gastric irritant causing acute gastric erosions. As such, public should be informed of dangers of taking these drugs and alcohol unscrupulously. Legal control of analgesics and steroid should be promulgated and action should be taken against those who sell these drugs without prescription. In order to reduce morbidity and mortality of these cases, the prime aim is to identify the source of haemorrhage as early as possible. It is universally accepted that early endoscopy is the most efficient and effective method of diagnosis in upper gastrointestinal haemorrhage. So early endoscopy serves more advantages for treatment in considering which patients must continue the conservative treatment and which patients required emergency surgery. Endoscopy is very helpful not only in diagnosis but also in predicting likelihood of recurrent bleeding. If endoscopy shows massive erosive bleeding where conservative measure fail emergency surgery is available as early as possible to control bleeding. Endoscopy also has therapeutic role in bleeding gastric erosion. Of facilities are available, via the gastroscope, mono and bipolar electrocauterization, argon laser photocoagulation, and neodymium YAG laser photocoagulation can be done for control of upper gastrointestinal bleeding. It prevents prolonged and potentially dangerous conservative treatment especially in high risk patients and also obviates disasters from early and inopportune surgery. If endoscopic facilities are not available, the decision whether to operate or not was decided according to history (rate and amount of blood loss) physical examination (vital sign). So, in early phase of hospital treatment, it is difficult to identify those patients who may eventually require operation. By the time that decision has been made, the continued hypoxia which inevitable despite multiple transfusion will have brought about damage to myocardium and other vital tissues and this, especially in elderly patients with previous cardio vascular diseases will load the patient against recovery. The morbidity and mortality can be lowered significantly by getting early diagnosis and proper prompt management. Emergency gastrointestinal unit can be established, and all patients admitted to hospital with these complaints were admitted to the unit and management according to protocol and active policy of early endoscopy, intensive care management, surgery and regular audit will certainly reduce mortality. As more than 130 patients with haematemesis and melena are admitted yearly to North Okkalapa General Hospital, Surgical Unit, it is felt that by establishing new emergency gastrointestinal unit here, the morbidity and mortality of haematemesis and melena can be dramatically reduced. In stress gastritis, bleeding rates may be reduced in patients receiving prophylactic therapy. Since the treatment of bleeding stress ulceration is unsatisfactory, prophylaxis is given to all high risk patients by H2 receptor blocker, incidence of stress ulceration is become much less. But it is not clear that the mortality rate is improved with prophylactic therapy, as most patients die from their underlying diseases. In conclusion, further large scale should be studied to determine accurately which factors are essential for decision of emergency surgery and which procedure is more benefit for bleeding gastric erosions.

- 226 Aung Kyaw Zaw; Than Nu Shwe; Mya Mya Yee; Yi Yi Myint and
 Soe Thein
TITLE Cost analysis of hospitalized children with two common diseases (acute
 respiratory tract infections and diarrhea) in Yangon Children's Hospital
SOURCE *Myanmar Health Sci Res J.* 2000; 12(1-3): pp14-20
ABSTRACT: The cost of hospitalization of (477) patients admitted to YCH for two
 common diseases (viz ARI 282 cases and diarrhoea 195 cases) were determined using
 semi-structured questionnaire and face to face interview. The main aim of the study was to
 reveal the direct and indirect costs incurred by patients/families during the children's illness
 and the cost contributed by the government so that the finding might help in future policy
 implication. The mean cost of hospitalization of each child was 1705 Kyats and medium cost
 was 1350 Kyats. The government contributed about 36% of the cost of hospitalization. The
 cost borne by family amounted to 64% of the total cost of which only 13% were for
 medicine and investigations. The cost of hospitalization amounted to about 24.7% of their
 monthly income. It was noted that majority of cases could be effectively treated at the
 hospitals in their local area. Despite having some extent of financial difficulty, more than 80%
 of families were willing to pay for hospital cost although 18% did not want to contribute
 anything at all. This study highlight that (a) public awareness regarding the availability of
 effective health care the two diseases at their respective local hospitals should be promoted.
 (This will reduce the unnecessary financial burden imposed on the families due to travel and
 food expenses if they attend YCH) (b) an interim appropriate local health care financial
 support mechanism should be considered for poor patients attending tertiary hospitals before
 nationwide comprehensive health care financial support system is established.
- 227 Aung Moe
TITLE Purification of Entero-toxicogenic Escherichia Coli heat labile toxin
SOURCE MSc(Zoology), Yangon University, 1998
ABSTRACT: Heat labile toxin from *Escherichia coli* (W165/82) was isolated from a subject
 suffering from diarrhoea and purified. The subunits of toxin were shown by Sodium
 Dodecyl Sulfate polyacrylamide gel electrophoresis (SDS-PAGE) by gradient method. The
 antigen was found to be specific to anti-cholera and similar immunological reactions were
 obtained by the gel diffusion. However, the purified heat labile toxin of *E. coli* and cholera
 toxin obtained from *Vibrio cholera* were not identical. The molecular weight of subunit of heat
 labile toxin is between 11-12(KDa) and subunit B is 28 (KDa).The subunit A of *E. coli* heat
 labile toxin is slightly higher in molecular weight than cholera toxin (CT) subunit A by 3
 (KDa), suggestions for future work are outlined.
- 228 Aung Mra
TITLE Clinical study of incisional hernia
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1992
ABSTRACT: The predisposing factors of incisional hernia (1) age, (2) sex, (3) occupation,
 (4) obesity, (5) nutritional status of the patient, (6) status of surgeon, (7) indication for
 operation, (8) timing of operation (emergency or elective), (9) type of incision, (10) post
 operative implications such as wound complications and chest complications were studied.
- 229 Aung Myo Han
TITLE Rainfall and increased transmission of childhood diarrhea in Yangon
SOURCE *Myanmar Health Sci Res J.* 1991; 3(2): pp108-109
Abstract/ Summary not available: Abstract written by book editors.
 The relationship between the rainfall and diarrhea data was studied. The incidence of
 diarrhea in the Infectious Diseases Hospital and in the two community studies shows highly

significant seasonality during the rainy season. The peak diarrhea admissions or incidence occurred on the same months and peak rainfall and the former was found to be significantly correlated to the latter ($r=0.4-0.8$; $p<0.001$). Fortnightly data revealed that heavy rainfall preceded the peak diarrhea incidence. No such relationship holds for the environmental temperature or relative humidity. The findings in this article underlines once again on the importance of effective human excreta disposal in the prevention of diarrhoeal pathogen transmission.

230 Aung Myo Han; Khin Nwe Oo; Tin Aye and Thein Hlaing
TITLE Bacteriologic studies of food and water consumed by children in Myanmar: 2. Lack of association between diarrhoea and contamination of food and water

SOURCE *J Diarrhoeal Dis Res.* 1991 Jun; 9(2): pp91-3

ABSTRACT: The association between contamination of morning samples of food and water of 208 children aged 6-29 months and the incidence of diarrhoea was investigated for 3 months in Yangon, Myanmar. Contamination of the samples was determined by isolation of faecal coliforms (FC) by standard methods. The children were divided into three groups, high, medium and low, according to the proportion of food and water samples found to be contaminated. The incidence of diarrhoea was recorded by weekly recall. Of the 779 food samples, 504 (65%), and of the 860 drinking water samples, 187 (22%) were positive for FC. The association between food and water contamination and the incidence of diarrhoea was assessed by comparing the cumulative incidences in the high and medium groups with that in the low group which served as reference. Diarrhoea risk ratios (RR) for children in the medium and high contamination groups (food, RR=1.04 in medium and 0.78 in high *vs* 1 in low; water, RR=0.73 and 0.73 *vs* 1) were not significantly different from those who were in the low-contamination group even after controlling for the confounding variables.

231 Aung Myat Thein, *Saw*
TITLE Acute diarrhoea in children
SOURCE *Myanmar J Curr Med Practice.* 1999 Oct.; 4(1): pp18-25
ABSTRACT: Not available

232 Aye Aye Than
TITLE Antibigram of some serotypes of entero-pathogenic *Escherichia Coli* (EPEC) isolated from diarrhoea and gastroenteritis

SOURCE MSc(Zoology) 1996 Yangon University

ABSTRACT: This study is to find out the role of Enteropathogenic *Escherichia coli* (EPEC) among adult with gastroenteritis. The relationship between the type of stool and EPEC was also carried out. Furthermore, test on the antibiotic sensitive pattern of these EPEC serotypes were also conducted. A total of 619 cases of adults with gastroenteritis admitted to Yangon General Hospital and No. 2 Military Hospital, Worker's Hospital and Infectious Diseases Hospital were included in this study. It was investigated that 32.9 percent were suffering from Enteropathogenic *Escherichia coli* (EPEC). The most prominent EPEC encountered were O1, O26, O55, O86, O114, O125, O126, O128 and O142 were tested with 21 available antibiotic. In the study of relationship between the type of stool and EPEC, it was noted that 24.5 percent of stool contained blood and mucous, 56.86 had semisolid type of stool and 17.15 percent had watery diarrhoea. It was investigated that the resistant pattern of EPEC were 89 percent to ampicillin, 59 percent to chloramphenicol, 55 percent to penicillin, 47 percent to tetracycline and 27 percent to septrinrespectively. The most sensitive antibiotics found were amikacin, furazolidone, gentamycin, neomycin, nalidixic acid, sisomycin and tobramycin.

- 233 Aye DT; Sack DA; Wachsmuth IK; Kyi DT and Thwe SM
TITLE Neonatal diarrhea at a maternity hospital in Rangoon
SOURCE *Am J Public Health.* 1991 Apr; 81(4): pp480-1
 Comment in: *Am J Public Health.* 1991 Apr; 81(4): pp415-7
ABSTRACT: Between 1981 and 1986, 1,540 infants born at the Central Women's Hospital
 in Rangoon were transferred to the Sick Baby Unit because of diarrhea (15.4 per
 1,000 live births). Rates among cesarean infants were five times as high as those of infants
 born vaginally (51.0 and 10.3 per 1000 live births, respectively). One hundred eighty-four of
 the infants with diarrhea died (case fatality rate=12 percent). We conclude that neonatal
 diarrhea is endemic in this large maternity hospital in Burma, and that control efforts should
 be targeted especially to cesarean and low birthweight infants.
- 234 Aye Kyaw; Swe Swe Lynn; Khin Maung U and Tin Oo
TITLE Effect of cholera toxin on intestinal lysosomal enzymes in the suckling rat
SOURCE *Myanmar Health Sci Res J.* 1992; 4(1): pp35-9
ABSTRACT: Lysosomal function, namely lysosomal enzyme activities and lysosomal
 membrane integrities were investigated in suckling rats which received cholera toxin
 intragastrically and in sham operated controls using two typical lysosomal enzymes, acid
 phosphatases and cathepsin D. It was found that the maximal specific activities of both the
 enzymes were decreased in the infected group when compared with the control suggesting a
 reduction in the ability of intracellular digestion by lysosome. On the other hand, the value of
 the ratio between maximal and basal activity (an expression of the degree of retention of
 enzyme by lysosome or lysosomal membrane stability) of acid phosphatase was significantly
 increased suggesting lesser extent of leakage of the enzyme into cytoplasm when compared
 with the control. However there was no difference in the lysosomal membrane stability when
 measured in terms of cathepsin D. This discrepancy between the two enzymes was explained
 by their latencies.
- 235 Aye Kyaw; Thet Htar Myint; Thaw Phon and Khin Maung U
TITLE Changes in serum aldosterone levels in response to malnutrition and
 diarrhea
SOURCE *Myanmar Health Sci Res J.* 1992; 4(3): pp163-8
ABSTRACT: The study included 31 children (age 1 to 5 years) who were hospitalized for
 malnutrition, malnutrition with diarrhea and acute diarrhea of less than 48hrs
 duration. The controls, consisted of 6 children from the same locality as patients, were
 apparently healthy and in the same age group. Serum chlorides tend to increase in the patients
 and the increase was more pronounced in the group suffering from both malnutrition and
 diarrhea. On the other hand, serum potassium tends to decrease and the decreases were
 significant in the groups having malnutrition. Serum aldosterone levels were raised in all the
 three groups of patients namely malnutrition, diarrhea and malnutrition associated diarrhea
 when compared with the control. The decrease was still observed even after exclusion of
 subjects whose ages lied within the first 1½ year of life for whom the serum aldosterone
 levels were found to have a sharp rise.
- 236 Aye Mon
TITLE Evaluation of preoperative nutritional assessment in elective
 gastroduodenal surgery
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1992-4
SUMMARY: Eighty-five patients electively operated for gastroduodenal disease in
 general surgical wards of Yangon General Hospital were studied during a period of
 six months. Most of the patients were 31-60 years age group with 75.29% male and 24.7%

female. 6.47% with chronic peptic ulcer of stomach and duodenum and 42.53% with carcinoma of the stomach. Types of operative procedures were gastric resection (28.24%), vagotomy and drainage (55.29%) and drainage procedure alone (16.47%). Complication rate was 33.53%, with the operative mortality rate of 5.88%. Most of the morbidity are due to wound sepsis and its sequales. Clinical malnutrition is 49.4% in total patients and 90% in complicated group. History of weight loss more than 20% was significant to predict postoperative complication. Among various anthropometric measurements, MAC, TSF and HGS (right) have predicted nutritional marker. Patients with serum albumin less than 3.4g/dl have 5.8 times increased risk of complications than those with more than 3.4g/dl. A total lymphocyte count with cut-out value 1400/dl was also high in sensitivity (75%), but low in specificity (57%). This study confirmed that malnutrition was common in surgical patients with operation. Gastroduodenal disease, and preoperative nutritional status well correlated with the operative outcome, and then the most relevant and significant nutritional parameters had reliable predicted capacity for the risk of postoperative complications.

- 237 Aye Maung Han
TITLE Intestinal immunity and changes during diarrhoea
SOURCE *Myanmar J Curr Med Practice*. 2000 Oct.; 5(1): pp13-19
ABSTRACT: No Abstract
- 238 Aye T; Moe K; Nyein MM and Swe T
TITLE Cryptosporidiosis in Myanmar infants with acute diarrhea
SOURCE *South East Asian J Trop Med Public Health*. 1994 Dec; 25(4): pp654-6
ABSTRACT: Cryptosporidiosis has been found in Myanmar for the first time in infants presenting with a mild transient form of acute diarrhea. A total of 203 fecal samples collected from those infants were examined by Kinyoun's acid fast modified method. 3.4% of infants between 2 and 11 months of age were found passing cryptosporidium oocysts. All cases presented with features consistent with findings reported by other authors from developing countries. Cryptosporidium was the sole microorganism isolated. Hence, cryptosporidiosis may be responsible for acute diarrhea in these Myanmar infants.
- 239 Aye Than; Mya Bwin; Saw Han; Tin Myint; Marlar Lwin and Po Aung, *Saw*
TITLE Screening of some medicinal plants reputed for antihelminthic activity on *in vitro* test models
SOURCE *Myanmar Health Sci Res J*. 1993; 5(2); pp79-84
ABSTRACT: Thirty three medicinal plants, traditionally claimed to be useful for purging human intestinal roundworms were evaluated experimentally for their antihelminthic action against *Ascaris Suum in vitro*. On the basis of producing muscle paralysis of the worm within predetermined experimental periods, seventeen of the plants tested were found to possess antihelminthic activity. *Urginea indica* and *Ananas Sativa* were most effective and a fungus, *Hydnum repanda* also showed good activity.
- 240 Aye Than; Thida Swe; Chit Maung and Mya Bwin
TITLE Pharmacognostical and pharmacological study on Taw-Kyat-Thun reputed for anthelminthic action
SOURCE *Myanmar Health Sci Res J*. 1991; 3(3); pp124-127
ABSTRACT: Taw-Kyat-Thun, an indigenous Myanmar medicinal plant whose bulb is being claimed by the country folks to be effective in purging intestinal roundworms, was identified to be *Urginea indica* kunth. Phytochemically, it consists of steroidal and flavonoid glycosides. On the *in vitro* test model of *Ascaris suum* the 50% alcoholic bulb extract indicated its anthelminthic efficacy by significantly immobilizing the parasite within 4-6

hours, with respect to both the frequency and the magnitude of mortality of worm; however, an initial stimulatory action on the parasite was observed, a situation which is undesirable. Acute toxicity of the bulb extract tested on mice showed LD₅₀ to be 52(41-66)mg/kg when administered intra-peritoneally, and 680 (555-833)mg/kg, orally.

241 Aye Than; Tin Myint; Mu Mu Sein Myint and Mya Bwin
TITLE Experimental screening for anti peptic ulcer activity of some Myanmar traditional medicine formulation

SOURCE *Myanmar Health Sci Res J.* 1995; 7(2): pp80-85

ABSTRACT: Four Myanmar Traditional Medicine Formulations (TMFs), namely TMF-02, TMF-03A, TMF-03B and TMF-08, locally claimed to be useful in treating dyspepsia, were screened for anti peptic ulcer activity employing two experimental *in vivo* test models in rats. Only TMF-02, TMF-038 and TMF-08 markedly reduced ulcer severity to the ulcer indices of 17.4, 15.6 and 14.5 respectively. These effects were comparable to cimetidine (13.8), while that of the negative control was 35. Measuring gastric juice acidity in rats employing pyloric ligation confirmed that these three drugs did reduce gastric acidity, particularly diminishing the free acid one third and shifting gastric pH from 6 to 7.

242 Aye Than; Yi Mon Myint; S. J. Tha and Chit Maung
TITLE Anthelmintic property of Myanmar pineapple (Nanat) on experimental models

SOURCE *Myanmar Health Sci Res J.* 1996: 8(1); pp14-19

ABSTRACT: The anthelmintic property of Myanmar pineapple (*Ananas sativa* L.) juice was investigated by using both *in vitro* and *in vivo* test models on *Ascaris suum*. In the *in vitro* test model, the pineapple juice, at a concentration of 40-80mg/ml was found to produce immobilization of the worms leading to death within two day period. In the *in vivo* test model using pig, the pineapple fruit, doses as low as 10g ingested food were found to purge *Ascaris suum* within 16 hours of ingestion. The lethal effect was assumed to be due to cuticle digestive effect of bromelain, which is present in an average of 0.29mg percent in pineapple.

243 Bolin TD; Genge JR; Duncombe VM; Soe Aung and Myo Khin
TITLE Patterns of methane production in a Burmese (Myanmar) population

SOURCE *J Gastroenterol Hepatol.* 1996 Jan; 11(1): pp71-6

ABSTRACT: While up to 50% of Western populations produce methane, this is less than that of rural black Africans and there is no information on methane production in populations from Asian developing countries. Females consistently produce methane more commonly than males, and methane production in children under the age of five years, except in Nigeria, is unusual. Breath methane was sampled in 1426 subjects from Myanmar ranging in age from 1 month to 88 years, with a mean age of 26.2 years. Half (49.8%) of the Myanmar population produced methane, this figure comprising 53% of females and 46% of males sampled. Methane production increases with age and reaches adult levels after 10 years of age. A high prevalence of methane production was found in children under 3 years of age (15.8%). Methane production was absent in 13 solely breast-fed children and increased as other food was introduced into the diet. There was an association of methane production within families and with smoking. The prevalence of methane production increased in male and female smokers, with 75% of smokers producing methane. Methane production was not associated with occupation, education, income, water source, latrine type, previous diarrhoea, antibiotic usage or socio-economic status.

- 244 Bolin TD; Myo Khin; Soe Aung; Genge JR and Duncombe VM.
TITLE Correlation of hydrogen and methane production to rice carbohydrate malabsorption in Burmese (Myanmar) children
SOURCE *J Pediatr Gastroenterol Nutr.* 1996 Feb; 22(2): pp144-7
ABSTRACT: Rice carbohydrate malabsorption is common in Burmese village children and adults and may contribute to diminished growth. Its diagnosis depends on a rice breath hydrogen test, which has limitations. Almost 20% of Burmese children under age 5 produce methane, compared with less than 7% of children in Africa and Hong Kong. If an increased carbohydrate load in the colon due to rice malabsorption provides increased substrate for methanogenic bacteria in the left colon, higher fasting breath methane concentrations might be a simpler method of diagnosing rice malabsorption. We tested breath hydrogen and methane over a 4-h period and did anthropometric measurements in 142 subjects, 79 children, and 63 adults. Seventy percent of children were rice-malabsorbers. Methane production occurred in 20% of children under 5 years of age and increased to 60% of adults. There is an association of rice malabsorption with reduced length. There was not correlation between rice malabsorption and breath methane, and the concentration of breath methane does not, therefore, indicate rice absorption status and cannot replace rice breath hydrogen tests.
- 245 Chit Soe; Khin Maung Than; Khin Nwe Oo and Yi Yi Linn
TITLE Knowledge, attitudes and practice on oral rehydration solution among gastroenteritis patients in Patheingyi General Hospital
SOURCE *Myanmar Health Res Congr.* 1998, Programme and Abstracts, p38
ABSTRACT: Data were collected to assess the current level of knowledge, attitude and actual practice regarding Oral Rehydration Solution (ORS) among gastroenteritis patients in Patheingyi General Hospital, Patheingyi in 1998. 16 questions about ORS was asked to 97 consecutive Gastroenteritis (GE) patients admitted between May to August. The answers were analyzed and compared with the outcome of the patients. About ninety percent of patients know ORS is good for GE, (44.33%) of patients know ORS prepared more than 24hr ago can not be use. (32.99%) of patients know ORS can be prepared locally with available materials. (37.84%) of patients know different brands of ORS manufactured from different companies other than MPI. (89.69%) of patients will suggest other family members to take ORS if they suffer GE. (43.30%) of patients had used ORS at home before coming to hospital. (28.87%) of patients used ORS from government staff supplied (24.74%) of patients used ORS from private seller supplied.
- 246 Chit Soe; Khin Maung Than; Nilar Lwin and Swe Zin Winn
TITLE Clinical features and prognostic indicators of gastroenteritis patients
SOURCE *Myanmar Health Res Congr.* 1998, Programme and Abstracts, p73
ABSTRACT: To study the clinical features and to evaluate the prognostic influence of clinical features and base line KAP status over outcomes of gastroenteritis was carried out at the Patheingyi General Hospital, Patheingyi from May 1998 to August 1998. Ninety seven consecutive patients were included in the study. There were 97 patients including 45 males and 52 females. Average age was 39.8 and body weight 100.5lb. The mean hospital stay was 3.01 days. Regarding the source, 9.28% of patients gave history of taking food from Ah-Hlu within 3 days. 18.56% of patients taking food from road-side food seller within 3 days. 2.06% of patients have oliguria, 7.22% have no urine output for more than 6hrs and no death patient. Average requirement of total IV fluids during admission 8.29±4.1L. 46.39% of patients have latrine and among which only 22.68% have fly-proof latrine. Prognostic indicator analysis showed no significant association between age, weight, maximum number of vomiting, maximum number of loose motion per day, potassium chloride replacement,

history of smoking, history of taking H₂ blocker and poor outcomes viz. (1) during of hospitalization for more than 5 days (2) renal involvement (3) large amount of IV fluid requirement (4) no palpable pulse pressure. There was positive association between male sex and large amount of IV fluid requirement ($p<0.05$). Regarding the source, the ice-cream is associated with duration of hospitalization. Among starting complaint, vomiting is associated with duration of hospitalization ($p<0.01$) and renal involvement ($p<0.01$), diarrhea is associated with IV fluid requirement ($p<0.01$) and shock ($p<0.01$). Group (c) dehydration is associated with renal involvement ($p<0.02$), IV fluid requirement ($p<0.05$) and shock ($p<0.01$). Antibiotic usage was not associated with duration of hospitalization nor renal involvement but furazolidone usage was associated with lesser fluid requirement.

247 Cho Cho Win

TITLE A clinical study of oral and oropharyngeal malignant ulcerations

SOURCE MMedSc(Otolaryngology), Institute of Medicine I, Yangon, 1996

Abstract/Summary not available: Abstract written by the book editors

This study was carried out on 62 patients with oral malignant ulcerations and 35 patients with oropharyngeal malignant ulcerations. Both oral and oropharyngeal malignant ulcerations were found to be more common in older people with lower socioeconomic status. Males were more commonly affected than females. The commonest site was alveolus and the possible aetiological factor was found to be chewing of betel quid with tobacco smoking.

248 Enda Kyaw

TITLE Clinical study of acute cholecystitis

SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1993-5

SUMMARY: This study comprises a total of 52 patients with acute cholecystitis admitted and treated during a one year period at NYGH and YGH surgical units. There is a higher incidence in female population and the majority of the patients are in the middle age group. Main presenting features include biliary colic associated with nausea and vomiting and positive Murphy's sign. The diagnosis is confirmed by abdominal ultrasound with the diagnostic accuracy of 84.8%. Surgical intervention is mandatory and early cholecystectomy within 7 days of admission after initial conservative treatment is the treatment of choice with no mortality. The mortality rate is 10.8% in the conservative treatment group, higher mortality being due to underlying liver pathology in one case and septicaemia in another case. The post operative morbidity includes minor wound sepsis occurring in 9.6%. This study shows that early cholecystectomy carries lower morbidity and mortality, and seems to be beneficial to the patients from the point of view of hospital stay and earlier return to work. Thus, it is recommended that early cholecystectomy should be considered whenever possible, in patients presenting with acute cholecystitis.

249 Genge J; Bolin TD; Duncombe VM and Myo Khin

TITLE Pattern of breath methane production in an Asian (Burmese) population

SOURCE *Gastroenterol.* 1992 April; 102(4): A p1925

ABSTRACT: While there is an influence of sex and ethnic origin on Methane Production (MP), other factors causing methane formation remain unclear. A study has been carried out in Myanmar; to relate MP to social and environmental factors. Breath methane samples were obtained from 1426 subjects from a periurban township in Burma. Subjects excreting methane in a concentration of more than 2ppm in these samples were deemed methane producers.

Bibliography of Research Findings on Gastrointestinal Diseases in Myanmar

Results* = p< 0.05			Methane producer
Sex*	Male	(n=562)	45.5%
	Female	(n=863)	52.5%
Children	<3yrs	(n=73)	13.7%
Smoking*	Yes	(n= 266)	74.7%
	No	(n=1200)	45%
Recent Diarrhoea	Yes	(n=18)	44%
	No	(n=1402)	49.6%
Recent Antibiotic	Yes	(n=24)	62.5%
	No	(n=927)	49.6%
Diet	Vegetarian	(104)	58.7%
	Mixed	(n=927)	58.5%
Children <12*	Breast Fed	(104)	0%
	Mixed Diet	(n=927)	28.7%

49.8% of the Burmese population are MP, there being a female bias and an increase in MP with age, 13.7% of paediatric population under the age of three years are MP, this being markedly greater than the pattern of MP in western children.

Conclusion: The prevalence of MP is similar to that in western communities through evident that much earlier age. There is an association with smoking, increasing age, family and diet, though not with diarrhoea.

250 Genge J; Bolin TD; Duncombe VM and Myo Khin

TITLE Breath methane and carbohydrate malabsorption

SOURCE *Gastroenterol.* 1992 April; 102(4): A p1925

ABSTRACT: The production of methane in the colon is dependent on both the appropriate methane producing bacteria together with the presence of carbohydrate substrate. There is an increased prevalence of Rice Malabsorption (RM) documented in the Burmese population. It was postulated that this may result in an increased substrate load in the left colon, overwhelming the metabolic capacity of hydrogen producing bacteria with a subsequent increase in the generation of methane gas.

Methods: The study has been undertaken in 76 children 58 adults from the periurban township of North Okkalapa in Yangon, Myanmar to relate rice malabsorption to Methane Production (MP). Rice breath hydrogen tests and breath methane samples were analysed on the same day. Subjects with methane concentration of more than 2ppm were deemed to be methane producers.

Results: 74% of children were RM and 36% of these were methane producers. This may relate to an increasing incidence of MP with age. 66% of adults were RM and 63% of these produced methane. Although this a greater prevalence of MP than in a normal Burmese population (49.8%). It is not significantly different to that in rice absorbers. There was a correlation between RM with decreased height and weight for age in children.

Conclusion: There is no significant increase in MP in subjects with rice malabsorption and therefore no support for the concept that malabsorption may produce an increased carbohydrate load in the left colon providing substrate for methanogenic bacteria.

251 Htar Htar Aung

TITLE Clinical study of carcinoma stomach

SOURCE MMedSc(Surgery), Institute of Medicine II, Yangon, 1995

CONCLUSION: Although these result could not be generalized because of the small sample size, the present study high light the problem of advanced stages of gastric cancer and confirm that the stage of the disease is one of the determinants of the outcome of treatment for gastric cancer in our country. All the patients in the present study came with the advanced

stages which was found to be due to ignorance of the patients, undue delay in referral by the general practitioners, lack of enthusiasm and facility on early detection of cases, in addition to the nature of the disease by itself. Because of the advanced stages in these patients, curative resection are not possible with the resultant high morbidity and mortality rate within the follow-up period of 6 months which indicate poor prognosis. These are the reason for poorer outcome of gastric cancer patients in our country than others, eg. Japan. The poor prognosis of these patients emphasizes the need to improve the survival rate with considerable efforts in future. Public health measure influencing the nutrition of population and changing some of traditional eating patterns of daily diet, eg. Salty diet, could contribute to control of gastric cancer. As there were no early cases of gastric cancer, attempts on early case detection are required for the future. The mass survey system, used in Japan, is costly and it is not feasible in Myanmar at the moment. At present the best way to solve the problem is to give informations about the nature of the disease to the general practitioners and health education to the public. The dyspeptic patients, or those suffering from epigastric pain not relieved by antacids should be referred to consultation clinics without delay. And clinician should have in this mind the importance of the disease. Careful examination and assessment should be performed in suspicious cases using contrast x-ray, Scopy and biopsy. All patients of above 50 years old with new dyspepsia should also be screened. By this way, the number of early referral cases of gastric cancer will increase in future. Because of the limited period of the present study, long term follow up was not possible on gastric cancer patients. I hope that effort of early detection of gastric cancer patients with the resultant increase in curative respectability rate, better staging incooperation with the pathologists and better understanding of the nature of gastric cancer will undoubtedly improve the prognosis of gastric cancer patients in our country in future.

252 Hnin Hnin Lwin
TITLE Acute infantile diarrhoea and its relation to type of feeding
SOURCE MMedSc(Paediatrics), Institute of Medicine I, Yangon, 1998
ABSTRACT: To determine the association of acute infantile diarrhoea and type of feeding, a total of 98 diarrhoeic patients, 0-4 months attending the Yangon Children's Hospital were studied for one year starting from May 1997. History taking including type of feeding and physical examination were done. Stool samples were collected. Routine examinations, virological, and bacteriological investigations were done in the laboratories of Virology and Bacteriology Research Divisions of the Department of Medical Research. The association of diarrhoea with type of feeding revealed that 34.08% of diarrhoeic infants had mixed feeding (with breast feeding), 14.29% had mixed feeding (with bottle feeding), 16.33% received breast feeding as well as bottle feeding, 7.14% had exclusive bottle feeding and 8.16% received exclusive breast feeding. Pathogenic *E. coli* was isolated in 35.71% and rotavirus was isolated in 50% of cases. Males made up 60.2% of the study subjects and 39.8% were females. The majority of diarrhoeal cases (32.65%) belonged to the >3-4 month age group. Of the 3 fatal cases, one was from exclusive bottle feeding group and the other two were from mixed feeding (with bottle feeding) group. Maternal education, behaviour scale, sanitation scale of family and paternal occupation were important contributing factors in the occurrence of acute infantile diarrhoea.

253 Htet Htet Nyunt and Than Than Yee
TITLE Experience of upper gastro-intestinal endoscopy in Defence Services General Hospital
SOURCE 6th Myanmar Military Med Conf. 1996, Abstract of Papers, p6
ABSTRACT: Upper GI endoscopy was done using fiber-optic endoscopes in DSGH since June 1995. 341 cases of gastroscopies were done starting from June 1995 to December 1995. The indications for gastroscopy ranges from abdominal pain, dyspepsia, vomiting,

flatulence and weight loss, haematemesis and melaena. The findings were 63% has gastritis, 10% has duodenal ulcer, 5% has gastric ulcer, 3% has stomal ulcers, 1% has oesophageal varices, 5% has gastric erosion, 0.5% has gastric polyp, 0.5% reflux oesohagitis. *Helicobacter pylori* positivity rate was >75% using urease test.

254 Huilan S; Zhen LG; Mathan MM; Mathrew MM; Olarte J; Espejo R; Khin Maung U; Ghafoor MA; Khan MA; Sami Z; *et al*

TITLE Etiology of acute diarrhoea among children in developing countries: A multicentre study in five countries

SOURCE *Bull WHO*. 1991; 69(5): pp549-55

ABSTRACT: A 2-year etiological survey of acute diarrhoea in children aged 0-35 months who were attending treatment facilities was carried out using a standardized protocol in five hospitals in China, India, Mexico, Myanmar, and Pakistan. A total of 3640 cases of diarrhoea and 3279 age- and sex-matched controls were studied; about 60% of the patients were aged less than 1 year and 60% were male. An enteric pathogen was detected in 68% of the cases and in 30% of the controls. In all the study centres, the pathogens most strongly associated with disease were rotavirus (16% of cases, 2% of controls), *Shigella* spp. (11% of cases, 1% of controls) and enterotoxigenic *Escherichia coli* (16% of cases, 5% of controls). Rotavirus was commonest among 6-11-month-olds, accounting for 20% of all cases in this age group; 71% of all rotavirus episodes occurred during the first year of life. *Shigella* spp. were commonest among those aged 12-23 months and 24-35 months, accounting for 22% and 27% of the cases, respectively. The proportion of cases that yielded no pathogen was inversely related to age, being highest (41%) among infants below 6 months of age and lowest (19%) among those aged 24-35 months. These results suggest that microbe-specific intervention strategies for the control of childhood diarrhoeal diseases in developing countries should focus on rotavirus, *Shigella* spp. and enterotoxigenic *E. coli*.

255 J. Kaye; TD Bolin; VM Duncombe; Myo Khin and Khin Myat Tun

TITLE Small bowel bacterial overgrowth, malnutrition and mucosal permeability in an Asian (Burmese) population

SOURCE *Gastroenterol*. 1992 April; 102(4) part 2: A, p930

ABSTRACT: The diagnosis of Small Bowel Bacterial Overgrowth (SBBO), as an important cause of diarrhoea and malabsorption in the developing country, utilizing anaerobic culture is often technically difficult. Aerobic culture is easier and there is a need for an indirect measure of SBBO, if culture facilities are unavailable. The relationship of SBBO to malnutrition and mucosal permeability has not been established. The aim of this study was to show a correlation between diagnostic techniques for SBBO, malnutrition and mucosal permeability in children presenting with diarrhoea.

Methods: The study was undertaken in Burma on 33 children aged 18 months to 12 years. The following investigations were performed: culture of jejunal fluid obtained using a string test; glucose Breath Hydrogen Test (BHT), small intestinal mucosal permeability ratio using lactulose 10g and rhamnose 2g measured in a 5 hour urine sample by HPLC.

Results: There were 14 children with aerobic bacterial counts greater than 10⁴ colony forming unit per ml (CFU-primarily enterobacter). 64% of these had moderate or severe malnutrition based on NCHS WHO criteria for weight and height compared with 21% in those without SBBO. The mean mucosal permeability in the SBBO positive group was 0.35 compared to 0.25 in the negative group (a normal range for a western population is 0.07). The glucose BHT had a positive predictive value of 62.5%, a specificity of 86.4% and a sensitivity of only 45.4%.

Conclusion: There is a significant association between SBBO and malnutrition together with an increase in intestinal permeability. Compared to culture of duodenal aspirate as the "gold standard" for SBBO, the glucose BHT is an imperfect measurement of bacterial contamination.

- 256 Khin Htwe; Aung Myat Thein, *Saw*; Zaw Lin; Khin Ma Gyi; Thwe Thwe; Khine Marlar Myint; Nyo Nyo Tun and Khin Aye Gyi
TITLE Study of pathogenic agents associated with diarrhea in children under 5 years admitted to DSOGCH in 1995 to 1996
SOURCE *Myanmar Health Res Congr.* 1994, Programme and Abstracts, p15
ABSTRACT: Sixty children of 0-5 years admitted to Defense Services Obstetrics, Gynaecology and Children's Hospital during the period of July 1995 to June 1996 who had not taken antibiotics prior to admission were studied. Thirty three patients (55%) were found to be associated with enteropathogenic bacteria. Pathogenic bacteria were mostly isolated from >6 months to 1 year group (68.8%) followed by 2 year to 5 year group (66.6%), 0-6m group (57.1%) and 1 yr-2yr group (33.3%). *Shigella* sp. was the commonest organism (48.5%) isolated followed by ETEC (42.4%), *Salmonella* sp. (24.2%) and EPEC (3%). *Shigella* affected all age groups but mostly the >6m to 1yr group. ETEC was isolated from all age groups but mostly from age group of 2yr-5yr. *Salmonella* sp. was associated with acute diarrhea in all seasons. ETEC was associated with rainy and cold seasons only. *Salmonella* sp. was mainly associated with dry and hot seasons.
- 257 Khin Khin Aye
TITLE A study of gastric ulcer by double contrast barium meal
SOURCE MMedSc(Radiology), Institute of Medicine I, Yangon, 1996
ABSTRACT: Double contrast barium meal examination of stomach was performed on 44 patients with the clinical history or epigastric pain. Endoscopy were also performed to all patients. Biopsy findings of gastric ulcers and, operative findings of all cases were recorded. It was a prospective study of one year period from 1st April 1995 to 30th March 1996. There were 42 patients with radiologically diagnosed gastric ulcers, 26 cases had benign gastric ulcers and 16 cases had malignant gastric ulcers. Endoscopy showed ulcers in 44 cases. The radiological error rate was 4.54% and the total diagnostic accuracy rate was 95.45%. Each of benign or malignant gastric ulcer had diagnostic accuracy rate of 97.72%. The highest incidence of gastric ulcer was found at 40-60 years age group. Gastric ulcers were more commonly found at the distal 1/3 of the stomach.
- 258 Khin Khin Lay
TITLE Laboratory profile of acute and persistent diarrhoea in children at Paediatric Unit, MGH
SOURCE MMedSc(Paediatric), Institute of Medicine, Mandalay(IMM), 1997
ABSTRACT: In Myanmar diarrhoeal disease is included in 15 top leading causes of mortality and morbidity. Therefore a laboratory profile of acute and persistent 90 diarrhoea in children admitted to Paediatric Unit including Special Care Baby Unit of Mandalay General Hospital had been done during June 1996 to October 1996 with the following objectives. (1) To determine the causal organism (bacteria, protozoa) in children with acute and persistent diarrhoea. (2) To determine the proportion of persistent diarrhoea to acute diarrhoea. (3) To describe clinical profile of children with acute and persistent diarrhoea. (4) To discuss the management of children with acute and persistent diarrhoea and make recommendation. 200 children had been included in this study and their mother or care givers had been interviewed and examination of the children had been done according to diarrhea care record form 200 stool samples had been taken for microscopic examination and culture. Out of a total 184 stool culture, the commonest bacterial pathogen isolated was enteropathogenic *E. coli* 41.35 (poly 1, 4). The second commonest bacterial pathogen isolated was *vibrio diarrhoea* (10.87%), mostly poly O1 types, *Salmonella* was found in 0.55% of children. In children with persistent diarrhoea, out of total 16 stool culture done, 50% revealed positive culture. Out of positive culture, 31.25% were Enteropathogenic *E coli* (poly 1, 2, 3, 4) and

18.75% were *vibrio diarrhoea* (O1 type). Out of total routine stool examination, 43.75% had revealed pathogen, out of which, 18.75% was *Entamoeba histolytica*, 12.5% was *Ascaris lumbricoid* and 6.25% was *Giardia lamblia* and the remaining 6.25% was *Trichuris trichura*. Out of positive stool REME, 42.86% revealed single infection or infestation and 57.14% had combined infection with bacterial pathogen. The proportion of persistent diarrhoea to acute diarrhoea was 1:11.5. Out of this total 200 cases with diarrhoeal diseases, 16 cases (8%) had persistent diarrhoea. Fever occurred in all children with persistent diarrhoea and 97.83% in children with acute diarrhoea, vomiting occurred in children with both types of diarrhoea. Abdominal pain, tenemus and muscle cramp were more marked in persistent diarrhoea 31.25%, 37.05% and 6.25% respectively. 15.76% of acute diarrhoea and 37.5% of persistent diarrhoea had severe dehydration. In children with persistent diarrhoea, 63.5% had malnutrition and 12.5% was associated with grade III malnutrition. In children with acute diarrhoea, 29.9% had malnutrition and 2.73% had grade III malnutrition. So malnutrition was more common in persistent diarrhoeal children ($p < 0.01$). $X^2 = 7.1349$ ($p < 0.01$). Out of total 184 patients with acute diarrhoea, 50.54% revealed ORT and 49.46% received ORS. Out of total 16 patients with persistent diarrhoea, 25% received ORS and 75% received ORT. Antimicrobial therapy was given in all persistent diarrhoeal patients (100%). But only 85.87% of children with acute diarrhoea had received antimicrobial therapy. In conclusion, the causal organism in children with acute and persistent diarrhoea had been isolated in about 50% of cases. The commonest bacterial pathogen was Enteropathogenic *E coli* serotype 1, 2, 3, 4 and the second commonest pathogen was *Vibrio diarrhoe*. *Salmonella* was found in 1.03% of total patients. The common protozoa and worm infestation were *Entamoeba histolytica*, *Giardia lamblia*, *Ascaris lumbricoid* and *tricuris trichura*. In children with persistent diarrhoea, more combination of infection or infestation was detected. So more antimicrobial therapy was found to be given in all persistent diarrhoeal patients. Poor nutrition, grade III malnutrition occurred in persistent diarrhoeal patients. Therefore, the existing ORT corner in the Diarrhoeal Training Unit at MGH should be strengthened in order to reduce hospital admission rate of acute and persistent diarrhoea. Also the usage of antibiotics in acute diarrhoeal cases should be minimized to actual indicated cases. Finally, the management approach of persistent diarrhoea should be updated to keep abreast with the recent approach recommended at the Clinical Research center ICDDR, B.

259 Khin Maung U; Tin Aye; Ku Tin Myint; Tin Oo; Myo Khin; Thackway SA; Connor SJ; Bolin TD and Duncombe VM.

TITLE *In-vitro* hydrogen production by enteric bacteria cultured from children with small bowel bacterial overgrowth

SOURCE *J Pediatr Gastroenterol Nutr.* 1992 Feb; 14(2): pp192-7

ABSTRACT: Lactulose breath hydrogen test and Enterotest string test were carried out simultaneously on 19 children 3-5 years old. Bacteria isolated from the jejunal fluid in upper small intestines of these children were incubated with lactulose at neutral pH. Anaerobes were present in all but one child, and in 15 children they were present in numbers greater than 5 log 10 organisms per ml. Most of these bacteria did not produce hydrogen *in vitro*. Hydrogen production (greater than 100ppm) was observed with the following bacteria: *Bacteroides* (5%), *clostridia* (8%), *anaerobic corynebacteria* (5%), *Escherichia coli* (67%), *Lactobacillus* (8%), *Staphylococcus* (8%), and *Streptococcus* (9%). The following bacteria did not produce hydrogen *in vitro*: *Actinobacter*, *Actinomyces*, *anaerobic cocci*, *Bifidobacterium*, *Fusobacterium*, *micrococci*, *Neisseria*, *Sarcina*, and *Veillonella*. This study suggests that in the diagnosis of small bowel bacterial overgrowth using lactulose breath hydrogen test, it is important to consider that patients with a flat breath hydrogen response to a carbohydrate challenge during the first 60min may be infected with enteric bacteria which are not capable of producing H₂.

- 260 Khin Maung U; Myo Khin; Nyunt Nyunt Wai; Mu Mu Khin; Mya Thi and
Thein Thein Myint
TITLE Comparison of glucose/electrolyte and maltodextrin/glycine/glycyl-
glycine/electrolyte oral rehydration solutions in acute diarrhea in children
SOURCE *J Trop Pediatr.* 1991 Nov; 13(4): pp397-401
ABSTRACT: Male children (N=101) 6.35 months of age presenting with acute watery
diarrhea for less than 48 h at home before hospitalization were admitted into a
randomized, double blind clinical trial. Fifty one children were treated with standard Oral
Rehydration Solution (ORS) (World Health Organization [WHO] formulation containing
citrate) and 50 were treated with an improved ORS formulation (containing, in addition to
the standard formula, 20g maltodextrin instead of glucose, and 4g glycine and 4g glycyl-
glycine). None were given antibiotics. No *in vivo* infusions were given. Rotavirus was detected by
enzyme linked immunosorbent assay in stools of 43 children. Clinical characteristics of
children in the two treatment groups were comparable. Improved ORS did not produce
significant reduction in the volume of diarrhea stools. Children given improved ORS had
greater weight gain than that observed in children treated with standard ORS, but the
differences were not statistically significant except at the end of the first 24h. Among children
with rotavirus diarrhea, no significant differences were observed between the 23 children who
received improved ORS and the 20 who received standard ORS.
- 261 Khin Maung U; Myo Khin; Nyunt Nyunt Wai; Nyi Win Hmam;
Thein Thein Myint and TC Butler
TITLE Risk factors for persistent diarrhoea and malnutrition in Burmese children
III: Behaviour related to personal hygiene and defaecation
SOURCE *J Trop Pediatr.* 1994 Feb; 40(1): pp47-8
ABSTRACT: Not Available
- 262 Khin Maung U; Myo Khin; Nyunt Nyunt Wai; Nyi Win Hmam;
Thein Thein Myint and TC Butler
TITLE Risk factors for persistent diarrhoea and malnutrition in Burmese children.
II: Behaviour related to feeding and hand washing
SOURCE *J Trop Pediatr.* 1994 Feb; 40(1): pp44-6
ABSTRACT: No Abstract
- 263 Khin Maung U; Myo Khin; Nyunt Nyunt Wai; Nyi Win Hmam;
Thein Thein Myint and TC Butler
TITLE Risk factors for persistent diarrhoea and malnutrition in Myanmar
children. I: Socio-anthropological risk factors
SOURCE *J Trop Pediatr.* 1994 Feb; 40(1): pp41-3
ABSTRACT: No Abstract
- 264 Khin Maung U; Myo Khin; Nyunt Nyunt Wai; Nyi Win Hmam;
Thein Thein Myint and TC Butler
TITLE Risk factors for the development of persistent diarrhoea and malnutrition
in Burmese children
SOURCE *Int J Epidemiol.* 1992 Oct; 21(5): pp1021-9
ABSTRACT: To identify socioeconomic and behavioural risk factors for development of
persistent diarrhoea and malnutrition in children, a case-control study was carried out
in Burma. Cases were 67 children 1-59 months old hospitalized for diarrhoea lasting >14 days
and complicated by severe malnutrition; for each case, a healthy control child was selected
who was age- and sex-matched from the same neighbourhood. Homes of cases and controls

were visited for interviews and for direct observation of household child-care practices. Risk factors were catalogued and calculations made for relative risk and etiologic fractions. Risk factors that were associated with persistent diarrhoea and malnutrition included low family income, low education of mothers, unhygienic latrines, flies in the house and on the child, dirty appearance of child and mother, mother not using soap and water when washing child's hands, defaecation of child on floor, breastfeeding on demand, child eating food from floor, not feeding recommended weaning foods, and lack of knowledge by mother about causes of diarrhoea and about foods that prevent malnutrition. These results indicated that persistent diarrhoea and malnutrition in Burma is caused by a complex of several interrelated socioeconomic factors, unsanitary behaviour pertaining to personal hygiene, the practice of demand breastfeeding and lack of certain weaning foods, and low education of mothers who showed less knowledge about causes of diarrhoea and prevention of malnutrition.

- 265 Khin Maung U; Myo Khin; Nyunt Nyunt Wai and Tin U
 TITLE Comparison of glucose/electrolyte and maltodextrin/glycine/glycyl-glycine/electrolyte oral rehydration solutions in cholera and watery diarrhea in adults
 SOURCE *Ann Trop Med Parasitol.* 1991 Dec; 85(6): pp645-50
 ABSTRACT: One hundred and eight male adults (mean age 33±1.7 years) presenting with watery diarrhea of less than 48 hours duration at home prior to hospitalization and with clinically evident (grade II, severe) dehydration were admitted into a randomized double blind clinical trial; 54 were treated with standard Oral Rehydration Solution (ORS) WHO formulation containing vitrate and 54 with an improved ORS formulation which contained, in addition to the standard formula, maltodextrin 20g (instead of glucose). Glycine 4g and glycyl-glycine 4g patients with clinical cholera were given tetracycline 500mg q. i. d. *Vibrio cholerae* was detected in 85 patients. The clinical characteristics of patients in the two groups were comparable. The clinical characteristics of patients in the two groups were comparable. The improved ORS did not reduce the volume of diarrhoeic stools in cholera: indeed, patients with cholera who were treated with improved ORS had larger diarrhea stool volumes. However, those cholera patients given improved ORS showed significantly greater weight gains during the first six hour period, at the end of the second day, and at discharge. On the other hand, non-cholera patients treated with improved ORS had significantly smaller diarrhoeic stool volumes during the six to 24 hour significantly smaller diarrhoeic stool volumes during the six to 24 hour period (i.e. during the commencement of maintenance rehydration therapy).
- 266 Khin Maung U; Nyunt Nyunt Wai; Myo Khin; Myo Min Aung and Thaug, U
 TITLE Beyond rehydration therapy: non dehydration deaths from diarrhoea in children with malnutrition
 SOURCE *J Trop Pediatr.* 1992 Oct; 38(5): pp265-7
 ABSTRACT: No Abstract
- 267 Khin Moe Moe Myint
 TITLE Occurrence of entero-toxigenic *escherichia coli* heat labile toxin in gastroenteritis cases
 SOURCE MSc(Zoology), Yangon University, 1998
 ABSTRACT: Gastroenteritis cases from four hospitals: Yangon General Hospital (YGH), Workers Hospital (WH), No. 2 Military Hospital (2MH) and Infectious Diseases Hospital (IDH) were studied utilizing effective sampling methods from June to December, 1997. A total of 261 cases were examined and 171 males (65.52 percent) and 90 females

(34.48 percent) were recorded with gastroenteritis. The occurrence of gastroenteritis in relation to age groups were two cases (0.77 percent) each in 1-10 and 71-80 years; 82 cases (31.42 percent) in 11-20 years; 57 cases (21.84 percent) in 21-30 years; (14.92 percent) in 41-50 years; 43 cases (16.48 percent) in 51-60 years and 11 cases (4.21 percent) in 61-70 years. Enterotoxigenic *E. coli* (ETEC) heat labile (LT) toxin were isolated from 27 cases. Of these 27 cases, nine cases (12.16 percent) from YGH; five cases (18.52 percent) from WH, three cases (10.35 percent) from 2MH, and 10 cases (7.63 percent) from IDH respectively were recorded. Occurrence of ETEC(LT) among different age groups varies from 1-10 and 71-80 years; nine cases (33.33 percent) from 11-20 years; six cases (22.22 percent) from 21-30 years, two cases (7.4 percent) from 31-40 years; four cases each (14.81 percent) from age groups of 41-50 and 51-60 years respectively. Suggestions for future work are outlined.

268 Khin Mu Mu Kyaw
 TITLE A study of serogroups and clinical spectrum of enteropathogenic *Escherichia coli* isolated from diarrhoeal cases attending the Yangon Children's Hospital
 SOURCE MMedSc(Paediatrics), Institute of Medicine I, Yangon, 1996
Abstract/Summary: A total of 200 children under five years attending the Yangon Children's Hospital during 1995 were studied. History taking and physical examination were done. Stool samples were collected and routine examinations were carried out. Rectal swabs were also taken and investigated for culture and sensitivity at the Bacteriology Research Division of the Department of Medical Research. Of the study subjects, 62 percent were male and 38 percent were female. Bacterial pathogens were isolated in 41 per cent of children with diarrhoea. 22.5% were due to enteropathogenic *E. coli*, Enterotoxigenic *E. coli*, *Salmonella*, *Shigella* and *Klebsiella* were also isolated in a few percentages. 62 per cent of EPEC diarrhoea occurred in less than one year of age. Sixteen serogroups of enteropathogenic *E. coli* were identified. Out of these, O125 and O126 were commonly isolated groups. Changing pattern of EPEC serogroups was also seen. Majority of serogroups were multi-drug resistant. It was found that the EPEC serogroups were resistant to Ampicillin (96%), Chloramphenicol (80%), Sulphamethoxazole and Trimethoprim (64%), Tetracycline (90%), Cephalexin (100%). Most of the serogroups were sensitive to Gentamicin, Amikacin, Polymyxin, Tobramycin, Sisomicin, Norfloxacin, Cephalothin and Furazolidine. Resistance of EPEC serogroups to antibiotic therapy is an increasing problem in Myanmar in recent years. Varieties of clinical presentation were observed among EPEC diarrhoea cases. Associated fever was seen in 60 percent. Enteropathogenic *E. coli* diarrhoea occurs with or without dehydration. Different degrees of dehydration were also noted. Shock and septecemia were noted in a few patients. It was also found that environmental and personal hygiene are important for prevention of diarrhoea including EPEC gastroenteritis.

269 Khin Mu Mu Kyaw and Mar Mar Nyein
 TITLE A study of serogroups and clinical spectrum of enteropathogenic *Escherichia coli* isolated from diarrhoeal cases attending the Yangon Children's Hospital
 SOURCE 8th Med Spec Conf. 20th-23rd Nov 1997: Scientific Programme and Abstracts: p30
ABSTRACT: Hospital based descriptive study on commonly encountered enteropathogenic *Escherichia coli* (EPEC) serogroups and their clinical features in paediatric patients was carried out in YCH in 1995. The antibiotic sensitivity pattern of EPEC was also studied. A total of 200 children under five years of age with acute diarrhoea were included in the study. Bacterial pathogens were isolated in 41% of the cases. Out of these 22.5% were EPEC, 62% of EPEC diarrhoea occurred in less than one year of age. Sixteen serogroups were identified

O125 and O126 were common serotypes. EPEC were resistant to ampicillin (96%), tetracycline (90%), chloramphenicol (80%), streptomycin (82%), septrin (64%); they are sensitive tonalidixic acid (100%), urazolidine (92%), sisomycin (90%), gentamicin (88%), norfloxacin (70%) and cephalothin (66%). Associated fever was seen in 60%. EPEC diarrhoea occurs with or without dehydration. Shock was 10% and convulsion was 16%. EPEC infection plays a major role in pathogenesis of diarrhea (22.5%), especially in infants.

270 Khin Mu Mu Kyaw; Mar Mar Nyein; Than Nu Shwe; Saw Thandar; Hnin Aye Sun and Thein Thein Myint

TITLE Bacterial pathogen isolation and drug susceptibility pattern among children with diarrhoea in 1995

SOURCE *Myanmar Health Res Congr.* 1997, Programme and Abstracts, p16

ABSTRACT: Stool specimens from 200 cases of children with age of less than five years old of both sexes with history of acute diarrhoea from Yangon Children's Hospital were proceeded for isolation of bacterial pathogens. It was found that Enterotoxigenic *Escherichia coli* ETEC (15.5%), Enteropathogenic *Escherichia coli* EPEC (19.0%), *Shigella* (3.5%), *Salmonellae* (2.5%), ETEC+EPEC (6.5%), ETEC+*Shigella* (1.0%) were isolated. *Vibrio* was not isolated. The serogroups of *Escherichia coli* classified were O1 K51; O8K25; K+; O25K+; O27K+; O28K+; O78K+; O86 K61, K62; O114 K90; O119 K69; O125 K70; O126 K71; O127 K63; O128 K67; O136 K78; O148 K+; O157 K+ and O159 K+. Antibiotic susceptibility pattern of EPEC revealed that they were resistant to ampicillin (96%), tetracycline (90%), streptomycin (82%), chloramphenicol (80%) and septrin (61%); but were sensitive to nalidixic acid (100%), furazolidone (92%), sisomycin (90%), gentamicin (88%), norfloxacin (70%) and cephalothin (66%). For *Shigellae* they were resistant to ampicillin (100%), cephalothin, chloramphenicol, furazolidone, streptomycin (66.7%) but were 100% sensitive to sisomycin, minocycline, norfloxacin; gentamycin, tobramycin (89%); neomycin (67%) and septrin (56%). For *Salmonellae* they were resistant to ampicillin (100%), chloramphenicol and tetracycline (80%), but were 100% sensitive to cephalothin, furazolidone, gentamycin, nalidixic acid, norfloxacin, septrin and sisomycin. For Enterotoxigenic *Escherichia coli* (ETEC) they were resistant to ampicillin (100%), tetracycline (79%), chloramphenicol (53%) and septrin (53%). They were 100% sensitive to cephalothin, furazolidone, gentamycin, nalidixic acid, neomycin, norfloxacin, septrin and sisomycin. It was also noted that personal hygiene still plays an important role in causing acute diarrhoea.

271 Khin Myat Nwe

TITLE Isolation of *Helicobacter pylori* in patients with active chronic gastritis and peptic ulcer attending Yangon General Hospital

SOURCE MMedSc(Microbiology), Institute of Medicine I, Yangon, 1998

ABSTRACT: During the past decade strong evidence has been accumulating that *Helicobacter pylori* is a major aetiologic agent of chronic antral gastritis (Type B gastritis) and peptic ulcer disease. As peptic ulcer disease is very common in Myanmar, it is of great importance to elucidate whether *H. pylori* played any significant role in Myanmar patients with gastritis. In Myanmar, previous diagnostic criteria for *H. pylori* infection was based only on microtiter biopsy urease test, histological examination of biopsy material and urea breath test. Successful attempts on the isolation of *H. pylori* have not been reported continuously prior to this investigation. A total of fifty biopsy specimens which were obtained from forty-three male and seven female patients were included in this study. The age of these patients ranged from 18 years to 77 years. Patients of age range forty-five and above forty-five years were observed to be of highest prevalence consisting of 44 percent. These patients had undergone endoscopic examination and the respective biopsies were taken. The invasive tests used in this study were rapid urease tests, histology and culture. Among the fifty patients studied,

thirty five patients (70%) were urease positive, twenty patients (40%) were positive on histological examination and ten patients (20%) were positive on bacteriological examination. Bacteriological examination included isolation and identification of *H. pylori* using pylori Medium, Dent's selective medium and G. C. agar base with Dent's selective supplements as selective media, chocolate Agar with brain heart infusion agar base and Mueller Hinton Sheep Blood Agar as nonselective media. Out of these media used, *H. pylori* isolated from Pylori Medium was 33.3% and from Dent's Slective Medium was 4% only. The sensitivity and specificity of urease test, histology and culture were 90% and 35% for urease test, 50% and 62.5% for histology and 25.7% and 93.3% for culture respectively. Correlations between these tests were studied also. In this study group *H. pylori* infection was found in 78% of the study population with chronic antral gastritis. This finding correlated well with the findings reported in other studies.

272 Khin Myat Nwe; Mala Maung and Khin Swe Oo
 TTITLE Isolation of *Helicobacter pylori* in patients with active chronic gastritis and peptic ulcer attending Yangon General Hospital
 SOURCE *Myanmar Mil Med J.* March 2000; pp16-19
 ABSTRACT: A hospital based study was conducted at Yangon General Hospital (Gastro-intestinal Unit) from March to November 1997 to elucidate the importance of *H. pylori* in patients with active chronic gastritis and peptic ulcer. This study was carried out for the isolation and identification of *H. pylori* and to determine the correlation between rapid urease test, histology and culture in the diagnosis of *H. pylori* infection. The study included fifty biopsy specimens obtained from forty three male and seven female patients. The age range was from eighteen to seventy seven years. These patients were submitted to endoscopic examination and the respective biopsies were taken. Among the fifty patients studied, thirty five patients (70%) were positive for *H. pylori* for urease test, twenty patients (40%) were positive on histological examination and ten patients (20%) were positive on bacteriological examination. The sensitivity and specificity of urease test, histology and culture in the diagnosis of *H. pylori* infection were 90% and 35% for urease test, 50% and 62.5% for histology and 25.7% and 93.3% for culture respectively. Correlation between these tests was studied also. The endoscopic study from 50 patients revealed, 18 patients with only gastritis (36%); 19 with gastritis and duodenal ulcer (38%); 6 with gastritis and gastric ulcer (12% and with gastritis, duodenal and gastric ulcer (14%). *H. pylori* tended to yield higher culture results with gastritis alone or gastritis with duodenal ulcer.

273 Khin Myat Nwe; San Myint; Aung San Oo and Soe Naing
 TTITLE Outbreak of *vibrio cholerae* O139, a new strain in Myanmar
 SOURCE *Myanmar Med J.* 1996 Sept; 41(3): pp38-45
 ABSTRACT: Not available

274 Khin Myat Tun; Han Win; Mar Mar Nyein; Kyaw Moe; Than Saw; Tin Mg Mg; Than Than Lwin; Sandar Kyi and S. Kyaw Hla
 TTITLE Prognostic indicators for the development of persistent diarrhea in childhood diarrhea
 SOURCE *Myanmar Health Res Congr.* 1994, Programme and Abstracts, p36
 ABSTRACT: To identify the prognostic indicators for the development of persistent diarrhoea (more than 14 days in duration) in children under five years of age, 487 children admitted for diarrhea in Yangon Children's Hospital (YCH) during March 1996 - February 1998 was analyzed. Factors associated with duration of diarrhoea were ascertained by multiple regression analysis, where as prognostic indicators were confirmed by simple logistic regression procedure. Positive association with duration of diarrhoea of diarrhoea

noted with presence of mucus/blood/both in stool, decreased weight for age, lower income group and non-use of soap in hand washing after defecation. In addition to these factors lack of exclusive breast feeding in under 2 years children had positive association with duration of diarrhoea. In a logistic regression analysis, malnutrition, lack of hand washing with soap after defecation and lack of exclusive breast feeding were found to be prognostic indicators for the development of persistent diarrhoea.

275 Khin Myat Tun; Khin Saw Myint; Thein Saw; Than Than Swe; Mar Mar Nyein; Myo Khin; Nyunt Win and Ni Win

TITLE Relationship between small bowel bacterial overgrowth and *Helicobacter pylori* infection in dyspeptic adults at YGH

SOURCE *Myanmar Health Res Congr.* 1997, Programme and Abstracts, p24

ABSTRACT: A prospective study was undertaken in 123 adults presenting with dyspepsia at Yangon General Hospital, to elucidate whether a relationship existed between *H. pylori* (H.P) infection and Small Bowel Bacteria Overgrowth (SBBO). Endoscopic antral biopsy tissues for urease testing and 14C urea breath test confirmed the diagnosis of H.P. infection. Duodenal mucosal biopsies were cultured aerobically and anaerobically and total bacterial counts exceeding 10⁵ colony forming units per ml (CFU/ml) defined SBBO. 70 (57%) male and 53 (43%) female age ranged from 17 to 80 years, participated in the study. *H. pylori* positivity was 74% (91/123) and SBBO was 24% (30/123) for all age group. The prevalence of *H. p.* infection increased with age showing 72% in less than 60 years to 82% in more than 60 years age group, while is SBBO, it was 20% and 23% in the two age groups ($p>0.05$). The prevalence of *H. p.* infection was 83% (25/30) in those with SBBO and 71% (66/93) in those without SBBO, whereas for SBBO it was 27% (25/91) and 16% (5/32) in those with and without *H. p.* infection respectively (Odds Ratio=2.05, 95% C.I.=0.64-6.9). PU was evident in 93% (14/15) of subjects with *H. p.* infection (Odds Ratio=5.6). In subjects aged over 60 years, the prevalence of SBBO was 20% (5/25) in those with *H. p.* infection and none without this infection. This preliminary study suggested that *H. p.* infection could not be held responsible for the development of SBBO.

276 Khin Myat Tun; Mar Mar Nyein; Kyaw Moe; Than Saw; Khin Saw Myint; Kyaw Min; Than Than Lwin and S. Kyaw Hla

TITLE Etiologic agents, clinical and laboratory characteristics of acute versus persistent diarrhoea in children at Yangon Children's Hospital

SOURCE *Myanmar Health Res Congr.* 1997, Programme and Abstracts, p13

ABSTRACT: To identify the etiologic agents, clinical and laboratory characteristics of acute and persistent diarrhoea in children (aged from 1 month to 12 years), hospital-based comparative study was carried out for 18 months at Yangon Children's Hospital. A total of 487 children, 327 with acute and 160 with persistent diarrhoea participated in the study, intestinal pathogen was detected in 71% (114) of persistent diarrhoea cases including bacteria agent 31%, viral agent 6.3% and protozoa 33%, where as in acute diarrhoea intestinal pathogen was identified in 64%, among which 28%, 11.5% and 25% with bacteria, viral and protozoal agents respectively. More than one enteric pathogen was detected in 13.7% and 16.5% of persistent and acute diarrhea cases respectively. Male had more diarrhoea than female and peak incidence of acute and persistent diarrhoea occurred in the 2-11 months age group. Fever and vomiting were found frequent in persistent than acute diarrhoea during second week of illness ($p<0.02$). *Shigellae* species, ETEC and *E. hist* was equally isolated in both acute and persistent diarrhoea whereas Rota virus was found more often in acute than persistent diarrhoea. The presence of leucocyte and reducing substances in the stool was equally frequent.

- 277 Khin Myat Tun; Mar Mar Nyein; Kyaw Moe; Than Saw; Kyaw Min; Than Than Lwin and Kyaw Hla, S
- TITLE Etiologic agents, clinical and laboratory characteristics of acute versus persistent diarrhoea in children who attended the Yangon Children's Hospital
- SOURCE *Myanmar Health Sci Res J.* 1997 Aug.; 9(3): pp153-158
- ABSTRACT: To identify the etiologic agents, clinical and laboratory characteristics of acute and persistent diarrhoea in children less than 12 years of age, a hospital based prospective study was carried out for 18 months in Yangon Children's Hospital. A total of 487 children, 327 with acute and 160 with persistent diarrhea participated in the study. Intestinal pathogens including bacterial agent 31 per cent, viral agent 6.3 per cent and protozoa 33 per cent were detected in 71 per cent of persistent diarrhoea cases, whereas in acute diarrhoea cases intestinal pathogens were identified in 64 per cent, among which bacterial, viral and protozoal agents were 28 per cent, 11.5 per cent and 25 per cent respectively. More than one enteric pathogen was detected in 13.7 per cent and 16.5 per cent of persistent and acute diarrhoea cases respectively. Male children who suffered from diarrhoea were more than females and peak incidence of acute and persistent diarrhoea occurred in the 2-11 month age group. Fever and vomiting were found more frequent in persistent than acute diarrhoea during second week of illness and differences were statistically significant. *Shigella* species, ETEC and *e. histolytica* were equally isolated from both acute and persistent diarrhoea whereas rota virus was found more after in acute than persistent diarrhoea. The presence of leucocytes and reducing substances in the stool was equally frequent.
- 278 Khin Myat Tun; Thida Kyaw; Khin Saw Aye; Tin Aye; Kyaw Moe; Khin Myint Myint Kyaw; Tin Oo; Tin Nu Swe; Soe Aung; Thein Thein Myint and Thein Aung
- TITLE Oral rice based electrolyte solution superior to glucose electrolyte solution in acute childhood diarrhea
- SOURCE *Myanmar Health Res Congr.* 1993, Programme and Abstracts, p24
- ABSTRACT: In a controlled trial of oral rehydration therapy, the efficacy and safety of rice-based electrolyte solution was compared with standard WHO oral rehydration solution. Ninety eight male children aged 4 months to 10 years presenting with watery diarrhoea of less than 72 hours prior to hospitalization were studied. 48 were treated with standard WHO Oral Rehydration Solution (ORS) and 50 patients with an improved formulation which contained 100gm of rice (instead of glucose) with 25mg of Amylase in addition to electrolytes. The clinical characteristics of the two groups on admission were comparable. Although there was a consistent trend towards reduction in stool volume and better gain in body weight in children with cholera treated with rice based ORS, significant difference was noted only in 6-12 hour stool output and first 6 hour weight gain. Stool volume was significantly reduced during 24 to 48 hour period in all diarrhoeal patients receiving rice based ORS. Thus Amylyte digested rice base ORS is as effective as the Standard WHO ORS and have some therapeutic advantage in the treatment of acute childhood diarrhoea.

- 279 Khin Myat Tun; Thida Kyaw; Khin Saw Aye; Tin Aye; Kyaw Moe; Thein Thein Myint; Thein Aung; Tin Oo; Tin Nu Swe and Soe Aung
TITLE Is oral rice-based electrolyte solution superior to glucose electrolyte solution in acute childhood diarrhoea?
SOURCE *Myanmar Health Sci Res J.* 7(1), 1995, pp30-36
ABSTRACT: In a controlled trial of oral rehydration therapy, the efficacy and safety of rice-based electrolyte solution was compared with standard WHO oral rehydration solution. Ninety eight male children aged 4 months to 10 years presenting with watery diarrhoea of less than 72 hours prior to hospitalization were studied. 48 were treated with standard WHO Oral Rehydration Solution (ORS) and 50 patients with an improved formulation which contained 100gm of rice (instead of glucose) with 25mg of amylase in addition to electrolytes. The clinical characteristics of the two groups on admission were comparable. Although there was a consistent trend towards reduction in stool volume and better gain in body weight in children with cholera treated with rice-based ORS, significant difference was noted only in 6-12 hour stool output and in the first 6 hour weight gain. Stool volume was significantly reduced during the 24 to 48 hours period in all diarrhoeal patients receiving rice-based ORS. Thus, amylase digested rice based ORS is as effective as the Standard WHO ORS and have some therapeutic advantage in the treatment of acute childhood diarrhoea.
- 280 Khin Myat Tun; Tin Oo; Htain Win; Han Win; Than Saw and Than Than Aye
TITLE Infective parasitism on lactose absorption and small bowel bacterial overgrowth in children
SOURCE *Myanmar Health Res Congr.* 2000; Programme and Abstracts, p11
ABSTRACT: The effect of parasitism on lactose absorption and small bowel bacterial overgrowth status were assessed before and after de-worming on 173 children. The age of the children ranged from 7 to 12 years with a mean (SD) of 10.1 (91.8) years. Stool for routine examination was done on each children and base line assessment on lactose absorption and small bowel bacterial overgrowth status were done. 153 (88.4%) children were lactose malabsorbers as demonstrated by initial lactose breath hydrogen test. 115 children have one or more parasites in their stool and 57 children were free from parasitic infections. It was found that there was significantly ($p < 0.001$) higher proportion of lactose malabsorbers in 115 parasitized children in compared to 57 unparasitized controls (85% vs 10.5%) before deworming. 71 (41%) children had small bowel bacterial overgrowth significantly ($p < 0.05$) decreased from (153) 88.4% to (103) 59.5% and (71) 41% to (21) 12% respectively in before and after deworming. The results indicate that parasitic infections hinder the lactose absorption and favour the small bowel bacterial overgrowth; thus deworming could improve the lactose absorption status in children.
- 281 Khin Myat Tun; Tin Oo; Sandar Kyi; San San Myint; Htain Win and Than Than Lwin
TITLE Intestinal sugar permeability test: Assessment of intestinal mucosal integrity in children with diarrhoeal disease
SOURCE *Myanmar Health Res Congr.* 2000; Programme and Abstracts, p22
ABSTRACT: The change in intestinal mucosal function was studied in 86 children aged 5-132 months including 17 months including 17 controls and 69 children with current or recovered diarrhoeal illness, admitted to Yangon Children Hospital during 1996 to 1998. Intestinal mucosal integrity was assessed by measurement of permeability index using dual sugar lactulose and L-rhamnose. The mean permeability index of control children was significantly lower (0.092 ± 0.04) than each of the four clinical groups. Children with persistent diarrhea had higher permeability index (0.354 ± 0.08) followed by acute diarrhea group

(0.203±0.05) and recovered acute diarrhea (0.124±0.03). Significantly decreased L-rhamnose excretion was observed in all of the clinical groups, in comparison to controls reflecting decreased absorption through enterocytes and villous atrophy. Raised lactulose urinary excretion was observed in all clinical groups except in children with persistent diarrhea, suggesting increased paracellular spaces and mucosal injury. It is concluded that major changes in intestinal permeability occurred in children with persistent diarrhea. There were lesser degree of damage in acute diarrhea and recovered persistent diarrhea groups. Only minor changes was observed on those who recovered from acute diarrhoeal illness. As a result persistent diarrhoeal group had lowest value of nutritional indices and grater proporation of malnourished children in comparison to acute and recovered diarrhoeal illness.

- 282 Khin Myint Thi; Mar Mar Nyein; Khin Myat Tun; Moe Moe Win; Than Saw and Aye Than
- TITLE The association between faecal leukocytes and pathogens present in stool of diarrhoea and dysentery cases of children
- SOURCE *Myanmar Health Res Congr.* 1994, Programme and Abstracts, p11
- ABSTRACT: A total of 388 cases of children with diarrhoea and dysentery attending the Yangon Children Hospital during March and September, 1996 were included in this study. The study included 20 days to 10 years old children and 239 were males and 149 were females. Faecal leukocytes were identified under a high power (40 X) field microscope by mounting of methylene blue staining method. Those cells clearly identified degenerated cells were ignored. The bacterial pathogens and protozoa pathogens were identified by standard methods. It was observed that 31.21 per cent of the stools were present with faecal leukocytes: diarrhoea (28.50%) and dysentery (45.76%). The association between the presence of faecal leukocytes and isolated pathogens from the stools were isolated in association with *Shigella* alone (25.0%); *Shigella* and *Entamoeba histolytica* (71.43%); *Entamoeba histolytica* alone (29.63%); *Enteropathogenic Escherichia coli* and *Entamoeba histolytica* (41.67%); *Enteropathogenic Escherichia coli* alone (9.76%); *Klebsiella* spp alone (50.00%); *Vibrios* (31.25%); and no pathogens isolated (30.77%).
- 283 Khin Nwe Oo; Aung Myo Han; Thein Hlaing and Tin Aye
- TITLE Bacteriologic studies of food and water consumed by children in Myanmar: 1. The nature of contamination
- SOURCE *J Diarrhoeal Dis Res.* 1991 Jun: 9(2): pp87-90
- ABSTRACT: To isolate major bacterial pathogens from children's food and drinking water, a 3-month study was conducted in a suburban community in Yangon, Myanmar. From the morning meals and stored drinking water of 208 randomly selected children, 775 food and 113 water samples were collected and were cultured using standard methods. *Escherichia coli*, *Vibrio cholerae* non-O1, and *Salmonella* were isolated from 505, 28 and 6 food samples respectively, and *E. coli* and *V. cholerae* non-01 were isolated from 29 and 5 water samples respectively. Among the *E. coli* isolates, 8 produced heat-stable toxin (ST) and 3 were enteroinvasive. Nine *V. cholerae* non-O1 produced cholera-like toxin. Of the 29 *E. coli* isolates from the samples of drinking water, 3 produced ST. All water samples were negative for *Salmonella*. The study underscores the importance of bacterial contamination of children's food and drinking water and stresses the need to improve environmental sanitation.

- 284 Khin Nwe Oo; Aung Myo Han and Tin Aye
TITLE Non-O1 *Vibrio cholerae* isolation from flies, cooked children foods drinking water, currency notes and vegetables in Yangon
SOURCE *Myanmar Health Sci Res J.* 1992 Aug; 4(2): pp105-109
ABSTRACT: Non-O1 *V. cholerae* isolation was done from flies, cooked children's food, drinking water, currency notes and vegetables in Yangon during 1984 to 1989. They were found in 45.7% of flies samples, 3.5% of cooked children's foods, 4.4% of drinking water samples, 5% of currency notes and 0.6% of vegetables samples. The strains of non-O1 *V. cholerae* isolated from these sources shared identical biochemical reactions. They all were grown at both 37°C and 42°C and they were resistant to polymyxin B sulphate.
- 285 Khin Nwe Oo; Mie Mie Khine; Marlar Aung; Zaw Min Soe; Aye Than; Than Saw and Myint Oo
TITLE Occurrence of *Giardia lamblia* in children attending Diarrhoeal Unit, Yangon Children Hospital during 1994
SOURCE *Myanmar Health Res Congr.* 1995, Programme and Abstracts, p89
ABSTRACT: A hospital based study was conducted in Yangon Children Hospital during June and November, 1994 to examine the importance of a protozoal pathogen *Giardia lamblia* as one of the causal organism in acute diarrhoeal disease in children. This study was also carried out to describe some epidemiological features of giardiasis in these children and to monitor the efficacy of metronidazole. A total of 308 stool samples from children attending the Diarrhoeal unit were examined for the presence of *Giardia lamblia* cysts or trophozoites. The infected children were treated with standard regimen of metronidazole (Myanmar Pharmaceutical Industry) and their stools were again examined at the end of treatment. To have a better understanding of public health importance of domestic and personal hygienic measures on acute diarrhoea, mothers were asked to answer some variables by using a standard questionnaire forms. There results were discussed in this study.
- 286 Khin Nwe Oo; Nwe Nwe Yin; War War Aung; Myat Thida; Maung Maung Toe; Hnin Hnin Lwin and Ei Ei Khin
TITLE Feeding and hand washing practices of mothers for severe dehydration and *Escheriachia coli* isolation among young children with acute diarrhea
SOURCE *Myanmar Health Res Congr.* 2000; Programme and Abstracts, p24
ABSTRACT: This study was carried out to get more information on the type of feeding and hand washing practices of the mother as the determinant of severe dehydration among under 4 months old children with acute *E. coli* diarrhoea in our community. The study design was prospective cohort design. It was carried out on 100 patients who were under 4 months old of age, diagnose as acute diarrhoea and admitted for treatment to Yangon Children Hospital, Myanmar, during June 1997 to May 1998. The data were collected; *E. coli* isolation for rectal swab samples, type of feeding, hand washing practices and dehydration status on the patients. *E.coli* was isolated in 48 rectal swab samples of less than 4 months old infants among 100 cases. It was isolated from 28 cases who had some dehydration and 20 cases who had severe dehydration. Exclusion breast feeding was only seen in age group of less than one and more than one to two months age group. It was not statistically significant when severity of dehydration with other types of feeding compared to exclusive breast feeding among less than one and more than one to two months old children. In our study most of the mothers wash their hands with water only after cleaning her child's defecation and before and after feeding her child. The severity of dehydration was statistically significant in hand washing practice and indicating a need for appropriate intervention programmes aimed at promoting exclusive breast feeding and hand washing practices with soap and water after cleansing her child's defecation, and before and after feeding her child.

- 287 Khin Nwe Oo; Than Win Myint; Win T; Thida M and Aung KS
TITLE *Vibrio cholerae* non-O1 as a causal pathogen in cholera patients in Yangon, Myanmar
SOURCE *J Diarrhoeal Dis Res.* 1995 Sep; 13(3): pp176-9
ABSTRACT: *Vibrio cholerae* non-O1 was studied in patients with rice watery diarrhoea admitted to the Infectious Diseases Hospital, Yangon. The study was conducted during 1993-1994 to determine the association of the pathogen with the disease. Altogether 771 rectal swabs were collected and examined. *V. cholerae* were isolated by the standard methods. The seasonal, age and sex distribution, serotyping and susceptibility of these isolates to antibiotics were investigated, *V. cholerae* were isolated from 233 (30.2%) samples. Among them, *V. cholerae* O1 were isolated from 117 (50%) samples and *V. cholerae* non-O1 from 116 (50%) samples. The seasonal, age and sex distribution was identical in both *V. cholerae* O1 and *V. cholerae* non-O1 groups. *V. cholerae* O139 was isolated during February 1994. Thus *V. cholerae* non-O1 was also one of the causal pathogens of cholera, like *V. cholerae* O1 in this community.
- 288 Khin Nwe Oo and Thida M
TITLE Serotype distribution and antimicrobial susceptibility of *Shigellae* isolated from diarrhoeal patients in Yangon, Myanmar
SOURCE *J Diarrhoeal Dis Res.* 1995 Sep; 13(3): pp180-2
ABSTRACT: In Myanmar there is a changing pattern in the prevalence of *Shigella* strains with an increasing antimicrobial resistance, and, thus the serotype prevalence and antibiotic sensitivity pattern of *Shigellae* were studied in 1993. Dysenteric stool samples were collected from the laboratory of Infectious Diseases Hospital, Yangon during January-June 1993. The *Shigella* isolates were identified by the standard bacteriologic procedures. Four hundred and sixty stool samples containing blood and mucous were collected in this study, and *Shigella* spp. were isolated from the 108 (23.5%) samples. The increasing antimicrobial resistance of shigellosis from 1980 to 1993 in this community was also discussed.
- 289 Khin San Aung; Khin Nwe Oo; Saw Tun; Myat Thidar; Le Le Win; Than Tun Sein and Tin Aye
TITLE Case-control study of risk factors for cholera in Yangon
SOURCE *Myanmar Health Sci Res J.* 1995; 7(3); pp115-120
ABSTRACT: A case control study was conducted on 100 culture confirmed cholera cases who were admitted to Yangon Infectious Disease Hospital during 12 July to 11 October 1993 and their age matched controls from their neighbourhood to determine the risk factor for cholera. *V. cholera* O1, E1 for Ogawa, was isolated from the drinking water sample of one case patient. A number of factors, including poultry farming, consumption of food and iced drinks from street vendors, drinking unboiled water and lack of hygienic habits were found to be significantly associated with cholera transmission.
- 290 Khin Than Htay
TITLE Isolation of *Aeromonas* and *Plesiomonas* strains from diarrhoea and dysentery cases
SOURCE DBacteriol, Institute of Medicine I, Yangon, 1991
SUMMARY: 42 samples of stools from diarrhoea and dysentery patients admitted to Yangon Children's hospital and Infectious Diseases Hospital, yield 8 isolates 9 approx: 19%) whose morphological and biochemical characters indicate that they belong to the genera *Aeromonas* and *Plesiomona*. These isolates consist of 4 strains of *A. sobria*, 2 strains of *A. hydrophila* and 2 strains of *Plesiomonas shigelloides*. The gastroenteritis caused by these bacteria is accompanied by pain in abdomen, nausea and vomiting, fever and a mild degree of

dehydration. This is the first report indicating the frequency and importance of *Aeromonas* and *Plesiomonas* species in causing gastroenteritis in Myanmar. It is anticipated to facilitate the epidemiological study in order to provide an effective control of disease.

- 291 Khin Win Myint
TITLE A study on risk factors for children with severe protein energy malnutrition
SOURCE 6th Med Spec Conf. 1993, Abstract of Papers, p45
ABSTRACT: The study was a case-control study using intervening method to identify the risk factors for severe PEM and to find out proportional morbidity and type of PEM in children under 5 years admitted to Yangon Children's Hospital from 1-6-91 to 30-11-91. One hundred and fifty mothers and guardians of severely malnourished children were interviewed regarding the epidemiologic, demographic, socio-economic, cultural and environmental risk factors. The peak incidence of severe PEM was between 12-23 months, and the most common type was maramus (51.3%). Large family size of more than 5, narrow birth spacing of less than 2 years, birth order (second youngest child), and the presence of other child with PEM in the same family were significant risk factors. Single parent, semi-skilled occupation, low parenteral education status, dependency ratio of less than 4, low socio-economic groups with low income were also significant risk factors. Incomplete immunization status and past history of tuberculosis, repeated diarrhoea and worm infestation, early weaning, and poor environmental sanitation were also found out to be significant risks in development of severe PEM.
- 292 Khin Zaw; Nyan Htein Lin; Htet Htet Nyunt and Hla Swe
TITLE The significance of mucosa associate lymphoid tissue (malt) in *Helicobacter Pylori* infection
SOURCE 8th Myanmar Mil Med Conf. 1998, Abstract of Papers, pp5-6
SUMMARY: Apart from being reliable in detection presence of the *H. pylori* infection, histology has the advantage of supplying data on the gastric mucosal pathology. Routine H & E stain and two tissue special staining methods, modified carbol-fuchsin and modified Giemsa, were introduced in this study. From June 1997 to December 1997, total of (58) gastroscopic biopsy were taken and examined, including (8) of gastric adenocarcinoma cases. Remaining (50) cases showed that 46 (92%) were infected by *Helicobacter pylori*. Comprising changes were chronic superficial gastritis 19 (38%), chronic atrophic gastritis 20 (40%), chronic gastritis with aberrant pancreatic rest 5 (10%), and chronic regenerative gastritis 6 (12%) respectively. Mucosa-associated lymphoid tissue observed in 36 (72%) and low grade MALTOMA in 3 (6%). Although lymphoid tissue is essentially absent in normal gastric mucosa, primary lymphomas arise in the stomach and most of these recapitulate the features of mucosa associated lymphoid tissue (MALT). We conclude that gastric MALT is acquired in *H. pylori* infection and that this provides the necessary background in which MALT lymphoma might developed.
- 293 Khin Mg Lwin
TITLE Inflammatory pancreatic masses following acute pancreatitis
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1991
SUMMARY: There were altogether 36 cases of inflammatory pancreatic masses following acute pancreatitis for the study period of one year. These cases were 0.38% of total admission to surgical wards for the same period. Mean age was 45.4 years (range=19 to 79 years). Peak incidence was found in the age group from 51 to 60 years. Male: female ratio was 5:4. Commonest cause of these cases was idiopathic cause (44.44%). Biliary tract disease was second most common (33.33%) and other less common causes

were trauma and alcohol drinking, (11.1%) each. Inflammatory pancreatic masses were divided into three groups. They were pseudocysts of pancreas (14 cases), pancreatic phlegmon (14 cases), and pancreatic abscess (8 cases). Their mortality rates were, 7.1%, 14.3%, and 50% respectively. Overall mortality rate of inflammatory pancreatic masses following acute pancreatitis was 19.4%. Prognostic factors were also studied. Age older than 50 years, duration of fever, 100°F or more for more than 15 days, duration of hospital stay for more than 40 days, haemoglobin concentration less than 8g/dl, leucocyte count more than 15 thousands/cu mm, plasma urea more than 7mmol per litre, plasma bicarbonate level less than 22mmol/L, plasma glucose more than 9mmol/l, plasma albumin less than 27g/L, were found to be statistically significant prognostic factors. Sex difference, serum amylase, urinary amylase and serum calcium could not be used as prognostic factors in these cases. Up to 2 positive prognostic factors, there was no mortality. However, when positive factors was 3 or more than 3, mortality rate became increased, along with increased number of positive factors. Serum amylase and urinary amylase levels were raised above normal in majority of cases but not that much as in early phase of acute pancreatitis. Means and standard deviations for serum amylase and urinary amylase levels were 544.7 ± 231.2 and $2493 \pm 2063 \mu/L$ respectively. Urinary amylase was more reliably raised in later phase of acute pancreatitis. Serum and urinary amylase levels in those cases remained high in blood longer than those of uncomplicated acute pancreatitis. Seven cases of pancreatic pseudocyst needed operative treatment. Six cases underwent transgastric cystogastrostomy and no mortality as well as no recurrences were encountered. Only one case was performed external drainage and he died. Seven responded well to non-operative treatment and achieved spontaneous regression. All of the spontaneous resolution started between two to six weeks from the onset of appearance of mass. Twelve cases of pancreatic phlegmon recovered by means of conservative treatment. Two cases expired and no cases were operated. Resolutions occurred within 2 to 9 weeks after onset of attack of acute pancreatitis (mean=4.7 weeks). All cases of pancreatic abscesses treated conservatively died. Two of six operated cases expired. Mortality rate of operated cases was 33.33%. Overall mortality rate for cases of pancreatic abscess was 50%.

- 294 Khin Maung U; Myo Khin; Nyunt Nyunt Wai and Tin U
TITLE Comparison of glucose/electrolyte and maltodextrin/glycine/glycyl-glycine/electrolyte oral rehydration solutions in cholera and watery diarrhoea in adults
SOURCE *Ann Trop Med Parasitol.* 1991 Dec; 85(6): pp645-50
ABSTRACT: One hundred and eight male adults (mean age 33 ± 1.7 years) presenting with watery diarrhoea of less than 48 hours duration at home prior to hospitalization and with clinically evident (grade II, severe) dehydration were admitted into a randomized double-blind clinical trial; 54 were treated with standard Oral Rehydration Solution (ORS)--WHO formulation containing citrate--and 54 with an improved ORS formulation which contained, in addition to the standard formula, maltodextrin 20g (instead of glucose), glycine 4g and glycyl-glycine 4g. Patients with clinical cholera were given tetracycline 500mg q. i. d. *Vibrio cholerae* was detected in 85 patients. The clinical characteristics of patients in the two groups were comparable. The improved ORS did not reduce the volume of diarrhoeic stools in cholera; indeed, patients with cholera who were treated with improved ORS had larger diarrhoea stool volumes. However, those cholera patients given improved ORS showed significantly greater weight gains during the first six-hour period, at the end of the second day, and at discharge. On the other hand, non-cholera patients treated with improved ORS had significantly smaller diarrhoeic stool volumes during the six to 24-hour significantly smaller diarrhoeic stool volumes during the six to 24-hour period (i.e. during the commencement of maintenance rehydration therapy).

- 295 Khin Maung U; Bolin TD; Duncombe VM; Myo Khin; Nyunt Nyunt Wai; Pereira SP and Linklater JM
 TITLE Epidemiology of small bowel bacterial overgrowth and rice carbohydrate malabsorption in Burmese village children
 SOURCE *Am J Trop Med Hyg.* 1992 Sep; 47(3): pp298-304
 ABSTRACT: Breath hydrogen tests were performed after a rice meal (3g of cooked rice/kg of body weight, equivalent to 1g of carbohydrate/kg of body weight) on 256 village children (age range 1-59 months) who were known hydrogen (H₂) producers. Anthropometric measurements were made every three months and growth rates were calculated. A breath H₂ excretion pattern that suggested small bowel bacterial overgrowth (SBBO), which was recognized as a transient maximum level of 10ppm or more at 20-, 40-, or 60-min breath samples following the rice meal, was present in 53 (20.7%) children, and was more frequent in children 36-47 and 48-59 months old. This breath H₂ excretion pattern was detected in 48 (33.3%) of 144 children who were rice malabsorbers (greater than 10ppm H₂ above baseline values in one of the breath samples taken between 90 and 240min), and in only five (4.5%) of 112 rice absorbers. Children who had SBBO had a high relative risk (10.7) of being rice malabsorbers. Rice malabsorbers have a high relative risk (59.7) of having faltered growth, accompanied by a large etiologic fraction (94%). This same risk (6.68) and an etiologic fraction of 62% exist in children with untreated SBBO. These findings emphasize the need for interventions aimed at reducing the prevalence of SBBO or similar conditions as detected by the breath H₂ excretion pattern to prevent rice malabsorption and growth faltering.
- 296 Khin Maung U; Nyunt Nyunt Wai; Myo Khin; Myo Min Aung and Thaug, U
 TITLE Beyond rehydration therapy: non-dehydration deaths from diarrhoea in children with malnutrition
 SOURCE *J Trop Pediatr.* 1992 Oct; 38(5): pp265-7
 ABSTRACT: Not Available
- 297 Kyaimon Myint
 TITLE A study of twenty-four hour intragastric acidity profile and acid secretory responses in pentagastrin-stimulated normal subjects and patients with *Helicobacter pylori* infected duodenal ulcers
 SOURCE MMedSc(Physiology), Institute of Medicine I, Yangon, 1998
 SUMMARY: Hypersecretion of gastric acid is considered to be causally related to duodenal ulcer diathesis. With the discovery of *Helicobacter pylori*, this organism has been shown to be responsible for several abnormalities of gastric secretion in duodenal ulcer. To assess the pattern of intragastric acidity profile including acid secretory response to pentagastrin, studies were done on fifteen apparently healthy nursing students of Defence Services Medical Corps and volunteers (both sexes, age range 20-35 years), and fifteen *H pylori* infected duodenal ulcer patients from GastroIntestinal Unit, Yangon General Hospital (both sexes, age range 20-74 years) before and after infection eradication regime. The presence of *H pylori* infection was confirmed and reassessed after infection eradication regime by the 20-minute 14carbon urea breath test. Eradication of organisms was revealed by significantly lower 14carbon-excretion at 20-minute breath sample. The twenty-four hour gastric acid profile including gastric acid response to pentagastrin was studied by ambulatory continuous twenty-four hour pH monitoring using a computerized system (Digitrapper MD). The latter was also measured by conventional titration method in *H pylori* infected duodenal ulcer patients. The twenty-four hour intragastric acidity and acid secretory response to pentagastrin in both the apparently healthy subjects and the *H pylori* infected duodenal ulcer

patients were high compared with reference values. A comparable trend of acid secretory response to pentagastrin was seen in both ambulatory continuous twenty-four hour pH monitoring method and the conventional titration method. High intragastric acidity in *H. pylori* infected duodenal ulcer patient, persisted for one and a half months after infection eradication regime.

298 Kyaw Hla; Swe Swe Aye; Lwin Tin Aye; Pyone Mo Ei and Kyaw Myint Tun
TITLE Endoscopy of oesophagus, stomach, and duodenal bulb in patients with haematemesis and melena

SOURCE 39th Myanmar Med Conf. 1993; p30

ABSTRACT: Oesophago-gastro-duodenoendoscopy was successfully performed in 57 patients presenting with haematemesis or melena, or both to Medical Unit, New Yangon Hospital from January to August 1992. A visual diagnosis was made in 48 patients (84). Bleeding oesophageal varices (22%) were more common than bleeding duodenal ulcer (17%). Ten patients (17%) with endoscopically proved duodenal ulcer were bleeding from another site and 28% of all patients had more than one lesion. This fact, and inability to detect the surface lesions limits the value of acute barium radiology, which was performed in 32 patients. Accurate diagnosis will help us in better understanding of individual lesion and more rational management of patients.

299 Kyaw Hla; Than Than Swe; Htun Myint; Than Than Htwe; Tin Aye; Khin Saw Aye; Khin Myat Htun; Tin Nu Swe and Aung Kyaw Htoo
TITLE Relation of *Helicobacter pylori* to gastritis and peptic ulcer disease

SOURCE Myanmar Health Res Congr. 1993, Programme and Abstracts, p70

ABSTRACT: *Helicobacter pylori* has received recent attention as the most likely cause of antral gastritis and is incriminated as an etiologic agent for peptic ulceration associated with active chronic gastritis. Herewith we report the association of *Helicobacter pylori* in 49 Myanmar patients presenting with dyspepsia. Biopsy specimens from the gastric antral mucosa of these patients were studied by specific test for gastric urease (CLO and microtitre biopsy urease test) as well as by light microscopy. Of 49 specimens, 3 were histologically normal and 46 showed histologic evidence of gastritis. By CLO and urease test, 40 patients with gastritis (87%) have *Helicobacter pylori*. Histologic evidence of *Helicobacter pylori* were demonstrated in 35 patients (76%). In 15 patients with gastritis who were associated with peptic ulceration, all had *Helicobacter pylori* by CLO and urease test, but the organisms were histologically demonstrated only in 13 patients (86%). Two out of three normal specimens were found to have positive CLO and urease test but none of these patients had *H. pylori* in their antral specimens. This preliminary but new study in Myanmar delineated the strong association between *Helicobacter pylori* and gastritis/peptic ulceration similar to other investigations.

300 Kyaw Soe Kyaw
TITLE A clinical and endoscopic study of acute upper gastrointestinal haemorrhage in NYGH and YGH (Ward 13 and 14)

SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1999

SUMMARY: This study included eighty patients with acute upper gastrointestinal haemorrhage admitted to Wards 13 & 14 YGH and NYGH (Surgical Ward). They are studied clinically and endoscopically. The three commonest causes were bleeding from acute erosive gastritis (32%), duodenal ulcer (22.5%), and ruptured oesophageal varices (22.5%). Rare causes of upper gastrointestinal bleeding such as Mallory- Weiss tear (1 patient), bleeding from carcinoma stomach (2 patients), hepatocellular carcinoma with bleeding oesophageal varices (2 patients), haemobilia due to haemangioma left lobe of liver (1 patient)

were included in the study. Definitive diagnosis had given in 95% patients by upper GI endoscopy. Clinical diagnosis was same as the endoscopic diagnosis only in 77% of patients. Normal endoscopy with no obvious bleeding site was found in 4 patients. All of them are clinically diagnosed as acute gastric erosion to whom endoscopy was done rather late. So early endoscopy was advocated in cases of upper GI bleeding. Compared to other 4 studies, the incidence of cases and endoscopic accuracy of this study were not much differed.

301 Kyaw Tint; Thein Myint; Ni Ni Hla and Rai Mra
TITLE Bacillary dysentery at the Infectious Disease Hospital, Yangon
SOURCE *39th Myanmar Med Conf.* 1993; p23
ABSTRACT: This study was carried out during 1991. 50 patients from whom *Shigella* was isolated from the stool culture are included. In 92%, *Shigella dysenteriae* type I was isolated and in 8% *Shigella flexneri* type II was isolated. Both are consistently sensitive to gentamycin, furoxone and norfloxacin but resistance to ampicillin, chloramphenicol and tetracycline. Gentamicin and furoxone were employed in 40 cases and average time for a clinical response was 4 days whereas with norfloxacin the symptoms stopped 2 days after employing the drug. Norfloxacin, a new quinolone antibiotic, is effective in drug resistant shigellosis and it also cuts down the duration of symptoms.

302 Kyaw Zaya
TITLE Plain film diagnosis of acute abdomen
SOURCE *6th Myanmar Mil Med Conf.* 1996, Abstract of Papers, p4
ABSTRACT: Acute abdomen is one of the major health problems in emergency medical practice. Clinical and radiological diagnoses are important for management planning. Frequency distribution of cases, radiological findings and radiological diagnosis are discussed. Usefulness specificity and sensitivity of some importance radiological signs and radiological diagnosis seen on 2 films study are presented.

303 Kyi Kyi Thinn
TITLE Microbiological aspect of diarrhoeal diseases
SOURCE *Myanmar J Curr Med Practice.* 1999 Oct.; 4(1): pp11-13
ABSTRACT: Not Available

304 Kyi Lwin Moe
TITLE Study of dysentery due to *shigella* during 1996
SOURCE MSc(Zoology), University of Yangon, 1997
ABSTRACT: Shigellosis from random samples of dysenteric cases attending at Infectious Diseases Hospital during 13-3-96 to 27-9-96 was studied. The study comprised of 53 cases of dysentery of which 36 (67.93 percent) were males and 17 (32.08 percent) females. The age ranged from one year three months to 80 years. The duration of illness before attending the hospital was found to be one to seven days. The frequency of motion among dysentery cases were found to be from 16 to 20 times per day. Volume of stool output was small in 33 cases (62.26 percent) and moderate in 15 cases (28.30 percent). Mucous was present in the stool of 33 cases (62.26 percent) and while mucous and blood was present in 19 cases (35.85 percent). Total *Shigellae* were isolated from 24 cases (45.28 percent). Four different serotypes of *Shigellae* were distinguished. They were *Shigellae flexneri* (54.17 percent); *Shigella dysenteriae* (29.17 percent); *Shigella boydii* (12.5 percent) and *Shigella sonnei* (4.17 percent). Suggestions for future work are outlined.

305 Kyi Soe; Khin Mg Kyi and Thein Nyunt
TITLE Highly selective vagotomy in the treatment of chronic duodenal ulcer
SOURCE *Myanmar Health Sci Res J.* 1991; 3(3): pp119-123
ABSTRACT: A presentation of nineteen cases of D. U. treated by HSV is made. The advantages and long term sequelae are discussed. The initial safety record of this procedure has continued unblemished and it remains the safest operation in treating duodenal ulcer disease. With proper selection of cases, approximately 10-15% of our D. U. cases are treatable by this method.

306 Kyin Hlaing
TITLE Socioepidemiological characteristics of the users of diarrhoeal training unit at Yangon Children's Hospital
SOURCE MMedSc(Paediatrics), Institute of Medicine I, Yangon, 1999

Abstract/Summary not available: Abstract written by the book editors

A study was carried out to determine the socio-epidemiological characteristics of the users of Diarrhoeal Training Unit (DTU) at Yangon Children's Hospital. The majority of children presenting at DTU were under one year of age (40%) and 1-2 year age group (37.7%). Almost all (95.7%) of the caretakers were mothers and most of them (78%) were housewives. Regarding information on DTU, only 49.7% of them knew where DTU is, and among them 74.8% and 56.2% knew the opening days and operating hours, respectively. Self referral amounts to 30% of admissions and 10.2% were referred by general practitioners. 32.2% came within 24 hours of diarrhoea and 57.4% came within two days. The majority of caretakers accept DTU as a special unit for diarrhoea cases.

307 Labang Hkawn
TITLE Morphology and arterial supply of vermiform appendix
SOURCE MMedSc(Anatomy), Institute of Medicine II, Yangon, 1994

ABSTRACT: Position, length and diameter of appendix and extent of mesoappendix were studied on 150 cadavers. 122 cases were selected from mortuary of Yangon General Hospital, and 28 cases were dissection room specimens. Position of appendix was also studied on 21 barium Enema x-ray films and records of 32 cases of acute appendicitis from surgical unit of North Okkalapa General Hospital. The commonest position of normal vermiform appendix was found to be pelvic type. The average length was 8.55 centimeters and average diameter was 0.8 centimeter. Average length and diameter in males was greater than that of females. The commonest position of inflamed appendix was also found to be pelvic type. Rectocaecal appendix were also observed and more than 90% of retrocaecal appendix were associated with ileal attachments. Half of the total numbers of appendices studied were provided with triangular mesoappendix which extended to the tip and one third of the cases lacked mesentery. The arterial supply to the appendix was studied on 78 cases by (a) plain gross dissection and after injection the ileocolic artery with plastic latex; (b) histological study after injecting the ileocolic artery with 1% trypan blue solution and (c) radiological examination after aqueous dionosil injection. Six trypan blue injected specimens were studied with Van Gieson's stain to study the intramural arterial pattern. It was observed that the appendicular artery arose from six sources and most commonly from ileocolic artery-44.44%. In one third of the cases, more than one appendicular artery was found. Arterial anastomosis within the mesoappendix was found in one case. Anastomotic connection between the primary branches and between the appendicular artery and posterior caecal artery was also identified. Two arterial plexus were found within the subserosa and submucosa layer of appendix. Correlation between the presence of mesoappendix and position and position, arterial anastomosis and incidence of acute appendicitis were also discussed.

- 308 Latt Latt Kyaw
 TITLE Role of enteropathogenic *Escherichia coli* in infantile diarrhea
 SOURCE MMedSc(Micrbiology), Institute of Medicine I, Yangon, 1998
 ABSTRACT: A total of 100 children under one year of age (50 patients with acute gastroenteritis and age and sex matched 50 healthy controls) from Yangon Children's Hospital were studied. History taking and physical examination were done. Stool samples were collected and routine examination were carried out. Rectal swabs were also taken and investigated for culture and sensitivity at the Microbiology Department, Institute of Medicine I, Yangon. Among the study subjects, 60% were male and 40% were female for both diseased and control groups. Regarding the age distribution 7-9 month group was the commonest (38%) age group in which acute gastroenteritis occurred followed by 10-12 (24%), 4-6 (20%) and 0-3 (18%) month age groups. Diarrhoea was common among bottle fed infants while breast feeding was the usual feeding pattern in controls for the 0-6 month infants. Weaning food was the predominant pattern for the rest. Regarding the clinical presentation of patients in the study group, dehydration was the commonest (66%) feature followed by vomiting (64%) refusal to feed (60%) and fever (58%). Bacterial pathogens were isolated in 18% of the cases comprising enteropathogenic *Escherichia coli* 12%, *Klebsiella* species 4% and *Pseudomonas* species 2%. Enteropathogenic *Escherichia coli* were also isolated from 4% of controls. Most of the diarrhoeal cases due to EPEC passed 6-10 times of motion daily and lasted 6-10 days. EPEC serotype O126 was the commonest serotype isolated with other serotypes noted being O1, O26, O86, O125, O128 and O142. Drug sensitivity pattern of EPEC serogroups showed 100% sensitivity to Gentamicin, Nalidixic acid, Norfloxacin and 88% sensitivity to Netilmicin, Amikacin, Cephalothin and Furazolidine. Sensitivity to chloramphenicol was seen in 25% of cases whereas Augmentin, Carbenicillin, Sulfizoxazole and Sulfamethoxazole/trimethoprim all had a 12% sensitivity only. Serotypes O126, O1, O142 and O125 showed multiple drug resistance but serotype O26 did not show any resistance to all the antibiotics tested.
- 309 Lebenthal E; Khin Maung U; Khin Myat Tun; Tin Nu Swe; Thein Thein Myint; Jirapinyo P; Visitsuntorn N; Ismail R; Bakri A and Firmansyah A
 TITLE High-calorie, rice-derived, short-chain, glucose polymer-based oral rehydration solution in acute watery diarrhea
 SOURCE *Acta Paediatr.* 1995 Feb; 84(2): pp165-72
 ABSTRACT: In this study, we have compared the effects of the World Health Organization Oral Rehydration Solution (WHO ORS) and an ORS containing short polymers of glucose (Amylyte ORS) at a high caloric density (five times) and comparable osmolality, on stool output, duration of diarrhea, weight gain and fluid and electrolyte balance, in randomized, open-labeled, controlled clinical trials in five centers. A total of 198 male children (4 months to 10 years) with acute diarrhea (<72h after onset) were assigned by random allocation to either WHO ORS or Amylyte ORS at five centers in Asia. Children were stratified according to grade of dehydration (mild, moderate or severe) and the initial purging rates during the first 6h (low (<2ml/kg/h), moderate (2-5ml/kg/h) and high (>5ml/kg/h) purgers). The clinical characteristics of the children in the two treatment groups were comparable. Amylyte ORS reduced stool volumes significantly in children with severe dehydration (285.4±74.2 versus 75.5±20.0ml/kg; p<0.05) and in children with a high initial purging rate (200.3±42.8 versus 130.5±9.1ml/kg; p<0.05). This was accompanied by a significant (276.4±14.6 versus 227.6±11.8ml/kg; p<0.01) reduction in ORS requirements in the Amylyte ORS treated group, the effect being greatest in children with severe dehydration (491.5±108.5 versus 155.7±27.3ml/kg; p<0.01) or high initial purging rates (394.2±66.2 versus 316.8±34.8ml/kg; p<0.05).

- 310 Lebenthal E; Khin Maung U; Rolston DD; Khin Myat Tun; Tin Nu Swe; Thein Thein Myint; Jirapinyo P; Visitsuntorn N; Firmansyah A and Sunoto S
 TITLE Thermophilic amylase-digested rice-electrolyte solution in the treatment of acute diarrhea in children
 SOURCE *Pediatrics*. 1995 Feb; 95(2): pp198-202
 ABSTRACT: OBJECTIVE. To compare the efficacy of an Oral Rehydration Solution (ORS) containing short polymers of glucose derived from rice (Amylyte-ORS) and five times the caloric density of current ORS to the standard glucose-ORS (World Health Organization [WHO]=ORS) in the treatment of acute diarrhea in children. METHODS. The rice ORS (Amylyte-ORS) was obtained by adding thermophilic amylase (252,500MW units) and salts (1.5g NaCl, 600mg KCl, and 150mg CaCl₂) to 100g rice and boiling for 10 minutes in 500mL water. This yields 250mL Amylyte-ORS, which contains 92% to 96% short-chain glucose polymers, three to nine molecules in length, and provides 425kcal/L, compared to 80kcal/L for the WHO-ORS. One hundred forty-four male children, 4 months to 3 years of age, presenting with acute diarrhea and mild, moderate, or severe dehydration, were assigned by random allocation to receive either WHO-ORS or Amylyte-ORS. Data from 127 children were analyzed (57 received the WHO-ORS and 70 the Amylyte-ORS). Two children given Amylyte-ORS and 15 given the WHO-ORS were not included in the analysis because of improperly collected data or lost urine or fecal specimens. None were given antibiotics during the study. Free water and feeding were allowed after the children were rehydrated. RESULTS. The clinical characteristics of the children in the two treatment groups were comparable. Five children who received the WHO-ORS and three children given Amylyte-ORS were treatment failures. Amylyte-ORS reduced diarrhea duration by 15% (41.4±2.5 *vs* 34.7±1.8 hours; P<.03) compared to the WHO-ORS, regardless of the severity of dehydration. In the Amylyte-treated group, ORS requirements were significantly less (234±15.2 *vs* 295±17.6mL/kg; P<.01) and weight gain was significantly more (367.7±45.1 *vs* 199.2±38.2g; P<.01) than in those given the WHO-ORS. The net intestinal fluid balance and total body fluid balance were similar in the two groups. CONCLUSIONS. Amylyte-ORS effectively rehydrates children with acute diarrhea, reduces diarrhea duration, decreases ORS requirements, and improves weight gain compared to the WHO-ORS.
- 311 Lebenthal E; Khin Maung U; Rolston DD; Melman S; Jirapinyo P; Shin K; Takita H; Firmansyah A; Ismail R; Bakri A; *et al*
 TITLE Composition and preliminary evaluation of a hydrolyzed rice-based oral rehydration solution for the treatment of acute diarrhea in children
 SOURCE *J Am Coll Nutr*. 1995 Jun; 14(3): pp299-303
 ABSTRACT: OBJECTIVE: The purpose of this study was to experimentally develop and clinically evaluate the safety and potential usefulness of a rice-based, short glucose polymer Oral Rehydration Solution (ORS), Amylyte, in the treatment of acute diarrhea. Amylyte has a similar osmolality but a higher caloric density than the WHO ORS. METHODS: Different amounts of rice were cooked in 500ml of water containing salts (1.5g NaCl, 600mg KCl, and 150mg CaCl₂) with varying amounts of thermophilic amylase (252,500 modified Wohlgemuth units). Amylase (25mg) thinned the gluey rice water when 100g of rice was cooked in 500ml of water for 10 minutes. The volume of the resultant supernatant (Amylyte) was approximately 250ml. A two-part, clinical case study was performed. In study 1, 12 children with diarrhea and mild dehydration were studied to determine the safety of Amylyte. In study 2, Amylyte and the WHO ORS were given to 24 and 31 male children with acute diarrhea and moderate to severe dehydration, respectively. RESULTS: 92-96% of the rice amylose and amylopectin were converted to short polymers of glucose (3-9 molecules of glucose). The osmolality of 7,994 packages used to make the Amylyte solution ranged between 277-340mOsm/kg. The mean electrolyte composition was Na+=68mEq/L,

K+=20mEq/L, Cl=73mEq/L, the caloric density 425kcal/L and rice proteins 0.7g/L. In study 1, 12 children with diarrhea and mild dehydration were rehydrated successfully with Amylyte ORS and the diarrhea ceased within 48 hours. None developed clinical features of carbohydrate intolerance. In study 2, an open-label clinical case study, children with acute diarrhea given Amylyte ORS had significantly less stool output than children given the WHO ORS. CONCLUSIONS: Amylyte ORS has the advantages of a higher caloric density than the WHO ORS and shares a simple preparation of appropriate osmolality and electrolyte composition. It can safely and effectively rehydrate children with acute diarrhea and dehydration.

312 Linklater JM; Khin Maung U; Bolin TD; Thane Toe; Pereira SP; Myo Khin; Duncombe VM and Nyunt Nyunt Wai
 TITLE Absorption of carbohydrate from rice in *Ascaris lumbricoides* infected Burmese village children
 SOURCE *J Trop Pediatr.* 1992 Dec; 38(6): pp323-6
 ABSTRACT: With the objective of determining the relationship between ascariasis and carbohydrate absorption from rice, Breath Hydrogen Tests (BHT's) were performed in two study populations of Burmese village children. Using a rice test meal, breath hydrogen peaks greater than 10ppm above baseline within 4 hours (indicating rice malabsorption) were seen in 24 out of 55 (44 per cent) *Ascaris lumbricoides* infected children and 3 out of 18 (17 per cent) non-infected children (age 18-59 months). In another ascariis endemic village 139 children (age 36-108 months) underwent a rice meal BHT. Seventy children had been regularly dewormed for 2 years (single dose levamisole 50 mg every 3 months) whilst 69 children had been dewormed once in 2 years, 6 weeks before breath testing. Regularly dewormed children showed a lower prevalence of rice malabsorption (33 per cent) compared to the control group (54 per cent) (P<0.05). These findings suggest that malabsorption of carbohydrate from rice can occur during *Ascaris lumbricoides* infection in children.

313 Lwin Tin Aye
 TITLE The study of *Helicobacter pylori* in 50 dyspeptic patients
 SOURCE MMedSc(Internal Medicine), Institute of Medicine I, Yangon, 1996
 SUMMARY: *Helicobacter pylori* is strongly associated with peptic ulcer disease. Its pathogenic role in chronic type B gastritis and gastric cancer have been established, and its role in nonulcer dyspepsia is now widely investigated. In this study, presence of *H. pylori* infection in 50 dyspeptic patients were studied by means of urease test and H & E stain of biopsy specimen from both body and antrum of the stomach. All 50 patients had endoscopic abnormalities; 37 with gastritis, 5 with gastric cancer; 3 with duodenitis, 3 with duodenal ulcer, and 2 with gastric ulcer. *H. pylori* was demonstrated by urease test from gastric biopsies from body and antrum. Out of 50 patients, 42 had positive urease test (84%). *H. pylori* was also demonstrated by histological sections of H7E stained gastric biopsy specimens from both body and antrum in 21 patients (42%). Highest age groups presented with *H. pylori* infection were 5th decade (22%), 6th and 7th decade (20%), follow by 4th (18%) and 3rd decade (4%). Regarding the sex distribution, there were more males (31 males and 19 females) in the study group. *H. pylori* infection was detected by urease test in 28 males (56%), 14 females (28%) with male: females 2:1. There was no demonstrable correlation between dyspeptic symptoms and *H. pylori* infection among the study population. *H. pylori* infection was demonstrated in 84% of the patients with chronic gastritis alone, 60% in the patients with gastric cancer in this study. *H. pylori* was found in both body and antrum of the biopsy specimens, but more on the antrum. All the patients with duodenitis, duodenal ulcer and gastric ulcer had chronic antral gastritis. In this study, *H. pylori* infection rate was high since 42 out of 50 patients with dyspeptic symptoms harbour the organism (84%).

- 314 Ma Ma Yi; Aung Htun; San Kyaw; Khwa Nyo Zin; Phyu Phyu Aye; Thein Hlaing; Than Saw; Win Win Khine; Tin Tin Than; Myo Khin; Myint Myint Soe and San Shwe
TITLE Nutritional status and intestinal parasitoses in school enrolled and non-enrolled school age children
SOURCE *Myanmar Health Res Congr.* 1994 Programme and Abstracts; p112
ABSTRACT: As over 38 per cent of children in age group 5-9 years were never enrolled in school in the country in 1990, and lacking in information on the comparative prevalence of malnutrition and intestinal parasitoses among school enrolled and non-enrolled school age children. We undertook a cross-sectional survey comprising 3325 schoolchildren from 13 primary school and 164 non enrolled school age children from neighboring quarters in Tharketa and Mingalardon townships of Yangon during December 1993. Height and weight of the children were measured and a total of 944 stool samples, including 148 non-enrolled children, were examined for the presence of intestinal parasites. Expressing the nutritional status as standard deviation scores for weight for height, the prevalence of wasting among 5-10 years non-enrolled school-age children was 19.8%, while that for school children of similar age was 13.9%. In addition, non enrolled school age children had higher than school children in the infection rates of *Ascaris lumbricoides* (66.9% vs 50.1%), *Trichuris trichura* (38.5% vs 23.9%), and *Giardia lamblia* (5.4% vs 2.7%). The policy implicating of this study is that health and nutritional status of non enrolled school aged children needs to be promoted and this should be partly solved by the provision of regular and periodic mass chemotherapy against the nutrition influencing major intestinal parasitoses.
- 315 Mala Maung; Thein Thein Kyi and Khin Nyo
TITLE Effectiveness of health education relating to diarrhoea on the perception and practice of mothers
SOURCE *Myanmar Health Res Congr.* 2000. Programme and Abstracts; p11
ABSTRACT: Health for the people by the people reflects the need to empower the community in providing health care. To this end, diarrhoea with subsequent childhood malnutrition, which is prioritized as the fourth national health problem in Myanmar and which demands worldwide concern was selected for a qualitative/quantitative study to assess the effectiveness of health education on the perception and practice of mother regarding diarrhoea. A sample of 345 mothers was selected by systematic random sampling method from a population who had been given self-care sessions. A set of single response questionnaires was used as the assessment tool. Demographic data showed that the majority of mothers have 1-2 children (63.5%), most have had primary and middle school education (86.4%) and those who completed only primary or middle school education have more children. Regardless of the age or educational status most have good knowledge on diarrhoea and its home care procedure (89%). However, maturity, educational status and experience are attributes for the ability to translate knowledge into good practice as 83.3% of mothers in older age group have good practice as compared to 64.6%. This study illustrates the value of primary education in acquiring knowledge of health educational messages. Its also reveals the importance of technical skill of health educators in structuring messages for the public in order to materialize change in the attitude of community and ensure its commitment and mobilization.
- 316 Mar Mar Nyein
TITLE Review on diarrhoea and dysentery research: *Shigella* and *Salmonella* as etiologic agents
SOURCE *DMR Bull.* 1996 Jul; 10(3): pp1-11
ABSTRACT: Not Available

- 317 Mar Mar Nyein
TITLE *Escherichia coli* diarrhea in Myanmar
SOURCE *DMR Bull.* 2000, 14(1): pp1-19
Abstract/ Summary not available: Abstract written by the book editots.
Research findings since 1980 on *Escherichia coli* as an etiologic agent responsible for diarrhoeal diseases in Myanmar are reviewed and presented. The incidence and seasonality of *Escherichia coli* diarrhea in community and hospital based settings, in adults and children were reported. Biochemical research on *Escherichia coli* including preparation of antisera and its use in BIKEN assay, development of ETEC and EPEC K and O antisera and study of enzyme levels were reported. Cytotoxins produced by *Escherichia coli* O157:H7 and application of ELISA test for EIEC were explained. The review also consisted of studies on pathogenesis of *Escherichia coli* and on plasmid profiles.
- 318 Mar Mar Nyein; Aye Aye Than; Than Saw; Thuzar Myint; Tin Aye and Myint Lwin
TITLE The association of enteropathogenic *Escherichia coli* (EPEC) and gastroenteritis
SOURCE *Myanmar Health Sci Res J.* 1996; 8(3); pp108-114
ABSTRACT: A total of 619 cases of adult with gastroenteritis admitted to Yangon General Hospital, Workers' Hospital and Infectious Disease Hospital were included in this study. It was observed that 33% were suffering from gastroenteritis due to enteropathogenic *Escherichia coli* (EPEC). The most prominent EPEC sero-groups encountered were O1, O26, O55, O86, O114, O25, O128. The antibiotic sensitivity pattern showed that 86 percent of enteropathogenic *Escherichia coli* (EPEC) were resistant to ampicillin, 58 percent to chloramphenicol, 49 percent to streptomycin, 55 percent to benzyl penicillin, 44 percent and 21 percent respectively to tetracycline and septrin. They are all sensitive to nalidixic acid but 97 percent to gentamycin, 96 percent to sisomycin and 95 percent to tobramycin respectively.
- 319 Mar Mar Nyein; Hayashi, H. and Tin Aye
TITLE Isolation of haemolytic *Escherichia coli* from patients with urinary tract infection
SOURCE *Myanmar Health Sci Res J.* 1994 Apr; 6(1): pp19-24
ABSTRACT: One hundred and eighty-five isolates of *Escherichia coli* isolated from different sources, such as 131 isolates from 58 diarrhoea cases, 33 isolates from 21 control cases and 21 isolates from 9 urinary tract infection cases with different age groups were studied for haemolytic activity. It was observed that one case from diarrhoea cases showed alpha haemolytic activity; none of the control cases showed any haemolytic activity; and 3 cases of urinary tract infection showed beta haemolytic activity. The haemolytic *E. coli* isolates were also performed for the plasmid encoded haemolysin determinant and demonstrated to possess the haemolytic phenotype Hly and encodes 107,000 kilodalton. *E. coli* isolated from the urinary tract infections were also tested for antibiotic sensitivity and found that most of them were resistant to ampicillin, streptomycin and tetracycline.
- 320 Mar Mar Nyein; Ein Kyin San; Moe Moe Win; Khin Myint Thi; Khin Myat Tun; Khin Saw Myint and Thein Thein Myint
TITLE Cryptosporidiosis among children with diarrhoea and dysentery from Yangon Children's Hospital
SOURCE *Myanmar Health Sci Res J.* 1997 Aug; 9(3): pp132-138
ABSTRACT: Cryptosporidiosis among children who attended Yangon Children's Hospital from March to October 1996 was studied. A total of 396 stool samples were collected after admission to hospital. Simultaneously, a set of questions was filled to ascertain the diarrhoea and motion of diarrhoea of children. Stool characteristic were also recorded.

Cryptosporidium oocysts were detected by staining with Kinyoun's acid mordified method by Haley and standard 1973. Random samples of 238 males and 158 females children of age ranging from one month to ten years old were included in this study. It was found that the duration of diarrhoea ranged from one to 150 days. Number of motions also ranged from one to 40 times per day. Diarrhoea with either blood or mucous (dysentery) was found in 61 cases (15.4%). Cryptosporidium oocysts were found in 5 cases (1.3%) of children; three were from watery diarrhoea cases and two from dysentery cases. From the cases detected, the age range was from ten months to five years and the duration of illness was from 3 to 30 days. Four cases were with moderate degree of dehydration and one case was associated with HIV infection.

321 Mar Mar Nyein; Khin Aye Aye Tun and Tin Aye
TITLE Development of enterogenic *Escherichia coli* "OK" and "O" antisera for detection of *E. coli* in diarrhea and dysentery cases
SOURCE *Myanmar Health Sci Res J.* 1995; 7 (3); pp109-114

ABSTRACT: Standard strains of enterotoxigenic *Escherichia coli* (ETEC) were used to raise OK and O antisera in rabbits. The antisera were obtained from O6K15, O8K40, O25K+, O27K+, O78k80, O148k, O159k+ strains. Random samples of 2730 isolates of *E.coli* from 305 cases of adults with diarrhea or dysentery were tested with "OK" antisera by slide agglutination and found that 96 cases show slide agglutination. It was then serotyped using "O" antisera by test tube serial dilution technique and found that 33 cases showed agglutination.

322 Mar Mar Nyein and Khin Myat Tun
TITLE Antimicrobial susceptibility testing of *Shigella* species and enteropathogenic *Escherichia coli* (EPEC) isolated from dysenteric cases of children in Yangon Children's Hospital during 1996
SOURCE *Myanmar Health Sci Res J.* 2000; 12(1-3); pp25-29

ABSTRACT: A total of 56 cases of children admitted to Medical Wards of Yangon Children Hospital during March to September 1996 with dysentery were tested for isolation of bacterial pathogens in a cross sectional descriptive study using convenience sampling method. Bacterial pathogens were isolated from 29 cases (51.79%) with *Shigella* species (35.71%) and enteropathogenic *Escherichia coli* (EPEC) (16.1%). The species of *Shigella* include *S. boydii* (25%), *S. dysenteriae* (10%) and *S. flexneri* (65%). The EPEC serotypes were O25K70, O26K60, O55K59, O112K66, O125K70, O126K71, O127K+ and O157K-. The anti-microbial susceptibility revealed that they were most susceptible to amikacin, gentamycin, kanamycin, minocycline, nalidixic acid, neomycin, netilmicin, norfloxacin and sisomyacin. Most of them were resistant to ampicillin, chloramphenicol, streptomycin, tetracycline and trimethoprim/sulfamethoxazole.

323 Mar Mar Nyein; Khin Myat Tun; Moe Moe Win; Than Saw and Aye Than
TITLE The association between fecal leukocytes and pathogens present in stool of children with diarrhoea and dysentery
SOURCE *Myanmar Health Sci Res J.* 1998; 10(1); pp35-39

ABSTRACT: A total of 378 cases of children with diarrhoea and dysentery admitted to Yangon Children's Hospital from March to mid-September, 1996 were studied. The study population comprised 233 males and 145 females. Fecal leukocytes were identified under a high power microscope by wet mounting of methylene blue staining method. Those cells clearly identified with either round nucleus or as polymorphonuclear were noted and degenerated cells that could not be clearly identified were ignored. The bacterial pathogens and protozoal pathogens were identified by standard methods. Fecal leukocytes were present

in 31.2% of total cases (diarrhoea 28.5%, dysentery 45.8%). The association between the presence of fecal leukocytes and isolated pathogens from the stools was analyzed. It was found that fecal leukocytes were seen in stools which are associated with *shigella* (25%), *Shigella* and *Entamoeba histolytica* 971.4%), *Entamoeba histolytica* (29.6%), Enteropathogenic *Escherichia coli* and *Entamoeba histolytica* (41.7%), Enteropathogenic *Escherichia coli* (9.8 %), *Klebsiella* spp (50%) and *vibrio* (50%).

324 Mar Mar Nyein; Khin Myat Tun; Nyomie Kyaw; Thuzar Myint; Moh Moh Win; Wah Wah Aung and Than Nu Swe

TITLE Enteropathogenic *Escherichia coli* (EPEC) from acute diarrhoeic children with *in vitro* antibiotic susceptibility

SOURCE *Myanmar Health Sci Res J.* 1999; 11(1-3); pp14-17

ABSTRACT: A descriptive hospital based study was conducted on 335 children, aged less than five years, with diarrhea attending Children's Hospital during 1996 using convenience sampling method. Enteropathogenic *Escherichia coli* (EPEC) was isolated from 61 cases (18.21%) of which 17.77 percent was from age group of less than six months, 13.24% from >6-12 months, and 37.50% from >12-24 months. The antibiotic resistance pattern using agar disc diffusion tests shows that 90.32% of the case of EPEC was resistant to aminobenzyl penicillin, 88.53% to streptomycin, 88.50% to ampicillin, 86.89% to tetracycline, 80.33% to carbenicillin and septrin (trimethoprim/sulpha methoxazole) and 62.30% to chloramphenicol. The sensitivity pattern of isolated EPEC to antibiotics were 98.36% to amikacin, 88.53% to gentamycin, 85.25% to sisomycin, 83.61% to nalidixic acid, 81.97% to norfloxacin, 78.69% furazoladone, 67.21% to minocycline and 59.02% to cephalothin.

325 Mar Mar Nyein; Kyi Lwin Moe; Tin Ohn and P. Kyaw Hla

TITLE Different types of *Shigella* species isolated from Infectious Disease Hospital during 1996 and their antibiotic susceptibility patterns

SOURCE *Myanmar Health Sci Res J.* 1998; 10(2); pp71-77

ABSTRACT: Cross sectional descriptive hospital based study using convenience sampling method was carried out among 53 dysentery cases admitted to Infectious Disease Hospital from March to September 1996. It consisted of 67.9% male and 32.1% females. Their age ranged from one year to three month to 80 years. The duration of illness before attending the hospital was one to seven days. They passed motions 16 to 20 times per day. Volume of stool output was small in 62.3%, moderate in 28.3%, with mucous in 62.3% and with blood and mucous in 35.9%. *Shigellae* was isolated from 45.3% of cases, *Shigella flexneri* 2a (54.2%) and *Shigella dysenteriae* A type I (29.2%), *Shigella boydii* (12.5%) and *Shigella sonnei* (4.2%). The antibiotic susceptibility pattern revealed that 87.5 of shigellae were resistant to ampicillin, 83.3% to chloramphenicol, 33.3% to cephalothin, 37.5% furazoladone, 33.3% to nalidixic acid, 33.3 % to nalidixic acid, 83.3% to streptomycin, 91.7% to tetracycline and 33.3% to norfloxacin respectively. It was also noted that 91.7% of *shigellae* were sensitive to amikacin, 91.7% to augmentin, 83.3% to gentamycin, 58.3% to minocycline, 91.7% to netilmicin, 66.7% to neomycin, 75 % to sisomycin and 62.5% to norfloxacin.

326 Mar Mar Nyein; Nu Nu Aung and Tin Aye

TITLE Preparation of enteropathogenic *Escherichia coli* (EPEC) 'OK' and 'O' antisera for identification of *E. coli* from diarrhea cases

SOURCE *Myanmar Health Sci Res J.* 1995; 7(2); pp63-69

ABSTRACT: Standard strains of enteropathogenic *E. coli* (EPEC) were used to raise 'OK' and 'O' antisera in rabbits. The antisera obtained were O1K51, O26K60, O44K74, O55K59, O86K61, O86K62, O111K58, O114K90, O119K69, O125K70, O126K71, O127K63, O128K67, O142k+, O146K89 and O157k+. A total of 1805 isolates

of *E. coli* isolated from 290 diarrhoea cases and 312 control cases were tested by 'OK' antisera by slide agglutination and it was found that 167 isolates showed agglutination. It was serotyped by using 'O' antisera using test tube serial dilution technique and observed that 93 isolates showed agglutination.

- 327 Mar Mar Nyein and Mi Mi Htwe
TITLE Activity of Traditional Medicine Formulations (TMF-6 & TMF-23)
SOURCE *Myanmar Health Sci Res J.* 2004 Jan-Dec; 16(1-3): pp18-22
ABSTRACT: The Myanmar Traditional Medicine formulations (TMF-5 & TMF-23) which are mainly used in diarrhoea and dysentery by Myanmar practitioners were selected to determine the antibacterial properties. The ingredients (24 plants) present in it were selected singly and tested for their antibacterial activities. A total of 35 strains of bacteria (*Escherichia coli*=11; *Staphylococcus aureus*=3; *Salmonella* species=7; *Shigella* species=4; *Vibrio cholerae*=7 and one species each of *Bacillus subtilis*, *Pseudomonas aeruginosa* and *Proteus morganii*) were chosen for testing. Agar disc diffusion was done for screening. It was demonstrated that TMF-06 extract was active on *Escherichia coli* (STLT) and *Vibrio cholerae* (Inaba); TMF-23 extract was active on *E. coli* (STLT), *Staphylococcus aureus*, *Shigella boydii*, *Shigella dysenteriae* and *Vibrio cholerae* (Ogawa). The extract of the mixture of two TMFs was also found to be active on *E. coli* (LT) and *Vibrio cholerae* (Inaba). Among the 23 plants tested, they were found to be active on one, two or more of the bacteria tested with different patterns
- 328 Mar Mar Nyein; T. Tsukamoto; Tin Aye; Myo Khin; Khin Nwe Oo; Khin Maung U and Y. Takeda
TITLE Detection of pathogenic bacteria in children with diarrhoea
SOURCE *Myanmar Health Sci Res J.* 1992: 4(1); pp45-51
ABSTRACT: 86 children ranging from one to three years old with diarrhoea from Yangon Children's Hospital and respective controls were included in this study. Isolation rates of major pathogens responsible for acute diarrhoea in children were *Enterotoxigenic Escherichia coli* (EPEC) 30 per cent, *Enteropathogenic Escherichia coli* (EPEC) 8.1 per cent, *Salmonella* 1.2 per cent, *Shigella sonnei* 1.2 per cent, *Plesiomonas* 1.2 per cent and *Vibrio* 1.2 per cent. In the control group, the prevalence was found to be ETEC 9.3 per cent, EPEC 7.0 per cent, *Salmonella* 12.0 per cent, *S. sonnei* 1.2 per cent, *Plesiomonas* 7.0 percent and *vibriosis* 1.2 per cent. The total pathogen isolated from diarrhoea and control cases were 46.5 per cent and 38.4 per cent respectively. It was also noted that *Salmonella* and *Plesiomonas* isolation rates were higher in the control group.
- 329 Mar Mar Nyein; Than Nu Shwe; Khin Mu Mu Kyaw; Saw Thandar and Thein Thein Myint
TITLE Bacterial pathogens and drug susceptibility pattern: From diarrhoea cases of children
SOURCE *Myanmar Health Sci Res J.* 1998: 10(2); pp91-96
ABSTRACT: Stool specimens from 200 cases of children with age of less than five years with history of acute diarrhoea from Yangon Children's Hospital were proceeded for isolation of bacterial pathogen. Enterotoxigenic *Escherichia coli* ETEC (15.5%), enteropathogenic *Escherichia coli* EPEC (19%), *Shigellae* (3.5%), *Salmonellae* (2.5%), ETEC+EPEC (6.5%), ETEC+ *Shigellae* (1.0%) were isolated. Antibiotic susceptibility pattern EPEC revealed that they were resistant to ampicillin (96%), tetracycline (90%), streptomycin (82%), chloramphenicol (80%) and septrin (61%); but were sensitive to nalidixic acid (100%), furazolidone (92%), sisomycin (90%), gentamycin (88%), norfloxacin (70%) and cephalothin (66%). For *shigellae*, they were resistant to ampicillin (100%), cephalothin, chloramphenicol, furazolidone, streptomycin (66.7%) but were 100% sensitive

to sisomycin, minocycline, norfloxacin, gentamycin; tobramycin (89%), neomycin (67%) and septrin (56%). For *Salmonallae* they were resistant to ampicillin (100%), chloramphenicol and tetracycline (80%) but were 100% sensitive to cephalothin, furazolidone, gentamycin, nalidixic acid, norfloxacin, septrin and sisomycin. For ETEC they were resistant to ampicillin (100%), tetracycline (79%), chloramphenicol (53%) and septrin (53%). They were 100% sensitive to cephalothin, furazolidone, gentamycin, nalidixic acid, neomycin, norfloxacin, septrin and sisomycin.

- 330 Mar Mar Nyein; Than Saw; Htay Htay Win; Aung Mya Thein, *Saw*; Aye Than; Tin Aye and Myint Lwin
 TTITLE Shigellosis among children attending the children hospitals in suburban areas
 SOURCE *Myanmar Health Res Congr.* 1994, Programme and Abstracts, p14
 ABSTRACT: A total of 55 cases of children with dysentery admitted to the Defense Services Obstetric, Gynaecology and Children Hospital and North Okkalapa General Hospital were included in this study. It was found that 49.1 percent of the children were suffering from *Shigella* bacillary dysentery. The *Shigella* spp. isolated were *Shigella flexneri* (44.4%), *Shigella dysenteriae* (29.6%), *Shigella boydii* (22.2%) and *Shigella sonnei* (3.7%). The distribution of *Shigella* spp. Among the different age groups, were: less than 6 months old (42.86%); 6 to 12 months (40.00%); 13 to 24 months (55.00%); 25 to 60 months (66.67%). Antibiotic susceptibility test revealed that these *Shigellae* were resistant to ampicillin (84%), chloramphenicol (76%), streptomycin (84%), tetracycline (64%) and septrin (72%); were fully sensitive to Amikacin, Gentamycin, Netilmicin, Norfloxacin; and were less sensitive to Cephalothin (76%) and furazolidone (72%).
- 331 Mar Mar Nyein; Than Saw; Htay Htay Win; Thein Aung; Aung Mya Thein, *Saw*; Aye Than; Tin Aye and Myint Lwin
 TTITLE Shigellosis among children attending the paediatric wards of hospitals in suburban areas
 SOURCE *Myanmar Health Sci Res J.* 1997; 9(1): pp27-32
 ABSTRACT: A total of 55 cases of children with dysentery admitted to the Defence Services Obstetric, Gynaecology, Children Hospital and North Okkalapa General Hospital were included in this study. It was found that 49.1 per cent of the children were suffering from shigella bacillary dysentery. The shigella spp. isolated were *shigella flexneri* (44.4 per cent), *Shigella dysenteriae* (29.6 per cent), *Shigella boydii* (22.2 per cent) and *Shigella sonnei* (3.7 per cent). The distribution of *shigella* spp. among the different age groups were 42.9 per cent in the age group of less than 6 months, 40 per cent in 6 to 12 months, 55 per cent in 13 to 24 months and 66.7 per cent in 25 to 60 months. Antibiotic susceptibility test revealed that these *shigellae* were resistant to ampicillin (84 per cent), chloramphenicol (76 per cent). Streptomycin (84 per cent), tetracycline (64 per cent) and septrin (72 per cent); were fully sensitive to amikacin, gentamycin, netilmicin, norfloxacin and less sensitive to cephalothin (76 per cent) and furazolidone (72 per cent).
- 332 Mar Mar Nyein; Than Saw; Thu Zar Myint; Saw Tun; Myint Aye; Tin Aye and Myint Lwin
 TTITLE Role of enteropathogenic *Escherichia coli* in adults with gastroenteritidis
 SOURCE *Myanmar Health Res Congr.* 1995, Programme and Abstracts, p88
 ABSTRACT: A total of 591 cases of adults with gastroenteritidis admitted at Yangon General Hospital, Worker's Hospital and Infectious Diseases Hospital were included in this study. It was investigated that 35.2% were suffering from Enteropathogenic *Escherichia coli* (EPEC). The most prominent EPEC encountered were O1, O26, O55, O86, O114, O125

and O128. Among these cases 7.9% of *Enterotoxigenic E.coli* were also isolated. From the above cases, 272 cases were also performed for the isolation of other aetiologic agents and observed that *Shigella* isolated from 3 cases; *Vibrio* species were isolated from 2 cases; and *Plesiomonas shigelloides* was isolated from 3 cases respectively. The antibiotic sensitivity of Enteropathogenic (EPEC) was also conducted. It was found that the EPEC were resistant to ampicillin 89%, chloramphenicol 59%, streptomycin 55%, benzyl penicillin 55%, tetracycline 47% and septrin 27% respectively.

333 Mar Mar Nyein; Tin Aye and H. Hayashi
TITLE Enteroadherent *Escherichia coli* isolated from diarrhea and dysentery cases in Myanmar

SOURCE *Myanmar Health Sci Res J.* 1993; 5(1): pp53-8

ABSTRACT: A total of 417 isolates *Escherichia coli*, isolated from 173 cases of diarrhea, 39 cases of dysentery and 21 control cases of different age groups were sub cultured in Trypticase Soy broth containing 1 percent D-mannose. Adherence cell assay was done by using Lab Tek chamber slides seeded with Hep- 2 cells. A total of 46 cases (21.7 percent) showed adherence and noted that 17.5 percent of EPEC, 16.7 percent of ETEC and 8.3 percent of untypable *E. coli* showed adherence. 28 isolates of them showed diffused adherence pattern and 14 isolates showed localized adherence pattern; 4 isolated also showed aggregative type of adherence.

334 Mar Mar Nyein and Tin Aye
TITLE Enteroadherent *Escherichia coli* isolated from diarrhea and dysentery cases in Myanmar

SOURCE *Myanmar Health Res Congr.* 1990, Abstract of Paper, pp18-19

ABSTRACT: 414 strains of *Escherichia coli*, isolated from diarrhea and dysentery cases were sub-cultured in Trypticase Soy Broth containing 1 percent D- mannose. Adherence cell assay was done by using Lab Tek chamber slides seeded with Hep. 2 cell. It was observed that 17.3 percent of EPEC, 16.7 percent of ETEC-serogroups and 7.1 percent of untypable *E.coli* showed adherence. Some of them showed diffused adherence pattern and some showed localized adherence pattern.

335 Mar Mar Nyein; Tin Aye; Aung Myo Han; Khin Maung U and H. Hayashi
TITLE Relationship between serogroups and enterotoxin production of *Escherichia coli* from children with diarrhea

SOURCE *Myanmar Health Sci Res J.* 7(1), 1995, pp37-40

ABSTRACT: It has been reported that the enterotoxigenic *Escherichia coli* could be serotyped in various countries and some serotypes were restricted to each area. Thus a study was conducted on 2522 *Escherichia coli* isolates from 501 diarrhoeal cases and 374 control cases from the Intakaw survey. Enterotoxigenic stains were isolated from 91 cases of diarrhoea and from 29 control cases. It was found that the serogroups O126 and O114 were associated with heat-stable (ST) and heat-labile (LT) toxin producing isolates respectively. O27 and O6 serogroups showed a correlation with ST alone and STLT producers respectively. Though the other serogroups sought were O1, O26, O119, O159, O127, O128, O148 and O159, it was noted that only 60 percent of the enterotoxigenic *E. coli* could be serogrouped. The serotyping of flagella was also done and different patterns including H8, H12, H19, H21, H32, H38, H49 and H51 were observed.

- 336 Mar Mar Nyein; Tin Aye; Khin Maung U; Myo Khin; Phyu Phyu Win and Thane Toe
 TITLE Seasonal pattern of enterotoxigenic *Escherichia coli* (ETEC) in children under three years of age
 SOURCE *Myanmar Health Sci Res J.* 1996: 8(1); pp7-13
 ABSTRACT: Children aged one month to three years from Yangon Children's Hospital were studied. A total of 923 cases of diarrhoea and 932 cases of control were included in this study. The total isolation rate of ETEC was 232 cases (25.2 per cent) and 55 cases (5.9 per cent) from diarrhoea and control cases respectively. In the diarrhoea group, out of 232 cases of ETEC, 43 cases (4.7 per cent) were STLT, 134 cases (14.5 per cent) were ST and 55 cases (6.0 per cent) were LT. In the control group, out of 55 cases of ETEC, 6 cases (0.6 per cent) were STLT, 21 cases (2.3 per cent) were ST, and 28 cases (3.0 per cent) were LT. Although ETEC was found in children all the year round, the incidence rate was higher during the months of February to July with the highest peak of 47.0 percent in June. ETEC occurred in the control cases with the maximum isolation rate of 16 percent in June.
- 337 Mar Mar Nyein; Wah Wah Aung; Mi Mi Htwe; Tin Ohn and Than Nu Shwe
 TITLE Antibiotic susceptibility pattern of *Vibrio cholerae* O1, O139, *Salmonella typhi* and *Escheriachia coli*
 SOURCE *Myanmar Health Sci Res J.* 2000: 12(1-3); pp30-35
 ABSTRACT: Bacterial pathogens isolated from clinical specimens were tested for susceptibility pattern to different antibiotics using agar disc diffusion technique. They were *Vibrio cholerae* O1 (21 cases) and *Vibrio cholerae* O139 (136 cases) from diarrhoea case attending the Infectious disease Hospital during 29-9-98 to 29-10-98. *Salmonella typhi* (38cases) and *Escheriachia coli* (15 cases) from cases with high fever for more than five days admitted to Yangon Children's Hospital during 27-8-98 to 17-8-2000. *Vibrio cholerae* O1 were resistance to Ampicillin (50%), chloramphenicol (28.6%), septrin (57.1%), tetracycline (57%), sensitive to amikacin (85.7%), Furazoladone (92.3%), nalidixic acid (73.7%), netilmicin (100%), norfloxacin(92.9%), *Vibrio cholerae* O139 were resistant to ampicillin (81.8%), chloramphenicol (34.6%) septrin (43.3%), tetracycline (43.8%); sensitive to amikacin (90.5%), furazoladone(60.8%), nalidixic acid (74.6%), netilmicin (100%), norfloxacin (81.8%). *Salmonella typhi* were resistant to ampicillin (76.3%), chloramphenicol (79%), carbenicillin (74%), streptomycin (89.5%), septrin (79%), tetracycline (70.3%), sensitive to amikacin (92.1%) cefaclor (54%), ceftriaxone (75%), cephalothin (63.2%), gentamycin (63.5%), gentamycin (89.5%), nalidixic acid (83.3%), netilmicin (92.1%), norfloxacin (81.6%). *Escheriachia coli* were resistant to ampicillin (66.7%), chloramphenicol (60%), cephalothin (80%), streptomycin (80%), septrin (60%), sensitive to amikacin (86.7%), gentamycin (57.1%) nalidixic acid (54.5%), netilmicin 973.3% and norfloxacin (58.3%).
- 338 Maung Maung Soe
 TITLE The barium study of gastroduodenal ulcer
 SOURCE MMedSc(Radiology), Institute of Medicine I, Yangon, 1994
 Abstract/SUMMARY: Barium meal examination of stomach and duodenum were performed on forty two patients with the clinical history of peptic ulcer. Endoscopy were also performed to all patients. Biopsy findings of gastric ulcers and, operative findings of some of the cases were recorded. It was a prospective study of 6 months-period from 1st April 1994 to 30th September 1994. There were 35 patients with radiologically diagnosed ulcer, 11 cases have gastric and 24 cases have duodenal ulcers. Endoscopy showed ulcer is 39 cases. Radiologic error rate is 14.2% and diagnostic accuracy rate of double contrast barium meal in the diagnosis of ulcer is 83.3%. Duodenal ulcers are more common. The highest incidence of gastric ulcer found at 61-70 years age group. The highest incidence of duodenal ulcer is found at 21-50 years age group. Gastric ulcers are more commonly found at the distal

part the stomach. The diagnostic radiographic features of duodenal, and both benign and malignant gastric ulcers are studied and discussed in detail.

- 339 May Aye Than; May Winn Aung Khin and Khin Maung Win
TITLE Comparison of the effectiveness of propranolol and injection sclerotherapy on prevention of upper gastrointestinal bleeding in cirrhotic patients
SOURCE *Myanmar Health Res Congr.* 1994, Programme and Abstracts, p92
ABSTRACT: The prospective randomized controlled study aimed to compare the effectiveness of propranolol compared with injection sclerotherapy in prevention of upper gastrointestinal bleeding from oesophageal varices in cirrhotic patients was carried out with 30 patients admitted to Liver Unit, Yangon General Hospital, Yangon. Ten patients treated with sclerotherapy alone and 20 patients treated with propranolol alone. Propranolol 20mg twice a day administered for 3 months. Elective sclerotherapy was performed by using absolute alcohol injection 2 weekly, after that 3 weekly till up to 3 months. Patients treated with propranolol bled significantly less, experienced less bleeding episode per patients (7 *vs* 28; $p < 0.001$) required smaller number of blood units (2.55 ± 7.9 *vs* 22.9 ± 12.9 days, $p < 0.001$) and more bleeding free interval (85.05 ± 15.2 *vs* 42.2 ± 25.6 days, $p < 0.0005$) than patients treated with sclerotherapy. Propranolol is cheap, easily available and thus, may prove beneficial and superior to injection sclerotherapy in preventing of upper gastrointestinal bleeding in cirrhotic patients.
- 340 Mie Mie Khine; Khin Nwe Oo; Marlar Aung; Aye Than; Than Saw and Myint Oo
TITLE *Giardia lamblia* infection in children attending Diarrhoeal Unit of Yangon Children Hospital
SOURCE *Myanmar Health Sci Res J.* 8(2), 1996 Aug; pp83-85
ABSTRACT: A hospital-based study was conducted in Yangon from June to November 1994 to examine the importance of a protozoal pathogen *Giardia lamblia* as one of the causal organisms in acute diarrhoeal disease in children. This study was also carried out to observe the effectiveness of metronidazole on them. The stool samples were collected from diarrhoeal unit of Yangon Children Hospital. A total of 308 stool samples were examined. *Giardia lamblia* cysts (or) trophozoites were examined under ordinary microscope. If they were present in the stool, the patient was treated with metronidazole and the stool was rechecked again. The results were discussed in this study.
- 341 Moe Khine; Pyi Soe; Aye Kyaw; Tin U and Myo Khin
TITLE Radioiodination and uptake of enterotoxigenic *E. coli* heat stable toxin by the intestine of suckling rat
SOURCE *Myanmar Health Res Congr.* 1993, Programme and Abstracts, p73
ABSTRACT: The targeted ^{125}I -procedure was employed to radioiodinate *E. coli* heat-stable toxin. The percentage iodination yield was found to be 53.14 percent with a specific activity of 25.97 microCi/microgm. Intragastric injection of both the targeted and unlabelled toxin produced a significant increase of fluid targeted ^{125}I ratio over the controls indicating that the biological activity was not lost during radioiodination. *In vivo* uptake studies of the targeted toxin by different parts of the intestine namely duodenum, jejunum and ileum indicated that the uptake by duodenum was highest and the uptake was found to decrease gradually in other parts of the intestine, jejunum and ileum, respectively. The uptake of the targeted toxin by subcellular particles of intestinal cells indicated that the toxin uptake was maximum in mitochondrial-lysosomal fraction probably confirming our previous report on lysosomal involvement in the digestion of toxin. The results also seem to be consistent with the short-lived physiologic hypersecretory action of the toxin.

- 342 Moe Moe Win; Mar Mar Nyein; Ein Kyin San; Thuzar Myint; Khin Myat Tun; Khin Saw Myint and Thein Thein Myint
TITLE Cryptosporidiosis among children with gastroenteritis from Yangon Children's Hospital
SOURCE *Myanmar Health Res Congr.* 1998, Programme and Abstracts, p74
ABSTRACT: Cryptosporidiosis among children attended at Yangon Children's Hospital during March to October 1996 were studied. Random samples of 396 stool samples from 238 males and 158 females with their ages ranged from one month to ten years old were included in this study. Simultaneously, a set of questions was prepared to ascertain stool characteristics and the duration and motion of diarrhoea of children. *Cryptosporidium* oocysts were stained by the method of Kinyoun's acid modified Haley and Standard 1973. *Cryptosporidium spp.*, oocysts were found in 5 cases (1.26 percent) of children; three cases from watery diarrhea cases and two cases from dysentery cases. It was noted that four cases with moderate degree of dehydration and one case with HIV infection with their age ranges from 10 months to five years with the duration of 3 to 30 days.
- 343 Mya Mya Thein
TITLE A study on maternal knowledge, attitude and practices related to severity of diarrhea in children under five years admitted to Yangon Children's hospital
SOURCE *6th Med Spec Conf.* 1993, Abstract of Papers, p49
ABSTRACT: The objective of the study is to determine the inter-relationship of maternal Knowledge, Attitude, and Practices (KAP). Socio-economic status, and severity of diarrhoeal diseases, in children under five years of age. The study was a cross sectional survey and standard structured interview schedule was employed. The instrument used for data collection consisted of general information, severity of diarrhoea and KAP Questionnaires, Scoring of KAP was done. A total of 270 mothers from children with severe, moderate, and mild diarrhoea were interviewed. The study findings were that, there was positive relationship between maternal KAP and severity of diarrhoea, maternal socio-economic status and KAP, but negative between maternal socio-economic status and severity of diarrhoea. A high socio- maternal knowledge and attitude but relatively low practices related to diarrhoea were encountered. The study concluded that communication and education for health programmes integrated localized programmes as well as multi-media approach.
- 344 Mya Mya Thwin
TITLE Comparative study between invasive and noninvasive tests for gastric acid secretion
SOURCE MMedSc(Physiology), Institute of Medicine II, Yangon, 2000
ABSTRACT: Gastric acid secretion should be optimum for normal gastrointestinal function. Defective gastric acid secretion predisposes to abnormal small intestinal bacterial overgrowth and recurrent enteric infection, both conditions may lead to the development of persistent diarrhoea and malabsorption, resulting in malnutrition and growth failure; and excessive gastric acid secretion may lead to peptic ulceration. Several methods are available to measure intragastric acidity. Generally, it is measured by aspirating stomach contents with a nasogastric tube after administration gastric stimulant such as pentagastrin. The samples are titrated to neutrality to determine their acid content A simple, non invasive procedure which may be useful a test for gastric acid secretion was developed by 'Sack and his coworker' in 1985. It is based on the reaction of ingested magnesium metal with gastric acid to produce hydrogen gas, which is detected in exhaled air and belches. This test is called the Oral Magnesium Breath Hydrogen excretion Test (OMBHT). Another new, non-

invasive test of gastric acid secretion was developed for ideal field studies in the developing world, where chronic diarrhoea and undernutrition are common. The test relies on the capacity of the kidney to retain hydrogen ion during acid secretion, leading to a post-prandial urinary 'alkaline tide'. This research is aimed to study the comparison between the basal and stimulated gastric acid secretion and invasive and non-invasive test for gastric acid analysis in Myanmar adults. Thirty apparently healthy Myanmar male volunteers (25-45) years participated in this study. After overnight fasting, they ingested 150mg of magnesium metal suspended in 3ml of glucose syrup and 100ml of 7% ethanol on the first day and alcohol without magnesium on second day. Basal gastric juice (by Ryle's tube), urine and breath hydrogen were collected. Another 11 samples of gastric juice and breath hydrogen were collected after meal for 180 minutes at 15-minute intervals. Hourly urine collection was also done for three hours. Acid contents of gastric juice and urine were determined by traditional titration method. Breath hydrogen was analyzed by microanalyzer (Quintron, Model 12 microlyzer). In the first part; basal gastric volume is 46.19ml (11.5-80) and basal gastric juice pH is 2.43 (0.88-6.48) (median and range). Basal urine acid output was 0.99 (0.06-28.7)mmolH/mmol. Creatinine (median and range) and basal breath hydrogen was '0' (zero) in 20 subjects. In remaining 9 subjects the breath hydrogen was 5.74 (0.49-52.46)ppm (median and range). Maximal acid output obtained after alcohol test meal is 12.1 (0.50-123.72mEq/hr) (median and range) and peak acid output obtained after alcohol test meal is 10.91 (0.48-162.06)mEq/hr (median and range). Correlation between maximal acid output (15-60) minutes and change in urine acid output/hr is -0.60 ($p < 0.05$), maximal acid output and breath hydrogen test (15-60) minutes is 0.46 ($p < 0.05$) and maximal acid output and breath hydrogen test (105-120 minutes) is 0.40 ($p < 0.05$) (Myanmar subjects). Since the results of both noninvasive and invasive tests were well correlated, it was concluded that Oral Magnesium Breath Hydrogen Concentration and urine acid output determination (non-invasive tests) can be used as alternative to Ryle's tube intubation (invasive test) in studying the gastric acid secretion.

- 345 Mya Mya Thwin; Khin Myo Chit; Lay Thet Htar; Tin Nu Swe; Htay Htay; Myo Khin; Myint Aye Mu; Tin Oo; Ni Win; Than Than Lwin and Sandar Kyi
- TITLE Comparative study of invasive and non- invasive test for gastric acid secretion
- SOURCE *Myanmar Health Res Congr.* 2000; Programme and Abstracts, p61
- ABSTRACT: To study the comparison between the invasive and non-invasive test for gastric acid secretion, 30 apparently healthy Myanmar male volunteers (25-45 years) participated in this study. After overnight fasting, they ingested 150mg of Magnesium Mg metal suspended in 3ml of glucose and 100ml of 7% ethanol on the first day and alcohol without Mg on second day. Basal gastric juice (by Ryles's tube), urine and breath H₂ were collected. Another 11 samples of gastric juice and breath H₂ were collected after meal for 180 minutes at 15 minutes intervals. Hourly urine collection was also done for three hours. Acid contents of gastric juice and urine were determined by traditional titration method. Breath H₂ was analyzed by microanalyzer (Quintron, Model 12 microanalyzer). Correlation between maximal acid output (45-90 minutes) and urine acid output per/hr is 0.79 ($p < 0.005$), maximal acid output and breath hydrogen test (105-120 minutes) is 0.40 ($p < 0.005$). Since the results of both non-invasive and invasive test were well correlated, it was concluded that Ryle's tube intubation (invasive) can be replaced by non invasive test (Oral Magnesium Breath Hydrogen Test and urine acid output determination) in studying the gastric acid secretion.

- 346 Mya Thein Han (Lt. Col.)
TITLE Experiences in surgical management of gastric outlet obstruction
SOURCE First research paper reading session, Defence Service Medical Research & Development committee 1990, Abstract of Papers, p7
J Myanmar Mil Med. 1; March, 1992, pp19-24
ABSTRACT: Gastric outlet obstruction is not an uncommon clinical problem in surgical practice. In this paper the causes of such a problem, their common clinical presentation, diagnosis and different forms therapy are presented as encountered in one's own clinical experience during the past 25 years.
- 347 Myat Soe Aung
TITLE Clinical analysis of postoperative mortality and morbidity in perforated peptic ulcer disease
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1992-4
Abstract/SUMMARY: A prospective study of 140 patients operated upon perforated peptic ulcer disease at Yangon General Hospital and New Yangon General Hospital during 1st April 1993 to 31st March 1994 is presented. This study is aimed to determine the factors which contribute to or associated with early post-operative mortality and morbidity in perforated peptic ulcer disease. Post operative mortality rate is 10.7% and morbidity rate is 17.1%. Total mortality and morbidity rate is 27.86%. The age range is 19 – 74 years. There are 122 males and 18 females. The site of perforation is duodenal in 60%, peripyloric in 21.4% and gastric in 18.6%. In the univariate analysis, factors associated with increase morbidity and mortality were; (1) older age ($p < 0.05$), (2) prolonged estimated duration of perforation ($p < 0.01$), (3) low mean blood pressure ($p < 0.01$), or preoperative hypotension ($p < 0.01$), (4) presence of co-morbid factors ($p < 0.01$), (5) low hemoglobin level ($p < 0.01$), (6) low serum albumin level ($p < 0.01$), (7) high serum creatinine level ($p < 0.01$), (8) high extent of perforation score ($p < 0.01$), and (9) associated GI haemorrhage ($p < 0.01$). With risk stratification, age of the patient, EDP, serum creatinine and EP score (\pm MBP and co-morbid factors) have been seen to be significant prognostic factors regarding post operative morbidity and mortality. Serum creatinine level is the most significant prognostic factor regarding post operative complications. In view of the influence on morbidity and mortality of factors in this study, risk stratification of patients with perforated peptic ulcers may facilitate their management and improve survival rates.
- 348 Myint Soe; Thi Thi Aye and Kyi Soe
TITLE Glomus tumour of the stomach
SOURCE *Myanmar Health Sci Res J.* 1991; 3(1): pp49-52
Abstract/ SUMMARY: The clinical symptoms and the pathological anatomical findings associated with a glomus tumor in the gastric wall, proximal to the pylorus, in a woman, aged 32, are described. Review of the literature discloses an apparent propensity of these tumors to occur in any age group and had no predilection for either sex and to be associated with upper gastrointestinal bleeding.
- 349 Myo Khin
TITLE Carbohydrate malabsorption, small bowel bacterial over growth and intestinal permeability
SOURCE MD (NSW) Thesis, 1999
ABSTRACT: The interaction between malnutrition and infection is the major factor contributing to morbidity and mortality in developing countries. The importance of sub-clinical malabsorption as a contributing factor to poor nutrition is poorly documented as is its pathogenesis. This thesis evaluates the absorption of rice carbohydrate with respect to

nutritional status and examines the factors affecting the relationship. Prevalence of rice malabsorption is explored, as is that of another carbohydrate, lactose. The effect of small bowel bacterial overgrowth is documented and methodology to improve the diagnosis of SBBO explored. Intestinal permeability studies were undertaken, and the concept of altered transit time and its influence on the absorption studied. The impact of sub-clinical malabsorption and its effect on stool frequency was explored and attempts made to correlate abnormalities in the small bowel intestinal mucosal morphology with altered absorption. These changes were set against a background of the general growth pattern of Myanmar children over the past 50 years.

High prevalence of rice malabsorption (57%) and lactose malabsorption (91.7%) were detected. SBBO was found to be significantly present in rice malabsorbers (26.3%). Growth deficit was prominent in rice malabsorbers. Intestinal permeability indices were impaired even in healthy children and small intestinal mucosa abnormalities were detected even at a very young age. However, the bowel function and oro-caecal transit time differ little from that of European children.

Conclusion: Rice carbohydrate malabsorption is common, as is malabsorption of the disaccharide, lactose. Lactose malabsorption is common at an early age, implying abnormalities of small bowel function and morphology. Small bowel bacterial overgrowth has been documented and associated with rice malabsorption, this in turn having an impact on deficits of height, weight and nutritional indices. Small intestinal permeability is impaired, suggesting mucosal cell damage. Abnormalities of small intestinal mucosa have been documented at an early age and there has perhaps been sub-optimal nutrition in Myanmar during the past 50 years. Sub-clinical malabsorption appears to have no impact on the frequency of defaecation. It is likely that improvement in absorption and nutritional indices will depend upon improvements in hygiene, sanitation and health education.

350 Myo Khin
TITLE Research findings on diarrhoeal diseases: practical applications
SOURCE *Myanmar J Curr Med Practice*. 2000, 4 (4): pp172-180

Abstract/ Summary not available: Abstract written by the book editors

Research outputs on diarrhoeal diseases carried out in Myanmar situations are numerous. This review is specifically made on the relevant topics in clinical practice. Emphasis is made on the research findings which will be of interest to the medical practitioners at the primary and secondary health care levels. The review consists of research findings on, a) definition of diarrhea, b) problem of diarrhea diseases in Myanmar children, c) hazards of diarrhea diseases to health, d) organisms causing diarrhea, e) risk factors of diarrhea, f) benefits of oral rehydration solutions, g) preparation of oral rehydration solution by mothers, h) benefits of feeding in management of diarrhea, g) common routes of transmission of diarrhea and h) interruption of transmission of diarrheal pathogens.

351 Myo Khin
TITLE Diarrhoeal management: The challenge
SOURCE *Myanmar J Curr Med Practice*. 1999 Oct.; 4(1): pp1-2
ABSTRACT: Not Available

- 352 Myo Khin; Bolin TD; Khin Mar Oo; Tin Oo; Kyaw Hla, S and Thein Thein Myint
TITLE Ineffectiveness of breath methane excretion as a diagnostic test for lactose malabsorption
SOURCE *J Pediatr Gastroenterol Nutr.* 1999 May; 28(5): pp474-9
ABSTRACT: BACKGROUND: In clinical and field conditions, breath gas analysis has been widely used in evaluating carbohydrate digestion. A field study was performed to determine the prevalence of lactose malabsorption in Myanmar children and to evaluate the possibility of using breath methane excretion to indicate lactose malabsorption in a field situation. METHODS: The study population consisted of 118 children aged 1 to 12 years. A hydrogen breath test after a lactose meal (2g/kg, maximum 50g) was used as a standard test. RESULTS: Lactose malabsorption was detected in 16.7% of children aged 1 to 2.9 years, with the prevalence increasing with age from 40.5% of those aged 3 to 5.9 years to 88.5% of those aged 6 to 8.9 years and reaching 91.7% in those aged 9 to 11.9 years. Lactose malabsorption was more prevalent when children were weaned before 4 months of age (87.2 vs 41.1%; $p < 0.01$). Compared with lactose-tolerant children, those with lactose malabsorption had significantly higher concentrations of breath hydrogen excretion 60 minutes after the lactose test meal. Breath methane excretion was also significantly higher in samples at 120 minutes in children with lactose malabsorption. Breath methane excretion of greater than or equal to 2 parts per million at 180 minutes as a diagnostic test for lactose malabsorption had a sensitivity of 61.5% and a specificity of 84.6%. CONCLUSION: The breath methane test for lactose malabsorption has a lower sensitivity and specificity than the breath hydrogen test and therefore does not replace the lactose breath hydrogen test.
- 353 Myo Khin; Bolin TD; Tin Oo; Thein Win Nyunt; Kyaw Hla, S and Thein Thein Myint
TITLE Investigation of small-intestinal transit time in normal and malnourished children
SOURCE *J Gastroenterol.* 1999 Dec; 34(6): pp675-9
ABSTRACT: We aimed to establish whether there was a variation in Orocecal Transit Time (OCTT) in Myanmar children and whether shortened transit time correlated with malnutrition. OCTT was measured in 90 healthy Myanmar children aged 1-5 years, using the hydrogen breath test (10g in 10% aqueous solution). The relationships between OCTT, sex, age, and malnutrition status were assessed. OCTT for 1 to 5-year old children was 90.2 ± 20 min (mean \pm SD). There was no significant difference in mean OCTT between boys and girls, breast-fed and weaned children, malnourished and non-malnourished children. There was also no difference between age groups (1-2 years, 2-3 years, 3-4 years, and 4-5 years), and no correlation was found between age and orocecal transit time. The assessment of OCTT using the lactulose breath hydrogen test was found to be feasible and acceptable in the field setting. The OCTT of Myanmar children with rice as a staple food is similar to that of children from developed countries having a different diet, and no shortening of transit time was demonstrated in children with malnutrition.
- 354 Myo Khin; San Shwe; Aye Aung and Myo Myint
TITLE Potential impedance factors for use of Oral Rehydration Therapy (ORT) in clinical practice
SOURCE *Myanmar J Curr Med Practice.* 1999; 3(2), pp277-280
ABSTRACT: In Myanmar, the current situation of use of Oral Rehydration Therapy (ORT) in clinical practice is not known as few data on use of ORT by medical practitioners exists to date. Therefore, a study was carried out to elucidate the use of ORT and to identify the potential barriers to use of ORT using an anonymous, cross-sectional

survey of medical practitioner's ORT perception and practice. Regarding medical practitioners' perception towards ORT, 98% of the medical practitioners in the survey expressed positive attitude on ORT requirement in dehydration. Moreover, ORT is also widely used in other common clinical conditions. However, although there is no financial barrier for the patient regarding usage of ORT, it is evident that the acceptance barrier exists. More extensive health education of the public to increase their acceptance of ORT as a treatment measure given by their doctors is required.

- 355 Myo Khin; Soe Aung; Tin Oo; Nyunt Win and Htain Win
TITLE Breath methane analysis in the diagnosis of rice carbohydrate malabsorption
SOURCE *Myanmar Health Sci Res J.* 1995; 7(3); pp121-126
ABSTRACT: Rice carbohydrate malabsorption is common in Myanmar village children and adults. The diagnosis is dependent on the use of rice breath hydrogen test which has potential limitations. As methane production has been identified in almost 20% of Myanmar children under age 5, it was possible that an increased carbohydrate load in the colon consequent upon rice malabsorption may provide increased substrate for methanogenic bacteria in the left colon. A rise in methane production might be reflected in fasting breath methane concentration and therefore simplify the diagnosis of rice malabsorption. 79 children had a rice breath hydrogen test with measurement of hydrogen over a four hour period allied with a breath methane measurement and anthropometric measurements. There was no correlation between rice malabsorption and methane production and the measurement of breath methane does not, therefore, correlate with the rice absorption status.
- 356 Myo Khin; Soe Aung; Tin Oo; Nyunt Win and Htain Win
TITLE Rice carbohydrate malabsorption, nutritional status and methane production in Myanmar children
SOURCE *Myanmar Health Res Congr.* 1995, Programme and Abstracts, p37
ABSTRACT: Breath hydrogen and methane concentrations for four hours following a rice meal (3gm cooked rice/Kg body weight) in 79 children under 12 years of age were measured. Based on breath hydrogen measurements, 56 children (71%) were categorized as rice malabsorbers. There was no correlation between rice absorption status and methane production. Rice malabsorbers were lighter and shorter than rice-absorbers but a statistically significant difference was noted only for height ($p < 0.05$). It is concluded that this study does not support the concept that increase methane production might reflect rice carbohydrate malabsorption.
- 357 Myo Khin; Tin Oo; Sandar Kyi and Khin Maung U
TITLE Evaluation of differential sugar absorption method for assessment of small intestinal permeability in Myanmar children
SOURCE *Med Res Congr.* 1991, Abstract of Papers, p12
ABSTRACT: The differential urinary excretion of lactulose and L- rhamnase after a standard oral dose has been employed as an index of mucosal injury and its feasibility and practicability tested under field conditions. 110 children who were assessed for malnutrition also had intestinal permeability analysis. Weight-for-age were all used as indicators of malnutrition. Moderately malnourished children (75% weight for age) had significantly greater lactulose/L-rhamnase ratios ($p < 0.05$) than those children with normal nutrition (90% weight-for-age) (0.1495 ± 0.0134 vs 0.1132 ± 0.0109). No significant differences were found between the differential sugar ratios of those children who had chronic (90% length for age) or acute- (80% weight for height) malnutrition and those children who were normally nourished according to these classifications.

- 358 Myo Khin; Tin Oo; Htain Win and Khin Mar Oo
TITLE Breath methane excretion status in children with lactose malabsorption
SOURCE *Myanmar Health Sci Res J.* 8(2), 1996, pp86-91
ABSTRACT: We carried out a study to determine breath methane excretion status in relation to lactose absorption in children. The lactose absorption status of 125 children aged 1 to 12 years was defined using the hydrogen breath test using lactose test meal (2g/kg, maximum 50g). Lactose malabsorption was detected in 16.7% of children aged 1-2.9 years, the prevalence increasing with age to 39.5% of 3-5.9 year olds and 88.5% of 6-8.9 years and reaching 91.7% of 9-11.9 year old children. We measured breath methane excretion status in 69 children (56 lactose-malabsorbers and 13 lactose-absorbers) and found significantly higher breath methane excretion in lactose – malabsorbers.
- 359 Myo Khin; Tin Oo; Htain Win; Phyo Phyo Wai; Aye Aye Thin; Ni Win; Than Than Lwin; Sandar Kyi; Myint Aye Mu and Tin Nu Swe
TITLE Effect of deworming on rice carbohydrate absorption
SOURCE *Myanmar Health Res Congr.* 2000; Programme and Abstracts, p62
ABSTRACT: It has been documented in cross sectional studies that ascariasis hampered the rice carbohydrate absorption status of the children. However, the longitudinal effect of deworming on rice carbohydrate absorption had not yet been studied. There, the rice absorption status of the 54 children were studied before deworming, and 2 weeks and six months after deworming using rice breath hydrogen test. The mean (SD) of the age of the children was 9.1 (2.1) years with the range of 6 to 13 years. All the subject had ascaris ova in their stools as demonstrated by initial microscopy. Breath hydrogen test using cooked rice as substrate was used to determine their rice carbohydrate absorption status. Initially, 10 out of 46 children (22%) were found to be malabsorbents. Deworming was done using combantrin (Pyrental pamoate) 100mg/kg body weight. Three days stool collection was carried out to determine the number of round worms (*Ascaris lumbricoide*) excreted. The number of excreted worm load among these children ranged from 1 to 104 with a medium of 12 worms. No significant association was found between deworming and change in rice absorption status from malabsorbers, 6 became absorbers at two weeks after deworming. However, at 6 months after deworming, one child reverts back to the malabsorber status. The results indicated that deworming could improve the rice carbohydrate absorption status in children.
- 360 Myo Khin; Tin Oo; Htain Win; S. Kyaw Hla and Khin Mar Oo
TITLE Breath methane excretion in the diagnosis of lactose malabsorption
SOURCE *Myanmar Health Res Congr.* 1994 Programme and Abstracts; p72
ABSTRACT: In recent years, breath gas analysis has been widely used in evaluation of carbohydrate digestion. We carried out a study to evaluate the possibility of using breath methane excretion to indicate lactose malabsorption in field situation. The study population consisted of 117 children aged 1 to 12 years. Hydrogen breath test following a lactose test meal (2g/kg, maximum 50g) was used as a standard test. Lactose malabsorption was detected in 16.7% of children aged 1-2.9 years, the prevalence increasing with age to 40.5% of 3-5.9 years-old and 88.5% of 6-8.9 years and reaching 91.7% of 9-11.9 years old children. Although there were no significant increments of methane concentration at any time in lactose absorbers, breath methane production increases significantly after 120 minutes in lactose malabsorbers. At 180 minutes breath methane concentration between lactose malabsorbers were significantly different. The sensitivity and specificity, the positive and negative predictive values of methane excretion of more than 3ppm at 180min after lactose ingestion as a diagnostic test for lactose malabsorption had sensitivity of 61.5% and specificity of 84.6%. A single breath methane measurement at 3 hours after a lactose test meal may be used as an alternative test for lactose malabsorption.

- 361 Myo Khin; Tin Oo; Htain Win and Thein Win Nyunt
 TITLE Orocaecal transit time measured by breath hydrogen test in pre-school children
 SOURCE *Myanmar Health Sci Res J.* 1998; 10(3); pp112-116
 ABSTRACT: The Orocaecal Transit Time (OCTT) was measured in 90 healthy children aged 1 to 5 years with hydrogen breath test using lactulose (10g in 10% aqueous solution) as the test meal. The relationship between OCTT and gender, age, malnutrition status were assessed. The OCTT for 1.5 years old children was 90.2 ± 20.25 min (mean \pm SD). There was no significant difference in mean OCTT between boys and girls (89.3 ± 15.45 vs 91.05 ± 23.24). The mean OCTT of children who were still breast-fed (92.86 ± 27.1 min) was also not different from those who were also no difference in OCTT between malnourished and non-malnourished children, between age groups (1-2yr, 2-3yr, 3-4yr and 4-5yr).
- 362 Myo Khin; Tin Oo; Htain Win; Thein Win Nyunt; S. Kyaw Hla and Thein Thein Myint
 TITLE Orocaecal transit time in normal and malnourished children
 SOURCE *Myanmar Health Res Congr.* 1994, Programme and Abstracts, p34
 ABSTRACT: The Orocaecal Transit Time (OCTT) was measured in 90 healthy children aged 1 to 5 years with the hydrogen breath test using Lactulose (10g in 10% aqueous solution) as the test meal. The relationships between OCTT and gender, age, malnutrition status were assessed. The OCTT for 1-5 year old children was 90.2 ± 20.25 min (mean \pm SD). There was no significant difference in mean OCTT between boys and girls (89.03 ± 15.46 vs 91.05 ± 23.24). The mean OCTT of children who were still breast fed (92.86 ± 27.1 min) was also not different from those who were completely weaned (89.03 ± 17.0 min). There was also no difference in OCTT between malnourished and non malnourished children, and between age groups (1-2yr, 2-3yr, 3-4yr and 4-5yr).
- 363 Myo Khin; Tin Oo; Sandar Kyi and Khin Maung U
 TITLE Intestinal permeability in Myanmar children: results from a field study
 SOURCE *Myanmar Health Sci Res J.* 1994; 6(1): pp25-30
 ABSTRACT: The differential urinary excretion of lactulose and L-rhamnose after a standard oral dose has been employed as an index of mucosal injury and its feasibility and practicability tested under field conditions. 110 children who were assessed for malnutrition also had intestinal permeability analysis. Weight-for-age were all used as indicators of malnutrition. Moderately malnourished children (75% weight for age) had significantly greater lactulose/L-rhamnose ratios ($p < 0.05$) than those children with normal nutrition (90% weight for age) (0.1495 ± 0.134 vs 0.1132 ± 0.0109). No significant differences were found between the differential sugar ratios of the children who had chronic (90% length-for-age) or acute (80% weight-for-height) malnutrition and those children who were normally nourished according to there classifications.
- 364 Myo Khin; Tin Oo; Sandar Kyi; Khin Swe Myint; Htain Win; Myint Aye Mu and Khin Myat Tun
 TITLE Changes in intestinal permeability following deworming
 SOURCE *Myanmar Health Res Congr.* 2000; Programme and Abstracts, p63
 ABSTRACT: Although it has been demonstrated that worm infestation has a negative impact on intestinal permeability, the recovery of intestinal permeability following deworming need to be demonstrated. We carried out a study to ascertain the effect of deworming on recovery of intestinal permeability in 47 children before de-worming, and 2 months, 4 months and 6 months after de-worming. The age of children ranged from 6 to 12 years with a mean (SD) of 9.2 (1.9) years. All the subjects have ascaris ova in their stool as

demonstrated by initial microscopy. De-worming was carried out using combantrin (pyrental pamoate) 10mg/kg body weight and three days stool collection was carried out to determine the round worms (*Ascaris lumbricoies*) excreted. The range of worm load among the children was 2 to 104 with a median of 12 worms. No significant correlation was found between worm count and intestinal permeability. Lactulose permeability after de-worming show only minimal decrease (from % excretion 0.53 to 0.45) which is statistically not significant. However, the rhamnose permeability showed significant increase at 4 months after de-worming ($p < 0.0010$ and at six months after de-worming ($p < 0.001$). After de-worming, significant improvement in overall intestinal permeability as indicated by Lactulose-Rhamnose permeability ratio (LR ratio) was observed from two months after deworming onwards. The initial LR of 0.31 fell to 0.18 at 2 months after deworming ($p < 0.001$). To 0.13 at 4 month after deworming ($p, 0.001$). The result of this study demonstrated that the deworming has positive effect on intestinal permeability and overall improvement was found to begin at 2 months after deworming. However, the significant improvement in trans-cellular permeability was found to take about 4 months to recover after deworming.

365 Myo Khin; Tin Oo; Sandar Kyi; Than Htike and Thein Thein Myint
TITLE Intestinal mucosal damage in normal and malnourished Myanmar children
SOURCE *Myanmar Health Res Congr.* 1997, Programme and Abstracts, p14
ABSTRACT: To study the change in intestinal mucosal function, a study was carried out on 63 children aged 14-60 months including 46 malnourished children. Dual sugar permeability test using lactulose and L-rhamnose was used to assess, the intestinal mucosal function. The mean permeability index in children with kwashiorkor (0.23; 95% CI 0.14–0.32) and marasmic-kwashiorkor (0.17; 95% CI 0.08-0.12). All children had marked decrease in L-rhamnose excretion reflecting decrease absorption through enterocytes and villous atrophy. Lactulose excretion was significantly increased in kwashiorkor suggesting increased absorption through paracellular spaces and mucosal damage. We conclude that intestinal permeability is increased in malnutrition and mucosal damage is more evident in kwashiorkor.

366 Myo Nyunt
TITLE A clinoco-pathological study on carcinoma stomach
SOURCE MMedSc(Surgery), Institute of Medicine II, Yangon, 1998
ABSTRACT: A hospital based descriptive study on carcinoma stomach in terms of clinical presentations and pathological types based on Lauren (1965) classification, in North Okkalapa General Hospital and Thingangyun Sanpya Hospital during one year period, from April 1996 to March 1997. 28 cases of carcinoma stomach who underwent operations were studied. H and E stain and light microscopy were used for histological classification. 14 diffuse type (50%) and 14 intestinal type (50%) were noted. No case in other category recorded. Cases were studied in association with age, sex, blood group, presenting symptom, tumour size, site of tumour, macroscopic types, metastatic and staging, tumour margin and histology. Significant association of intestinal type with intestinal metaplasia and diffuse type with normal gastric mucosa were noted ($p < 0.001$). Most intestinal types were well differentiated, but most diffuse types were poorly differentiated ($p < 0.05$). These findings support the possible pathogenesis that intestinal type started from intestinal metaplasia in gastric mucosa. Diffuse type tumours are relatively more in poor differentiation and more aggressive in nature which determine the relatively poor prognosis than intestinal type.

- 367 Myo Nyunt; Khin Hla Hla; Khin Mya Htay; Khin Nyo Nyo; Win Ko Ko and Thein Htun
TITLE Pilot study of rotavirus gastroenteritis in neonates and infants at No. (2) M. H.
SOURCE *Myanmar Mil Med Confer.* 1992, Abstract of Papers, p23
ABSTRACT: Rotavirus, belonging to the family of reoviridae has been shown to be associated with 50% of outbreaks of acute diarrheal diseases in hospitalized infants and children in many parts of the world, with high mortality. As the first pilot study in Myanmar, a total of seventy five cases of neonates and infants admitted during January-December 1991, at the No. 2 Military Hospital, Yangon with acute diarrhea has been investigated for rotavirus in the stool using Welcome Rotavirus Latex Kit. Out of seventy five cases screened, a case of 9 day old neonate showed positive rotavirus as the aetiological agent. Fluid and electrolyte replacement is all that is necessary without any need for antibiotics for such cases.
- 368 Myo Swe Kyi
TITLE Role of thoracic computed tomography in preoperative assessment of carcinoma oesophagus
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1993-95
SUMMARY: In this study period, 134 cases of oesophageal carcinoma were admitted. Among them, 20 cases of oesophageal carcinoma had been studied. These 20 cases were diagnosed as operable (stage I, II) oesophageal carcinoma clinically. All these 20 patients had undergone CT scanning. 19 patients had undergone operation. One patient was transferred to cancer unit without operation, as perioesophageal invasion to left main bronchus detected by CT scan and then confirmed by bronchoscopy. The age of the patients ranged from 40 to 80 years. There were 14 males and 6 females. Out of 20 cases of oesophageal carcinoma, 5 involved in middle third, 14 involved in lower third and one involved distal half of the oesophagus. Perioesophageal invasion were present in 18 cases. These invasions were detected by CT preoperatively in 7 cases. Percentage of false negatives was 61.1% and percentage of false positives was 50%. The sensitivity, specificity and accuracy of CT scan in detecting perioesophageal invasion was 38.9%, 50% and 40% respectively.
- 369 Myo Khin; Thein Win Nyunt; Kyaw Hla, S; Thein Thein Myint and Bolin TD
TITLE A prospective study on defecation frequency, stool weight, and consistency
SOURCE *Arch Dis Child.* 1994 Oct; 71(4): pp311-4
ABSTRACT: It has been commonly believed that children in developing countries pass stools that are very different from those of developed countries. A community based study on defecation frequency, stool weight, and consistency was conducted in a cohort of 300 Myanmar children aged 1 to 4 years. Most (80.3%) children opened their bowels daily and none passed more than three stools a day. The mean (SD) defecation frequency was 6.98 (1.94) times a week and total stool weight was 596 (221)g a week. The majority (61%) of children passed soft stools. At all ages, there was no significant difference in the defecation frequency, stool weight, and consistency between boys and girls, those on adult style diet and those partially weaned, and between age groups.
- 370 Mar They, *Naw*
TITLE Clinical study of carcinoma of pancreas and periampullary carcinoma
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1999
SUMMARY: According to Department of Medical Records (YGH and NYGH), the incidence of total numbers of cases per year of carcinoma pancreas and periampullary carcinoma is in the rise. Within (9) months of case collection, we found (21) numbers of biopsy proven patients. This may be due to advanced in diagnostic technique and awareness

of surgeons and physicians regarding the cases presenting with obstructive jaundice. Although the results can't be generalized because of the small sample size, the present study highlights the problem of advanced stages of carcinoma pancreas and periampullary carcinoma and confirmed that the stage of the disease is one of the determinants of the outcome of treatment in our country. All the patients in the present study, came in with the advanced stages which was found to be due to ignorance of the patients, the nature of disease itself, undue delay of patients to seek medical treatment, undue delay by the clinicians due to lack of enthusiasm, awareness and facility in early detection of such cases. Because of the advanced stages in these patients, curative resections are not possible. High morbidity and mortality rate within the follow-up period of (3) months which indicates poor prognosis. Lacks of knowledge and health education are the reasons for poor outcome of carcinoma pancreas and periampullary carcinoma patients in our country than others (i.e. Japan). The poor prognosis of these patients emphasise the need to improve the survival rate with considerable efforts in the future. The public health measures influencing the pattern of eating style in daily diet such as fat, meat, coffee, alcohol favours the incidence. Attempts of early case detection are required for the future. At the present, the best way to solve the problem is to give informations about the nature of the disease to the general practitioners and health education to the public. Majority of cases were referred from Liver Unit and Gastrointestinal Tract Medical Unit. So collaboration of the Surgical Unit and other disciplines is required for early case detection and effective treatment. Any patients presenting with anorexia, weight loss in their 4th or 5th decades should be screened for malignancy. Author hope the efforts of early detection of carcinoma pancreas patients with the resultant increase in curative resectability rate, better staging incorporation with the radiologist and pathologist will undoubtedly improve the prognosis of carcinoma pancreas and periampullary carcinoma patients in our country in the future.

- 371 Nyo Mie Kyaw
TITLE Antibiotic susceptibility pattern of Enteropathogenic *Escherichia coli* (EPEC)
SOURCE MSc(Zoology), Yangon University, 1998
ABSTRACT: Three hundred and thirty five diarrhoea cases of children below five years were tested of EPEC by using the most recommended standard method. Both sexes were included in the sample collection. Of the 335 samples tested, EPEC is isolated from 61 cases (18.21 percents). The age groups were categorized into six groups, below six months, 7-12 months, 13-24 months, 25-36 months, 37-48 months and 49-60 months. Of these age groups EPEC was detected mostly in the age group of 13-24 months. The study period lasted from March 1997 to April 1998. The antibiotic susceptibility tested by agar diffusion test shows that 88.5 percent of the cases of EPEC are resistant to ampicillin, 80.33 percent to carbenicillin; 62.3 percent to choramphenicol; 90.32 percent to aminobenzyl penicillin, 88.53 percent to streptomycin, 80.33 percent to septrin (trimethoprim/sulfamthoxazole) and 86.89 percent to tetracycline. The sensitive pattern of EPEC to antibiotics are 98.36 percent to amikacin, 59.02 percent to cephalothin, 78.69 percent furazolidone, 88.53 percent to gentamycin, 67.21 percent to minocycline, 83.61 percent to nalidixic acid, 81.97 percent to norfloxacin and 85.25 percent to sisomycin. Suggestions for future work are outlined.
- 372 Nwe Nwe Win
TITLE A study of assessment of proper preparation and usage of oral rehydration solution in mothers of under 5 children with diarrhoea
SOURCE MMedSc (Paediatric). Institute of Medicine II, Yangon, 1995
ABSTRACT: The study of proper preparation and usage of ORS in mothers of under 5 years old children with diarrhoea and some rehydration admitted to NOGH and DSOGCH was carried out between June and November 1994. It was hospital based

descriptive study. Standard structured interview and observation schedules were employed. The study samples include a total of 170 mothers, 120 from NOGH and 50 from DSOGCH. It was found that no difference were noted between two sub-samples regarding educational status, previous experience with diarrhoea in children, health education exposure status on diarrhoea, knowledge of ORS, correctness in ORS preparation, correct usage of ORS in first 4 hours, method of giving ORS, overall preparation, usage and methos of giving ORS. Aanlysisof data relating to whole sample showed about half of mothers could not prepare ORS correctly. Most of the mothers could not use correct amount of ORS solutionin 1st 4 hours. However, most of the mothers could use coorrect methods in giving ORS. It was also found that in these mothers (1) income, occupation, education had no relation with correctness in preparation of ORS (2) previous experience with diarrhoea in children, health education exposure status on ORS, familiarity with ORS, knowledge of ORS, however, had significant association with correctness in preparation of ORS (3) amount of ORS used in 1st 4 hour, had significant association with health education exposure status and knowledge on ORS. (4) method of giving ORS had significant association with previous experience with diarrhoea in children.

373 Nwe Nwe Winn
TITLE The effectiveness of exclusive breast-feeding in the prevention of diarrhoeal diseases in babies under four months of age
SOURCE MMedSc(Paediatric). Institute of Medicine II, Yangon, 1997
ABSTRACT: To determine the effectiveness of exclusive breast feeding in the prevention of diarrhoeal diseases among the babies under four months of age, 100 cases including 50 exclusively breast fed and 50 non exclusively breast-fed babies delivered at North Okkalapa General Hospital were studied. The incidence and severity of diarrhoeal diseases in relation to breast feeding practices and illness were assessed monthly by questionnaires. Incidence of diarrhea was less among those who were exclusively breast-fed compared with those who received non-exclusive breast- feeding (P value=0.005). The risk of developing dehydration was also reduced in exclusively breast-fed babies, but it is not statistically significant. Most of the mothers who were successful in initiating and maintaining exclusive breast-feeding were low parity, young age and educated and they all attended antenatal care regularly.

374 Oo KN; Thida M and Aye NN
TITLE Comparison of main features in children with cholera O1 and O139 in Yangon, Myanmar, 1996
SOURCE *J Diarrhoeal Dis Res.* 1997 Dec; 15(4): pp250-1
ABSTRACT: No Abstract

375 Oo KN; Aung WW; Thida M; Toe MM; Lwin HH and Khin EE
TITLE Relationship of breast-feeding and hand-washing with dehydration in infants with diarrhoea due to *Escherichia coli*
SOURCE *J Health Popul Nutr.* 2000 Sep; 18(2): pp93-6
ABSTRACT: This prospective cohort study was carried out in the neonatal unit of the Yangon Children Hospital, Myanmar, to gather more information on the types of feedings and hand-washing practices of mothers as the determinant of severe dehydration in infants with acute diarrhoea due to *Escherichia coli*. The study subjects included 100 infants with diarrhoea, aged less than 4 months, admitted to the hospital from June 1997 to May 1998. Data on isolation of *E. coli* from rectal swab samples, types of feedings, hand-washing practices, and dehydration status were collected. Of the 100 cases, *E. coli* was isolated from rectal swab samples of 48 infants. Of these 48 cases, 28 had some dehydration and 20 had

severe dehydration. Exclusive breast-feeding was observed only in the age group <1 and >1-2 month(s). The association of the severity of dehydration with other types of feedings compared to exclusive breast-feeding was not statistically significant. In this study, most mothers washed their hands with water only after cleansing their children's defaecation, and before and after feeding their children. The severity of dehydration was statistically significant in hand-washing practices when compared to washing with water only and washing with soap and water. This study has shown the association between types of feedings and hand-washing practices with dehydration in infants with acute diarrhoea due to *E. coli*. The results of the study suggest that there is a need for appropriate intervention programmes to promote exclusive breast-feeding and hand-washing practices with soap and water after cleansing children's defaecation, and before and after feeding children.

376 Oo Kyaw
TITLE Gastrointestinal tuberculosis in surgical practice
SOURCE *Myanmar J Curr Med Practice*. 2000; 4(3): pp146-148

Abstract /Summary not available: Abstract written by book editors

This paper represents the study of gastrointestinal tuberculosis in Kayin State, Mon State, social security health care clinics throughout Myanmar and North Okkalapa area of Yangon Division (1988-1998). Gastrointestinal tuberculosis is widely regarded as a rare disease in Western countries but not in Myanmar. It remains a common surgical problem of gut obstruction, perforation and in a peritoneal mass, in many parts of Myanmar.

377 Oo Kyaw
TITLE E-1991 operative method in the management of enteric perforation
SOURCE *Myanmar J Curr Med Practice*. 1999, 3(2): pp355-358

Abstract /Summary not available: Abstract written by book editors

Typhoid fever remains a problem in our country and perforation is a deadly complication. The aim of this prospective study is to report the impressive reduction in mortality following E-1991 operative method in a group of 30 patients with clinical suspicion of enteric perforation. There were two deaths giving a case fatality rate of 6.6% with no case of wound dehiscence. E-1991 operative method seems to be the best treatment for typhoid perforation and is recommended for surgeons practicing in a handicapped environment in district and divisional hospitals.

378 Pereira SP; Khin Maung U; Bolin TD; Duncombe VM; Nyunt Nyunt Wai; Myo Khin and Linklater JM
TITLE A pattern of breath hydrogen excretion suggesting small bowel bacterial overgrowth in Burmese village children
SOURCE *J Pediatr Gastroenterol Nutr*. 1991 Jul; 13(1): pp32-8

ABSTRACT: Breath Hydrogen Tests (BHTs) were performed on 340 Burmese village children aged 1-59 months. Normalization (correction of breath H₂ values to a constant mean O₂ level) eliminated the variations in H₂ levels due to sleep, storage temperature, or duration of storage. After a 10g lactulose test meal, 145 (42.6%) children produced less than 10ppm H₂ above basal values (non-H₂ producers). Of 195 H₂ producers, a pattern of breath hydrogen excretion suggesting small bowel bacterial overgrowth (SBBO)—recognized as a transient peak at the 20, 40, or 60min breath samples following the lactulose test meal and distinguishable from the later colonic peak—was observed in 53 (27.2%), being significantly more frequent in male children, and exhibiting an age-prevalence pattern similar to that of acute childhood diarrhea in these villages. Diarrhea did not alter the state of H₂ production (non-H₂ producers remain non-H₂ producers, and H₂ producers remain H₂ producers) although the magnitude of peak breath H₂ changed.

- 379 Phyu Phyu Thaw
 TITLE Antibiotic susceptibility pattern of *Shigellae*
 SOURCE MSc(Zoology), Yangon University, 1997
 ABSTRACT: The antibiotic susceptibility pattern of *Shigellae* was carried out in Yangon Children's Hospital and Infectious Diseases Hospital during 1996. A total of 71 strains of *Shigellae* isolated from 449 cases of enteric infections were tested for antibiotic susceptibility testing using 17 different types of antibiotic disc. From Yangon Children's Hospital *Shigella boydii* (27.66 percent); *Shigella dysenteriae* (19.15 percent); *Shigella flexneri* (48.94 percent) and *Shigella sonnei* (4.26 percent) were isolated. From Infectious Diseases Hospital, *Shigella boydii* (12.50 percent); *Shigella dysenteriae* (29.17 percent); *Shigella flexneri* (54.17%) and *Shigella sonnei* (4.17 percent) were isolated. The *Shigellae* isolated from Yangon Children's Hospital, were resistant to ampicillin (87.23 percent); chloramphenicol (74.47 percent); cephalothin (44.68 percent); furazolidone (36.17 percent); streptomycin (74.47 percent) septrin (74.47 percent); tetracycline (65.96 percent). The *Shigellae* isolated from Infectious Diseases Hospital, were resistant to ampicillin (87.5 percent); chlorophenicol (83.33 percent); cephalothin (33.33 percent); furazolidone (37.5 percent); streptomycin (83.33 percent); septrin (83.33 percent); tetracycline (91.67 percent). However, *Shigellae* from Yangon Children's Hospital, were totally sensitive to amikacin and neomycin; augmentin (59.17 percent); gentamycin (93.48 percent); kanamycin (94.74 percent); minocycline (85.11 percent); nalidixic acid (89.36 percent); netilmicin (97.87 percent); sisomycin (93.62 percent); and norfloxacin (93.62 percent). *Shigellae* from Infectious Diseases Hospital, were totally sensitive to amikacin, augmentin (70.83 percent); gentamycin (82.61 percent); kanamycin (87.50 percent) minocycline (75.00 percent); nalidixic acid (69.57 percent); netilimicin (95.83 percent); sisomycin (79.17 percent); and norfloxacin (70.83 percent).
- 380 Phyu Phyu Sein
 TITLE A study on prevalence of antibody to *Helicobacter pylori* in Myanmar children at North Okkalapa Township
 SOURCE 8th Med Spec Conf. Myanmar Med Assoc. 1997, Abstract of Papers, pp31-32
 ABSTRACT: The study was conducted in North Okkalapa Township from April 1995 to June 1995 by a cross-sectional study with the aim of identifying the prevalence of *H. pylori* infection in Myanmar children. A total of 201 children aged 2-12 years of both sexes were chosen at random for the study. IgG antibody to *H. pylori* in the saliva specimen from the children was measured by an ELISA test. Routine examination of stool from children with recurrent abdominal pain was also performed. An overall prevalence of 31.34% was observed. No statistically significant association was observed between *H. pylori* infection and age, sex, socio-economic class, water supply and overcrowding characteristics ever though differences were recorded. A significantly higher ($p < 0.02$) rate of 75% was observed in children using surface latrines as compared to 29.26% in children using pit latrines. No significant association was also observed between *H. pylori* infection and recurrent abdominal pain or parasite infestation.
- 381 Phyu Phyu Win and Tin Aye
 TITLE *Aeromonas* and *Plesiomonas* strains isolated from diarrhea and dysentery cases
 SOURCE Myanmar Health Sci Res J. 1992; 4(2): pp90-95
 ABSTRACT: The study was carried out to determine the frequency and importance of *Aeromonas* and *Plesiomonas shigelloides* in the pathogenesis of gastroenteritis. Stool samples were collected from the diarrhea and dysentery patients who attended the Infectious Diseases Hospital as well as from the outpatient clinics during August, 1990 to June, 1991. Isolation and identification of the pathogens was processed by standard biochemical test described by Cowen (1974) and according to the criteria outlined by von Graevenitz (1985).

Of 124 patients studied, *Aeromonas* spp. were isolated from 5 (4.03%) and *Plesiomonas shigelloides* from 2 (1.61%). It is evident that *Aeromonas* and *Plesiomonas* spp. are not an uncommon a etiological agents of acute gastroenteritis in Myanmar. So, it is anticipated to study on these bacteria to expand the knowledge and to provide information on the epidemiological control of the disease caused by these bacteria.

382 Phyu Phyu Win and Tin Aye
TITLE *Aeromonas* and *Plesiomonas* strains isolated from diarrhoea and dysentery cases
SOURCE *Med Res Congr.* 1991, Abstract of Papers, p11
ABSTRACT: This study was carried out to determine the frequency and importance of *Aeromonas* and *Plesiomonas shigelloides* in pathogenesis of gastroenteritis. Stool samples were collected from the diarrhoea and dysentery patients attended to the Infectious Diseases Hospital as well as from the outpatient clinics during August, 1990 to June, 1991. Isolation and identification of the pathogens was processed by standard biochemical tests described by Cowen (1974) and according to the criteria outlined by Von Graevenitz (1985). Of 124 patients studied, *Aeromonas* spp. were isolated from 5 (4.03%) and *Plesiomonas shigelloides* from 2 (1.61%). It is evident that *Aeromonas* and *Plesiomonas* spp. are not uncommon aetiological agents of acute gastroenteritis in Myanmar. So it is anticipated to study on these bacteria to expand the knowledge and to provide an information on the epidemiological control of the diseases caused by these bacteria.

383 San San Myint
TITLE A study of intestinal permeability in diarrhoeal diseases
SOURCE MMedSc(Paediatrics), Institute of Medicine I, Yangon, 1999
ABSTRACT: Intestinal permeability in diarrhoeal diseases during acute and recovery stages of diseases were compared by using quantitative high potency thin layer chromatography. After oral ingestion of an isotonic solution containing monosaccharide and disaccharide, their urinary excretion were measured both in acute stage and recovery stage. The mucosa damaged during acute stage and regeneration of mucosa at recovery stage that is 4-6 weeks after acute stage were compared. Then correlation of persistent diarrhoea and malnutrition were also studied. Intestinal permeability in diarrhoea diseases was assessed in 38 children with various types of diarrhoea including acute diarrhoea, persistent and dysentery (bloody diarrhoea) diarrhoea. Intestinal permeability is expressed as lactulose (disaccharide) and L-rhamnose (monosaccharide) ratio (LL/Rhm) in urine after ingestion. Mucosal damage and regeneration of both acute and recovery phase of diarrhoea are showed as urinary excretion percentage of monosaccharides (Rhm%) and disaccharides (LL%) in 5 hours urine collections. In acute diarrhoea, in acute phase, LL% was not significantly changed in recovery phase but in case of Rhm% there was significantly high in recovery phase and it was statistically significant [P<0.01]. Also in LL/Rhm ratio, showed that significant fall in recovery stage [P<0.01]. Time taken to estimate the recovery phases were ranged from 4 weeks to 8 weeks. Also in persistent diarrhoea, like in acute diarrhoea (LL%) results were not significantly lowered in recovery phase, but in Rhm% there was significantly higher in recovery urine [P<0.01]. In case of LL/Rhm ratio, there was also significantly lower in recovery phase. [P<0.02]. But times taken to estimate the intestinal permeability in recovery phase were ranged from 6 weeks to 24 weeks. In case of bloody diarrhoea like dysentery, there are more of bacteria dysentery and amoebic dysentery was found in only one case. There were nosignificant results in LL%, Rhm% and LL/Rhm ratio. In this study, nutritional statuses of estimated children were done according to the percentage of median value of growth curve of National Centre for Health Statistics as weight for age. Height for age, weight for height in both acute and recovery stage of various types of diarrhoea. In case of

acute diarrhoea, there was significant increased in Weight For Age (WFA) in recovery phase than acute phase. [P<0.001]. Also in Length For Age (LFA) there was not statistically significant [P=0.05], and Weight For Length (WFL) results show statistically significant in recovery stage (P<0.01). As like as acute diarrhoea in persistent diarrhoea, increment of WFA was statistically significant [P<0.001] and LFA increment was not statistically significant [P>0.05]. In percentage of WFL increment was also statistically significant. [P<0.01]. In case of dysentery percentage of WFA increment increased after the episodes of 136 argeted136 (recovery) and it was statistically significant [P<0.001]. Percentage of LFA also increased but it was not statistically significant [P>0.05]. Percentage of WFL increased after the episodes and it was statistically significant. [P<0.01]. Therefore, in all types of diarrhoea except dysentery regeneration of epithelium and normal permeability restored and increment in both WFA and WFL at recovery stages. But because of the patency of lactulose (disaccharides) in 5 hours urine collection of recovery sample indicated that mucosa leakiness still occurred at in – recovery phase of all 3 types of diarrhoea. In case of dysentery, in spite of good clinical response and weight increment, there was not statistically significant results in both sugars (monosaccharides and disaccharides), (LL%, Rhm%) percentage excretion and mono and disaccharides excretion ratio (LL/Rhm) in 5 hours urine collection. In nutritional status, WFA and WFL were increased, but there was no significantly increased percentage of LFA was found. Therefore mucosa epithelial regeneration may not completely occurred at recovery phase and subclinical enteropathy was still play a role in intestinal permeability changes.

- 384 San San Oo
TITLE Strategic significance of health information from clinico-social behavioural study of childhood diarrhoeal diseases at Yangon Children Hospital year 2000
SOURCE MMedSc(Public Health), Institute of Medicine II, Yangon, 2000
ABSTRACT: Hospital based cross sectional descriptive study (both quanti and qualitative) on diarrhoeal cases under 12 years was carried out at YCH. 150 diarrhoea cases from 3 children medical wards of YCH were included in this study. The respondents were interviewed by pretested questionnaires, in depth interviews by same interviewr and their records were reviewed with record review check lists. The study design was hospital based cross sectional descriptive study (both quantitative and qualitative) through face to face interviews using a structured questionnaires and house hold based interviews and observations were done on the selected houses in the satellite areas of Yangon. The study covered 150 cases of diarrhoea under the age of twelve years, admitted to YCH with the chief complaint of loose motion more than three times in one day. Both male and female cases were included. The response rate was 100% (4) cases died during the study period of April to end of September of year 2000. Total admission of diarrhoea cases at YCH for year 2000 were (2600) and expired with diarrhoea cases were (50) cases this providing CFR of diarrhoea disease was (19%) for year 2000. For qualitative study, twelve cases were selected as ten extreme cases with extreme case sampling method and two typical cases were indepth interview with guide line for indepth interviews questionnaires. Study result indicated that 94% were under one year children and only 6% were one year and above children. Among those, most of cases were male i.e 55.7%. It is also indicated that clinical types of (1) acute watery diarrhoea (81 cases 54%) (2) Acute bloody diarrhoea (51 cases 34%) (3) Persistent watery diarrhoea (9 cases 6%) (4) Persistent bloody diarrhoea (9 cases 6%). Measles sassociated cases were ten cases and fever associated cases were 106/150 and HIV associated cases were four cases. Most of the care-takers were mother and had average KAP score for diarrhoea related knowledge but only few percentages of caretakers managed satisfactorily for current episode of diarrhoea. Majority of care takers could not prepare the ORS solution

correctly. It is found that significant association between socio demographic characteristics of caretakers such as maternal education, maternal KAP, poverty and severe diarrhoea. Regarding health care center contact, most of patients contact to G.P., second most were TMP and only few percents contact to hospital directly. Most of cases who sought G.P. were found that diarrhoea with severe dehydration. Most of General practitioners could not instruct the correct preparation of ORS solution and assess the disease status correctly. They also could not give proper health education concerning feeding practice during episode and about type of food given. It also found that significant association between feeding practice, environmental sanitation and severe diarrhoea. In qualitative study (about 12 cases) also indicated that clinico social course of diarrhoea cases as most cases came from poor economic status, had low education level, low KAP relating to diarrhoea causation, feeding practice and ORS preparation. (4) expired cases associated with HIV infection and (2) cases transferred to nutritional unit for further management and (2) cases lived in houses with no latrine. The remainders recovered completely but not severe social and economical burden strongly as well as in expired cases. Based on findings, unsatisfactory home management of caretaker about feeding practice during episode, correct ORS preparation, unsatisfactory management of General Practitioners such as incorrect assessment of disease status and incorrect instruction about ORS solution. HIV associated diarrhoea diseases were concluded as important issue as well as environmental sanitation was also important for prevention and reduction of diarrhoea cases. Therefore establishing proper IEC materials concerning feeding practice, correct ORS preparation, training and refresher courses for health professionals will also be suggested to improve the diarrhoea related knowledge among mothers as well as health care providers. Sanitary latrine programme should be intensified along with public education on proper use of latrine to protect insanitary environmental situation. Encouraging interest of M.S. from hospital on poor patients and ruled out proper criteria for those patients and should be given more supportive measures such as in terms of money or drugs or required supplements. Conducting further exploratory studies should be made on the clinical diagnosis of HIV related diarrhoea so as to assist in proper management.

385 Saw Aung
 TITLE A comparative study of gastrointestinal motility in emergency appendicectomy cases for uncomplicated appendicitis with and without nasogastric suction
 SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1992-94
 ABSTRACT: OBJECTIVE: To determine the effects of nasogastric suction on the return of gastrointestinal motility after emergency appendicectomy for uncomplicated appendicitis and to determine the advantages and disadvantages of early oral feeding in such cases. **Design:** Prospective randomized and comparative study of uncomplicated acute appendicitis cases during 1st April to 20th July 1993. **Setting:** Emergency Department of Yangon General Hospital. **Subjects:** 100 cases of uncomplicated acute appendicitis; 50 cases with nasogastric suction (group 'A') and 50 cases without nasogastric suction (group 'B'); alternate cases in each group. In group 'B' sip of water is given on first 24 hours and 1-2Oz/Hr. of fluid given on 2nd & 3rd postoperative days. **Main outcome measures:** The return of gastrointestinal motility and advantages and disadvantages of early oral feeding. **Results:** Age of patients on group 'A' range from 14 to 56yr, with mean age of 30.6yr, and that of group 'B' range from 16 to 75yr with mean age of 33yr. Sex distribution was 48% male and 52% female in group 'A' and 46% male and 52% female in group 'B'. On the first postoperative day 12% of group 'A' patients and 36% of group 'B' passed flatus. The difference was statistically not significant (p=0.0648). On the 2nd postoperative day 66% of group 'A' and 80% of group B passed flatus. The difference was statistically not significant (p=0.404). Patients of both groups passed flatus on 3rd postoperative day. Bowel sound was

present in 56% of group 'A' and 64% of group 'B' on 1st postoperative day. Ninety four per cent of group 'A' and 96% of group 'B' on 2nd postoperative day and all cases of both groups on 3rd postoperative day. Vomiting occurred in 4 cases of group 'A' and one case of group 'B' in 1st postoperative day. The difference was statistically not significant ($p=0.402$). Vomiting occurred in 2 cases and one case of group 'A' on 2nd and 3rd postoperative days respectively. None of the patients from both groups had abdominal distension. None of the patients from group 'B' needed reinsertion of nasogastric suction tube. Conclusion: These findings suggest that, in uncomplicated acute appendicitis, there is no difference in the return of gastrointestinal motility between those patients with postoperative nasogastric suction and those patients without. Oral fluid feeding is permissible in early postoperative period after emergency appendicectomy for uncomplicated acute appendicitis.

386 Saw Mya Yee; Tun Myint and Yee Yee Myint
TITLE Analysis of gastrointestinal biopsies reported at the New Yangon General Hospital (NYGH) (January 1990 - September 1992)
SOURCE 39th Myanmar Med Conf. 1993; pp43-44
ABSTRACT: A total of 870 surgical biopsies from the gastrointestinal tract were reported from the Department of Clinical Pathology, N. Y. G. H. during the period of January 1990 to September 1992, 446 (53.56%) were gastric biopsies, 386 (44.3%) were intestinal biopsies and 18 (2%) were oesophageal biopsies. Malignant tumours of the gastrointestinal tract were considerable and those of inflammation were equally common. Malignant tumour of oesophagus (55.56%), inflammatory condition (27.78%) of oesophageal biopsies, (19.9%) of malignant tumours of the stomach, (25%) of peptic ulcer and (44.64%) of gastritis of gastric biopsies, 22.5% of intestinal malignancy and the 60.63% of the inflammatory conditions of the intestinal biopsies were reported. Histological typing of the malignant condition were also studied and inflammatory conditions were analysed for specific and non specific lesions.

387 Sein Lin; Kyaw Zin Han; Myint Myint Khaing and Tun Myint
TITLE Clinical and pathological analysis of acute appendicitis (A prospective study)
SOURCE 8th Myanmar Mil Med Conf. Abstract of Papers, 1998, p2
ABSTRACT: During 12 month period from February 1997 to January 1998, 67 cases were diagnosed as acute appendicitis and admitted to surgical unit, No. (2) Military Hospital (500 bedded). Preoperative data collection according to "Appendicitis Protocol Sheet" was done. Thorough physical examination and laboratory investigations were done. Occasionally diagnostic imagings were done. Prophylactic antibiotic iv ampicillin 500mg just prior to operation and another 2 doses after operation were given and those (34) cases were excluded from this study. The clinical diagnostic accuracy was 97.50% and laboratory supportive evidence for acute inflammation was 49.20%. The results of peritoneal swab for C&S from all cases of acute appendicitis were sterile. During histopathological examination, there were moderately inflamed appendix in 25 cases and severely inflamed appendix in 8 cases. One case had right-sided ectopic tubal pregnancy. Postoperative wound sepsis was found in three cases which are superficial in nature are well healed after a few days of dressing. There were no post operative intra abdominal sepsis. The purpose of submitting this paper is to analyse clinical and histo-pathological findings of acute appendicitis and effective role of using prophylactic antibiotic.

- 388 Sein Myint; Nyunt Shwe; Hla Aye and Khin Maung Than
TITLE Perforated peptic ulcers, updated
SOURCE 38th Myanmar Med Conf. 1992; p32
ABSTRACT: The management of perforated peptic ulcer remains controversial. Some advocates emergency surgery in the form of suture of perforation. Few recommend emergency definitive ulcer curing surgery in fit patients. Non-operative conservative treatment is safe and effective in preventing continuing leakage and promoting spontaneous sealing of the perforation. From 1st July 1990 to 31st October 1991, forty patients with perforated peptic ulcers were admitted to surgical unit of Sao San Htun Hospital, Taunggyi. All patients were treated conservatively according to protocol. 30 patients had their perforation sealed spontaneously. 10 patients needed surgical intervention at the end of the observation period. The protocol for the conservative approach, the outcome of the patients who need surgical intervention and those whose ulcers have sealed spontaneously without operation will be discussed.
- 389 Soe Aung; Myo Khin; Tin Nu Swe; Khin Myat Tun and Htain Win
TITLE Breath methane excretion of apparently healthy subjects in North Okkalapa periurban area
SOURCE 38th Myanmar Med Conf. 1992; p33
ABSTRACT: Breath methane, an indicator of intestinal methanogenic bacterial flora status, was measured in 1426 subjects (562 males and 864 females) from North Okkalapa peri-urban area using QUINTRON microlyser model 16. The prevalence of breath methane excretors was found to be 49.78% with female predominance ($p < 0.01$). The youngest excretor was found to be 10 month old and the oldest 84 years old. The prevalence of excretors increases with age until a peak is reached at 41-60 age group and then declines ($p < 0.0001$). Socioeconomic and sanitary factors were not found to significantly influence the prevalence of breath methane excretors. On the other hand the prevalence of methane excretors in smokers (74.8%) was found to be significantly higher than that of non-smokers (45.1%) ($p < 0.001$). The clinical implication of breath methane excretion status is fully discussed.
- 390 Soe Myint; Tin Tin Htwe and Than Than Win
TITLE Role of GP in diarrhoeal management
SOURCE *Med Res Congr.* 1991, Abstract of Papers, p7
ABSTRACT: Diarrhea diseases kill approximately (4) million children a year around the world. About two and half million of these deaths are the result of dehydration. The tragedy is that most of these can be prevented by available technology i.e. Oral Rehydration Therapy (ORT). It is felt that there is an important role which GPs can play in the use of thesis intervention. Therefore, a convenient sample of (87) General Practitioners from Yangon Municipal area was requested to answer the self administrated questionnaire. Objectives of the study are; to identify role of General Practitioners in promotion of homemade oral rehydration solution used in diarrhea and to estimate the size of diarrhoea problem, the volume and price structure of ORS sachets used in General Practice. The result of the survey are presented and discussed.

- 391 Soe Soe Myint
TITLE A study on clinical profile and aetiologic agents in acute diarrhoeal cases admitted to Yangon Children's Hospital
SOURCE MMedSc(Paediatrics), Institute of Medicine I, Yangon, 1998
SUMMARY: A total of 200 children under five years attending the Yangon Children's Hospital during 1996 were studied. History taking and physical examination were done. Stool samples were collected and routine examination were carried out. Rectal swabs were also taken and investigated for culture at Bacteriology Research Division of Department of Medical Research. In this study, 57% were male and 43% were female. Aetiological agents were isolated in 64% of cases. Among these 45.5% were single pathogen isolated and 18.5% were mixed infection. No pathogen were isolated in 35% of cases. Isolated organisms were EPEC 13%, ETEC associated serogroups (5.5%), other *E. coli* which were not able to differentiate by available antisera (12.5%), *shigella* (8.5%), *Vibrio cholera* (5.5%), *Klebsiella* (1%), rotavirus (29%), *Entamoeba histolytica* (21%), *Giardia lamblia* (0.5%), *Ascaris ova* (5%), *Trichuris trichura ova* (0.5%). Most of the organisms were isolated from children under 2 years of age. Rota viruses were most frequently detected in children under one year (62.5%) and no cases above two years. Majority of the diarrhoeic children showed some dehydration (76%). The rest were severe dehydration (10.5%) and no sign of dehydration (13.5%). Varieties of clinical presentations; associated conditions and complications were observed among acute diarrhoea cases. Associated fever were seen in 75% of cases Vomiting 73.5% and malnutrition were seen in 12.5% of cases. Worm infestations were seen in 5% of cases. Shock and clinical septicaemia were noted in a few patients. 7 cases expired and all of them were found to be associated with malnutrition and severe dehydration. It was also found that environmental and personal hygiene are important for prevention of diarrhoea. Maternal literacy and education is one of the important factors for child survival in diarrhoea disease.
- 392 Than Htike
TITLE A study on small intestinal permeability in relation to nutritional status in Myanmar children
SOURCE 6th Med Spec Conf. 1993, Abstract of Papers, pp46-47
ABSTRACT: A prospective study was carried out to determine the feasibility and applicability of intestinal permeability tests in children with (or) without malnutrition. The intestinal permeability tests were performed in 46 PEM children (15 kwashiorkor, 15 marasmic-kwashiorkor, 16 marasmus) and 19 control children. Permeability was measured by differential sugar absorption tests using lactulose and rhamnose. Urinary sugar excretion was determined by quantitative thin layer chromatography. The lactulose/L-rhamnose ratios were found to be significantly higher ($p < 0.05$) in kwashiorkor children (mean 0.228) compared to those children who were well nourished (mean 0.13). The lactulose/L-rhamnose ratios were also found to be significantly higher ($p < 0.05$) in those children with marasmic-kwashiorkor (mean 0.172) compared to those children who were well nourished (mean 0.130). No significant differences in the sugar ratios were found in between maramus and well nourished children, and between marasmic-kwashiorkor and marasmic children ($p > 0.05$). It is postulated that reduce L-rhamnose urinary excretion in malnutrition is due to a reduction in absorption area in the small bowel, whereas, increased lactulose excretion indicated leakiness on the abnormal mucosa to large polar molecules.

- 393 Than Htwe
TITLE The comparative study of preoperative single dose antibiotics versus postoperative antibiotics therapy in acute appendicitis
SOURCE MMedSc(Surgery), Institute of Medicine II, Yangon, 1998
SUMMARY: This is a comparative study on 2 groups of patients, each consist of 20 patients undergoing emergency appendisectomy in Surgical Unit of NOGH from May 1996 to January 1997. It compares the efficacy of preoperative single dose antibiotic with postoperative routine antibiotic therapy in prevention of wound sepsis. The two groups were not ideal comparison for age, sex and other risk factors due to limitation of study periods and due to emergency operation. One patient from group A and one patient from group B developed wound sepsis. There was no significant difference between 2 groups in wound sepsis rate, oher post-operative infection rate and hospital stay. But in cost effectiveness, group A has an advantage over group B.
- 394 Than Khin
TITLE The barium study of gastric outlet obstruction
SOURCE MMedSc(Radiology), Institute of Medicine I, Yangon, 1996
SUMMARY: During one year study period from April 1995 to March 1996, 56 patients with clinical diagnosed of GOO, admitted to Surgical Units, YGH were examined by barium to detect the causes of obstruction. All patients underwent surgery and biopsy was taken for histological confirmation. There are found 22 (39.3%) cases of PU obstruction and 34 (60.7%) cases of neoplastic ohstruction. PU obstruction is found to be the most common cause and chronic DU accounts for 90.9% of PU cases. Most common causes of neoplastic obstruction is adenocarcinoma and accounts for 90%. The majority of PU obstructive cases are found in 31 to 41 years agc group and most cases of neoplastic obstruction are found in 61 to 70 years agc group with the male preponderance in both types. Most of the GOO patients presented with the symptoms of epigastric pain or discomfort, vomiting and weight loss. The common physical signs are anaemia, dehydration, 141 argeted 141n splash and visible peristalsis. Other signs of epigastric mass, and lymph node enlargement are particularly found in neoplastic cases. The main radiological features of GOO are dilation of the stomach and the presence of food residue in it. Mucosal destruction and irregular filling defect are mostly found in neoplastic obstruction. Morphologically, the infiltrating, the polypoid or fungating type are most common. According to histology, adenocarcinoma is the most common type and found in 94% of neoplastic obstruction. Most common surgical procedures for GOO are double vagotomy and gastro-jejunostomy, partial gastrectomy and gastro-jejunostomv. And most cascs of PU obstruction were treated by double-vagotomv and gastro-jejunostomy. And most cases of neoplastic obstruction were treated by Partial gastrtectomy and 141arget-jejunostomy. With barium study signs of gastric obstruction had been detected in all cases and can be evaluated the causes of obstruction in 85.7%. Therefore detection rate of barium study is benefit for GOO. In the present study, radiological diagnosis correlated with surgical finding in 82.7%.
- 395 Than Lwin and Than Sein
TITLE A comparative study of perioperative versus postoperative antibiotic prophylaxis in biliary surgery
SOURCE 6th Myanmar Mil Med Conf. 1996, Abstract of Papers, p14
ABSTRACT: A prospective randomized control study was carried out in 41 patients undergoing elective biliary surgery during one year period from March 1994 to February 1995. Of 41 patients, 20 patients were encountered into study group and 21 patients were encountered into control group. The efficacy of Augmentin for prevention of postoperative febrile morbidity and wound sepsis as compared with perioperative versus

postoperative regimen in biliary surgery. 4 patients in study group and 7 patients in control group were developed postoperative febrile morbidity. None of the study group developed wound sepsis but 3 patients developed wound sepsis in control group. Although febrile morbidity and wound sepsis were developed, all bile cultures from 41 patients were sensitive to Augmentin.

396 Than Naing Tun
TITLE Ultrasonographic assessment of gastrointestinal masses
SOURCE MMedSc(Radiology), Institute of Medicine I, Yangon, 1998
SUMMARY: This study is based on total 38 cases of ultrasonographically diagnosed gastrointestinal masses were confirmed by histology. They were admitted to surgical units of YGH, NYGH and GI units of YGH from May 1997 to May 1998. Ten (26.3%) out of 38 cases of gastrointestinal masses presented as mass arising from appendix. Among them, one of 8 cases ultrasonographically diagnosed as appendicular mass turned out to be an appendicular abscess. So, careful examination is needed not to miss the detection of an abscess. Besides one out of 2 cases ultrasonographically diagnosed as appendicular abscess changed into duodenal perforation with pelvic abscess on operation. So, it is critical to find out normal appendix by changing different probe direction together with appropriate posture of the patient not to diagnose as the appendicular abscess in case of pelvic abscess. Twelve (31.6%) out of 38 cases of GI masses are stomach origin. They produce typical pseudorenal signs with thickened bowel wall. So, all cases diagnosed as carcinoma of stomach ultrasonographically are found to be true at histology. Sometimes, fluid filled dilated stomach gives more visualization of a relatively well defined, nonhomogeneous echogenic mass within the body of the stomach. Three (7.9%) out of 30 cases of gastrointestinal masses diagnosed as carcinoma of gastroesophageal junction are found to be true at histology. So, ultrasound can depict the involvement of the stomach in the case of carcinoma of lower oesophagus without need of more expensive and more time consuming procedures. Four (10.5%) out of 38 cases of GI masses presented as ileocaecal tuberculosis in this study. Barium examination can accurately diagnose all 4 cases as ileocaecal tuberculosis. But, on ultrasound examination the two cases are miss diagnosed as appendicular masses. To overcome this problem, the larger frequency ultrasound probes are required to give clearer delineation of the organs which are located nearer to the skin surface. Four (10.5%) out of 38 cases of GI mass histologically proved as carcinoma of caecum in this study. Transabdominal ultrasound cannot diagnose 2 cases as carcinoma of caecum in this group. We can alleviate this failure of detection by using barium examination, colonoscopy and biopsy. Two (5.3%) out of 38 cases of GI mass and two (5.3%) out of 38 cases GI mass which are diagnosed as carcinoma of ascending and descending colon are found to be true at histology. So that, transabdominal ultrasound can efficiently detect these tumours when encountered in routine practice as they produce abdominal mass of uncertain origin. One (2.6%) out of 38 cases of GI mass diagnosed as lymphoma by ultrasound examination is also confirmed as lymphoma (Diffuse histiocytic – Non Hodgkin lymphoma type) by histology. Accuracy of ultrasound in evaluating the origin of gastrointestinal mass is 84.2%, and sensitivity of ultrasound for the diagnosis of GI mass is 88.8%. So that, more than 10% of gastrointestinal masses are still missing at ultrasound examination in this study.

- 397 Than Nu Shwe; Thein Thein Myint; Mya Mya Yee; Aung Kyaw Zaw; Yi Yi Myint and Soe Thein
TITLE Cost analysis of hospitalized children with two common diseases (diarrhoea and acute respiratory infections) in Yangon Children's Hospital
SOURCE *Myanmar Health Res Congr.* 1994, Programme and Abstracts, p41
ABSTRACT: The cost of hospitalization of (477) patients admitted to YCH for two common diseases (viz: ARI 282 cases and diarrhea 195 cases) were determined using semi-structured questionnaire and face to face interview. The study was undertaken to reveal the direct and indirect costs incurred by the patients during their children's illness, their financial source, their willingness to pay and the cost contributed by the government so that the findings may help in future policy implication. The mean duration of stay in hospital was 6 days and median was 5 days. The mean cost of hospitalization of each child was 1705 kyats and the median cost was 1350 kyats. About 36% of the cost of hospitalization was contributed by the government. The cost borne by the family amounts to about 64% of the total cost, of which only 13% was for medicine and investigations. A large proportion of the expense was for travel (25%) and food (22%). It was noted that the majority of the cases could be effectively treated at the hospitals in their local area. The cost of hospitalization amounts to about 29.3% of their monthly income. 39.4% of the family were in debt at the time of admission. 1.5% of the families had to sell their goods, 3.5% pawned their properties and 19.7% had to borrow money from their friends for the event. However, more than 80% of the families were willing to pay for the hospital cost although 18% did not want to contribute anything at all. This study highlighted that; (a) public awareness regarding the availability of effective health care for these two diseases, at their respective local area hospitals, should be promoted. This will reduce the unnecessary financial burden imposed on the patients due to travel and food expenses if they attend YCH and (b) an interim appropriate local health care. Financial support mechanism should be considered for the poor patients attending tertiary hospitals before the nationwide comprehensive health care financial support system is established.
- 398 Than Saw; Aye Than; Moe Moe Aye; Nwe Nwe Oo; Ye Htut and Myint Oo
TITLE A study on intestinal parasitoses and its contamination in soil, water and vegetables
SOURCE *Myanmar Health Res Congr.* 1998 Programme and Abstracts; p16
ABSTRACT: A study was undertaken to investigate the prevalence of intestinal parasitic infections in children under 14 years and contamination of these parasites in soil, water and vegetables of Eindayazar Village, Yebyu Township, Dawei District. The study was conducted during the cold dry season, in November 1997. The intestinal helminthes observed were *Ascaris lumbricoides* 10%, *Trichuris trichura* 5.55% and hookworm species 2.22%. The intestinal protozoa observed were *Entamoeba coli* 7.77%, *Giardia intestinalis* 21.1% and *Entamoeba histolytica* 5.55%. The prevalence of intestinal parasitic infections among the children of the study village was found to be low. But the prevalence of *Giardia intestinalis* was found to be higher than other infection. It was also observed that the soil, water, vegetables collected from the study village were contaminated with *Giardia intestinalis* cysts. The possibility of sustained high prevalence rate of *Giardia intestinalis* in relation to its contamination in soil, water and vegetables was discussed.

- 399 Than Saw; Aye Than; Moe Moe Aye; Nwe Nwe Oo; Khin Myat Htun; Mar Mar Nyein; Myint Oo and Myint Lwin
TITLE Intestinal parasitosis in children with gastroenteritis from Yangon Children Hospital
SOURCE *Myanmar Health Res Congr.* 1997, Programme and Abstracts, p15
ABSTRACT: The study was carried out to investigate the prevalence rate of intestinal parasites in children from Yangon Children Hospital. Both macroscopic and microscopic examinations were done on a total number of 526 stool samples from those children who were either having dysentery or diarrhoea. Commonly observed intestinal helminthes were *Ascaris lumbricoides*, *Trichuris trichura*, and hook worm sp. Protozoa infection such as *Entamoeba histolytica*, *Giardia intestinalis* and *Trichomona intestinalis* were also found. The prevalence rate of *Ascaris lumbricoides*, *Trichuris trichura*, and *hook worm sp.* were found to be 9%, 3.8% and 0.38% respectively. *Entamoeba histolytica*, *Giardia intestinalis* and *Trichomonas intestinalis* prevalence rates were 24.9%, 1.14% and 2.6% respectively. The prevalence rates of various intestinal parasites were also presented on the basis of nature of stool samples.
- 400 Than Saw; Aye Than; Moe Moe Aye; Than Than Nu; Ye Htut and Myint Oo
TITLE Detection of *Blastocystis hominis* by microscopy and *in-vitro* culture
SOURCE *Myanmar Health Res Congr.* 2000; Programme and Abstracts, p25
ABSTRACT: The study was taken to investigate the prevalence of intestinal parasites on total number 182 boys, with age ranging from 6 to 12 years of Myitta Wadi Monastery, Hlaing Township, Yangon. This study was conducted during the rainy season in 1988 by comparing 3 days *in vitro* culture and conventional microscopy methods. The intestinal parasites observed were *Entamoeba histolytica* (13.19%), *Blastocystis hominis* (32.96%), *Giardia intestinalis* (9.34%), *Trichomona intestinalis* (12.64%), *Ascaris lumbricoides* (43.31%), *Tricuris tricura* (10.44%), Hookworm species (7.69%), *Enterobius vermiculris* (0.55%) and rm sp (0.55%) respectively. The prevalence rate of intestinal parasitic infections in the boys of Myitta Wadi Monastery were found to be low, excepts in *Ascaris lumbricoides* and *Blastocystis hominis* infection, the rate of which are as high as (42.31%) and (32.96%) respectively. In this study, it was evident that 3 days *in vitro* cultures are clearly superior to direct microscopy in terms of sensitivity in diagnosis of *Blastocystis hominis*.
- 401 Than Saw; T Tanaka; Y Kaneda; Tin Tin Aye; Myint Lwin; Aye Than and Ohmar Aung
TITLE A preliminary characterization of some isolates of *Entamoeba histolytica* in Myanmar
SOURCE *Med Rese Congr.* 1991, Abstract of Papers, pp12-13
ABSTRACT: In this preliminary study, we aimed to find out the isoenzyme patterns of *Entamoeba histolytica* in Myanmar, by using agarose gel electrophoresis technique. The enzyme used were Glucose phosphate isomerase, GPI (EC. 5.3.1.9.), Phosphoglucomutase PGM (EC. 2.7.5.1.), Hexokinase HK (EC 2.7.1.), Malate hydrogenase ME (EC. 1.1.1.40). The enzyme patterns of the isolates of *Entamoeba histolytica* obtained from symptomatic and asymptomatic cases, were recorded, taking an Rf system in relating isoenzyme band motility to the migration distance of a standard pathogenic type obtained from symptomatic and asymptomatic cases, were recorded, taking an Rf system in relating isoenzyme band motility to the migration distance of a standard pathogenic type *E. histolytica*, HK 9 strain. However, no differences in isoenzyme patterns of *Entamoeba histolytica* from symptomatic and asymptomatic cases were observed using the enzymes of PGM and HK.

- 402 Than Saw, Tanaka Tomoo, Tachibana Hiroshi, Tin Tin Aye, Myint Lwin and Kaneda, Yoshimasa
TITLE Detection of *Entamoeba histolytica* antigen in stool samples by enzyme-linked immunosorbent assay using monoclonal antibodies
SOURCE *Myanmar Health Sci Res J.* 1993 Dec; 5(3): pp138-142
ABSTRACT: An Enzyme-Linked Immunosorbent Assay (ELISA), using monoclonal antibodies, was applied for the detection of *Entamoeba histolytica* antigen in stool samples obtained from 148 patients with gastrointestinal symptoms, and the results are compared with microscopic findings. Ninety nine positives by microscopy generally had high ELISA OD values. Ninety one stool samples of asymptomatic cyst passers were also investigated by ELISA, and most were found to be positive. Although false positives were observed in both symptomatic and asymptomatic cases, the ELISA appears to be useful for the detection of amoebic antigen(s). However, our results suggest that both immunological methods and microscopic examination are needed for an accurate diagnosis of intestinal amoebiasis.
- 403 Than Sein and Tint Zaw Lin
TITLE Clinical study of bleeding chronic peptic ulcer cases in North Okkalapa Hospital and Defence Services General Hospital
SOURCE *4th Myanmar Mil Med Conf.* 1994, Abstract of Papers, p34
ABSTRACT: 44 patients with bleeding chronic peptic ulcers were studied during 10 months period from 1st June 1992 to 31st March 1993. Peak age incidence was 51-60 years. Seasonal peak incidence was June. 45.4% of patients were blood group O. 65.9% of patients had precipitating 145 argete. Emergency surgical treatment was done in 8 patients (4 chronic gastric ulcer patients and 4 chronic duodenal ulcer patients.) All 4 chronic gastric ulcer patients who needed surgery had risk factors compared to 6 chronic gastric ulcer patients who responded to conservative treatment. In chronic duodenal ulcer patients there were no significant difference of risk factors between two groups of conservative treatment versus emergency surgery. Further large scale study may prove the significance of risk factors in decision of emergency surgery for bleeding chronic peptic ulcer cases.
- 404 Than Than Aye
TITLE Management of acute diarrhoeal disease
SOURCE *Paediatr Bull.* 1993 Jul; 10(2): pp9-12
ABSTRACT: Not Available
- 405 Than Than Htwe; Soe Soe; Myo Khin; S. Kyaw Hla; Win Myat Aye; Ni Win; Wynn Wynn Kyaw and Aye Myint Swe
TITLE A comparative post mortem study between dissectioning microscopy and histology of the proximal jejunum
SOURCE *Myanmar Health Res Congr.* 1992, Programme and Abstracts, p46
ABSTRACT: A comparative morphological study of jejunal villi under the dissecting microscope and their histological changes under the light microscope were performed on 100 childhood necropsies from Yangon Children's Hospital. They were from a day old neonates to twelve years old children. Four pattern of villi morphology were observed under the dissecting microscope: finger-like, tongue-like, leaf-like and ridged villi. Histological examination revealed inflammatory cells infiltration in the lamina propria and submucosa, together with vascular congestion of graded severity. There were no positive correlation between the villi morphology and histological changes. Though finger-like villi were supposed to be normal, they were rarely seen in our collections. The predominance of tongue-like and leaf-like villi which were the broader forms of villi with lesser surface absorption area, could

be regarded as normal for our children. Although histological examination of the jejunum especially in post-mortem materials were supposed to be almost valueless, it could be of supportive or additive value if studied simultaneously with the dissecting microscopy.

406 Than Than Htwe; Myo Khin; Kyaw Hla; Than Than Swe; Tin Nu Swe;
Khin Myat Tun and Thida Kyaw

TITLE Histopathological severity of antral gastritis in relationship to *Helicobacter pylori* colonization

SOURCE *Myanmar Health Sci Res J*, 1997; 9(1): pp5-9

ABSTRACT: The association between *Helicobacter pylori* (HP) colonization in gastric antrum and the degree of severity and activity of gastritis and concomitant relationship with gastric atrophy and intestinal metaplastic changes were studied. A total of 204 pieces of endoscopic biopsy tissue were collected from the out patient endoscopic unit of New Yangon General Hospital in 1994. Routine Haematoxylin and Eosin stain as well as special stain such as modified Giemsa and Carbol fuchsin stains were used for bacterial identification and quantitative analysis. A significant correlation (p value <0.001) was obtained between density of HP colonization and severity of gastritis as well as its activity (p value <0.0001). However, no significant degree of atrophic changes and intestinal metaplastic changes were noted in these biopsies. A continuation for a better understanding of pathogenesis of HP and its consequences is necessary.

407 Than Than Htwe; Soe Soe; Myo Khin; S. Kyaw Hla; Win Myat Aye;
Ni Win; Wynn Wynn Kyaw and Aye Myint Swe

TITLE Post-mortem histological and dissecting microscopic appearance of the proximal jejunum of Myanmar children

SOURCE *Myanmar Health Sci Res J*. 1997; 9(1): pp37-39

ABSTRACT: A comparative morphological study of Jejunal villi under the dissecting microscope and their histological changes under the light microscope was performed on 100 childhood necropsies from Yangon Children Hospital. They were from a-day - old neonate to twelve years old children. Four pattern of villi morphology were observed under the dissecting microscope: finger like, tongue like. Leave like and ridged villi. Histologically, inflammatory cells infiltration in the lamina propria and submucosa with vascular congestion of graded severity were observed. There is no correlation between villi morphology and histological changes. Tongue like and leave like villi could be regarded as normal for our children. Although histological examination of the post mortem jejunal materials yield limited value, it could be of supportive or additive value if studied simultaneously with the dissecting microscopy.

408 Than Than Htwe; Wynn Wynn Kyaw; Aye Myint Swe; Tun Myint; Mie Mie Han;
Kyaw Hla; Than Than Swe; Tin Nu Swe; Khin Myat Tun and Khin Saw Aye

TITLE The value of various special stains in the identification and semiquantitation of *Helicobacter pylori*: A histopathological study

SOURCE *Myanmar Health Res Congr*. 1993, Programme and Abstracts, p72

ABSTRACT: The recent identification of *Helicobacter pylori* (*H. pylori*) overlying the gastric mucosa is strongly associated with active chronic gastritis which is not responsive to treatment with antacid alone. The routine *Haemotoxylin* and *Eosin* stain together with Modified Giemsa. Carbol fuchsin and Gram stains were used for identification of these organisms. In this study a total to fifty cases were collected during May to September 1993. Endoscopic biopsy specimens were taken from these patients from the gastric antrum, fundal and duodenal regions. These patients were attending the outdoor clinic of New Yangon General Hospital, presenting with dyspepsia. Modified Giemsa stain and Carbol fuchsin stain were

superior to gram stain in the sense that a clear and distinctive spiral morphology was identified. Out of fifty cases thirty five cases were positive for *H. pylori* in the gastric antrum and fundal regions in different grading of bacterial colonization. Thus all of these staining methods can be applied as routine hospital laboratory work in the identification of *H. pylori*.

409 Than Than Htwe; Wynn Wynn Kyaw and Aye Myint Swe
TITLE The value of different special stains in the identification and semiquantitation of *Helicobacter pylori*: a histopathological study
SOURCE *Myanmar Health Sci Res J.* 1995; 7(3): pp136-141
ABSTRACT: The recent identification of *Helicobacter pylori* (*H. pylori*) overlying the gastric mucosa is strongly associated with active chronic gastritis which is not responsive to treatment with antacid alone. The routine *Haematoxylin* and *Eosin* stain together with Modified Giemsa Stain., Carbol fuchsin stain and Gram stains were used for identification of these organisms. Each of them has their different value in supporting the diagnosis. In this study, a total to fifty cases were collected during May to September 1993. Endoscopic biopsy specimens were taken from these attending the outdoor clinic of New Yangon General Hospital, presenting with dyspepsia. Modified Giemsa stain and Carbol fuchsin stain were superior to gram stain in the sense that a clear and distinctive spiral morphology was identified. Moreover, they are less expensive, easily available and the techniques are uncomplicated and rapid to perform compared to that of the Warthin-Starry silver stain mentioned by others. However, Gram stain is useful for exclusion of other Gram positive and negative organisms and H & E stain for correlation of the severity of gastritis with bacterial colonization. A semiquantitation of bacterial colonization can also be done at the same time with identification. All of these staining methods can be applied as routine hospital laboratory without difficulty.

410 Than Than Swe
TITLE Heterotopic gastric mucosa in the duodenum
SOURCE *39th Myanmar Med Conf.* 1993; p30
ABSTRACT: Heterotopic Gastric Mucosa (HGM) in the duodenal bulb was detected by radiologic and endoscopic examination in 50 adult patients and was confirmed by biopsy. The endoscopic findings were correlated with the radiologic features of lesion on upper gastrointestinal barium studies. Morphologically, single lesions were common in contrast to other studies. Single lesions consisted 66% (33) and multiple lesions 34% (17). On radiographs, this entity usually presented as sessile to pedunculated polypoid lesions with smooth surface above the normal mucosa; this was seen in 37%, the prevalence of which as equally highest as nonspecific polypoid growths among 79 solitary polypoid lesions. Each morphology of HGM can be applied in all malignant conditions of duodenal bulb.

411 Than Than Swe; Kyaw Hla; Htun Myint; Than Than Htwe; Tin Aye; Khin Saw Aye; Khin Myat Htun; Tin Nu Swe and Aung Kyaw Htoo
TITLE *Helicobacter pylori* - associated chronic active antral gastritis
SOURCE *6th Med Spec Conf.* 1993, Abstract of Papers, pp39-40
ABSTRACT: *Helicobacter pylori* is a bacterium that inhabits gastric mucosa. To determine the clinical importance of *H. pylori* infection, its association with chronic active antral gastritis in Myanmar, thirty-four patients who were evaluated for possible chronic gastritis entered the study. In the prospective study, the type, intensity of inflammation in antral biopsy specimens were correlated with the presence of *H. pylori*. CLO and microtitre biopsy urease tests were performed to detect the urease enzyme of *Helicobacter pylori* in gastric mucosal biopsies. Of the 34 patients evaluated, *H. pylori* was detected in the specimens of 22 patients (65%), whereas CLO and urease tests were found to be positive in 27 (62%). Two cases were

histologically normal, however, they showed positive CLO and urease tests. One was normal on endoscopy, histology and enzyme studies. *H. pylori* is shown to be probable pathogen responsible for Myanmar patients with chronic gastritis, as in overwhelming experimental data from recent publications.

412 Than Than Swe; Kyaw Hla; Htun Myint; Than Than Htwe; Tin Aye; Khin Nwe Aye; Khin Myat Tun; Tin Nu Swe and Aung Kyaw Htoo
TITLE Amoxicillin plus Metronidazole with or without Colloidal Bismuth Subcitrate efficacy of anti bacteriological and anti ulcer treatment to eradicate *Helicobacter pylori*

SOURCE *Myanmar Health Res Congr.* 1994 Programme and Abstracts; p93

ABSTRACT: *Helicobacter pylori* is gaining increasing importance as one of the causal factor in pathogenesis of chronic antral gastritis and of idiopathic ulcer disease. *H. pylori* eradication is of great clinical importance because for the first time, it is possible to cure peptic ulcer disease with the help of medical treatment in limited period of time. Twenty-nine patients with *H. pylori* positive chronic active antral gastritis with or without peptic ulceration were tested with a 2 week regimen consisting of 500mg amoxillin t.d.s and 200mg metronidazole t.d.s orally in group I and along with addition of 4 week regimen of colloidal bismuth subcitrate 1 q. i. d orally in group II. A total of 20 patients completed the study without contravening the study protocol. Five patients (42%) from group I and two patients (13%) from group II withdrew from follow up because side effects (vomiting: n=7, diarrhoea: n=3) that lead to termination of drug therapy. Elimination of *H. pylori* was confirmed by repeat endoscopy and urease test 4 weeks after completion of therapy. Combined treatment with amoxillin and metronidazole gave an eradication rate of (57% whereas triple therapy with busmith, amoxillin and metronidazole gave a statistically higher eradication rate (93%). We conclude that standard triple therapy is promising concept with regard to effective treatment of *H. pylori* related gastroduodenal ulcer disease.

413 Than Win Zaw

TITLE A clinical study of duodenal ulcer perforation

SOURCE MMedSc(Surgery), Institute of Medicine, Mandalay (IMM), 1999

SUMMARY: 61 cases of perforated duodenal ulcer, admitted to three Surgical Units of Mandalay General Hospital during one year from 1st June 1997 to 31st May 1998 was studied. Perforation was commoner in men 14.25:1 than in women. High incidence was in the age group of less than 50 years. Perforation occurred most in August. All cases had chronic duodenal ulcer perforation anterior wall. Among 61 patients, 38 cases were operated after 12 hours of onset of symptoms and 8 cases were after 24 hours, three patients died. Mortality rate was 4.91%. Seven patients had postoperative complications such as wound infection (5 cases), chest infection (one case), faecal fistula formation (one case). Postoperative complication rate was 13.72%. Most ulcers had lsee than 5mm in size, 51 cases were discharged from hospital at 7 days.

414 Thet Htar Myint

TITLE Changes in serum aldosterone levels in response to malnutrition and diarrhoea

SOURCE MSc(Zoology), Yangon University, 1992

ABSTRACT: The incidence of hyponatraemia in acute diarrhoea has been shown to be directly related to the degree of malnutrition by several authors. The endocrine homeostatic mechanism may have been responsible for such an incidence and in the present study; the significant of blood aldosterone have been studied in children with or without malnutrition during diarrhoea and its relationship with the blood electrolyte levels in these

patients. The study included 31 children (age one to five years) who were hospitalized for malnutrition, malnutrition with diarrhoea and acute diarrhoea of less than 48 hours duration. The groupings were done according to standard classification. The controls consisted of six children from the same locality as the patients, were apparently healthy and were of the same age group. Serum sodium and chloride tend to increase in the patients and increase was more pronounced in the group suffering from both malnutrition and diarrhoea. On the other hand, serum potassium tend to decrease and the decreases were significant in groups having malnutrition. Serum protein level was found to be most depleted in the malnutrition associated diarrhoea group. Serum aldosterone levels were raised in all the three groups of patients namely malnutrition, diarrhoea and malnutrition associated diarrhoea when compared with the control whether aldosterone levels were expressed as ng/100ml or ng/g protein. The increase was still observed even after exclusion of the subjects whose ages lied within first one and half year of life for whom the serum aldosterone levels were found to have a sharp rise. Among the electrolytes only serum K⁺ appeared to correlate with serum aldosterone. However, serum Na/K ratio also seemed to correlate with serum aldosterone but in an inverse manner. The results suggested that aldosterone, a mineralocorticoid secreted by adrenal cortex might be involved in the regulation of electrolyte levels in blood possibly through the so called electrolyte pump, Na-K exchange system.

415 Thaung Hla; Thuzar Myint; Khin Myat Tun; Myo Khin; Mar Mar Nyein and Tin Tin May

TITLE *Helicobacter pylori* isolated from endoscopic biopsy specimens (pilot study)

SOURCE *Myanmar Health Res Congr.* 2000, Programme and Abstracts; p44

ABSTRACT: A total of 28 gastric biopsy specimens (male 19 and female 9) were included in this study. They were taken by endoscopic examination at Thingangyun General Hospital and Yangon General Hospital during July and August 2000. Specimen in stuart's transport media were carried by cold chain transportation. Processing for isolation of *Helicobacter pylori* was done within 3 to 6 hours of having biopsy from the patients. Five percent horse blood in blood agar based No. 2 with antibiotic supplement (vancomycin, trimethoprim and amphotericin⁰) was used for primary and secondary isolation. Thioglycolate media was also used for enrichment media GasPak gas generator envelopes (BBL) were used and the plate were incubated in anaerobic gas jar at 37°C for up to 10 days. *Helicobacter pylori* was isolated from 4 cases ie 14.3%) and those were confirmed by examination under phase contrast microscopy, gram staining, oxidase reduction, catalase reaction and urease production.

416 Thaung Nwe, *Ma*

TITLE Detection of gastric masses by double contrast barium meal examination

SOURCE MMedSc(Radiology), Institute of Medicine I, Yangon, 1994

SUMMARY: Total 36 cases of radiologically diagnosed gastric masses were confirmed by endoscopy and/or surgery together with tissue biopsies. Among 35 cases of endoscopically and/or surgically confirmed gastric masses, thirty cases (85%) were primary gastric carcinoma which was the commonest type, one was lymphoma and other four cases were benign lesions Twenty seven out of thirty cases of histologically confirmed primary gastric carcinoma were adenocarcinoma which was the commonest histological pattern. One case was pancreatic tumor impressing the posterior wall of the stomach. Four out of 31 cases of advanced malignant gastric lesions presented with mild symptoms. So middle age patients presenting with loss of appetite, slight nausea and discomfort after meal should always require careful investigation to get early diagnosis. Primary gastric carcinoma were commonly found in 51 to 70 year age group (23 cases) and males were more affected than females (3:2). They frequently originated in gastric antrum (17 cases, 57%). Three cases (10%) were found in

gastric cardia. Even small frequency occurred in gastric cardia, it can be missed occasionally on barium meal, so careful examination is needed. Eighteen out of 36 cases of radiologically diagnosed gastric masses were fungating/polypoid lesion which was the commonest morphological appearance. In these lesions, the surface pattern is important to differentiate between benign and malignant masses. Ulcerative lesion was seen in four cases and in these cases careful analysis of ulcer crater and converging target folds are important to distinguish between benign and malignant ulcers. Mucosal folds amputation is a reliable indicator for malignant ulcer. Seven cases were ulcerative and fungating combined lesions. Because of tumor mass with central ulceration, there was no diagnostic problem. One case was ulcerative growth in post-operative stomach after gastrojejunostomy which was operated for chronic duodenal ulcer last 23 years ago. Gastric cancer is reportedly higher in patients having had a previous gastric surgery. Infiltrative lesions were found in seven cases. Four cases were localized type found at gastric antrum and two cases were generalized type with linitis plastica appearance of the stomach. One case showed hyperrugosity of gastric rugae folds with relative normal gastric volume and peristalsis. So elderly patients presented with hyperrugosity we must have high index of suspicions for primary gastric carcinoma. Accuracy of DCBM in evaluating the malignant and benign gastric masses was found to be 89% and accuracy of Endoscopy was 91%.

417 Thaw Zin; Aung Naing; S. J. Tha; Khin Mg U and Khin Kyi Kyi
TITLE Effect of acute diarrhea on the bioavailability of chloroquine in Myanmar subjects
SOURCE *Myanmar Health Sci Res J.* 1992; 4(1): pp25-34
ABSTRACT: Considering the possibility of altered bioavailability of drugs during acute diarrhea, there is a need to determine the therapeutic status of chloroquine as an antimalarial prophylactic during an attack of acute diarrhea and to develop a reasonable basis for dose adjustment if necessary, in such clinical situations. Chloroquine 300 mg base was administered orally to 16 adult diarrhoeal patients from the Infectious Disease Hospital, Yangon and 12 healthy non-diarrhoeal volunteers. The drug serum levels at various time intervals up to 96 hours were analysed fluorometrically and the pharmacokinetic profile studied. Acute diarrhea was found to decrease the rate, but did not alter the extent of absorption of chloroquine. Since the overall bioavailability of chloroquine remains unchanged, it was concluded that if there is no vomiting, dosage adjustment is not necessary in acute diarrhea.

418 Thaw Zin; May Aye Than; Tin Tin Lay; Cho Cho; Tin Ohn; Tin Mi Mi Naing; Win Khine; Cho Cho Yee and Mg Mg Win
TITLE Clinical trial to determine the antidiarrheal potential of traditional medicine formulations TMF-16, TMF-35A and TMF-43
SOURCE *Myanmar Health Res Congr.* 1993, Programme and Abstracts, p75
ABSTRACT: Clinical trial to determine the therapeutic efficacy of 3 Traditional Medicine Formulations, claimed to have antidiarrhoeal action, were studied on 150 acute diarrhoeal patients admitted to the Infectious Diseases Hospital, Yangon. TMF-16 was found to possess a good antidiarrhoeal action, the potency approximately equal to that of the standard drug, loperamide. TMF-35a also possesses a mild to moderate antidiarrhoeal action, but TMF-43 show little or no antidiarrhoeal potency. The clinical significance of the study is that both TMF-16 and loperamide was found to reduce the stool output as well as the amount of fluid replacement required. TMF-16 is well tolerated, available locally and cheaply, and thus, may prove beneficial in the symptomatic relief of non-specific acute diarrhoea.

- 419 Thaw Zin; May Aye Than; Tin Tin Lay; Choc ho; Tin Ohn; Tin Mi Mi Naing; Win Khine and Maung Maung Wint
TITLE Clinical trial to determine the antidiarrhoeal potential of Traditional Medicine Formulations TMF's-16, TMF-35a and TMF-43
SOURCE *Myanmar Health Sci Res J.* 1994; 6(3); pp127-132
ABSTRACT: Clinical trial to determine the therapeutic efficacy of three Traditional Medicine formulations, claimed to have antidiarrhoeal action, were studied on 150 acute diarrhoeal patients admitted to the Infectious Disease Hospital, Yangon. TMF-16 was found to possess a good antidiarrhoeal action with the index (ADI) of 28.71%, which is approximately equal to that of the standard drug, loperamide which had to the ADI of 27.94%. TMF-35a also possess a mild to moderate antidiarrhoeal action (ADI=21.5%), but TMF-43 showed little or no antidiarrhoeal action (ADI=9.64%). The clinical significance of the study is that both TMF-16 and loperamide were found to reduce the stool output as well as the amount of fluid replacement required. TMF-16 is well tolerated, available locally and cheaply, and thus, may prove beneficial in the symptomatic relief of nonspecific acute diarrhea.
- 420 Thein Hlaing; Than Saw and Myat Lay Kyin
TITLE The impact of three-monthly age-targetted chemotherapy on *Ascaris lumbricoides* infection
SOURCE *Trans R Soc Trop Med Hyg.* 1991 Aug, 85(4): pp519-22
ABSTRACT: The impact of 3 chemotherapeutic regimens at 3-monthly intervals against *Ascaris lumbricoides* infection, targeted at under 15 years old children with and without initial mass chemotherapy, and at 2-12 years old children, was studied in three Myanmar [Burmese] rural communities over a period of 2 years. Computation was made of prevalence and intensity (worm burden) of *Ascaris* infection, and other parameters for estimation of basic reproductive rate (R0) of the parasite and of the proportion of target age group to be treated 3-monthly (g) by employing the mathematical model for targeted chemotherapy. The 3 treatment regimens were almost equally effective in reducing prevalence and intensity in both the targeted and non-targetted age groups. *Ascaris* transmission in each of the 3 communities was interrupted, as indicated by the values of mean worm burden per person. The findings are compared with those of other similar studies and the reasons for the impact are discussed. The possible impact in similar endemic areas of applying the mathematical model predictions for age-targetted chemotherapy in controlling ascariasis is also discussed.
- 421 Thein Hlaing; Win Win Khine; Tin Tin Than; Than Saw; Myo Khin; Myint Myint Soe; San Shwe; Ma Ma Yi; San Kyaw; Aung Tun; Khwar Nyo Zin and Phyu Phyu Aye
TITLE Nutritional status and intestinal parasitosis in school-enrolled and non-enrolled school-age children in Yangon
SOURCE *Myanmar Health Sci Res J.* 1995; 7(2); pp86-91
ABSTRACT: In Myanmar, near 38 percent of children in the age group 5-9 years were never enrolled in school in 1990. Also, there is a lack of information on the comparative prevalence of malnutrition and intestinal parasitosis among school-enrolled and non-enrolled school-age children in Myanmar. We, therefore, undertook a cross-sectional survey comprising 3325 school children from 13 primary schools and 164 non-enrolled school-age children from neighbouring quarters. Tharkayta and Mingaladon townships of Yangon during December 1993. Height and weight of the children were measured and a total of 944 stool samples, including 148 non-enrolled children, were examined for the presence of intestinal parasites. Expressing the nutritional status as standard deviation scores for weight-for-height, the prevalence of wasting among 5-10 years non-enrolled school-age children was

19.8%, while that for school children of similar age was 13.9%. In addition, non-enrolled school-age children had higher infection rates than school children regarding *Ascaris lumbricoides* (66.9% vs 50.1%) *Trichuris trichiura* (38.5% vs 23.9%), and *Giardia lamblia* (5.4% vs 2.7%). The policy implication on this study is that health and nutritional status of non-enrolled school-age children needs to be promoted and this should be partly solved by the provision of regular and periodic mass chemotherapy against major intestinal parasitoses influencing nutritional status.

422 Thein Myint and Than Sein
TITLE Role of peritoneal drain in early peritonitis
SOURCE 5th Myanmar Mil Med Conf. 1995, Abstract of Papers, p45
ABSTRACT: Altogether 50 patients with early peritonitis due to various causes were studied during the study period of 12 months from 1st April 1993 to 31st March 1994. Peritoneal drain was inserted in 27 patients, and it was omitted in 23 patients. Effectiveness and complications of peritoneal drain were studied. Morbidity of patients with and without peritoneal drain was compared regarding the postoperative fever, duration of nasogastric suction, duration of stay in bed, wound sepsis and hospital stay. Some of the findings were as follows; most of the drain (26 out of 27) could not fulfill their function well, the commonest complications of the peritoneal were (a) sepsis at the drain site (77.97%) and (b) leakage at the drain site (33%). Duration of the postoperative fever, nasogastric suction and be stay were more prolonged in patients with peritoneal drain than those without peritoneal drain. Wound sepsis was increased in patients with peritoneal drain (40.74%) than those without peritoneal drain (26.8%).

423 Thein Saw; Myo Khin; Win Myint; Than Than Swe; Aye Than and Kyaw Soe
TITLE The potential usefulness of *Planto major* Linn in management of peptic ulcer
SOURCE Myanmar Health Res Congr. 2000; Programme and Abstracts, p96
ABSTRACT: Peptic ulcer is common condition in clinical practice. Modern management of peptic ulcer includes eradication of associated *Helicobacter pylori* infection with the use of expensive drugs such as colloidal bismuth citrate and a combination of antibiotics. Regimens such as proton-pump inhibitors and newer antibiotics such as clarithromycin are also used but unfortunately these medicines are also expensive and may not be affordable for a developing country like Myanmar. *Plantigo major* Linn (Ahkyaw-baung-tahtaung) is readily available and affordable plant compound with reputed healing activities and with documented anti-ulcerogenic properties. Thus, treatment regimen containing p. major in combination with standard antibiotics was tested in five patients with proven peptic ulcer disease. *Pepto major* solution containing 900mg of *P. major* extract was given three times a day for 28 days. In the initial 7 days, they also received Amoxicillin (1000mg twice a day) and Tinidazole (500)mg twice a day. Histological examination of gastric biopsies for gastric severity and biopsy urease testing and ¹⁴C breast test for the presence of *H. pylori* infection with improvements in clinical and histology findings was seen in three patients. *P major* is a potential candidate to be used as a medication in the management of peptic ulcer disease in Myanmar.

424 Thein Saw and Tin Tin May
TITLE An experience of endoscopic sclerotherapy for bleeding oesophageal varices in Gastro-intestinal Unit, YGH
SOURCE 6th Med Spec Conf. 1993, Abstract of Papers, p39
ABSTRACT: A total number of 21 patients attending the Gastro-intestinal Unit, Yangon General Hospital for bleeding from the oesophageal varies due to liver cirrhosis were selected to undergo endoscopic sclerotherapy. In 11 patients 1% Thrombar was used as a

sclerosant and in the remaining 10 patients who are unable to afford it, 100% Alcohol was used as a sclerosant. With 1% Thrombar, obliteration of the varices was achieved in 6 patients, persistence of the varices was noted in 2 patients even after 5 sessions of sclerotherapy, in whom the shunt operation had been advised; 3 patients died during the follow up period due to recurrent bleeding. With 100% Alcohol, obliteration of the varices was obtained in 4 patients, 3 patients had some improvement and 1 patient died during the follow up period. One patient was lost to follow up, after 2 sessions of sclerotherapy. The incidence of oesophageal ulceration and other side effects after the procedure were the same in both series. It is evident that 100% Alcohol is as effective as 1% Thrombar in the sclerosis of the oesophageal varices.

425 Thein Saw; Tin Tin May; Myo Khin; Khin Myat Tun; Than Than Htwe and Thida Kyaw

TITLE Comparison of treatment with sucralfate and amoxycillin plus tetracycline (Triple Therapy) to treatment with tripotassium dicitrato bismuthate and Amoxycillin plus Tetracycline (Triple Therapy) for the eradication of *Helicobacter pylori* infection and healing of chronic peptic ulcers

SOURCE Myanmar Health Res Congr. 1995, Programme and Abstracts, p36

ABSTRACT: A total of 76 patients with endoscopically proven chronic peptic ulcer and positive urease test reaction were selected for participation in the clinical trial and randomly assigned to received either Denol (Tripotasium dicitrato bismuthate) 4 weeks and Amoxycillin plus Tetracycline (1 week) or Sucralfate (4 weeks) and Amoxycillin plus Tetracycline (1 week) for the healing of peptic ulcer and eradication of *Helicobacter pylori* infection. 11 patients had negative C14 urea breath test and accordingly excluded from the trial, and 10 patients failed to complete the trial. Ulcer healing was achieved in 24 out of patients (95%) in Denol group and 29 out 30 patients (96.6%) in the Sucralfate group. *Helicobacter* eradication was achieved in 17 out of 25 patients (68%) in Denol group and 8 out of 30 patients (26.6%) in the Sucralfate group. Although Denol and Sucralfate are equally effective in healing of ulcers. Denol is superior in eradication of *Helicobacter pylori* infection, however, one week treatment of antibiotics is not sufficient to obtain satisfactory eradication rate for *Helicobacter pylori* infection.

426 Thein Win Nyunt and Myo Khin

TITLE Bowel habit of Myanmar children

SOURCE 6th Med Spec Conf. 1993, Abstract of Papers, p41

ABSTRACT: This study was launched with the objective of determining the standardized bowel habit and gut transit times of normal Myanmar children, and to compare with children of other countries. It was done in Thaketa Township from June to December, 1991. The specific study regarding bowel habit included retrospective and prospective studies done on 300 children aged 1 to 5 years. In the retrospective study investigated by asking the questionnaires to the mothers, each child passed 2 soft stools per day with an average of one tea cup for each motion. In the prospective study, in which each motion of every child was observed for one week, the amount of stool passed per motion ranged from 54.9±20.3 to 129.8±55.6Gms with an average weekly stool output of 595.8±221.2Gms. On average, they passed stools once daily for 5 days, and twice daily for at least one day. Most were soft in consistency. The small intestinal transit time, done on 74 children by breath hydrogen test, was 90.2±20.2 minutes, (defined as the time of first rise of breath hydrogen) and 134.5±30 minutes (defined as the time of reaching peak of breath hydrogen). The whole gut transit time done on 30 children by colorimetric method using Norit capsules were 1009.6±463.5 minutes (16.8±7.7 hours). The amount of daily stool output in our children was very much larger than that of children from the United Kingdom. The whole gut transit time of our

children was similar to those in Bangladesh. The results probably reflected the dietary pattern and habits.

427 Thein Hlaing; Thane Toe; Than Saw; Myat Lay Kyin and Myint Lwin
TITLE A controlled chemotherapeutic intervention trial on the relationship
 between *Ascaris lumbricoides* infection and malnutrition in children
SOURCE *Trans R Soc Trop Med Hyg.* 1991 Jul-Aug; 85(4): pp523-8
ABSTRACT: A 2-year investigation, consisting of a controlled, non-blind, 3-monthly
 chemotherapeutic intervention trial, based on transmission dynamics of *Ascaris
lumbricoides* infection, was undertaken to prove or refute the role of *A. lumbricoides* as a
contributor to childhood malnutrition. The study involved 1206 children aged 2-12 years in
21 villages in Myanmar [Burma] starting in August 1984. The intervention and non-
intervention villages were comparable regarding almost all the important baseline variables,
including prevalences of *Ascaris* infection (80.8 *vs* 83.0%) and of malnutrition of grade 2 and
above for height-for-age (58.4 *vs* 55.8%) and for weight-for-age (48.2 *vs* 47.8%). The intensity
of *Ascaris* infection was related to the degree of malnutrition. A significant increment of
height gain was found, starting after the 6th month, and of weight gain after the 24th month, of
the study among the treated 2-10 years old children when compared with the non-treated
ones. By the end of 24 months, the height and weight gains per child were 0.65cm and 0.93kg
respectively. Lesser increments in height-for-age and weight-for-age were also observed after
successive treatments among the treated children with initially higher mean worm burdens.
The findings are discussed in the context of causal relationship between ascariasis and
malnutrition in children.

428 Thet Htar Myint; Aye Kyaw; Thaw Poon and Khin Maung U
TITLE Changes in serum aldosterone levels in response to malnutrition and
 diarrhea
SOURCE *Med Res Congr.* 1991, Abstract of Papers, pp9-10
ABSTRACT: The study included 26 children (age 1 to 5 years) who were hospitalized for
 malnutrition, malnutrition with diarrhoea and acute diarrhoea of less than 48hrs
duration. The controls, consists of 6 children from the same locality as patients, were
apparently healthy and in the same age group. Serum chloride tends to increase in the patients
and the increase was more pronounced in the group suffering from both malnutrition and
diarrhea. On the other hand, serum potassium tends to decrease and the decreases were
significant in the groups having malnutrition. Serum aldosterone levels were raised in all the
three groups of patients namely malnutrition, diarrhea.

429 Thet Thet Zin
TITLE A study of Diarrhoea Traing Unit in Myanmar
SOURCE MMedSc(Preventive and Tropical Medicine), Institute of Medicine I,
 Yangon, 1993
ABSTRACT: A crossectional community intervention (retrospective) design using
 structured interview and observation methods were carried out, to compared the
effectiveness of diarrhoeal case management conducted by Diarrhoea Training Units (DTUs),
in trained and non trained areas. Rural area of Shwepyithar Township, Yangon Division and
rural area of Tharbaung Township, Ayeyarawaddy Division were chosen for diarrhoea case
management trained area (case) and non trained area (control) respectively. From each
trained and non trained areas 100 mothers of under five children, 6 basic health staff and 4
voluntary health workers were included in the study. The better result was found in the
trained than non trained area concerning overall diarrhoeal case management in the
communities (mothers 0, by using Control of Diarrhoea Diseases (CDD) key indicators.

A striking difference was found in recommended home fluid which is substantially high 85% in trained area and only 20% use rate in non trained area. The result was also statistically significant. Regarding the result of basic health staff there was no difference between training and non training areas, both area showing reasonably good results. The results obtained from FGD had strongly suggested that the trained health personnel from the area had succeeded in improving the knowledge and behavior of local mothers is regarded to diarrhoea case management.

430 Thet Myint Maung; Kyaw Hla and Tin May Nyunt
TITLE Endoscopic studies of Workers Hospital, Yangon
SOURCE *39th Myanmar Med Conf.* 1993; pp29-30
ABSTRACT: Gastroscopic study was done on 250 patients from the Medical Ward, Surgical Ward and Medical outpatient with dyspeptic symptom during the period of 1st Feb 1992 to 20th Oct 1992. Out of 250 patients 176 (70.9%) patients have positive endoscopic findings 31.2% have duodenal ulcers and 9.2% have gastric ulcer. Age incidence of DU is highest in 30-39yrs (30.77%) and 96.15% of DU patients are male and 3.46% were female. 61.53% of DU are situated at the anterior wall. Single DU is 75.64%, 61.11% of cases belong to blood group B. 43.5% cases are smoker. 68.75% have good respond after 45 days of treatment with H2 blocker. Age incidence of GU is highest in 50-59yrs (43.47%), 47.8% of GU are situated at the body of the stomach. 45.45% of GU patients belong to blood group O. All are smoker.

431 Thin Thin Win
TITLE Clinicopathological study of carcinoma stomach
SOURCE MMedSc(Pathology), Institute of Medicine I, Yangon, 1998
ABSTRACT: This paper is a hospital based descriptive study on carcinoma stomach in YGH and NYGH during one year period, from May 1997 to April 1998. Sixty-five cases of carcinoma stomach who underwent operation were studied in terms of clinical presentations, risk factors, morphology, classification, staging, histological grading, metastasis and results of investigations. There was close relationship between risk factors such as taking spicy and pickled food, salted and smoked fish, chronic gastric ulcer/gastritis, blood group 'A' and carcinoma stomach. Histological classification was done based on Lauren's DIO classification. Thirty five intestinal type (53.8%) and 30 diffuse type (48.1%) were noted. No case in other category was recorded. Most of the intestinal types were well and moderately differentiated, and most of the diffuse types were poorly differentiated.

432 Thura Oo
TITLE Correlation between acute appendicitis and peritoneal aspiration cytology in MGH
SOURCE MMedSc(Surgery), Institute of Medicine, Mandalay (IMM), 1995
ABSTRACT: This is prospective study to evaluate the role of peritoneal aspiration cytology in diagnosis of acute appendicitis undertaken from 1.6.94 to 31.5.95 in Mandalay General Hospital in one year period. Peritoneal aspiration cytology was performed in 41 patients who were provisionally diagnosed as acute appendicitis. Aspiration was successful in 39 patients and 36 were positive. Patients with positive results underwent emergency surgery, 34 had histologically proven acute appendicitis and two patients were of other cause (tubo-ovarian abscess and Meckel's diverticulitis). Patients with negative results underwent appendicectomy. Two patients had acute appendicitis and three patients had normal appendices. In this study, peritoneal aspiration cytology has 90.2% accuracy, 94.4% sensitivity and 60% specificity with no mortality or morbidity attached to use of this method. It is concluded, therefore, that peritoneal aspiration cytology is a useful diagnostic test in management of patients with suspected acute appendicitis.

- 433 Thuzar Myint; Mar Mar Nyein; Nyo Mie Kyaw; Khin Myat Tun; Mi Mi Htwe and Myint Aye
TITLE Antibiotic susceptibility pattern of Enteropathogenic *Escherichia coli* (EPEC)
SOURCE *Myanmar Health Res Congr.* 1998 Programme and Abstracts; p76
ABSTRACT: A descriptive study of hospital based study convenience sampling method using in Yangon Children's hospital is studied on of 335 cases of gastroenteritis cases of children less than five years old. A total of 61 cases (18.21 percent) were isolated with Enteropathogenic *Escherichia coli* (EPEC). It was observed that 17.77 percent from the age group of less than six months; 13-24 percent from 7-12 months old; and 37.50 percent from 13-24 months were isolated with EPEC. The antibiotic susceptibility testing by agar diffusion test shows that 88.50 percent of the cases of EPEC are resistant to ampicillin, 80.33 percent to carbenicillin; 62.30 percent to chloramphenicol; 90.32 percent to aminobenzyl penicillin, 88.53 percent to streptomycin; 80.3 percent to septrin (trimethoprim/sulfamethoxazole) and 86.89 percent to tetracycline. The sensitive pattern of EPEC to antibiotic are 98.36 percent to amikacin, 59.02 percent to cephalothin, 78.69 percent to furazolidone, 88.53 percent to gentamycin, 67.21 percent to minocycline, 83.61 percent to nalidixic acid, 81.97 percent to norfloxacin and 85.25 percent to sisomycin.
- 434 Tin Aye; Aung Kyaw Htoo; Tin Nu Swe; Khin Myat Tun; Khin Saw Aye; Nyunt Win; Myo Thein; Kyaw Hla; Than Than Swe and Aung Kyi
TITLE Comparative study on the detection of urease activity by CLO test kit and microtiter biopsy urease broth test kit for evaluation of *Helicobacter pylori* preliminary report
SOURCE *Myanmar Health Res Congr.* 1993, Programme and Abstracts, p71
ABSTRACT: Recently, *Helicobacter pylori* has been recognized as the major etiological agent of gastritis and a mechanism for involvement in gastric ulcer formation. A prominent feature of *Helicobacter pylori* is its marked urease activity. Hence, the detection of Urease activity in gastric biopsies is used for assessment of the presence of *Helicobacter pylori* in chronic gastritis. With an aim to establish a sensitive and locally available test kit, microtiter biopsy urease broth testkit is developed. A study was conducted to compare commercially available CLO test Kit with microtiter biopsy urease broth test kit for detection of urease activity in gastric biopsies in the hospital endoscopic units. 42 cases of patients presenting with different degree of gastritis were studied. It is found that there was 100% correlation detected by both test kits.
- 435 Tin Aye; Sack DA; Wachsmuth IK; Thein Kyi and Shin Min Thwe
TITLE Neonatal diarrhea at a maternity hospital in Rangoon
SOURCE *Am J Public Health.* 1991 April; 81(4): pp480-2
ABSTRACT: Between 1981 and 1986, 1,540 infants born at the Central Women's Hospital in Rangoon were transferred to the Sick Baby Unit because of diarrhea (15.4 per 1,000 live births). Rates among cesarean infants were five times as high as those of infants born vaginally (51.0 and 10.3 per 1000 live births, respectively). One hundred eighty-four of the infants with diarrhea died (case fatality rate=12 percent). We conclude that neonatal diarrhea is endemic in this large maternity hospital in Burma, and that control efforts should be targeted especially to cesarean and low birthweight infants.
- 436 Tin May Nyunt
TITLE Management of diarrhoea in adults
SOURCE *Myanmar J Curr Med Practice.* 1999 Oct.; 4(1): pp30-35
ABSTRACT: Not Available

- 437 Khin Nwe Oo; Aung Myo Han; Thein Hlaing and Tin Aye
TITLE Bacteriologic studies of food and water consumed by children in Myanmar: 1. The nature of contamination
SOURCE *J Diarrhoeal Dis Res.* 1991 Jun; 9(2): pp87-90
ABSTRACT: To isolate major bacterial pathogens from children's food and drinking water, a 3-month study was conducted in a suburban community in Yangon, Myanmar. From the morning meals and stored drinking water of 208 randomly selected children, 775 food and 113 water samples were collected and were cultured using standard methods. *Escherichia coli*, *Vibrio cholerae* non-O1, and *Salmonella* were isolated from 505, 28 and 6 food samples respectively, and *E. coli* and *V. cholerae* non-O1 were isolated from 29 and 5 water samples respectively. Among the *E. coli* isolates, 8 produced heat-stable toxin (ST) and 3 were enteroinvasive. Nine *V. cholerae* non-O1 produced cholera-like toxin. Of the 29 *E. coli* isolates from the samples of drinking water, 3 produced ST. All water samples were negative for *Salmonella*. The study underscores the importance of bacterial contamination of children's food and drinking water and stresses the need to improve environmental sanitation.
- 438 Tin Aye; Kyaw Moe; Mar Mar Nyein and Than Swe
TITLE Cryptosporidiosis in Myanmar infants with acute diarrhea
SOURCE *Southeast Asian J Trop Med Public Health.* 1994 Dec; 25(4): pp654-6
ABSTRACT: Cryptosporidiosis has been found in Myanmar for the first time in infants presenting with a mild transient form of acute diarrhea. A total of 203 fecal samples collected from those infants were examined by Kinyoun's acid fast modified method. 3.4% of infants between 2 and 11 months of age were found passing cryptosporidium oocysts. All cases presented with features consistent with findings reported by others from developing countries. Cryptosporidium was the sole microorganism isolated. Hence, cryptosporidiosis may be responsible for acute diarrhea in these Myanmar infants.
- 439 Tin Aye; Kyaw Moe and Than Swe
TITLE Cryptosporidiosis in infants with acute diarrhea
SOURCE *Myanmar Health Res Congr.* 1992, Programme and Abstracts p29
ABSTRACT: Faeces were examined from 203 infants enrolled in a WHO funded Rotavirus Vaccine Trial from November 1990 to September 1991. Smears were prepared from stool samples collected from those cohort infants with diarrhoeal episodes during the study period. The stool samples were also processed for virological examination and bacteriological culture of *Salmonella*, *Shigella* and *Vibrio* spp. Medical history, clinical conditions and examinations for those cases were recorded by field medical officers assigned. Faecal smears were stained by Kinyoun's modified Ziehl-Neelson method. They were examined under oil immersion objective (x 100) and confirmed as Cryptosporidium when bright deep pink round or oval structures with clear halo, measuring about 4-5µm were found. These oocysts may appear either as a clean central with dark periphery or with dark centre and light periphery. Nuclei may be observed in some of the oocysts. Cryptosporidium oocysts were found microscopically in faecal smear's from 7 (3.4%) infants under one year of age. Cryptosporidium oocyst was the only pathogen found. Six out of positive smears presented with numerous oocysts per microscopic field. Watery diarrhoea and frequency of motions varying between 2-10 times per day were observed. Low grade fever and moderate degree of dehydration were recorded in 3 cases. No vomiting was noted. Duration of diarrhoea lasted between 1 to 15 days. All cases recovered with ORS.

- 440 Tin Aye; Than Than Swe; Kyaw Hla; Tin Nu Swe; Khin Saw Aye; Khin Myat Tun; Aung Kyaw Htoo; Nyunt Win and Myo Thein
TITLE Comparative study on detection of urease activity by CLO test Kit and Microtiter Biopsy Urease Test Kit for evaluation of *Helicobacter pylori*
SOURCE *Myanmar Health Sci Res J.* 1994; 6(3): pp105-8
ABSTRACT: A Microtiter Biopsy Urease Test (MBUT) for the detection of *Helicobacter pylori* was evaluated in the drug trial study conducted in the Endoscopy Department of New Yangon General Hospital. The MBUT was compared with commercially available urease test (CLO Test). Both CLO test and MBUT were performed on antral and fundal gastric tissues biopsied from 35 subjects who underwent upper gastrointestinal endoscopy. 29 (83%) cases were positive for *Helicobacter pylori* when tested by CLO test and MBUT. Thus the sensitivity and specificity of MBUT relative to CLO test was both 100% respectively. Tested by MBUT, the urease reaction was positive in 83% of cases within 2 hours and 90% within 3 hours. Tested by CLO test. It was positive in 60% of cases within 2 hours and 67% within 3 hours. The accuracy of MBUT was thus similar to that of CLO test for the detection of *Helicobacter pylori*. Moreover, MBUT is not expensive, can be prepared locally, packed in test kit from and can be supplied to gastroenteroscopy units for diagnostic and treatment purposes.
- 441 Tin Latt
TITLE Evaluation of ultrasonography in staging of carcinoma of thoracic oesophagus
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1991
SUMMARY: 42 patients admitted to thoracic surgical unit from June 1990 to May 1991 with clinically operable carcinoma of the oesophagus were studied. The age of the patients ranged from 29 to 77 years (mean age – 59.64 years). There were 32 males and 10 females. Out of 42 cases of carcinoma of the oesophagus 20 involved the middle third and 22 involved the lower third. Histologically, 30 cases were squamous cell carcinomas and 12 cases were adenocarcinomas. Lymph nodal metastases were present in 20 patients and the most commonly involved lymph nodes were the coeliac group of lymph nodes. The other nodes involved were paracardiac nodes and left gastric nodes. Peritoneal metastases were present in 4 patients. There were no hepatic metastases. The sensitivity, specificity and accuracy in detecting lymph node metastases were 45%, 100% and 74% respectively. The sensitivity, specificity and accuracy in detecting peritoneal metastases were 25%, 100% and 93% respectively. Ultrasound could not detect intra-abdominal extra-oesophageal spread and infiltration to surrounding structures accurately. Because of its low sensitivity in detecting intra-abdominal metastases and its failure in detecting even intra-abdominal extra-oesophageal spread, ultrasound can not be used as a staging tool in carcinoma of the oesophagus.
- 442 Tin Maung Aung
TITLE Pyogenic granuloma, an antro-oral manifestation and its oral surgical management
SOURCE *Myanmar Mil Med Conf*, 1992, Abstract of Papers, p15
ABSTRACT: A rare case of sessile growth apparently arising from a tooth extraction socket was referred to the defence services dental centre at No. 2 Military Hospital, Yangon. The assistance of advanced radiologic aids such as the orthophos and C. T. scan, depicting the exact extent and location of the lesion are discussed. Pre and post operative treatment planning and the oral surgical technique applied is presented.

- 443 Tin Maung Aye
TITLE A clinical study of colostomy
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1994
ABSTRACT: Described the age and sex incidence of colostomy patients, the proportions of emergency and elective colostomy operations, the frequency of different types and sites of colostomy operations, the various causes of colostomy, and the complications arising from colostomy operations including the mortality.
- 444 Tin May Saw
TITLE A study of evaluation of high resolution ultrasonography in diagnosis of acute appendicitis
SOURCE MMedSc(Surgery), Institute of Medicine, Mandalay (IMM), 1998
ABSTRACT: (Conclusion only available): The finding of present survey suggest that ultrasonographic evaluation of the patients with suspected acute appendicitis is considered to be value in surgical practice. The error rate of 4% was found in this study and was found to be acceptable. Therefore, I conclude that graded compression ultrasonography was useful to rule out the diagnosis of acute appendicitis and helped to avoid unnecessary appendisectomies and negative laprotomies.
- 445 Tin Oo; Sandar Kyi; Khin Myat Tun and Tin Nu Swe
TITLE Small intestinal permeability in apparently healthy Myanmar adults
SOURCE *Myanmar Health Sci Res J.* 1995; 7(1); pp47-8
ABSTRACT: No Abstract
- 446 Tin Oo; Sandar Kyi; Khin Myat Tun and Tin Nu Swe
TITLE Small intestinal permeability in apparently healthy Myanmar adults
SOURCE *Myanmar Health Sci Res J.* 1995; 7(1): p47
ABSTRACT: The present study was carried out to determine small intestinal permeability in 20 apparently healthy Myanmar subjects. After an overnight fast, the subjects drank a 100ml test solution conatining 5g of lactulose (7.5ml of Duphalac syrup) and 1g of L-rhamnose. 5h urine collection was carried out. Thin layer chromtography was carried to determine the urinary sugar content at a later date. The mean (\pm SE) 5h secretion of lactulose and L-rhamnose were $0.292\pm 0.038\%$ and $4.941\pm 0.527\%$ respectively. The lactulose/rhanmose ratio was 0.067 ± 0.008 (range 0.010-0.170). It was found to be higher than that of data from Western countries.
- 447 Tin Tin Aye
TITLE Evaluation of diarrhoeal disease control programme in Rangoon Division (1988)
SOURCE MMedSc(Public Health), Institute of Medicine I, Yangon, 1996-8
SUMMARY: The study of evaluation of CDD programme in Yangon Division was carried out between July and December 1998. It was a cross sectional analytical study consists of 30 cluster household survey on case management of diarrhoea, the health facility survey on diarrhoea case management and review of programme documents. Standard structured interview and observation schedules were employed. 30 cluster household case management survey was carried out in Yangon Division to determine the prevalence of diarrhoea among the under 5 children and the knowledge and practice of mothers related to management of diarrhoea at home. The number of under 5 children included in survey was 3023. Survey results indicated that 2 weeks diarrhoea incidence among under 5 was 6.8% and annual incidence of diarrhoea was 2 episodes per child per year. Diarrhoea associated mortality was 1.6 per 1000 under 5 children. It was found that no significant association

between sociodemographic characteristics of caretakers and satisfactory home management of diarrhoea. Only 21% of caretakers managed satisfactorily for current episode of diarrhoea. Majority of the caretakers could not prepare the ORS solution correctly. Health Facility survey on diarrhoea was conducted in twenty health facilities to assess the quality of diarrhoea case management. It included observation of case management using the observational check list, interview with health staff responsible for diarrhoea case management using the structured questionnaire, assessment of health facility as regards to ORT corner material and HE materials and review of record.

448 Tin Tin Aye
TITLE A study on intestinal parasitoses in children with protein energy malnutrition
SOURCE 7th Myanmar Mil Med Conf. 1997, Abstract of Papers, p15
ABSTRACT: This prospective comparative study aimed to find out the problem of intestinal parasitoses in children with protein energy malnutrition. One hundred and twenty nine cases of protein energy malnutrition and one hundred and twenty two comparable cases were studied. The parasite positive cases were determined by routine examination as well as concentration method of stool examination and NIH swab test. Hemoglobin concentration and peripheral blood examinations were also determined. Intestinal parasitoses (*Ascaris lumbricoides*, *Enterobius vermicularis* and *Trichuris trichiura*) were significantly commoner in children with protein energy malnutrition when compared to comparable group (100% vs 76.2% p<0.0001 in 1-4 years age group and 27.8% vs 23.5% p<0.0001 in 5-8 years age group respectively). The mean hemoglobin concentration of children with protein-energy malnutrition was significantly lower than that of comparable group (8.8±1.08g/dl vs 10.57±0.6g/dl P=0.0001 in 1-4 year age group and 9.61±0.96g/dl vs 10.94±0.67g/dl P=0.0005 in 5-8 years age group). Hypochromic microcytic anemia and hypochromic normocytic anemia were significantly commoner in children with protein-energy malnutrition than those of comparable group (54.3% vs 4.9% and 14.0% vs 2.5% respectively). Among the children with ascariasis and protein energy malnutrition those of 1-4 year age group had significantly lower hemoglobin concentration and significantly higher prevalence of hypochromic microcytic anemia than those of comparable group (9.027±0.985g/dl vs 10.07±0.186g/dl P<0.005 and 55/100 vs 6/42 p=0.0024 respectively). Children with trichuriasis had significantly lower concentration of hemoglobin than those with ascariasis even though their types of anemia were similar (7.5±0.58g/dl vs 9.017±0.975g/dl p<0.005).

449 Tin Tin Aye and Soe Thein
TITLE A study of small intestinal permeability in relation to dengue haemorrhagic fever
SOURCE 8th Med Spec Conf. Myanmar Med Assoc. 1997 Abstract of Papers, p24
ABSTRACT: Small intestinal permeability proportion of 52 children with DHF was determined by simultaneous of the urinary excretion of lactulose and L-rhamnose sugars after oral ingestion of an isotonic solution containing both sugars. Urine sample were analysed for sugar by thin layer chromatography, the percentage excretion of oral dosed lactulose was significantly higher in children with DHF shock than non-shock children and this increased transfer of lactulose in children with shock may relate to intestinal damage in non-gastrointestinal infection. But this value improved slowly when they recovered from illness indication that epithelial repair may initiate as soon as they recovered. In contrast, the percentage excretion of L-rhamnose remained unaltered in three stages. This might be the fact that there was no serious effect on the mucosa area due to DHF infection. Moreover, the lactulose/L-rhamnose sugars excretion ratios were higher in children with shock when

compared with those children with non-shock. This transient alteration of intestinal integrity in DHF may be an important factor in the pathophysiology of DSS.

450 Tin Tin May; Aung Myint and Thein Saw
TITLE Experience with the use of omeprazole in gastric ulcer patients
SOURCE 37th Myanmar Med Conf. 1991; p38
ABSTRACT: The acid pump, the enzyme H⁺-K⁺-ATPase, exchanges hydrogen ions from the cytosol of the parietal cell with potassium ions from the secretory canaliculi. This exchange is preceded by a passive movement of potassium and chloride ions out of the cell cytoplasm upon stimulation of the parietal cell. The net effect of that hydrochloric acid is formed in the secretory canaliculi, final step in the production of gastric acid. Omeprazole inhabits this acid pump. A total of 21 patients including 10 males and 11 females, within age range of 30 years to 55 years with barium meal, gastroscopic and histologically proven benign gastric ulcers in lesser curvature of stomach were given omeprazole 20mgm once/day after meals were given for one month. All these cases were rescoped and biopsied after one month's treatment. All case healed after one month of medical treatment.

451 Tin U
TITLE Operative staging of carcinoma stomach in adults
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1991
SUMMARY: Altogether 70 operated gastric patients were studied during the study period of 9 months from 1st June 1990 to 29th February 1991. The findings were: 1) all the patients admitted to 4 surgical units of Yangon General Hospital were at stage III and stage IV at the time of operation. There were no stage I and stage II cases at the present study; 2) the commonest presentation symptom was pain; 3) the commonest site of gastric cancer is the lower third of the stomach; 4) in patients with pain, vomiting and lump, the higher the duration of these symptoms and signs, the greater the degree of serosal involvement; 5) only palliative resection was possible in gastric cancer patients. There were no patients with curative resections. Resectability rate was found to be higher in stage III than stage IV; 6) in resected cases the gastrointestinal symptoms were alleviated in both stage III and IV cases; 7) general symptoms were found to be severe in stage IV cases; 8) in stage IV there was less operative tolerance than stage III. There was a risk of leakage of anastomotic site and risk of post operative pancreatitis in stage IV cases especially where there was infiltration to pancreas; 9) overall incidence of mortality and morbidity were lower in stage III cases than stage IV cases; 10) the higher the residual tumour the greater the morbidity was found.

452 Tun Than
TITLE Clinico-pathological study of carcinoma of the stomach
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1997
SUMMARY: Though the results could not be generalised because of small sample size and limited nature of the study, it would highlight not only the histological differences of two main types but also it could relate other characteristic. Such difference can not be achieved in the purely descriptive commonly used WHO classification. Most of the gastric cancers in this study are diffuse type rather than intestinal type. Further studies have to be carried out for comparison as there is geographical variation of incidence and types of gastric cancer not only between the countries but also within a country. The endemic or diffuse type of gastric cancer is associated with genetic predisposition like blood group A. In epidemic or intestinal type of gastric cancer, it is proved to be associated with environmental factors mainly nutritional factors which are preventable by prophylaxis measures. In Europe 40 years ago, there was increased incidence of intestinal type rather than diffuse type, since then there has been steady decline in incidence of intestinal type by the improvement of nutrition

whereas the incidence of diffuse type remains stable or even slightly increases at the present moment. The elderly patients get increased chance of intestinal type while the younger female patients are more affected with diffuse type of gastric cancer. No doubt gastric cancer patients with blood group A have increased incidence of diffuse type of gastric cancer. The clinical presentation and location or sites of the tumour do not give significant difference between the two histological type but macroscopic appearance of the tumour can foretell the histological type as polypoid or fungating tumours are mostly associated with intestinal type while ulcerative or infiltrative type with diffuse cancer in this study. There is more aggressive lymph node involvement in diffuse type with predilection of metastasis to liver in intestinal type and to peritoneum in diffuse type of gastric cancer. In some countries, there is introduction of histological type oriented surgical approach in which diffuse type is dealt with more extensive surgical resection in order to achieve free of residual tumour for better prognosis. I hope the results from this study may motivate the assumption that intestinal type and diffuse type might have at least some what differing aetiology and pathogenesis for further management and prognosis of gastric cancer.

- 453 Wah Wah Aung; Mar Mar Nyein; Moh Moh Win; Lay Myint; Thandar Lwin and Myat Thida
 TITLE Current antibiotic susceptibility pattern of bacterial pathogens isolated from dysentery cases from clinics
 SOURCE *Myanmar Health Res Congr.* 2000; Programme and Abstracts, p26
 ABSTRACT: A cross sectional descriptive clinic based study was carried out among dysentery cases attending three general practitioners' clinic from February to June 1999. Sixty two percent were males and thirty eight percent females. The age range was from six months to 72 years. Bacterial pathogens isolated were Enteropathogenic *Escherichia coli* (EPEC) (8 percent); Enterotoxigenic *Escherichia coli* (ETEC-LT) (6.7 percent), of which were *Shigella flexneri* (50 percent), *Shigella* dysentery (40 percent) and *Shigella sonnei* (10 percent). The antibiotic susceptibility revealed that EPEC were sensitive to Amikacin, Augmentin, Flurazolidone, Gentamycin, Netilmicin, Norfloxacin, Nalidixic Acid (83.3 percent) Sisomycin and Chlaramphenicol (75 percent), Cephalothin, Streptomycin and Neomycin (66.7 percent); and Septrin (58.3 percent). They were resistant to Ampicillin (66.7 percent), Tetracycline (75 percent), Carbenicillin (66.7 percent). *Shigella* species were sensitive to Netilmicin (100 percent), Norfloxacin (100 percent), Amikacin, Augmentin, Fuazoladone, Gentamycin (80 percent), Cephalothin, Nalidixic Acid, Neomycin, Septrin (70 percent). They were resistant to Streptomycin (100 percent), Chloramphenicol (80 percent), Tetracycline (80 percent), Carbenicillin (70 percent) and Ampicillin (60 percent).
- 454 Wah Wah Aung; Mar Mar Nyein; Tin Ohn; Thuzar Myint; Kyi Lwin Moe; Myint Aye; Aye Aye Maw and P. Kyaw Hla
 TITLE *Shigellosis* and its antibiotic susceptibility pattern in Yangon
 SOURCE *Myanmar Health Res Congr.* 1997, Programme and Abstracts, p79
 ABSTRACT: Cross sectional descriptive hospital-based study by using convenience sampling method among 53 dysentery cases admitted at Infectious Diseases Hospital during March to September, 1996 were included in this study. It consisted of 67.93 percent males and 35.08 percent females. Their ages ranged from one year three months to 80 years. The duration of illness before attending the hospital was one to seven days. Motion of stool in times were 16 to 20 times per day. Volume of stool output was small in 62.26 percent; moderate in 28.3 percent; 62.26 percent with mucus and 35.85 percent with blood and mucus. *Shigellae* was isolated from 45.28 percent of the cases; *Shigella flexneri* (54.17 percent), *Shigella dysenteriae* (29.17 percent); *Shigella boydii* (12.50 percent) and *Shigella sonnei* (4.17 percent). The antibiotic susceptibility revealed that 87.50

percent of *Shigellae* were resistant to Ampicillin; 83.33 percent to Chloramphenicol; 79.17 percent to Carbenicillin; 33.33 percent to Cephalothin; 37.50 percent to Furazolidone; 33.33 percent to Nalidixic acid; 83.33 percent to Streptomycin; 91.67 percent to Tetracycline; and 33.33 percent to Norfloxacin respectively. It was also noted that 91.67 percent of *Shigellae* were sensitive to Amikacin; 91.67 percent to Augmentin; 83.33 percent to Gentamicin; 58.33 percent to Minocycline; 91.67 percent to Metilimicin; 66.67 percent to Neomycin; 75 percent to Sisomycin; and 62.50 percent to Norfloxacin.

455 War War Hlaing
TITLE Occurrence of *Shigellae* among dysentery patients during cool dry season
SOURCE MSc(Zoology), University of Yangon, 1998
ABSTRACT: *Shigellosis* from random sample of dysenteric cases attending at Infectious Diseases Hospital during October 1996 to May 1997 was studied. The Study comprised of 34 cases of dysentery. The duration of illness before attending the hospital was found to be two to twenty days. The frequencies of motion among the cases were found to be three to more than eight times per day. Volume of stool output was small in 22 cases (64.71 percent) and moderate in 12 cases (35.29 percent). Mucous was present in stool of 19 cases (55.88 percent) and while mucous and blood was present in six cases (17.65 percent). *Shigellae* species were isolated from four cases (11.76 percent). Two different serotypes of *Shigellae* were distinguished. They were two cases each of *Shigella flexneri* and *Shigellae dysenteriae*. Suggestions for future work are outlined.

456 Win Myat Aye; S. Kyaw Hla; Thein Thein Myint; Soe Soe; Than Than Htwe; Myo Khin and Ni Win
TITLE A morphological study of intestinal mucosa of children under dissecting microscope
SOURCE *Myanmar Health Res Congr.* 1992, Programme and Abstracts, p47
ABSTRACT: A morphological study of intestinal mucosa under dissecting microscope was performed on 33 autopsies from Yangon Children's Hospital. The autopsy specimens are from 33 deceased infants and children with ages ranging from 1 day to 10 years. All the cases had no evidence of gastrointestinal disease. The study was undertaken to determine the villous architecture in children of different ages and changes taking place in their morphology according to age. The morphological study was done using the method of J. A. Walker Smith, 1969, of the four patterns of villi namely ridge, tongue, leaf and finger like patterns, ridges, were predominant in duodenum and tongue and leaf like villi were found in the distal portion of small intestine. Finger like villi were seen in ileum in only 5 cases. It was also noted that the villi in distal portions of small intestine became broader with age. The pattern of villi remain the same in all ages in duodenum.

457 Win Myat Aye; Thein Thein Myint; Than Nu Shwe and Aye Maung Han
TITLE Comparison of characteristic of patients and treatment seeking behaviour of their patients admitted through Diarrhoea Training Unit (DTU) and through Emergency Department YCH for acute diarrhoea
SOURCE *Myanmar Health Res Congr.* 2000; Programme and Abstracts, p66
ABSTRACT: It is a clinical based analytic study to identify the differences in patient's characteristics and outcome of acute diarrhoeal cases admitted to Diarrhoeal Training Unit (DTU) and Emergency Department of YCH. The knowledge, attitude and practice of patients on acute diarrhoea and the use of oral rehydration salt, are also studied. Data were collected by face to face interview using pretested structured questionnaire. Fifty eight patients with acute diarrhoea admitted DTU (Group 1) and 468 patients admitted to Emergency Department of YCH (Group 2) were included in the study. There was significant

difference in severity of patients (33% of group 1 *vs* 87% of group 2) requiring parenteral rehydration therapy ($p=0.007$); no one of group 1 *vs* 23.6% of group 2 requiring parenteral antibiotics ($p<0.05$) for “severe dehydration” cases; 4.1% of group 1 *vs* 9.15% of group 2 required parenteral rehydration therapy ($p<0.05$) and 10.2% of group 1 *vs* 8.5% of group 2 required parenteral antibiotic for “some dehydration” cases. Outcome was different in two groups (1.7% mortality in group 1 and 3.6% in group 2). Knowledge on cases of diarrhoea was low (27.5% of group 1 *vs* 11.7% of group 2, $p=0.0008$). Knowledge on preparation of ORS was significantly different (93.1% of group 1 *vs* 60% of group 2, $p=0.0009$). Only 26% of group 1 *vs* 5% of group 2 knew the existence of DTU in YCH9 ($p<0.000$). Attitude on correct way of giving ORS solution to the child with vomiting was significantly different (89.6% of group 1 *vs* 35.6% of group 2, $p>0.05$). Regarding practice on using ORS whenever the child got diarrhoea was significantly different (86.2% of group 1 *vs* 58.2% of group 2, $p=0.04$). The improved outcome and low mortality rate in group 1 patients and high knowledge and good practice on use of ORS related to acute diarrhoea. However, it is necessary to give more information for utilization of DTU.

458 Yan Naing Soe
 TITLE Correlation between clinical and bacteriological aspect of acute appendicitis
 SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 1998-1999

Abstract/Summary not available: Abstract written by the book editors

A prospective study on 60 patients with acute appendicitis was conducted in three surgical units of Yangon General Hospital and New Yangon General Hospital during March 1988 to May 1999. Majority of cases (50%) are of moderate severity with mild comprising 41.7% and severe cases constituting 8.3%. Most of the patients (86.7%) were admitted within 48 hours of onset of signs and symptoms and the remainder (13.3%) after 48 hours. Among those admitted within 48 hours (52 patients), 98.1% and 90.4% culture positive rates were obtained from stump of appendix and peritoneal fluids respectively. 100% culture positive rates were obtained from stump of appendix and peritoneal fluids of those (8 patients) who were admitted after 48 hours of onset. 98.3% of appendicular stump swabs and 91.6% of peritoneal swabs were positive. The majority of organisms identified in both swabs are *E. coli* (37% in appendix stump swabs and 36.3% in peritoneal swabs), followed by *Enterobacter* and coliforms.

459 Ye Myat Tun
 TITLE A clinical study of peptic ulcer disease and its relation with *Helicobacter pylori* infection in Myanmar Military personnel
 SOURCE 8th Myanmar Mil Med Conf. 1998, Abstract of Papers, p5

ABSTRACT: We studied total 58 soldiers who presenting with epigastric pain or dyspepsia both clinically, endoscopically and histologically in D. S. G. H. and No. (2) M. H. between 1995 May to 1996 April. All are soldiers, 8 had benign gastric ulcer 13.1%, 20 soldiers (34.4%) had duodenal ulcer, 14 soldiers (24.1%) had pangastritis and 12 soldiers (21.1%) had antral gastritis and 4 soldiers had normal. *Helicobacter pylori* infection was tested with rapid urea test and 49 soldiers were found to be positive. i.e. (87.5%) of soldiers with gastric ulcer and (95%) of soldiers with duodenal ulcer were positive for *H. pylori* relationship of diseases, *H. pylori* infection to age, rank, duration of services, smoking, presenting symptoms, nocturnal attacks will be discussed.

- 460 Ye Myint Kyaw
TITLE A study on small bowel bacterial overgrowth
SOURCE 6th Med Spec Conf. 1993, Abstract of Papers, pp45-46
ABSTRACT: A cross sectional study was carried out to detect the clinical significance of Small Bowel Bacterial Overgrowth (SBBO) in Myanmar children. One hundred and forty children aged 12 -120 months were included. The study was carried out in two phases. In phase I, 50 children admitted to YCH were tested by glucose breath hydrogen test and lactulose breath hydrogen test. In phase II, 90 children from Thaketa Township were tested by lactulose breath hydrogen test. The prevalence of SBBO was found to be 53.66%. Lactulose breath hydrogen test had better sensitivity and specificity (81.81% and 100% in contrast to 35.7% and 0% of glucose breath hydrogen test). No statistically significant difference was found out for nutritional status, developmental status, gastrointestinal disorders, feeding practice and socio-economic status. It was concluded that other factors might be playing roles along with SBBO as causative factors.
- 461 Ye Tint Lwin; Myo Khin; Tin Oo; Soe Min Thein and Hla Pe
TITLE Comparison of lactose breath hydrogen test and milk breath hydrogen test in diagnosis of lactose malabsorption
SOURCE *Myanmar Health Sci Res J.* 1997; 9(2): pp74-78
ABSTRACT: In both clinical and field situation, breath hydrogen analysis has been widely used in evaluating lactose malabsorption. It is accurate as other tolerance tests and has an advantage of being noninvasive. The use of milk (360ml) as a test meal for breath hydrogen test was evaluated in 16 adult subjects (8M: 8F), age ranging from 20-50 years. Lactose (17.6g) breath hydrogen test used as standard test. Of 16 subjects tested, 5 subjects were found to be lactose absorbers and 8 out of 11 subjects (lactose malabsorbers) were detected as lactose malabsorbers. The presence study demonstrates that breath hydrogen test using milk (360ml) as a test meal has a sensitivity of 73% and a specificity of 100% and could be used as an alternative test in the diagnosis of lactose malabsorption.
- 462 Ye Tint Lwin; Myo Khin; Tin Oo; Soe Min Thein and Hla Pe
TITLE Comparison of lactose breath hydrogen test and milk breath hydrogen test in diagnosis of lactose malabsorption
SOURCE *Myanmar Health Res Congr.* 1994; p71
ABSTRACT: In both clinical and field situation, breath hydrogen analysis has been widely used in evaluating lactose malabsorption. It is accurate as other tolerance tests and has an advantage of being noninvasive. The use of milk (360ml) as a test meal for breath hydrogen test was evaluated in 16 adult subjects (8M: 8F), age ranging from 20-50 years. Lactose (17.6g) breath hydrogen test used as standard test. Of 16 subjects tested, 5 subjects were found to be lactose absorbers and 8 out of 11 subjects (lactose malabsorbers) were detected as lactose malabsorbers. The presence study demonstrates that breath hydrogen test using milk (360ml) as a test meal has a sensitivity of 73% and a specificity of 100% and could be used as an alternative test in the diagnosis of lactose malabsorption.
- 463 Ye Tint Lwin; Myo Khin; Tin Oo; Ni Win; Than Than Lwin; San Kun; Mi Mi Nwe; Soe Min Thein; Tin Nu Swe and Hla Pe
TITLE Low prevalence of lactose malabsorption and lactose intolerance in Myanmar top athletes
SOURCE *Myanmar Health Sci Res J.* 2000; 12(1-3): pp48-51
ABSTRACT: Good nutrition is essential for success in athletes. Although, milk is easily available good source of nutrition, abdominal discomfort and diarrhoea due to milk and milk products in lactose intolerant athlete can hamper their athletic performance. The

presence study was carried out to identify those athletes who are intolerant to lactose by using milk breath hydrogen test and advise them to refrain from taking milk and milk products during competition to avoid ill effects. Out of 324 Myanmar top athletes from various sports disciplines, selected for 18th SEA Games (Thailand, 1995) who were subjected to milk breath hydrogen test, 15 (4.63%) were found to be lactose intolerant and 81 (25%) turned out to be lactose malabsorbers. Lactose malabsorption in Myanmar adults have been reported to be as high as 93%. The presence study reveals a much lower prevalence of lactose malabsorption among athletic population in Myanmar

- 464 Yone Yin
TITLE A comparative study between endotracheal anaesthesia and on-lung anaesthesia for oesophageal surgery in cancer oesophagus
SOURCE MMedSc(Anaesthesia), Institute of Medicine I, Yangon, 1994
ABSTRACT: The clinical effects and complications of one-lung anaesthesia were studied by comparing it with endotracheal anaesthesia in a series of 30 patients undergoing elective oesophageal surgery in the lateral position for carcinoma of the oesophagus. The study utilized a structured proforma for collecting the data of (15) cases for endotracheal anaesthesia and (15) cases for one-lung anaesthesia. There were no significant differences in mean age, body weight, haemoglobin concentration and sex of the patients between the two groups. One-lung anaesthesia was given in (14) patients undergoing right thoracotomy (Lewis Tanner's operation) and in (1) patient undergoing Mc Keown three phase operation. Endotracheal anaesthesia was given in 10 patients undergoing left thoracotomy (Allison's operation) and in 5 patients undergoing right thoracotomy (Lewis Tanner's operation). The patients were ventilated with halothane 0.5% in oxygen-nitrous oxide gas mixture throughout the operation using a Blease ventilator at constant rate (twelve per minute) and constant tidal volume of 800ml throughout the period of surgery in both groups, except during reinflation of the collapsed lung when manual inflation was used. The group undergoing endotracheal anaesthesia received about 33% oxygen and nitrous oxide. The group undergoing one-lung anaesthesia received about 50% oxygen and nitrous oxide. Differences between arterial pressure, pulse rate and oxygen saturation taken at different stages were compared between the two groups. During endotracheal anaesthesia, there were no significant changes in mean arterial pressure and pulse rate, no intraoperative and immediate postoperative complications, and no problems arising from endotracheal intubation. However, retraction of the upper lung caused contusions of lung-tissues and areas of atelectases, which was observed during operation. During one-lung ventilation, there were no significant changes in mean pulse rate. There were no serious complications except significant decrease in both mean systolic and diastolic pressure and dysrhythmias which was related to retraction of mediastinum found in (14) patients. Profound hypotension with severe dysrhythmias was found in one patient who was given one-lung anaesthesia for Mc Keown three phase operation. There were no immediate postoperative complications in these (14) patients. There were no problems with double-lumen tubes except failure to intubate in one patient. Study with pulse oximeter showed the lowest value of mean oxygen saturation in patients undergoing endotracheal anaesthesia which was 98% in left thoracotomy and 96% in right thoracotomy, and 91% in patients undergoing one-lung anaesthesia for right thoracotomy. Although there is a problem of hypoxaemia due to intrapulmonary shunting during one-lung ventilation, surgeons from thoracic surgical unit prefer one-lung anaesthesia to endotracheal anaesthesia in oesophageal surgery because of its advantage which is the absence of surgical retraction which minimizes pulmonary parenchymal trauma and postoperative pulmonary complications. Because of fear of hypoxaemia, one-lung anaesthesia should not be employed routinely in all cases of oesophageal surgery. However, it can be employed appropriately in patients with carcinoma oesophagus (middle third) undergoing right thoracotomy to avoid extensive surgical

retraction of lung tissue. For employing successful one-lung anaesthesia, careful monitoring of arterial oxygenation is essential. Because of unavailability of facilities for blood gas analysis, pulse oximeter is recommended for detection of early warning of hypoxaemia.

465 Wah Wah Hlaing
TITLE Occurrence of *shigellae* among dysentery patients during the cool dry season
SOURCE MSc(Zoology). 1998. Yangon University
ABSTRACT: Shigellosis from random samples of dysenteric cases attending at Infectious Diseases Hospital during October 1996 to May 1997 was studied. The study comprised of 34 cases of dysentery. The duration of illness before attending the hospital was found to be two to twenty days. The frequencies of motions among the cases were found to be from three to more than eight times per day. Volume of stool output was small in 22 cases (64.71%) and moderate in 12 cases (35.29%). Mucous was present in stool of 19 cases (55.88%) and while mucous and blood present in six cases (17.65%). *Shigellae* species were isolated from four cases (11.76%). Two different serotypes of *Shigellae* were distinguished. They were two case each of *Shigella flexneri* and *Shigellae dysenteriae*. Suggestions for future work are outlined.

466 Zaw Lin; Hisao Kurazono; Shinji Yamasaki and Yoshifumi Takeda
TITLE Polymerase chain reaction set up and confirmation by southern blot for detection of Enterohaemorrhagic *Escherichia coli* (or) Verotoxin-producing *Escherichia coli*
SOURCE 7th Myanmar Mil Med Conf. 1997, Abstract of Papers, p15
ABSTRACT: Construction of common primers for the Polymerase Chain Reaction (PCR) was done to detect the genes for various verotoxins reported, that is, VT1, VT2, VT2vha, VT2vhb, VT2vp1, VTvp2. Southern blot hybridization was done on amplified products to confirm that these were target fragments. By PCR with the designed common primers, a total of 80 Enterohaemorrhagic *Escherichia coli* (EHEC) (or) Verotoxin producing *Escherichia coli* (VTEC) strains isolated from human, domestic animals and meat gave a positive result.

467 Zaw Lin; Yee Yee San; Khine Marlar Myint; Thwe Thwe; Zaw Myint; Khin Htwe and Khin Ma Gyi
TITLE Antibiotic susceptibility pattern of shigella species isolated from diarrhoea cases of children under 5 years in Defence Services Obstetrics and Gynaecology and Children Hospital (DSOGCH) in 1995-1996
SOURCE *J Myanmar Mil Med.* 1998 Sept; 5(1): pp10-12
ABSTRACT: Sixty-three diarrhoeal stool specimens were studied during one year period which was from July, 1995 to June, 1996. *Shigella* species were isolated in 16 (25.2 per cent) of stool specimens studied. Results of species identification with polyvalent antisera showed 9 (56.3 per cent) *Shigella boydii*, 3(18.7 per cent) *Shigella sonnei*, 2(12.5 per cent) *Shigella dysenteriae* and 2(12.5 per cent) *Shigella flexneri*. All strains were totally resistant to tetracycline, Chloramphenicol, ampicillin, Amoxycillin, Streptomycin, Septrin and Penicillin. Seven (43.5 per cent) strains were resistant to Furoxone. All Strains were sensitive to Norfloxacin, Cephalothin, Augmentin and Gentamycin.

- 468 Zin Thet Khine; Khin Maung U; Myo Khin; Myat Thi and Kyi Kyi May
TITLE Sodium balance during acute diarrhea in malnourished children
SOURCE *J Trop Pediatr.* 1992 Aug; 38(4): pp153-157
ABSTRACT: Forty six male children 12-59 months old (27 malnourished and 19 with
 normal nutrition) admitted for acute water diarrhea of less than 48 hours' duration
 were studied. Using a metabolic balance and separate collections of urine and stools over
 each 6 hour period, balance studies were carried out up to 48 hours. Blood, stool, and urine
 samples were analysed for sodium and potassium levels, Serum, cortisol levels were
 determined using radio immunoassay in a sub-sample of six normal and five malnourished
 children. Malnourished children lost more sodium in their stools and urine during diarrhea,
 so that they had significantly diminished gut net sodium balance and significantly diminished
 total body sodium balance. Significantly higher levels of serum cortisol were observed initially
 on admission among children with malnutrition. This study demonstrated that malnourished
 children had poorer sodium balance during acute diarrhea.

Studies in 2001 - 2010. Summing up

Microbial genetic studies begun in the previous decade now reached high level during this period. Reverse transcription Polymerase Chain Reaction was used to characterize and genotype Rotavirus isolated from Yangon Children Hospital. Rotavirus surveillance was carried out in Children's hospital as part of Asian Rotavirus Surveillance project.

Studies of etiological agents for diarrhoea continued. Blastocystis homini was isolated and its role in diarrhoea and response to treatment investigated. Traditional medical formulations continued to be tested for the treatment of diarrhoea, dysentery and typhoid. The utilization pattern of traditional medicine for diarrhoea was described.

Studies of *H. pylori* continued. Its bacteriological, molecular and drug sensitivity profile was described. The usefulness of ELISA to detect *H. pylori* was evaluated.

Innovative approaches for diagnosis and assessment of GI disease were studied- such as evaluation of abdominal pain chart in management of acute abdomen; usefulness of the Alvarado scores for diagnosis of acute appendicitis.

Anatomical studies of the GI tract were extended to include innervation of the stomach. Small intestine mucosal pattern was studied in children and added to studies in previous decades of dissecting microscopic appearance and histological features of the small intestine.

Diagnostic methods for obstructive jaundice continued to be evaluated -endoscopic retrograde cholangiography features were correlated with ultrasonography in obstructive jaundice due to stones.

The opening of Dr. Med Sc courses at University of Medicine resulted in high level of studies in clinical medicine such as study of effectiveness of acupuncture stimulation in preventing postoperative nausea and vomiting after abdominal surgery for degree of Dr. Med Sc (Anaesthesiology).

Prof. Aung Than Batu

Abstract of Papers 2001-2010

- 469 Aung Khin
TITLE Stimulation of gastric acid secretion by different dietary solutions
SOURCE 11th Med Spec Conf, 2003, Abstract of Papers, p76
ABSTRACT: The effect of starch, protein and milk solutions on gastric acid secretion was studied in asymptomatic, healthy, *H pylori* negative 18-40 years old male subjects (n=12). The solutions at the ambient temperature were given by Ryle's tube at the controlled rate on four separate days. They were of the same volume and osmolarity. Test solutions included 250ml of starch (100gm of maize powder), protein (25gm of casien powder) and milk (8 ounces). Physiological saline was used as a control. Maximal acid output was 3.42 ± 0.36 mmol/hr, 7.0 ± 1.81 mmol/hr, 8.66 ± 2.17 mmol/hr and 11.93 ± 1.74 mmol/hr (mean \pm SD) for physiological saline, starch, protein and milk solution respectively. Maximal acid output one hour after Ryle's tube feeding was significantly greater ($p < 0.05$) with test solution than with the physiological saline. All test solution but not physiological saline, significantly increased acid output after one hour of ryle's tube feeding (8%, 10.1% and 21.1%) for starch, protein and milk solution respectively. Since starch, protein and milk solutions are potent stimulators of acid secretion, caution should be taken in administering these solutions in the management of hyperacidity and related diseases.
- 470 Aung Myat Thwin
TITLE The effectiveness of forearm acupoint stimulation by normal saline deposition in preventing postoperative nausea and vomiting after abdominal surgery
SOURCE Dr.Med.Sc.(Anaesthesiology), Institute of Medicine I, 2005
SUMMARY: A total of a hundred patients were randomized into two groups. In the experimental group, the patients received an injection of normal saline at the forearm Neiguan point at the correct depth (0.5 cun) bilaterally, twenty minutes before the induction of anesthesia. The volume introduced is 0.04 ml. per Kg. of body weight. The control group had an injection of the same solution at the same point at the same time but only intradermally and the volume is just 0.2ml. The outcome data collected were the presence of Post Operative Nausea and Vomiting (PONV), the severity of PONV, the number of emetic episodes, the need for rescue treatment, the maximum score of nausea obtained and the onset of PONV within the twenty four hour postoperative period. The Statistical Package for Social Sciences (SPSS) 11.0 was used for the statistical calculations. The number of patients without PONV is significantly greater in the experimental group with a p-value of 0.005 (Pearson) and 0.002 (Likelihood Ratio). Three patients in the experimental group and only two in the control group had emetic episodes but the difference was shown to be insignificant with a p-value of 0.646 (Pearson), 1.000 (Continuity correction) and 0.645 (Likelihood ratio). Three patients in the control group required anti-emetic rescue treatment while none of the patients in the experimental group had to be treated, but it was also shown to be insignificant with a p-value of 0.079 (Pearson), 0.241 (Continuity correction) and 0.039 (Likelihood ratio). The severity of nausea was compared between the two groups, and it was found that the control group had a more severe degree of nauseating incidences with a p-value of 0.005 (Pearson) and 0.002 (Likelihood ratio). The onset of PONV was shown to be much earlier in the control group with a p-value of 0.000 (Pearson) and 0.000 (Likelihood ratio) (within six hours). Finally, the maximum number of nauseating attacks in each patient was also shown to be fewer in the experimental group with a p-value of 0.005 (Pearson) and 0.002 (Likelihood Ratio). The NNT in this study is 3.57 which is more acceptable than 5 which is considered by the researchers as significant. Thus, it can be concluded from this experiment that acupoint stimulation of Neiguan point with normal saline does have a preventive effect upon PONV.

- 471 Aye Myint Sein; Thaw Zin; Khin Chit; Mu Mu Sein Myint; Saw Hla Myint; Moe Moe Aye and Yu Yu Nwe
 TITLE *In vivo* anti-diarrheal activity of Seik-Phoo (*Boesenbergia pandurata*, Roxb.) Schltr. in mice
 SOURCE *Myanmar Health Res Congr.* 2008; pp 24-25
 ABSTRACT: Acute diarrhea is commonly encountered in developing countries, where traditional/herbal remedies are often sought for symptomatic relief. Thus, identifying and evaluating reputed plants used for diarrhea, in terms of efficacy and safety becomes a necessity. With the object to determine the antidiarrheal efficacy of Seik-Phoo (*Boesenbergia pandurata* (Roxb.) Schltr), a plant reputed of having antidiarrheal property, studies on experimentally-induced diarrhea mouse model and antibacterial activity on common diarrhea-causing organisms was carried out. The watery extracts, in serial dilutions of 3, 6 and 12g/kg of Seik-Phoo, were administered to 3 groups of mice induced by castor oil to produce experimental diarrhea and the efficacy compared with a negative control receiving normal saline and a positive control receiving standard antidiarrheal drug, loperamide. Antidiarrheal activity was assessed by 1) effect on castor oil-induced diarrhea (number/type of stools passed), 2) effect on castor oil induced enteropooling (weight/volume of fluid accumulation), and 3) effect on castor oil induced small intestinal transit (passage of charcoal meal). Seik-Phoo was found to possessed marked anti-diarrheal effect comparable to loperamide, as seen by a significant delay in onset of diarrhea in first hour and a marked reduction in the number of diarrhea stools (12.5 ± 1.4 to 5.8 ± 0.7 times in 4 hours; $p < 0.02$). There was also marked reduction in both intestinal fluid accumulation (43.6%; $p < 0.05$), and intestinal transit (63.3%; $p < 0.001$). In addition, ethyl acetate, petroleum ether and ethanolic extracts showed marked antimicrobial activity against *E. coli* species, *Salmonella typhi*, *Shigella dysenteriae*, *Staphylococcus aureus*, and *Vibrio* species, indicating its potential usefulness in infective diarrheas where non-specific antidiarrheal agents are contraindicated. The present study signified the antidiarrheal effect of the extracts and their potential usefulness in a wide range of diarrheal states, whether due to disorders of transit (e.g. functional diarrhea, radiation diarrhea) or due to abnormal secretory mechanisms like in cholera or *E. coli* enterotoxin induced diarrhea.
- 472 Aung Soe
 TITLE Correlation between the ultrasonographic and endoscopic retrograde cholangiographic features in case of obstructive jaundice due to biliary stones
 SOURCE MMedSc(Diagnostic Radiology), Institute of Medicine I, Yangon, 2001-3
 SUMMARY: The study period was from 1st August 2001 to 31st July 2002. During this period, many cases were studied at Gastrointestinal ward of Yangon General Hospital. The 50 patients with biliary stones were studied to demonstrated following facts: 1) presenting features of biliary stone in order of frequency, 2) age and sex distribution of biliary stones, and 3) relationship between USG findings and ERCP findings. There was good agreement between ultrasonography and ERCP findings. The peak incidence is between 30 to 40 years age group and female to male ratio is 3:2. Among the biliary stones, the most common site was CBD. The sensitivity is 95%. The specificity is 80% and accuracy is 92% in detection of CBD stones.

- 473 Aung Thu; Supanaranond W; Phumiratanaprapin W; Phonrat B; Chinprasatsak S. and Ratanajaratroj N
TITLE Gastrointestinal manifestations of septic patients with scrub typhus in Maharat Nakhon Ratchasima Hospital
SOURCE *Southeast Asian J Trop Med Public Health*. 2004 Dec; 35(4): pp845-51
ABSTRACT: Scrub typhus is an acute febrile illness caused by *Orientia* induced vasculitis, which is common in Asia and the Pacific Islands and is sometimes also encountered in Western countries. Even though it can cause multi-organ dysfunctions, there is limited information regarding the relationship between scrub typhus infection and gastrointestinal dysfunction. Therefore, a cross-sectional study was conducted to discover the gastrointestinal manifestations of septic patients with scrub typhus infection. During the study period, 80 septic cases were recruited, and according to the results of immunofluorescent antibody testing (IFA), 20(25%) were found to have scrub typhus infection. The most common gastrointestinal symptoms of scrub typhus patients were vomiting 13(65%), nausea 12(60%), diarrhea 9(45%), and hametamesis or melena 5(25%). Gastrointestinal signs included hepatomegaly 8 (40%), jaundice 7(35%), and abdominal pain 4(20%). Elevation of SGOT, SGPT, and alkaline phosphatase were 16(80%), 14(70%), and 16(80%), respectively. Direct bilirubin was elevated in 19(95%) of the cases and half of the cases had a low serum protein level. Of scrub typhus cases, 8(40%) had eschars. The sites of eschars were mostly in hidden areas, such as on the back, genitalia and abdomen. Three of the five patients with eschar had hepatomegaly on ultrasound examination. The significant findings of the scrub typhus septic patients with eschar on endoscopic examination were gastritis in two cases, gastritis with gastric erosion in two cases, and one case showed a duodenal ulcer and erosion. The differentiating point for endoscopic findings in scrub typhus compared to the other causes was that the stomach lesions were more frequent and severe than the duodenal lesions. According to our endoscopic findings, physicians should be aware of gastric and duodenal lesions in febrile patients with gastrointestinal symptoms, such as abdominal pain or discomfort and indigestion. Scrub typhus can cause gastrointestinal and liver dysfunction.
- 474 Aye Aye Thinn
TITLE Association between absorption of rice carbohydrate and ascariasis in children
SOURCE *10th Med Spec Conf*, 2001, Abstract of Papers, p58
Abstract/ Summary not available: Abstract written by the book editors.
A field based intervention study was carried out to determine the prevalence of rice carbohydrate absorption in *Ascaris lumbricoides* infected children 5-12 years of age. Rice carbohydrate absorption was determined by using breath hydrogen test before and after deworming. Of 70 institutionalized children, 36 subjects (75%) were rice absorbers, 12 (25%) were rice malabsorbers before deworming. 8 subjects (27.3%) were non-hydrogen producers. Among 7-9 years age group, 76.47% were absorbers and 23.53% were malabsorbers. Among 10-12 years age group, 74.19% were absorbers and 25.8% were malabsorbers. Of the 12 malabsorbers, improvement in rice absorption status was seen in 10 children after deworming.
- 475 Aye Maung Han
TITLE Intestinal immunity and changes during diarrhea
SOURCE *Myanmar J Curr Med Practice*. 2000 Oct.; 5(1): pp13-19
ABSTRACT: Not available

- 476 Aye Than; Nu Nu Aung; Thaw Zin; Myat Phone Kyaw; Khine San Yin;
Ye Htut; Ni Ni Zaw and Maung Maung Gyi
TITLE Safety and *in vivo* Antiamoebic Efficacy of *Euphobia hirta* Linn. (Kywe-
Kyaung-Min-Say) on *Caecal amoebiasis* in mice
SOURCE *Myanmar Health Res Congr.* 2008; p38
ABSTRACT: Amoebiasis is an invasive disease of the caecum and large intestine, and
affects mainly the low socio-economic groups living under crowded, poor hygienic
conditions. Because of low cost, safety and easily availability, herbal remedies, like Kywe-
Kyaung-Min-Say (*Euphobia hirta* Linn.), are popularly used for amoebic dysentery among
these people. Thus, it is of interest to scientifically evaluate its safety by acute toxicity testing
(LD₅₀) and antiamoebic activity against caecal amoebiasis in mice. The study tested the effect
of crude 50% ethanolic extract of *Euphobia hirta* on the caecum amoebiasis induced in mice
by *E. histolytica* (HM1:MISS) strain. *E. histolytica* trophozoites (2x10⁵) was administered
orally and infection confirmed on the fourth day through detection of trophozoites in mice
stools. The ethanolic extract, in serial dilutions of 3, 6 and 9g/kg of *Euphobia hirta*, were
administered daily for 3 consecutive days, to 3 groups of mice infected with *E. histolytica*. On
the fourth day, the mice were sacrificed and the reduction in caecal wall ulceration was
compared with a negative control group of non-infected mice and a positive control group of
infected mice receiving metronidazole (78mg/day). Marked antiamoebic activity of *Euphobia*
hirta was seen as reduction of caecal wall ulceration in mice treated by the extract and
metronidazole when compared to the control animals. The 50% ethanolic extract, at doses of
9g/kg, affect cure in 40% of the mice treated, as compared to 80% with metronidazole. The
remaining 2 doses of 3 and 6g/kg extract still showed 20-25% effectiveness in treated mice.
Since acute toxicity study (LD₅₀) did not indicate significant toxicity, the study signified the
potential usefulness of Kywe-Kyaung-Min-Say (*Euphobia hirta* Linn.) in caecal amoebiasis.
- 477 Aye Than; Myat Phone Kyaw; Zin Zin Thu; Hnin Nu Wah; Win Lwin;
Phyo Zaw Aung and Khin Moe Sabei Khine
TITLE Study of *Blastocystis hominis* Infection in a Defined Primary School children
and its role in causing diarrhoea and effect of metronidazole on *Blastocystis*
Hominis infection
SOURCE *Myanmar Health Res Congr.* 2003; pp40-41
ABSTRACT: The prevalence of *Blastocystis hominis* (*B. hominis*) infection among primary
school children, age between 6 - 12 years at Setsan quarter, Kyeemyindaing Township
was studied during April 2003. Out of 328 registered primary school children, 141 children
(41%) were included in the study. Among them *Blastocystis hominis* infection was observed in
45.4% of the children, in which 59.4% (38 children) had history of repeated attacks of
diarrhoea, but 82.8% of *B. hominis* positive children had associated worm infestation.
Although, 17.2% of children had single infection with *B. hominis*, only 45.4% had history of
diarrhoea. A course of metronidazole 12mg per kg per day for 5 days was given to these
children with *Blastocystis hominis* infection, detected by microscopy and 72 hour culture. A cure
rate of 40.6% was found, but 60% became positive again for *Blastocystis hominis* on day 28.
Although reinfection could not be excluded, it was quite evident that metronidazole
treatment alone is not sufficient to treat *Blastocystis hominis* infected cases.
- 478 Aye Than; Ye Tint Lwin; Hnin Nu Wah; Thein Nyunt and Ye Htut
TITLE The intestinal parasitic infections in myanmar athletes
SOURCE *Myanmar Health Res Congr.* 2003; p46
ABSTRACT: To identify the prevalence and type of intestinal parasite infections in
athletes and its relationship with nature of sports discipline, a cross-sectional
descriptive study was conducted on 322 Myanmar athletes (177 males and 145 females)

selected for XXII SEA Games to be held in Vietnam. Routine examination of stool was done by applying direct smear and acid-fast stained methods. Forty four percent of athletes was found to be infected with intestinal parasites. Highest rate (65.38%) was found in rowers and pencak silat (63.16%). None of the parasites was identified among body builders. Common types of infected parasites were *Ascariasis* (49.3%), *Amaebiasis* (44.37%) and *Giardiasis* (16.9%). The highest rate of mixed intestinal parasitic infection was also identified in rowers (50%). No special relationship was noted between the nature of sports discipline (either aquatic, racket, atheletic or contact sports) and type of parasitic infections.

- 479 Aye Than; Nu Nu Aung; Thaw Zin; Myat Phone Kyaw; Khine San Yin;
 Ye Htut; Ni Ni Zaw and Maung Maung Gyi
TITLE Safety and *in vivo* antiamoebic efficacy of *Euphobia hirta* Linn. (Kywe-Kyaung-
 Min-Say) on *Caecal Amoebiasis* in mice
SOURCE *Myanmar Health Res Congr.* 2008; p38
ABSTRACT: Amoebiasis is an invasive disease of the caecum and large intestine, and
 affects mainly the low socio-economic groups living under crowded, poor hygienic
 conditions. Because of low cost, safety and easily availability, herbal remedies, like Kywe-
 Kyaung-Min-Say (*Euphobia hirta* Linn.), are popularly used for amoebic dysentery among
 these people. Thus, it is of interest to scientifically evaluate its safety by acute toxicity testing
 (LD50) and antiamoebic activity against caecal amoebiasis in mice. The study tested the effect
 of crude 50% ethanolic extract of *Euphobia hirta* on the caecum amoebiasis induced in mice
 by *E. histolytica* (HM1:MISS) strain. *E. histolytica* trophozoites (2x10⁵) was administered orally
 and infection confirmed on the fourth day through detection of trophozoites in mice stools.
 The ethanolic extract, in serial dilutions of 3, 6 and 9g/kg of *Euphobia hirta*, were administered
 daily for 3 consecutive days, to 3 groups of mice infected with *E. histolytica*. On the fourth
 day, the mice were sacrificed and the reduction in caecal wall ulceration was compared with a
 negative control group of non-infected mice and a positive control group of infected mice
 receiving metronidazole (78mg/day). Marked antiamoebic activity of *Euphobia hirta* was seen as
 reduction of caecal wall ulceration in mice treated by the extract and metronidazole when
 compared to the control animals. The 50% ethanolic extract, at doses of 9g/kg, affect cure in
 40% of the mice treated, as compared to 80% with metronidazole. The remaining 2 doses of
 3 and 6g/kg extract still showed 20-25% effectiveness in treated mice. Since acute toxicity
 study (LD50) did not indicate significant toxicity, the study signified the potential usefulness
 of Kywe-Kyaung-Min-Say (*Euphobia hirta* Linn.) in caecal amoebiasis.
- 480 Bresee J; Fang ZY; Wang B; Nelson EA; Tam J; Soenarto Y; Wilopo SA;
 Kilgore P; Kim JS; Kang JO; Lan WS; Gaik CL; Moe K; Chen KT;
 Jiraphongsa C; Ponguswana Y; Nguyen VM; Phan VT; Le TL;
 Hummelman E; Gentsch JR; Glass R and Asian Rotavirus Surveillance
 Network
TITLE First report from the Asian rotavirus surveillance network
SOURCE *Emerg Infect Dis.* 2004 Jun; 10(6): pp988-95
ABSTRACT: Rotavirus remains the most common cause of severe, dehydrating diarrhea
 among children worldwide. Several rotavirus vaccines are under development.
 Decisions about new vaccine introduction will require reliable data on disease impact. The
 Asian Rotavirus Surveillance Network, begun in 2000 to facilitate collection of these data, is a
 regional collaboration of 36 hospitals in nine countries or areas that conduct surveillance for
 rotavirus hospitalizations using a uniform World Health Organization protocol. We
 summarize the Network's organization and experience from August 2001 through July 2002.
 During this period, 45% of acute diarrheal hospitalizations among children 0-5 years were
 attributable to rotavirus, higher than previous estimates. Rotavirus was detected in all sites

year-round. This network is a novel, regional approach to surveillance for vaccine-preventable diseases. Such a network should provide increased visibility and advocacy, enable more efficient data collection, facilitate training, and serve as the paradigm for rotavirus surveillance activities in other regions.

481 Han Win
TITLE Modified surgical procedure for bleeding oesophageal varices
SOURCE Dr.Med.Sc.(General Surgery), Institute of Medicine II, 2003
ABSTRACT: Bleeding oesophageal varices has become one of the major causes of death in Myanmar following the increasing incidence of viral hepatitis, cirrhosis of liver and consequently that of portal hypertension. Although the therapeutic endoscopy is the definitive treatment for bleeding oesophageal varices, many patients respond poorly and rebleed after therapeutic endoscopy. For these patients, portal systemic shunt and transection devascularization (Sugiura and modified Sugiura) procedures are the two famous options currently available. The author modified the Sugiura procedure with a transabdominal approach and subcardial gastric transection instead of thoraco-abdominal approach and oesophageal transection. A total of 19 patients were included in the study during the study period of 4 years and 2 months. There were 14 male and 5 female patients. Age ranged from 14 to 64 years with the mean age of 37 years. According to Child's grading, 6 patients were in Child's grade A and 13 patients were in Child's grade B. Out of 19 patients, 7 patients had hepatitis B positive, 5 patients had hepatitis C positive, one patient had both B and C positive and the remaining 6 patients were free of viral antigens. Among the study patients, there were 11 cases of post hepatic cirrhosis, 6 cases of alcoholic cirrhosis and the remaining 2 cases were extrahepatic portal vein thrombosis without cirrhosis. The mean duration of operation was 286 minutes. The mean estimated intraoperative blood loss was 2120mls and the average blood transfusion during operation was 4.7 units. Since 7 of the 19 patients died within 30 days, the early operative mortality was 36.8%. The major causes of death were early rebleeding, septicemia probably due to the effect of splenectomy and multiorgan failure especially liver failure. The overall post operative complications rate was 52%. Twelve survivors were discharged from the hospital with the average hospital of 21.8 days. Excluding 7 operative deaths, 12 patients were available for follow up. The duration of follow up ranged from 8 months to 51 months with the mean follow up of 27.3 months. On recheck endoscopy at follow up, residual varices were noted in 4 patients (33%) and varices were eradicated in 8 patients (67%). During the follow up period, 3 patients died following recurrent bleeding and eventually 9 patients survived. The mortality and morbidity of the study is high so that the procedure is routinely not recommended as an acceptable procedure for the patients with rebleeding after therapeutic endoscopy.

482 Hla Kyaw
TITLE A clinical study of colonic injury
SOURCE MMedSc (Surgery), Institute of Medicine Mandalay (IMM), 2002
SUMMARY: In conclusion, broad spectrum antibiotic should be used early in patients with suspected colonic injury, In penetrating injuries with no adverse factors primary repair should be performed. In the presence of adverse factors a colostomy should be established. Blunt injuries should be treated by resection and anastomosis and in many instances with a covering colostomy. Iatrogenic injuries recognized early may be suitable for primary repair, but those presenting late often require a colostomy. Highly destructive blunt trauma forms a relatively large proportion of colonic injuries and colostomy remains an important option.

- 483 Hlaing Myat Thu; Win Mar Oo; Thaung Myat Aung; Kyaw Moe; Khin Mar Aye; Khin Htwe; Thin Thin Shwe and Win Mar
TITLE Genotyping of Rotavirus isolates from children under five years of age admitted for diarrhea at the Yangon Children Hospital
SOURCE *Myanmar Health Res Congr.* 2007, p26
ABSTRACT: Stool samples were collected from under five year-old children admitted for diarrhea to the medical wards of the Yangon Children Hospital to determine the distribution of human rotavirus genotypes circulating in Yangon. The stool samples were tested for the presence of rotavirus antigen by enzyme immunoassay (EIA). From the samples collected from January to December 2005, rotavirus was detected in 536 of 1180 stool samples tested (45.42%). Rotavirus diarrhea was most prevalent in the 6 to 12 month age group. From the rotavirus positive samples, 262 samples were subjected to genotyping by employing multiplex reverse transcriptase polymerase chain reaction (RT-PCR) with G and P specific primers. Of the 133 samples identified for G typing, 88% (117) were genotype G3, followed by 10 positive samples of G1 (7%), 4 of G4 (3%) and 2 of G2 (2%). The G and P type combinations could be identified from 8 out of 24 samples. Of the 8 combinations 5 were G1/P[4], 1 was G1/P[6] and 2 were G2P[4]. In addition to the 2005 samples, preliminary screening of the P and G genotype combinations of 30 stool samples collected in 2006 December and 2007 January were also tested. Three unusual G and P combinations, that is G2/P[9], G3/P[9] and G3/P[10] were identified in the samples collected from 2007. The distribution of G and P genotype provides valuable information for the development of effective rotavirus vaccines.
- 484 Kay Thwe Han; Rai Mra; Htin Aung Saw and Aye Than
TITLE Study on intestinal parasitoses and diarrhea in HIV infected Myanmar patients
SOURCE *Myanmar J Curr Med Practice.* 2003; 7(3): pp160-164
ABSTRACT: Diarrhoea is a common and life threatening symptom in Human Immunodeficiency (HIV) infected patients. Intestinal parasitosis is a main contributor in causing diarrhea in immunocompromised patients. Intestinal parasitosis has been detected frequently in both symptomatic and asymptomatic HIV patients. A total of 65 HIV patients attending to Specialist Hospital, Waibagie from August 2000 to September 2001 were studied to determine the prevalence of *intestinal parasitosis* and its relationship to CD4 count of the host. Collected stool samples were examined as wet-mount preparation and also cultivated. Modified acid fast staining and trichome staining were applied to detect coccidia. The most prevalent intestinal parasites were *Cryptosporidium parvum* (79.68%), *Microsporidia* spp (35.93%) *Entamoeba histolytica* (28.12%), *Blastocystis hominis* (25%), and *Cyclospora* spp (10.93%). Range of CD4 counts of the subjects were 0-723/ μ l. Number of parasite positive patients varied directly with the number of diarrhea patients. Both the prevalence rate of intestinal parasitosis and the number of diarrhea patients were inversely correlated with hosts' CD4 counts. Although intestinal parasitosis was common in HIV patients, it needed some degree of immunosuppression to be symptomatic. Therefore CD4 count of the host could be a useful indicator for the management of diarrhoea in HIV patients.
- 485 Khin Aye Aye Tun
TITLE Serotyping, antibiotic susceptibility and plasmic profile of bacteria isolated from children with diarrhea
SOURCE PhD(Zoology), University of Yangon, 2005
ABSTRACT: The study covers the period between April 2003 and December 2004. Ninety-five stool samples collected from children admitted to Yangon Children's Hospital with diarrhoea cases from Yangon proper (31 cases) and outskirts of Yangon proper (64 cases) were examined. Yangon proper included Dagon, Kyauktada, Lanmadaw,

Pazundaung, Mingalartaungnyunt, Kamayut, Kyimyindaing, Mayangone and Yankin while the outskirts included Dala, Dawpon, Seikgyi, Tharkata, South Dagon, Hlaingtharyar, Insein, Shwepyithar, Twante, Thanlyin. Seven age groups, 2-6 months, >6-12 months, >12-24 months, >36-48 months, >48- 60 months and >60-108 months were categorized among the children from which the samples were taken. Standard conventional methods recommended by World Health Organization (WHO, 1983) were utilized to isolate pathogenic bacteria, their serotyping and determination of antibiotic susceptibility. Plasmid profile was done by the method of Birnboim and Doly (1979). The sex ratio amongst the diarrhoea cases admitted to Yangon Children's Hospital during this study period was 54.75% males and 45.26 percent females. Of the 95 stool samples examined, 57% cases (60.00%) were found to be infected with pathogenic bacteria; 39(68.42%) with enteropathogenic *Escherichia coli* (EPEC), 17 (29.82%) with *Vibrio cholera*, and 1 (1.75%) with *Shigella dysenteriae*. Serotyping of *V. cholerae* revealed 9 and 8 strains of O1 and O139 respectively. The lowest pathogenic isolation rate (50%) was recorded in the children 61-108 months and the highest (76.92%) in 24-36 months children. Twenty three serogroups (O1K51, O6K15, O8K25, O8K40, O25K+, O26K60, O27K+, O44K74, O55K59, O78K80, O86K61, O86K62, O111K58, O112K66, O114K90, O119k69, O125K70, O128K67, O142K+, O143KX1, O144KX2, O148k+ and O159K+) were found to be the most common pathogens in EPEC. Antibiotic resistance varied between isolated pathogenic bacteria. The plasmids profile of EPEC were recorded as no plasmid from 7(17.95%), one plasmid, one plasmid from 30(76.92%) and 2 plasmids from 2(5.12%) isolates with the size ranging from 5, 625bp. The rate of pathogenic bacterial infection was recorded to be 74.19% (Yangon proper), 73.17% (outskirts of Yangon). In addition, the parents of children admitted to the Children's Hospital from Yangon Proper were street sellers and labourers while the parents of those admitted to the hospital from outskirts were mainly service members who are more knowledgeable than the street sellers. The findings are comparatively discussed. Suggestions for future work are also outlined.

486 Khin Mar Aye; Kyaw Moe; Thandar Lwin; Win Mar Oo; Tin Tin Htwe; Thin Thin Shwe and Win Mar

TITLE Genomic characterization of Rotavirus isolates from Yangon Children's Hospital by Reverse Transcription Polymerase Chain Reaction

SOURCE *Myanmar Health Res Congr.* 2005; pp26-27

ABSTRACT: The intentions of the study were to establish a Reverse Transcription Polymerase Chain Reaction (RT-PCR) for G and P genotyping of rotavirus isolates and to determine the distribution of human rotavirus genotypes in Yangon. This study was done in 2004, from stool samples collected from under five year-old children admitted to the Yangon Children's Hospital for diarrhoea. After screening for rotavirus by enzyme immunoassay (EIA), 181 stool samples (32%) were randomly chosen from 564 rotavirus positive samples, for genotyping by using RT-PCR. The rotavirus positive samples were genotyped employing multiplex RT-PCR using G and P specific primers. Genotype G3 was the most common type identified (44% of samples) followed by G1 (33.3%). The genotype G1 was the predominant type in the early part of the year, but was replaced by genotype G3 from July to December 2004. The VP7 genotypes G2, G4 and G9 each represented as minor types (total <13% of samples). Rotavirus P genotyping was attempted in 91 samples and P genotype can be ascertained in only 31 samples of which 74.2% were identified as P[8]. There was no apparent pattern of P genotype distribution throughout the year. Several unusual G and P type combinations were also identified, two of which were G1/P[4], one sample was G3/P[4] and another belonging to G2/P[8]. The distribution of G and P genotype provides important and valuable formation for the development and introduction of rotavirus vaccines, the most effective strategy for the prevention of severe rotavirus diarrhea.

- 487 Khin Myat Tun; Nwe Nwe Min; Mar Mar Nyein; Htay Kyaw; Sabai Nyi; Mie Mie Aung; Han Win and Htain Win
TITLE Effect of malnutrition on gastrica secretion and bacterial colonization of the stomach in children at Yangon Children's Hospital
SOURCE *Myanmar Health Res Congr.* 2002; p26
ABSTRACT: Cross sectional comparative study was conducted to determine the effect of malnutrition on gastric acid secretion and bacterial colonization of the stomach in children, admitted to Yangon Children's Hospital during the year 2000. Forty malnourished and twenty better-nourished children were recruited, as a test and control group respectively. Clinical history, physical examination and anthropometrics measurements were carried out on all children. Gastric juice samples were collected through nasogastric tube before and every 15 minutes after a caffeine test meal for determination of gastric secretion. Basal and stimulated gastric acid outputs were higher in better nourished than in malnourished counterparts but the differences were not statistically significant. Both Peak Acid Output (PAO) and Total Acid Output (TAO) were significantly higher in better-nourished children than in malnourished counterparts. Significantly higher gastric juice volume was observed in all stimulated samples in better nourished than malnourished children. In malnourished children the gastric juice pH was >5 in basal as well as in stimulated samples, whereas, in better nourished children gastric juice pH was 4 and the pH of stimulated gastric juice was <4. Malnourished children had significantly higher gastric juice pH in basal and 30-60 minute stimulated samples compared to better-nourished counterparts. Forty percent of the malnourished children and twenty five percent of better-nourished counterparts had Gram-negative bacterial colonization in prestimulated gastric juice samples. In the post stimulation period, gastric juice pH still remained high in the malnourished children, and there was no change in the percent of children with bacterial colonization. However, gastric juice pH dropped down to <4 in the post stimulation period in better-nourished children, leading to a significant reduction in the proportion of samples with bacterial colonization from 25% to 15%. This study showed that hypochlorhydria was evident in both malnourished and better-nourished children, with malnourished children unable to respond appropriate to a stimulus for gastric acid production. As a consequence of hypochlorhydria, bacterial colonization of the stomach was common in malnourished children.
- 488 Khin Pyone Naing
TITLE A study of ultrasonographic features of gastric masses
SOURCE MMedSc(Radiology), Institute of Medicine I, Yangon, 2002
SUMMARY: Total 50 cases or ultrasonographically diagnosed gastric masses were confirmed by endoscopy and/or surgery together with tissue hiopsies. Among 48 cases of endoscopically and/or surgically confirmed gastric masses, forty five cases. (90%) were primary gastric carcinoma which was the commonest type, three was lymphoma, one was chronic gastritis, the remaining one was leiomyoma. Thirty nine out of forty five cases of histologically confirmed primary gastric carcinoma were adenocarcinoma which was the commonest histological pattern. Primary gastric carcinomas were commonly found in 51 to 70 years age group (26 cases) and male were slightly more affected than female (1.04:1). They frequently originated in pyloric antrum (26 cases, 57%). Twenty six out or 50 cases of gastric masses were polypoid lesion which are the commonest morphological appearance. Forty out of 43 cases of primary gastric carcinoma showed pseudorenal pattern in ultrasound. Two out of 3 cases of lymphoma showed pseudorenal pattern. So pseudorenal pattern was not the specific feature for primary gastric carcionma. Ultrasound also revealed liver metastasis, paraortic, paracaval, peripancreatic lymph node enlargement, krukenberg tumor and ascites. Accuracy of ultrasound in evaluating the malignant and benign masses was found to be 93% and accuracy of endoscopy was 97%.

- 489 Khine Khine Lwin
 TITLE Gastric emptying in patients with type 2 diabetes mellitus in Yangon General Hospital
 SOURCE MMedSc(Internal Medicine), Institute of Medicine I, Yangon, 2002
 SUMMARY: Twenty five patients with Type 2 Diabetes of more than five years/duration and above, forty years of age and age matched twenty healthy control subjects from general medical wards of Yangon General Hospital and New Yangon General Hospital were studied over a period of one year. All these subjects were selected according to a set criteria. After getting relevant history and physical examination by prepared proforma, the patients were divided into two groups, those with gastrointestinal symptoms group and those without gastrointestinal symptoms group according to criteria. Both groups were assessed by following tests: 1) Evaluation of orthostatic changes in blood pressure, 2) blood pressure response to sustained handgrip, and 3) respiratory variation in heart rate (Expiration : Inspiration ratio). After carrying out the above procedures, for the assessment of gastric motility, each and every patients and healthy control subjects underwent measurement of solid meal gastric emptying time by nuclear scintigraphic study at Nuclear Medicine Department, Yangon General Hospital. Then, all results were analysed statistically by using T test for measuring the differences between group means and univariate analysis of variance. It was found that diabetes mellitus influenced very variably on gastric emptying time (i.e. shortening in some and lengthening in others). Upper gastrointestinal symptoms (nausea, vomiting, early satiety and abdominal bloating) alone did not statistically correlate with actual gastric emptying time. Hence, lack of gastrointestinal symptoms does not exclude abnormal gastric emptying and on the other hand, the presence of gastrointestinal symptoms can not be concluded that there will be delay gastric emptying or gastroparesis. Diabetic gastroparesis was correlated with the presence or absence of cardiac autonomic neuropathy and duration of diabetes in this study. In addition to this, it was found that blood sugar level also influence the gastric emptying in diabetes mellitus patients.
- 490 Khaing Win Htun; Nay Lin; Ngu Wah Min; Chan Nyein Maung; Zayar Win Lwin Oo; Yi Yi Nwe; Yi Yi Myint and Htun Naing Oo
 TITLE Antibiotic sensitivity monitoring of bacteria causing diarrhoea in Central Myanmar
 SOURCE *Myanmar Health Res Congr.* 2009; p28
 ABSTRACT: A total 152 diarrhoea patients from Nay Pyi Taw, Central Myanmar participated in this study and collection of socio-demographic data and stool samples was done and proceeded accordingly. The age of patients varied from one month to 90 years-old. Nausea and vomiting were commonly associated symptoms in diarrhea patients (67.1%). Blood streak and mucous were present in 3.9% (6 of 152) and 34.9% (53 of 152) of stool samples respectively. Other associated symptoms were fever 34.9% (53 of 152) and unconsciousness 5.3% (8 of 152). There were no fatal cases among study patients. Identified bacteria were *Vibrio cholerae* (5.9%), *E coli* (56.6%), *Shigella dysenteriae* (5.9%), *Shigella sonnei* (8.6%), *Shigella boydii* (2.0%), *Shigella flexneri* (3.9%), *Salmonella typhi* (3.3%), *Salmonella paratyphi* (3.9%), other *Salmonella* species (1.3%), *Proteus* species (3.9%), *Pseudomonas* species (1.3%) and *Klebsiella* species (3.3%). The overall antibiotic sensitivity of these bacteria were amikacin 87.5%, ceftriaxone 82.7%, kanamycin 75.6%, norfloxacin 73%, ciprofloxacin 71.7%, gentamycin 52%, tetracycline 43.2% and erythromycin 12.8%. In this study *Escherichia coli* was the most commonly identified bacteria in diarrhoea patients and amikacin was the most sensitive antibiotic for diarrhoea cases.

- 491 Kyaw Moe; Hummelman EG; Win Maw Oo; Lwin T and Htwe TT
TITLE Hospital-based surveillance for rotavirus diarrhea in children in Yangon, Myanmar
SOURCE *J Infect Dis.* 2005 Sept 1; 192 Suppl 1: ppS111-3
ABSTRACT: Diarrhea is a common childhood illness in Myanmar, and rotavirus is the single most important etiological agent of diarrhea. Surveillance for rotavirus diarrhea in children <5 years of age was conducted in a tertiary pediatric hospital in Yangon, Myanmar, from January 2002 through December 2003. Stool specimens obtained from children admitted to the hospital for acute diarrhea were tested for the presence of rotavirus by use of an enzyme-linked immunosorbent assay. Diarrhea was the cause of 5671 (18%) of all hospitalizations of children <5 years of age during the 2-year study period (n=30,869). Rotavirus was identified in 923 (53%) of the 1736 stool specimens tested, and rotavirus infection was associated with approximately 10% of all hospitalizations of children. Rotavirus diarrhea most frequently occurred in children 6-17 months of age, and it was more commonly identified in boys (62% of children with rotavirus diarrhea were boys). The seasonal pattern of rotavirus disease mimicked that of diarrheal illness due to all causes, with the peak season for rotavirus disease occurring from November through February (i.e., during the cool, dry season). During the study period, 53 of the children who were hospitalized for diarrhea died. The present study confirms the importance of the etiological role that rotavirus plays in childhood diarrhea.
- 492 Kyaw Moe; Win Mar Oo; Thandar Lwin; Thin Thin Shwe and Tin Tin Htwe
TITLE Hospital-based surveillance of rotavirus gastroenteritis in children under five years of age
SOURCE *Myanmar Health Res Congr.* 2003; p31
ABSTRACT: The objective is to determine the disease burden of rotavirus gastroenteritis in children under five years of age. A hospital based descriptive study design was employed. From December 2001 to September 2003, stool samples were collected from children under five years of age admitted to the three medical wards of the Yangon Children Hospital. A clinical history was taken and physical examination was done. The stool samples collected were tested for the presence of rotavirus by enzyme-linked immunosorbent assay. Rotavirus was detected in 49.8% of stools of diarrhoeic children. Rotavirus diarrhoea was most common between the ages of 6–17 months. Vomiting was the most common symptom occurring in 79% of children with rotavirus gastroenteritis. Rotavirus is the cause in one half of children under five years of age with gastroenteritis.
- 493 Kyi Soe and Than Than Swe
TITLE Case report: (2) Duodenal leiomyoma
SOURCE *Myanmar J Curr Med Practice.* 2002, 6(2): pp108-110
Abstract/ Summary not available: Abstract written by book editors
Although the stomach is regarded as the common site of leiomyoma, a benign tumour, the lesion in the duodenum is a rarity. UHO, a 43 year old man from Hinthada presented to the gastroenterologist with dyspepsia and mild degree of hypochromic anaemia. Endoscopy was performed and although stomach was found to be normal, a rounded spherical shaped tumour of size 1.5-2.0cm was detected. Following laparotomy, patient made an eventful recovery. Histopathologic diagnosis came back as duodenal leiomyoma with no evidence of malignancy.

- 494 Kyin Hlaing
TITLE Socioepidemiological characteristics of the users of Diarrhoeal Training Unit at Yangon Children's Hospital
SOURCE *10th Med Spec Conf*, 2001, Abstract of Papers, p55

Abstract/ Summary not available: Abstract written by the book editors.

A cross-sectional descriptive hospital based study was carried out to determine the socioepidemiological characteristics of the users of Diarrhoeal Training Unit at Yangon Children's Hospital. The specific objectives are a) to identify knowledge and perception on utilization of DTU at YCH and b) to explore reasons for using DTU at YCH. A total of 600 mothers or caretakers of children under 12 years presenting with acute diarrhea of less than 14 days attending the DTU at YCH were included. Face to face interview with a single interviewer using pre-tested standardized proforma was carried out. Most of the users of DTU at YCH were housewives, living in Yangon municipal area with easy access to YCH. The socioeconomic status of the users was found to be low and found to have limited knowledge on DTU. Most of the mothers brought their children to DTU within 2-3 days of diarrhea episode and the majority perceived DTU as a special unit for treatment of diarrhea cases.

- 495 Kyu Kyu Naing
TITLE The study of pancreatic masses by transabdominal ultrasonography
SOURCE MMedSc(Radiology), Institute of Medicine I, Yangon, 2002
SUMMARY: The study period from 1st August 2000 to 31st July 2001. During this study period, 30 cases of pancreatic masses were studied at surgical wards of Yangon General Hospital and New Yangon General Hospital. It was revealed that pancreatic neoplasm (66.67%) were more common than inflammatory disease of pancreas (36.67%). Pancreatic tumour (66.67%), pancreatic abscess (13.33%) and pseudocyst of pancreas (20%) were included. Regarded age & sex incidence, middle aged male were more common than women in this study. The most common primary neoplasm of the pancreas is Ductal adenocarcinoma, which usually occur in the head. Common clinical presentation were jaundice in 85% of pancreatic tumor and history of acute pancreatitis was presented in 66.67% of pseudocyst of pancreas. Different ultrasonic features of tumor, abscess, pseudocyst and pitfalls in diagnoses of these lesions were studied. All ultrasonically diagnosed pseudocysts of pancreas were confirmed by operation. There were 2 false negative cases were diagnosed by ultrasound in tumor and 1 false positive cases were diagnosed in abscess.

- 496 Mar Mar Nyein
TITLE Characterization of bacterial isolates from enteric infection, sexually transmitted diseases and leprosy
SOURCE PhD(Zoology) 2004, YU
ABSTRACT: Antibiotic susceptibility tests on enteric infections sexually transmitted diseases and Hansen's diseases studied from 1996 to 2004 are separately described under three chapters based on the types of diseases. Each chapter includes, isolation, identification and characterization of the pathogens with pathogenicity tests *in vitro* and *in vivo* methods. The application of Deoxyribonucleic Acid (DNA) based technology was introduced for confirmation of the isolated pathogens. Production of purified antigens and antisera was also employed to diagnose important pathogens. In addition, immunological test such as Biseibutsyokenkyusho (BIKEN) and enzyme linked immunosorbent assay (ELISA) method were employed. From cases of enteric infections, bacterial isolates were recorded as *Escherichia coli*, *Shigella species*, *Salmonella typhi*, *Vibrio cholerae*, *Campylobacter jejuni*. Pathogenic and non-pathogenic *Esch. coli* were further confirmed by tissue culture methods *in vivo* tests. The frequency and seasonal distribution of enterotoxigenic *Esch. coli* (ETEC0 had

shown that they were present throughout the whole year with the highest peak in June with 47 percent of the tested cases. In the antibiotic susceptibility tests, it was found that the resistant level of bacterial pathogens have increased up to 80-89 percent. The bacterial pathogens were mostly resistant to the antibiotic such as quinolones, ampicillin and tetracycline that have been used in the past. Plasmid analysis of ETEC had been shown that heat labile plasmid size varies from 45-80 kbp and toxins were produced from 2-8ng of 10^8 cells. Antisera; ETEC (LT), Cholera Toxin (CT) and enteropathogenic *Esch. coli* (EPEC) were produced by injecting the antigens of bacterial pathogens into the rabbits to be used for diagnosis purposes. Sexually transmitted infection were examined in married women from 268 (Ahlone) and 464 (Thaketa). Of these, 32 (11.20 percent) and 66 (14.22 percent) respectively were recorded to be positive cases. The pathogens isolated were *Candida albicans* and *Trichomonas vaginalis*. Regarding antibiotic susceptibility, it was found that the pathogen *N. gonorrhoeae* was resistant to conventional antibiotics such as penicillin (92.9 percent), trimethoprim/sulfamethoxazole (septrin) (85.7 percent), tetracycline (85.7 percent), erythromycin (78.6 percent), amikacin (71.4 percent), and vancomycin (43 percent). However the pathogens were sensitive to newer drugs such as cefaclor, ceftriaxone, spectinomycin and sparflaxacin. The plasmid which encodes for tetracycline conjugative plasmid of 25.2 MDa was obtained from *N. gonorrhoeae*. Thirty two and 115 biopsy specimens from Hansen's disease respectively were obtained from Special Skin Clinic in Yangon General Hospital and Myingyan area. Of these specimens, the bacterium *Mycobacterium leprae*, the cause of the disease, in 27 specimens (84.38 percent) and 106 specimens (96.86 percent) respectively were successfully transmitted to the mouse foot pads. Antibiotic susceptibility test with varying doses of dapsone in these cases showed high resistance level. However, antibiotic sensitivity was obtained when treated with rifampicin. The data obtained are discussed in detail. Suggestions for future work are outlined.

- 497 Mar Mar Nyein; Khin Myo Naung; Mi Mi Htwe; Saw Hla Myint and Maung Maung Htay
- TITLE Activity of TMF-06, TMF-23 and their ingredient plants on some pathogenic bacteria isolated from diarrhoea, dysentery and typhoid cases
- SOURCE *Myanmar Health Res Congr.* 2003; p25
- ABSTRACT: The Myanmar traditional medicines which were mainly used in diarrhoea and dysentery TMF-06, TMF-23 and TMF-06 + TMF-23 by Myanmar practitioners were selected to determine the antibacterial properties. The ingredients (23 plants) present in it were selected singly and tested for their antibacterial activities. A total of 100 strains of bacteria (*Escherichia coli*=20; *Salmonella typhi*=20; other *Salmonella*=5; *Shigella* species=20, *Vibrio cholerae* O1 & O139=30) isolated from enteric diseases and other bacteria (one species each of *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *S. epidermidis*, *Proteus morgani* and *Vibrio fluvialis*) were chosen for examination. Agar disk diffusion and Microtitre plate dilution assays were done for screening and for determination of minimum inhibitory concentration respectively. It was demonstrated that TMF-06 extract was active on *Escherichia coli* (STLT), and *Vibrio cholerae* (Inaba). TMF-23 extract was active on *E. coli* (STLT), *Staphylococcus aureus*, *Shigella boydii*, *Shigella dysenteriae* and *Vibrio cholerae* (Ogawa). The extract of the mixture of two TMFs was also found to be active on *E. coli* (LT) and *Vibrio cholerae* (Inaba). Among the 23 plants tested, they were found to be active on one, two or more of the bacteria tested with different patterns. The minimum inhibitory concentration obtained by determination with microplate reader at wave length 45nm was also shown.

- 498 Mar Mar Nyein; Mi Mi Htwe; Aye Aye Maw; Wah Wah Aung; Khin Aye Aye Tun and Khin Myat Tun
 TITLE Isolation of bacterial pathogens from children with diarrhoea from Yangon Children Hospital (1999-2003)
 SOURCE *Myanmar Health Res Congr.* 2004; pp21-22
 ABSTRACT: Rectal swab samples were collected in Cary Blair transport media from 313 cases (179 males; 134 females) of children (less than nine years old) who were admitted to Yangon Children Hospital during 1999 to 2003. They were processed by standard conventional bacteriological methods. The enteric pathogens isolated were enteropathogenic *Escherichia coli* (EPEC) (23.64%); *Shigella* spp. (3.5%); *Vibrio cholerae* (8.31%), and *Salmonella typhi* (0.32%). Total pathogen isolation rates 20.6% in 1999; 35.8% in 2001; 21.8% in 2002 and 60% in 2003. Enteropathogenic *Escherichia coli* (EPEC) isolation rate was 16.18% in 1999; 17.89% in 2001; 10.91% in 2002 and 41.05% in 2003. *Vibrio cholerae* was not isolated in 1999 but increased isolation began from 2000 (7.37%); 2001 (3.64%) to 2003 (17.89%). Antibiotic susceptibility pattern of EPEC showed that they were resistant to ampicillin, amikacin and tetracycline. Also 66.7% and 93.75% of *Vibrio cholerae* were resistant to ampicillin in 2001 and in 2003 respectively. Similarly, 50% and 75% of *V. cholerae* were resistant to tetracycline in 2001 and 2003 respectively.
- 499 Mar Mar Nyein; Mi Mi Htwe; Aye Aye Maw; Wah Wah Aung; Khin Aye Aye Tun and Khin Myat Tun
 TITLE Bacterial pathogens isolated from acute diarrhea cases of children at Yangon Children's Hospital
 SOURCE *Myanmar Health Sci Res J.* 2004 Jan-Dec; 6(1-3): pp35-41
 ABSTRACT: Rectal swab samples were collected in Cary Blair transport media from 313 cases (male=179; female=134) of children (less than nine year old) who were admitted to Yangon Children's Hospital during 1999 to 2003. They were processed by standard conventional bacteriological methods. The enteric pathogens isolated were enteropathogenic *Escherichia coli* (EPEC) (23.64%); *Shigella* spp. (3.5%); *Vibrio cholerae* (8.31%) and *salmonella typhi* (0.32%). Total pathogen isolation rate was as follows: 1999 (20.59); 2001 (35.79); 2002 (21.82) and in 2003 (60). In other teams EPEC isolation rate increased from 16.18. in 1999; 17.89 in 2001; 10.91 in 2002 and 41.05 in 2003 was not isolated in 1999 but increased beginning from 2000 (7.37); 2001 (3.64) to 2003 (17.89). Antibiotic susceptibility pattern of EPEC has shown that they were resistant to ampicillin, amikacin and tetracycline. Also 66.7 and 93.75 of *Vibrio cholerae* were resistant to ampicillin in 2001 and in 2003 respectively. Similarly, 50 and 75 of *V. cholerae* were resistant to tetracycline in 2001 and 2003 respectively.
- 500 Mar Mar Nyein; Mi Mi Htwe and Aye Than
 TITLE Antibacterial activity of herbs used in Traditional Medicine Formulations as remedies for gastrointestinal disorders (diarrhoea and dysentery)
 SOURCE *Myanmar Health Res Congr.* 2002; p6
 ABSTRACT: A total of 44 plants were tested for antibacterial activity by agar disc diffusion assays and some *in vivo* tests. Different extracts of plants were tested on 12-64 strains of bacteria with known antibiogram and special emphasis on pathogens isolated from diarrhoea/dysentery and gastroenteritis cases. Tested bacterial pathogens include *Bacillus subtilis*, *Citrobacter freundii*, *Escherichia coli* species, *Klebsiella aerogenes*, *Klebsiella pneumoniae*, *Plesiomonas shigelloides*, *Proteus* species, *Pseudomonas* species, *Salmonella* species, *Shigella* species, *Staphylococcus* species and *Vibrio* species. Plant extracts which were shown to have antibacterial activity either singly, or to all tested bacteria were *Aegle marmelos*, *Alpinia galangal*, *Capparis sepiaris*, *Cinnamomum inunctum*, *C. zeylanicum*, *Cuminum cyminum*, *Curcuma longa*, *Cyperus rotundus*, *Dichroa febrifuga*, *Embelia robusta*, *Embllica officinalis*, *Eugenia caryophyllata*, *E. jambolan*, *Foeniculum*

vulgare, *Garcinia mangostana*, *Melia azadirachta*, *Mesua ferrea*, *Myristica fragrans*, *Nigella sativa*, *Piper betle*, *P. nigrum*, *Pinus kesiya*, *Pterocarpus santalinus*, *Symplocos racemosa*, *Terminalia chebula* and *Zingiber officinale*. The minimum inhibitory concentration ranges from 15mcg to 200mg/ml with respect to the type of extraction methods. Activity of some plants were proven by *in vivo* tests using infant rabbit assay, infant mouse assay, rabbit ileal loop assay and experimental induced wounds in rats. By testing the antagonism effect by tissue culture toxin assay methods using CHO cells, Hep-2 cells, and vero cells, the activity of plant extract was obtained only by using the limited amount of minimum dose of infection.

- 501 Mar Mar Nyein; Mi Mi Htwe; Khin Myat Tun and Kyi Kyi Aye
 TITLE Potential Source of infection through vegetables with a note on bacterial pathogens isolated from children with diarrhoea
 SOURCE *Myanmar Health Sci Res J.* 2005; 17(2): pp66-71
 ABSTRACT: Distribution of bacterial pathogens studied on 350 specimens of vegetables from bazaar and salads from street vendors in 10 townships in three seasons during March 2000 to August 2001. Similarly, 62 cases of diarrhoeic children attended the Yangon Children's Hospital during May to August 2001 were tested for isolation of pathogens. All the vegetables and salads were heavily contaminated with coliform and fecal coliforms. *Salmonella* species, *Shigella dysenteriae* and *S. sonnei* were isolated from Thaketa, Insein, Mingaladon respectively. *Vibrio cholerae* was isolated from Tamwe and Kamayut. *S. dysenteriae* was isolated from coriander (nan-nan-pin) and *V. cholerae* from hsala. Various serogroups of *Escherichia coli* (O6K15, O28a/cK73, O25K+, O86K62, O142K-, O146K89, O148K+) were isolated from vegetables: *Aeromonas hydrophila*, Enteropathogenic *E. coli*, (O27K+, O28a/cK73, O111K58, O114K90, O119K69, O128K67, O148K+, O157K+, O159K+). *Plesiomonas shigelloides*, *S. dysenteriae A*, *S. sonnei* phase 1, *V. cholerae* O1 (Ogawa) and *V. cholerae* O139 were isolated from 27 cases (43.55%) of diarrhoeic children. Studies on antibiotic resistance and plasmid patterns reveal that some clinical and environmental *E. coli* possess similar pattern of resistance gene. Thus, environmental health care is important to eliminate transmission of infections. From experiments, just washing with clean water 11 times could not eliminate faecal coliforms totally. However, washing vegetables at least three times with clean water (1liter each for 50gram) and treating with 0.001 percent of potassium permanganate for 30 minutes and again washing out with clean water for three times could eliminate faecal coliforms.
- 502 Mar Mar Nyein; Yaminn; Mo Mo Win; Aye Aye Maw and Thein Aung
 TITLE Serogroup distribution of enteropathogenic *Escheriachia coli* isolated from infants with acute diarrhoea admitted to Yangon Children Hospital (2004)
 SOURCE *Myanmar Health Sci Res J.* 2006; 18(2): pp100-103
 ABSTRACT: Bacteriological characteristics of enteropathogenic *Escherichia coli* in 200 infants (<12 months) with diarrhoeal diseases admitted to Yangon Children's Hospital from July to December, 2004 were studied. Isolation of bacterial pathogens was done from rectal swabs in Cary-Blair transport media which were plated onto selective media for specific bacterial pathogens. The most frequently isolated bacterial pathogen was Enteropathogenic *Escheriachia coli* (EPEC) accounting for 21% (42 cases) of the tested cases. The EPEC was isolated from 17.39%, 23.21% and 20.66% from <2, 2-6 and 6-12 months of age group respectively. Isolated *E. coli* serogroups were O26K60, O25k+, O55K59, O119K69 (4 cases each), O6K51 (3 cases each), O1K51, O27K+, O78K80, O114K90, O125K70, O127K63 and O148K+ (2 case each) and one case each of O8K40, O44K74, O28K73, O86K62, O112K66, O136K78 and O144kx2. Antibiotic susceptibility revealed that EPEC was sensitive to amikacin (79.5%), cefotaxime (69.2%), netilmicin (66.6%), gentamycin (51.3%), norfloxacin (33.3%). Chloramphenicol (20.5%) and co-trimoxazole (5%). All EPEC tested were resistant to ampicillin.

- 503 Mar Mar Nyein; Mi Mi Htwe; Aye Aye Maw; Wah Wah Aung; Khin Aye Aye Tun and Khin Myat Tun
TITLE Bacterial pathogens isolated from acute diarrhoea cases of children at Yangon Children's Hospital
SOURCE *Myanmar Health Sci Res J.* 2004 : 1-3; pp35-41
ABSTRACT: Rectal swab samples were collected in Cary Blair transport media from 313 cases (Male=179; female=134) of children (less than nine years old) who were admitted to Yangon Children's Hospital during 1999 to 2003. They were processed by standard conventional bacteriological methods. The enteric pathogen isolated were enteropathogenic *Escherichia coli* (EPEC) (23.64%); *shigella* spp (3.5%); *Vibrio cholerae* (8.31%), and *Salmonella typhi* (0.32%). Total pathogen isolation rate was as follows: 1999 (20.59%); 2001 (35.79%); 2002 (21.82%) and in 2003 (60%). In other terms EPEC isolation rate increased from 16.18% in 1999; 17.89% in 2001; 10.91% in 2002 and 41.05% in 2003. *Vibrio cholerae* was not isolated in 1999 but increased beginning from 2000 (7.37%); 2001(3.64%) to 2003 (17.89%). Antibiotic susceptibility pattern of EPEC has shown that they were resistant to ampicillin, Amikacin and tetracycline. Also 66.7% and 93.75% of *Vibrio cholerae* were resistant to ampicillin in 2001 and in 2003 respectively. Similarly, 50% and 75% of *V.cholerae* were resistant to tetracycline in 2001 and 2003 respectively.
- 504 Mar Mar Nyein and Than Nu Shwe
TITLE Antibiotic resistance pattern of enteric pathogens among childhood diarrhea
SOURCE *Myanmar Health Sci Res J.* 2006 Dec; 18(3): pp140-143
ABSTRACT: Antibiotic susceptibility tests on bacterial pathogens isolated from cases of childhood dysentery and diarrhea admitted to some hospitals in Yangon were carried out from 1980 to date. Yearly changing of antibiotic susceptibility pattern was found on these isolates which include enteropathogenic *Escherichia coli* (EPEC), enterotoxigenic *Escherichia coli* (ETEC), *Shigella* species and *Salmonella typhi*. Changing drug resistance pattern of EPEC and ETEC isolates to ampicillin, chloramphenicol and tetracycline was recorded. From this study, it is shown that the drug resistance of *Shigella* species was increased in adult than children. Susceptibility pattern was distinct in newly introduced drugs compared conventional drugs.
- 505 May Aye Than; Mu Mu Sein Myint; Ohn Mar Ko; Myint Myint Khine; San San Myint; Nu Nu Win and Mar Mar Nyein
TITLE Evaluation of antidiarrhoeal activity of seed kernel of *Mangifera indica* Linn. (Mango)
SOURCE *Myanmar Health Res Congr.* 2007, pp24-25
ABSTRACT: In order to combat the problems of diarrhoea globally, World Health Organization has given a special emphasis on the use of traditional medicines in management of diarrhoea. It thus becomes important to evaluate commonly available natural drugs as alternative to currently used anti-diarrhoeal drugs. The aim is to evaluate *in vivo* and *in vitro* antidiarrhoeal activity of reputed Mango seed kernel. *In vivo* the anti-diarrhoeal activity of aqueous extracts were carried out using castor oil-induced diarrhoea model in mice with the standard loperamide. Like loperamide, a single oral dose of its extract produced significant reduction in fecal out put and onset of diarrhoea ($p < 0.005-0.001$) compared with that of control. This study was also conducted on castor oil-induced gastrointestinal motility (intestinal-transit) after charcoal meal, intestinal fluid accumulation, and the effect of smooth muscle on isolated rabbit intestine for its mechanism of action. These extracts and loperamide also significantly reduced the castor oil-induced intestinal fluid accumulation and intestinal transit (anti-secretory effect) ($p < 0.0000$). These extracts directly caused dose dependant relaxation of smooth muscle of isolated rabbit intestine by antimuscarinic and antihistaminic like mechanism. The *in vivo* anti-

diarrhoeal index of extracts and loperamide were 66.6 and 71.2% respectively. Anti-bacterial activity screening of pet-ether, ethyl acetate, ethanol and aqueous extracts against 13 species of pathogenic microorganisms was carried out by employing agar disc diffusion method. All extracts inhibited the growth of four strains of *E.coli*, three species of *Salmonella*, two species of *Vibro* and *Shigella sonnei*. This results indicated their potential usefulness in infected diarrhoea with these four organisms. In conclusion, mango seed kernel extract revealed the antidiarrhoeal effect and potential utility in a wide range of both infected and noninfected diarrhoea states.

506 May Kyi Aung; Myint Naing Tun; Khin Ma Ma; Than Than Su; Nilar San and Soe Naing

TITLE Intestinal parasitoses in selected group of primary school children of North Okkalapa Township

SOURCE *Myanmar Health Res Congr.* 2003; pp34-35

ABSTRACT: A cross sectional descriptive study was conducted among primary school children of North Okkalapa Township in the year 2002. Total number of children examined was 161 comprising 83 boys and 78 girls with the age ranged from 5-7 years. Physical growth of them was determined by measuring height (cm) and weight (kg). Routine examination of stool was conducted in the study group. Among the study population 73% were infested with intestinal helminthes and protozoa. Single and multiple infestations were noted. The point prevalence rate of infested intestinal parasites will be presented according to the age, sex and physical growth of the study.

507 Mya Mya Aye

TITLE Bacteriological, molecular and drug sensitivity profile of *Helicobacter pylori*

SOURCE PhD(Microbiology), Institute of Medicine I, 2005

SUMMARY: The first isolation of *Helicobacter pylori* in 1982 by Marshall and Warren ushered in a new era in gastric microbiology. Although spiral organisms has been observed in the gastric mucous layer many times in the preceding century, the isolation of *H. pylori*, in conjunction with increased interest in the pathogenesis of gastroduodenal diseases, as well as the relatively frequent availability of clinical specimens via endoscopic -biopsy has led to important breakthroughs in medical care. The aim of this study is to determine bacteriological, molecular and sensitivity profile of *H. pylori*. The isolation rate of *H. pylori* infection in this study was 30% as measured by culture. The gastric endoscopic biopsy specimens were taken from patients with gastritis and peptic ulcer. Culture is important to monitor *H. pylori* susceptibility to antibiotics in order to give recommendations for primary treatment. There are many kinds of culture media for isolation of *H. pylori* and three kinds of selective culture media including Butzler's medium, Skirrow's media and Dent's medium were used for *H. pylori* isolation. The efficacy of culture media was different and Butzler's medium and Skirrow's media were found to be better than Dent's medium. In addition, rapid urease test such, as Microtitre Biopsy Urease Test (M. B. U. T.) used for *H. pylori* infection by measuring urease production showed that all culture positive isolates were urease test positive also. Antibiotic resistance is a threat to currently used drug regimes. Although metronidazole and clarithromycin resistant *H. pylori* strains are increasing, amoxillin resistance has been reported only recently. Metronidazole resistance was 54.2% and clarithromycin resistance was 12.5% and there was low detection rate for amoxicillin regimes could be considered as treatment of choice for *H. pylori* infection in Myanmar. Since drugs against *H. pylori* are able to reduce colonization of this organism, definite identification of *H. pylori* is, therefore, an important prelude to treatment. Isolating *H. pylori* on culture media and performing antibiotic susceptibility testing is potentially and the most tool for guiding antibiotic therapy, especially when antibiotic resistance is suspected. In Myanmar, the incidence of antibiotic resistance in *H. pylori* especially metronidazole resistance is unknown. Therefore, this study addresses the

issue of gastric biopsy based detection of *H. pylori* and antibiotic susceptibility testing to select the drug of choice for eradication of in the management of gastritis and peptic ulcer, and ultimately to prevent cancer of the stomach. Many virulence factors in the pathogenesis of *H. pylori* include vacuolating cytotoxin (*vacA*) and cytotoxin associated gene (*cagA*). The vacuolating cytotoxin (*vacA*) induces vacuolation in a wide variety of eukaryotic cells associated with gastric injury. The cytotoxin associated gene (*cagA*) induces the gastric epithelial cells to produce interleukin -8 (IL-8) which has chemoattractive properties for neutrophils and enhances inflammation. *H. pylori* is highly diverse at the genetic level. The diversity involves two major regions for *vacA* gene, the s (for signal sequence encoding) and m (for middle region encoding) types. There are three allelic types for, that is s1a, s1b, s1c and s2 and two allelic types for m, m1 and m2. Interestingly, s1 strains are more toxic than s2 strain and frequently associated with *cagA* gene. The infection with *cagA* strains enhances the risk of development of peptic ulcer and adenocarcinoma of stomach compared with strains without *cagA* gene. Molecular characterization of *H. pylori* was done by Polymerase Chain Reaction (PCR) by using different primers for *vacA* and *cagA* in this study. The genotype s1a/m1 was more frequently detected than s1c/m1 in this study and all strains were *cagA* positive. The s1 genotype is more toxic than s2, strains as reported in many studies. Therefore, the predominant s1 genotype found in this study may also lead to a more severe type of gastric disease although follow-up of the subjects will take years and is not feasible for this study. Also, the detection of *cagA* positive strains is becoming clinically relevant. In conclusion, bacterial factors determining strain predominance will become key for further research. A better understanding of the genetic level of *H. pylori* will provide a genetic based novel therapeutic regime for *H. pylori* treatment in future.

508

Moe Moe Tin

TITLE Elective right hemicolectomy without mechanical bowel preparations

SOURCE Dr.Med.Sc.(General Surgery), Institute of Medicine I, 2005

SUMMARY: With the increasing incidence of colorectal surgery being performed world wide, the role of Mechanical Bowel Preparation (MBP) as a preoperative requisite for colorectal surgery had been questioned. Even with the varieties of oral lavage solutions available nowadays, the concept that mechanical bowel preparation reduces postoperative complication has been very much doubted and disapproved by various trials. This study aims to find out whether right hemicolectomy and extended right herraicolectomy without mechanical bowel preparations achieve outcomes comparable to the traditional method. Elective right hemicolectomy done for both benign and malignant conditions were included in this study. A total 30 patients were included in this study during the study period of 2 years and 3 months. They were grouped into group A and group B according to the serial number (odd and even). Group A patients were operated without mechanical bowel preparation. Group B patients were operated only after mechanical bowel preparation. Diet regime was same for both groups. Light diets two days before operation and liquid diet the day before operation was instructed to both groups. In both groups, oral antibiotics (neomycin 1g and metronidazole 400mg 8 hourly) were given two days before operation. Prophylactic parenteral antibiotics (third generation cephalosporin 1g and metronidazole 500mg) were given before the induction of anaesthesia and continued for 48 hours. There were 15 patients each in group A and group B. There were 8 male and 7 female patients in group A and 6 male and 9 female patients in group B. Age ranged from 46 (29-68) years in group A and 48 (24 - 72) years in group B. The main presenting complaints were mass in right iliac fossa (5 patients), mass in abdomen (4 patients), pain in abdomen (10 patients), increasing constipation (2 patients), bleeding per rectum (1 patient) severe anaemia (1 patient). Preoperative diagnoses were obtained by clinical radiological investigations and by colonoscopy. The mean duration of operation was 177.0+31.6 minutes in group A and

176.7+29.0 minutes in group B. Duration of postoperative hospital stay were 9.3+1.6 days in group A and 9.5+1.6 days in group B. (P' value 0.778) Mortality was seen in one patient in each group (6.7%). Anastomotic leakage was seen in one patient (6.7%) in group A and none in group B. Surgical wound infection was found in 2 patients in group A (13.3%) and one patient in group B (6.7%). (P' valve 1.000). Apart from one absconded patient, all patients came for follow up. Those intestinal tuberculosis showed improvement in appetite, weight gain and sense of well being. The weakness in this study is the small sample size. Although there is no difference in mortality and morbidity between the two groups statistically, with such a small sample, it is rather not strong enough to conclude that right hemicolectomy without mechanical bowel preparation is comparable in outcome to the traditional method.

509 Myat Khaing

TITLE The combined epidural and general anaesthesia for lower abdominal operations

SOURCE Dr.Med.Sc.(Anaesthesiology), Institute of Medicine I, 2005

SUMMARY: This study is a hospital based control clinical study. The aim of the study is to evaluate the efficacy and safety of combined epidural technique by comparing with the conventional narcotic based general anaesthesia. Sixty patients to be operated for lower abdominal operations were randomly allocated into two groups. Patients in both groups were found to be comparable in age, gender, body weight and height Baseline haemodynamic parameters such as systolic blood pressure, diastolic blood pressure, mean arterial pressure and baseline heart rate were also comparable. Thirty patients from the control group were operated under narcotic based general anaesthesia and patients from the study group were operated under combined epidural and general anaesthesia technique. Intraoperative blood pressure changes (SBP, DBP and MAP), heart rate changes and changes in blood glucose before and after operation were collected as outcome data to be analysed. Post-operative recovery status and duration of post-operative residual analgesia were also recorded. Number and type of complications were also noted. In the control group, there was some rise in blood pressure and heart rate. Highest systolic pressure was 131mmHg and highest diastolic pressure was 87mmHg. Base line mean -arterial pressure was 89.5mmHg in average of the patients in control group. Maximal MAP during operation was 101.2mmHg. The rises in blood pressure during operation were less than 25% of the baseline value and clinically not seriously important. The rises in systolic pressure, diastolic pressure and mean arterial pressure are statistically significant by comparing with the data of the study group. But these data show that conventional narcotic based general anaesthesia technique was less efficient to obtund the sympathoadrenal response to surgery and anaesthetic procedure. In contrast, the rises in systolic blood pressure, diastolic blood pressure and mean arterial pressure were less significant in study group than in control group. Highest systolic pressure was 121.5mmHg and highest diastolic pressure was 67.5mmHg. Base line mean arterial pressure was 87.9mmHg in average of the patients in study group. Maximal MAP during operation was 85.5mmHg. There was some fall in systolic blood pressure, diastolic blood pressure and mean arterial pressure in early period of operation. But the fall in blood pressure was less than 25% of the base line values and symptoms attributed to hypotension such as nausea, vomiting and restlessness were not found. There was statistically significant higher differences in control group than in study group ($p < 0.001$). Baseline heart rate was 74.03beat/min in control group and 74.37beat/min in study group. The maximum heart rate in control group was 88.7 beat/min. Intra-operative heart rates were lower than baseline level in study group. Means of the pre-operative blood glucose level of the patients in control group and study group were 88.7mg/dl and 88.8mg/dl respectively. After operation, higher blood glucose was found in control group than in study group. The differences between pre and post-operative blood glucose level were 25.2mg/dl in control group and 15.6mg/dl in study group respectively.

The patients from the study group receive recovery score 8 earlier than those in control group. Thirty minutes after reversing from effect of muscle relaxant, all the patients from study group got fitness for discharge from recovery area. At that time 10 of the patients from control group are still less than recovery score 8. Delay recovery may be related to the effect of narcotic which was used in control group. In this study, PONV rate was very low. It may be due to stable blood pressure, effective analgesia (reflex suppression) and avoidance of narcotic drugs in study group. In conclusion, newer technique combined epidural and general anaesthesia may be efficient enough to fulfill the required condition during operation and gap between the optimal condition and present condition may be narrowed.

510 Myint San Nwe

TITLE Innervation of stomach

SOURCE PhD(Anatomy), Institute of Medicine I, Yangon, 2003

ABSTRACT: The gross innervation of the human stomach was studied by dissecting 40 adult cadavers, 3 aborted fetuses, and 2 stillbirths. The sympathetic supply of the stomach was by the greater splanchnic nerves through the coeliac plexus. The roots of the greater splanchnic nerves arose from as high as 4th thoracic ganglion and as low as 10th thoracic ganglion: even variable origins in each side of the same specimen were observed. In the majority of cases, the segmental origin of the greater splanchnic nerve was found to come from the 6th to 9th thoracic ganglia (78% on the right side and 84% on the left side). In most of the cases, the parasympathetic nerves were seen to arise from a single anterior vagus and, a single posterior vagus (73.3%). However, in 8 cases, two anterior vagal trunks and one posterior vagal trunk were seen (17.7%). In 4 cases, one anterior and two posterior vagal trunks were seen (8.8%). The histological examination of the distribution and the mode of termination of the gastric nerves were determined in the stomachs of 15 human adults, 3 human fetuses, 8 albino rat, and 4 specimens from operative biopsy tissue by using various neurohistological and histochemical techniques. Nerve plexuses and ganglia were observed in the submucosa, muscular, and serosa layers of the stomach. The autonomic ground plexus of beaded axons were seen. They were both cholinergic and adrenergic. Two types of afferent nerve endings were observed. Free as well as encapsulated endings were observed in the wall of the stomach of human and albino-rats. The type of nerve endings were free and free but organized endings such as loop-like endings. The type of encapsulated nerve endings were Meissner's corpuscle in the musculature of the body and bulbous corpuscle in the serosa of the pyloric region of the adult stomach. Pharmacological experiments were done in the stomachs of 2 albino-rats to prove the sympathetic and parasympathetic activities. Sympathomimetic agents were seen to evoke inhibitory responses where parasympathomimetic agents were found to evoke excitatory responses.

511 Myint San Nwe and Nilar Shwe

TITLE Innervation of the stomach

SOURCE *Myanmar Health Res Congr.* 2003; p53

ABSTRACT: The stomachs of forty adult cadavers, three aborted fetuses, and two stillbirths were dissected to study the gross innervation. Neurohistological and histochemical studies were done on the specimens from fifteen human adults, three human fetuses, eight albino-rats, and four specimens from human operative biopsy tissue. All parts of the stomach were supplied by the gastric branches of the coeliac plexus formed by both vagi and greater splanchnic nerves mainly from 6th to 9th thoracic ganglia. Neurohistochemically nerve plexuses and ganglia were observed in the submucosa, muscular, and serosa layers of the stomach. The autonomic ground plexus of beaded axons were seen. Intraepithelial free nerve endings, free but organized nerve endings such as loop-like endings and encapsulated endings such as Meissner's corpuscle and small bulbous corpuscles were

seen. Histochemically, acetylcholinesterase - positive ganglia, varicose nerve fibres and formaldehyde fluorescent nerve plexus were observed. Pharmacological experiments with sympathomimetic agents, sympatholytic agents, parasympathomimetic agents, and parasympatholytic agents were done in the stomachs of two albino-rats to prove the sympathetic and parasympathetic activities.

512 Myo Khin
TITLE Rice carbohydrate malabsorption in Myanmar children
SOURCE *Myanmar J Curr Med Practice*. 2002, 6(3): pp126-132

Abstract not available: Abstract written by book editors

Review article on the research findings of carbohydrate absorption in Myanmar children. The review also outlines the rational approach to promotion of growth of Myanmar children. Studies conducted in Myanmar have shown that rice malabsorption is common in children, and may occur in up to two thirds of the population. It is possible that *Helicobacter pylori* infection frequently acquired during childhood in developing countries has an impact on small bowel function. The precise mechanism is unknown but it has been proposed that it relates to the impact of infection on acid secretion, resulting in hypochlorhydria which may open the gate to enteric infections, small bowel bacterial overgrowth, and associated carbohydrate malabsorption. Elucidation of these mechanisms would allow a rational approach to promotion of growth of Myanmar children.

513 Myo Khin; Kyaw Soe; Yi Yi Kyaw and Khin Ohnmar Lwin
TITLE Seroprevalence of *Helicobacter pylori* in a periurban area in Yangon
SOURCE *Myanmar J Curr Med Practice*. 2002; 6(4): pp179-183
ABSTRACT: We carried out a community based study in 542 subjects (age 3 months to 74 years) from a periurban community in Yangon to determine the seroprevalence of *H. pylori* infection and to examine factors relating to it. The majority (69%) of the subjects were infected with *H. pylori* and peak prevalence (90%) was observed in the 15-20 years age group. A significant association ($p=0.007$) was found between *H. pylori* positive mothers and *H. pylori* infection in the siblings, suggesting intrafamilial transmission. An increase in the number of siblings was also found to be a high risk factor for *H. pylori* within the family. Density of living, drinking water source, and type of latrine were not significantly associated with *H. pylori* infection. The findings indicated that intrafamilial transmission could play an important role in the high prevalence of *H. pylori* infection in the community.

514 Myo Myint
TITLE A study on the usefulness of enzyme-linked immunosorbent assay (ELISA) in management of upper gastrointestinal disorders associated with *Helicobacter pylori* infection
SOURCE MMedSc(Internal Medicine), Institute of Medicine I, Yangon, 2002
SUMMARY: Background: For diagnosis of *H. pylori* infection, two methods of urease testing and histology from antral biopsy are currently accepted gold standard methods. However, changing strategies in management of *H. pylori* related upper gastrointestinal disorders highlight the potential role of non-invasive serological tests to reduce the increasing workload of upper GI scopies of specialist centers from unnecessary referrals from primary and secondary health care levels. Before implementation of clinical use of such a serological test requires validations for local use. Again growing popularity of "test-and-treat" policy requires evaluation of usefulness of such serological test-performance among under and over forty-five years age groups. Information about data are lacking. Aim: To determine the validity of widely used ELISA test (Immunocomb II quantitative. Organic) for serological diagnosis of *H. pylori* infection and to evaluate the role of ELISA test in management of young dyspeptics of under 45 years.

Method: Total sixty patients who had been already underwent oesophago-gastro-duodenoscopy (OGD) were recruited. Half of them were urease positive and another half were urease negative. And their biopsies were already sent for histological examination. One milliter of venous blood were taken within 24-48 hour of endoscopy and performed ELISA test according to manufacture's instruction's. The results of ELISA test were validated against urease testing and histology.

Results: The study population had mean age of 47.6 years (of 45.2 in under 45 years group, of 49.5 in over 45 years group). Male to female ratio was 2.51:1 (43:17). The overall validity of ELISA test against urease test was sensitivity 90%, specificity 83.33%, positive predictive value 84.66%, negative predictive value 89.66%, and percentage agreement 86.66%. Those values of under 45 years group were 89.47%, 92.3%, 94.3%, 85.7%, 90.6% and of over 45 years group were 76.9%, 86.6%, 83.3%, 81.25%, 82.1% respectively. The concordance between ELISA test and urease test was and urease test was 1.59 in under 45 years group and 2.7 in over 45 years group showing the better validity in former group. The validity of ELISA test against histology was sensitivity 100%, but low specificity 52%, very low positive predictive value 34.29%, high negative predictive value 100% and percentage agreement 61.67% indicating the false negative results may be due to lack of special staining equipment as well as size and site of biopsy bite. Therefore validating ELISA test against histology had less accuracy and not been compared in two age groups. Fortunately, there were no invalid-ELISA test results performed.

Conclusion: The ELISA test can be used safely to diagnose *H. pylori* infection especially for young dyspeptics of under 45 years.

515

Nwe Nwe Min

TITLE

Effect of malnutrition on gastric acid secretion and urine acid output secretion by different dietary solutions

SOURCE

11th Med Spec Conf, 2003, Abstract of Papers, pp61-62

ABSTRACT not available and written by book editors

A cross sectional comparative study was carried out to determine the gastric acid secretion together with urine acid output between malnourished and well-nourished children. The objectives were: a) to compare the gastric acid secretion together with urine acid output between malnourished and well-nourished children, b) to determine the relationship between the gastric acid secretion and urine acid out put. The study was carried out during June to December 2000 at the Yangon Children Hospital. Gastric acid secretion and urine acid output level before and after coffee stimulation in 40 malnourished and 20 well-nourished children. It was found that there was significantly decreased volume of stimulated gastric acid secretion within first hour (17.72 ± 8.9)ml in malnourished children compared to controls; significantly decrease in MAO (Maximum Acid Output) (1.59 ± 1.12)meq/hr and stimulated volume of gastric juice secretion within the first hour (15.58 ± 5.81)ml in kwashiorkor (n=9) and a significantly fall only in stimulated volume of gastric juice secretion within the first hour (14 ± 7.55)ml in marasmic-kwashiorkor (n=10) and no significant change in marasmic children (n=21). However, there was no significant quantitative relationship between gastric acid secretion and urine acid output in both malnourished and well-nourished children. Malnourished children were unable to respond appropriate to a stimulus for gastric acid production, poor response was markedly observed in children with kwashiorkor and lesser extent in marasmic-kwashiorkor children.

- 516 Oo KN; Htwe KM and Khine TT
TITLE Colonization of *Vibrio cholerae* among persons in contact with cholera patients
SOURCE *J Health Popul Nutr.* 2001 Mar; 19(1): pp43-4
ABSTRACT: No Abstract
- 517 Phyo Aung
TITLE Haemorrhoidectomy for acute prolapsed haemorrhoids
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 2003
Abstract /SUMMARY: A hospital based prospective study was made on 25 selected patients with acute prolapsed haemorrhoids. They were admitted to three surgical units of Yangon General Hospital (YGH) and the surgical unit of New Yangon General Hospital (NYGH) started from August 2002 to July 2003 (12 months). Patient's age, sex, familial tendency, presenting symptoms were presented and discussed in this series. All these patients underwent semi-urgent haemorrhoidectomy (Standard Ligation and Excision). During hospital stay, early post-operative complication were elected and compared with other series. Follow-up was done monthly for three months. On each visit of the follow-up, late post-operative complications was explored and the results were also compared and discussed with the other series.
- 518 Pe Win Aung
TITLE A study of colorectal carcinoma at North Okkalapa General Hospital and Thingayun Sanpya Hospital
SOURCE MMedSc(Surgery), Institute of Medicine II, Yangon, 2002
SUMMARY: This study is based on colorectal carcinoma patients histologically proven, admitted to N. O. G. H. and S. P. H. surgical units from 1st April 2001 to 31st March 2002. Study was done regarding the incidence, clinical presentation, pathological staging and type of operation and postoperative complication. The age incidence range from 23-75 years with the mean age of 51 years. 3 patients comprising (6.2%) were seen below the age of 30 years and four patients (8.3%) were saturated above the age of 70 years group. The youngest one was 23 years old man (medical student) the oldest one was 75 years old man. The peak incidence was found in 50-59 years group. Male (52%) were slightly more affected than females (48%). Male to female ratio being 1.08:1 was similar with western countries. However, the peak age incidence as well as average age incidence was one decade earlier than the counterparts in the Western countries, but similar to that of Egyptians and South African Bantu. The sign and symptoms of colorectal cancer are varied and nonspecific. But the commonest symptoms of colorectal cancer are extremely varied and nonspecific. But the commonest symptoms after final result include bleeding per rectum (50%) and changing bowel habit (46%). The (35.4%) of the patients presented with acute symptom, intestinal obstruction at the time of admission. There were 2 cases presenting as perforation and peritonitis. Regarding distribution of colorectal carcinoma in this study, in most of the patients, tumour were situated in the rectum (50%). Regarding microscopic types, ulcerative type was found to be the commonest (60.8%) compared to polypoidal type (26%) and annular infiltrative type (13.2%). Microscopic manifestation revealed that, most of the cases were adenocarcinoma (69.5%) and other includes signet ring cell carcinoma (10.8%), mucinous adenocarcinoma (15.2%) compared to adenocarcinoma (8.6%). But adenocarcinoma was markedly dominant after 40 years of age group (50.8%). According to histological grading, most of the cases were placed in moderately differentiated (54.3%). Well differentiated and poorly differentiated types share (26.1%) and (19.6%) respectively. In clinical staging, most of the cases by the time of admission were more or less in advance stage and so there was staging of Dukes C2 (44.3%) is mostly seen. Duke B is only seen in 5 cases

- 521 Soe Soe Htwe; Myat Phone Kyaw; May Aye Than; Aye Than; Ni Ni Zaw and Cho Cho Nyunt
TITLE Antiamoebic activity of fruits of *Piper longum* Linn. (Peik-chin) on albino mice
SOURCE *Myanmar Health Res Congr.* 2009; pp18-19
ABSTRACT: Amoebiasis is an invasive disease of the large intestine, and affects mainly the low socio-economic groups. The LD₅₀ of 95% of ethanolic and aqueous extracts of fruits of *Piper longum* Linn were 1.9g/kg (1.03-3.3g/kg) and 21.3g/kg (18.7-24.3g/kg) respectively. The study tested the effect of both extracts on the caecum amoebiasis, induced in mice by (2x10⁵)/ml trophozoites of *Entamoeba histolytica* (HM1: IMSS) strain. Infection was confirmed on fourth day through detection of trophozoites in mice stools. The 95% ethanolic extract, in serial dilutions of 0.5, 0.25 and 0.125g/kg and the aqueous extract of 3, 6 and 9g/kg, were administered daily for 4 consecutive days to albino mice proven to be infected with *E. histolytica*. The antiamoebic activities of both extracts were compared with a group of infected mice receiving metronidazole, normal saline and with a group of non infected mice. On the fifth day, the mice were sacrificed and the caecum was examined macroscopically for lesions at caecal wall and contents. The antiamoebic activity was expressed as the percent of cured infection. The 95% ethanolic extract, at doses of 0.5g/kg, affected cure in 60% of the mice treated, as compared to 80% with metronidazole. The remaining 2 doses of 0.25 and 0.125g/kg extract showed 40% and 20% effectiveness respectively. The aqueous extract, at doses of 9, 6, 3g/kg showed 40%, 30% and 20% effectiveness respectively. Therefore, it can be concluded that both extracts had dose dependent antiamoebic effect.
- 522 Su Su
TITLE A clinical study of upper gastrointestinal bleeding in the Department of Gastroenterology, MGH
SOURCE MMedSc(Internal Medicine), Institute of Medicine I, 2004
ABSTRACT: Background: Upper gastrointestinal haemorrhage is one of common reason for hospital admission and also one of the diseases which acutely endanger life. There are many associated or precipitating factors for upper gastrointestinal bleeding. But we did not know the clinical profile in our local population. Moreover, risk stratification for patients with acute upper gastrointestinal bleeding can discriminate between patients at high or low risk of rebleeding or death. Method: This study used data from 187 patients presented to Gastroenterology Department, Mandalay General Hospital, with haematemesis and melena within 6 weeks duration. Clinical profile of these patients was developed by history taking, clinical examination, laboratory investigation and endoscopy of upper gastrointestinal tract. Poor prognostic factors for rebleeding were also explored from 58 patients with upper gastrointestinal bleeding within 72 hours at the time of endoscopic diagnosis. Results: In our local population, bleeding oesophageal varices was the major cause of bleeding NSAID taking is observed in large proportion of patients with upper gastrointestinal bleeding. Age older than 45, postural drop in systolic blood pressure and assessment value on admission, variceal bleeding and presence of stigma of Gastrointestinal haemorrhage significantly determined development of rebleeding.
- 523 Takahashi E; Sultan Z; Shimada S; Aung WW; Nyein MM; Oo KN; Nair GB; Takeda Y and Okamoto K
TITLE Studies on diarrheagenic *Escherichia coli* isolated from children with diarrhea in Myanmar
SOURCE *Microbiol Immunol.* 2008; 52(1): pp2-8
ABSTRACT: *Escherichia coli* isolates from 217 children in Myanmar with diarrhea were investigated for the presence of virulence genes related to diarrhea by colony hybridization

and PCR. The genes examined were *lt*, *stI*, *stII*, *stx1*, *stx2*, *eae*, *bfp*, *pCVD* (which is the representative gene of plasmid of *pCVD* of EAEC), and *ial* (which is invasion-associated locus of the invasion plasmid found in EIEC). Isolates from 47 of 217 children (21.7%) possessed virulence genes characteristic of diarrheagenic *E. coli*. No instance was found of co-existence of different *E. coli* strains with different virulence genes in the same patient. Diarrheagenic *E. coli* are currently classified into five categories based on their virulence markers: ETEC, EHEC, EPEC, EAEC, and EIEC. Of the 47 isolates examined, 30 were EAEC, 12 were EPEC and 5 were ETEC. Susceptibility tests for antimicrobial agents showed that almost all diarrheagenic isolates were resistant to penicillin, tetracycline and streptomycin. However, the majority of strains were sensitive to cephalexin, nalidixic acid and norfloxacin. In particular, 42 of the 47 isolates were sensitive to norfloxacin, which is a fluoroquinolone. This study shows EAEC and EPEC are responsible for sporadic diarrhea in Myanmar and fluoroquinolones appear to be effective in the treatment of these patients.

524 Than Than Nu
TITLE Association between intestinal ascariasis and lactose absorption in children
SOURCE 10th Med Spec Con. 2001, Abstract of Papers, p59

Abstract/Summary not available: Abstract written by book editors

A study was carried out to determine the influence of ascariasis on lactose absorption in children 7-12 years of age. 50 boys, aged 7-12 years from Myitta Wahdi monastery were studied. Breath hydrogen test was used to determine the lactose absorption status. Stool was examined for the presence of ascaris ova and ascaris level was measured by egg count with cellophane thick smear method. Lactose absorption status, egg count, weight and height were measured before and at two months after deworming. Improvement of lactose absorption status was seen after deworming. It was associated with number of egg counts and a significant increase in nutritional status after deworming was found.

525 Than Than Soe
TITLE Ultrasonographic assessment of intra-abdominal masses in upper abdomen
SOURCE MMedSc(Diagnostic Radiology), Institute of Medicine I, Yangon, 2003
SUMMARY: A study was carried out in surgical units and medical units of Yangon

General Hospital for one year period from 11th June 2001 to 10th June 2002 in order to correlate the ultrasonography with the clinical findings and other investigative procedures in the diagnosis of upper abdominal masses. Those who attended the above surgical and medical units with upper abdominal swellings and were investigate with ultrasound and operated there after were selected for the study. There were 25 males and 25 females and ages ranged from 19 to 82 years. Out of 50, patients, 30 patients presented with liver and biliary tract disease (5 cases of liver diseases and 25 cases of biliary tract diseases) and 20 patients with other abdominal mass originating from stomach, colon, pancreas, mesenteric lymph nodes, retroperitoneum and kidney. In this study most of the biliary tract diseases occurred in the females of 30-40 years and in the males of 40-50 years whereas most of the liver diseases in the male patients of 40-50 years. Two cases of tuberculous mesenteric lymphadenitis presented in young adults males of 20-30 years. All the cases of pancreatic mass occurred under 40 years of age in both sexes. In correlation with the clinical diagnosis, ultrasonography yielded 100 percent diagnostic accuracy ratio in cases of biliary tract disease and 80 percent in case of liver diseases, whereas clinical diagnosis yielded 92% and 80% in case biliary tract diseases respectively. Most of the biliary tract diseases were gall stones with cholangiohepatitis and cholecystitis. There were two cases of carcinoma of common bile duct included in this study. Ultrasonography was found to be superior (i.e. 100 percent diagnostic accuracy rate) than other investigative procedures such as X-ray gall-bladder area 33.3%,

intravenous cholangiography (80%), liver scan (60%) in the diagnosis of hepatohiliary presented with upper abdominal mass. Regarding the upper abdominal masses other than hepatobiliary in origin ultrasonography and clinical diagnosis achieved (100 percent) diagnostic accuracy in 5 cases of pancreatic diseases, 2 cases of tuberculous mesenteric lymphadenites, (50 percent) diagnostic accuracy in 2 cases of renal masses whereas ultrasonography obtained (71.5 percent) diagnostic accuracy in 7 cases of carcinoma of the stomach (clinical diagnosis 100%) and (100%) in 3 cases of colonic masses (clinical diagnosis 100%) and (100%) in 3 cases of colonic masses (clinical diagnosis 66%). In correction with other investigative procedures in the diagnosis of renal masses, ultrasonography yielded only 50% diagnostic accuracy as compared to 100% in X-ray KUB, 50% in intravenous pyelography. Ultrasonography had failed to diagnosed the case of retroperitoneal infected cyst in this study. Since most of the retroperitoneal masses are difficult to locate and identify. Ultrasonography is an essential investigation in the patient with cholestatic jaundice. The gall bladder is an ideal organ for sonographic analysis. Ultrasonography does not replace the radiographic examination but the two are complementary. Ultrasonography has been recommended as a primary screening procedure in patients with acute, right upper quadrant pain (Cinkora I, Ben-Ora A Macheil R. et al 1979). Space-occupying lesions of about 2 cm in diameter in th liver and even down to 1 cm under ides circumstances, can be visualized. Primary hepatocellular carcinoma and abscesses can be identified. Tumours of the gall- bladder or pancreas can be seen. The pseudocyst of the pancreas can be detected with nearly 100 percent accuracy as Duncan et al, 1976 has described. Tuberculous mesenteric lymphadenopathy can be diagnosed with ultrasonography although bowel gas may limited the success. Because of the close location of the stomach and colon, the masses originated from these hollow viscera cannot be easily differentiated by ultrasonic scanning. It is better to do the conventional barium opacification procedures in the diagnosis of gastrointestinal diseases as they are poorly imaged by ultrasonography. In case of renal masses in this study, ultrasonography obtained only 50 percent diagnostic accuracy as an intravenous pyelography, whereas X-ray KUB gained 100 percent diagnostic accuracy in diagnosing the origin of the upper abdominal mass. Ultrasonic diagnosis is based with very few exceptions upon the reflection of ultrasonic waves which occurs at the boundaries between different tissues within the body. Ultrasonic evaluation in the patients in whom fat is lacking may prove rewarding, whereas examination of obese patients may be less productive, since ultrasound is not particularly well transmitted through fat. In summary, selection of an appropriate radiographic imaging requires consideration of the area and organ system to be examined, the body habitus of the patients and the skill of the examiner. The major values of ultrasound for the surgeon are ability to; a) complement and supplement the physical examination, b) investigate further the nature and anatomical relations of any palpable mass, c) establish precise anatomical relation of tender areas, d) demonstrate obstruction in vessels such as the inferior vena cava, biliary tree or urinary system.

526 Thant Zin
TITLE Evaluation of an abdominal pain chart in the management of acute abdomen
SOURCE MMedSc(Surgery), Institute of Medicine I, Yangon, 2002
SUMMARY: In this study, one hundred aptients presented with acute abdominal pain of less than 48 hours, admitted to surgical observation units of YGH and NYGH were involved. Commnest cause was acute appendicitis and its related complications. Meticulous history and thorough physical examination was done usng abdominal pain chart. Diagnosis was made after clinical examination and was correct in 57 overall patients. Diagnostic

accuracy with this pain chart was 57%. After excluding the NSAP cases, diagnostic accuracy using this chart was 66.7%. Sensitivity and specificity were calculated for each category of disease. Sensitivity was high in acute appendicitis and low in gynaecological diseases. Specificity was high in biliary stone disease and relatively low in acute appendicitis. Most of NSAP patients were diagnosed only after short period of observation and thus diagnostic accuracy was low in this group.

527 Thin Thin Mar
TITLE A study of some bacterial and parasitic enteropathogens in children under-five with acute diarrhoea
SOURCE MMedSc(Microbiology), Institute of Medicine I, Yangon, 2003
ABSTRACT: A total of 100 under-five children with acute diarrhoea attending Yangon Children's Hospital during February to November 2002 were studied. History taking and physical examination were carried out. The prevalence of bacterial and parasitic enteropathogens were investigated at Bacteriology Section, National Health Laboratory, Yangon. Of the study subjects, 60 percent were male and 40 percent were female. Bacterial pathogens were isolated in 46% and parasitic agents were detected in 12% of children with acute diarrhoea. The detected aetiological agents were enteropathogenic *Escherichia coli* (EPEC) (7%), *Vibrio cholerae* O1 Ogawa serotype (2%), *Campylobacter jejuni* (1%), *Escherichia coli* (untyped) (36%), *Entamoeba histolytica* (2%), *Giardia lamblia* (1%), *Ascaris lumbricoides* (8%) and *Trichuris trichiura* (1%). No *Salmonella spp.*, *Shigella spp.*, or *Cryptosporidium spp.* were detected in this study. There were no cases found to have both bacterial and parasitic enteropathogen. Prevalence of pathogen was the same with that reported from other developing countries. Majority of the isolated bacteria were multi-drug resistant. It was found that the EPEC serogroups were resistant to ampicillin (100%), tetracycline (86%), cotrimoxazole (72%) and chloramphenicol (57%). *Vibrio cholerae* O1 strains were resistant to ampicillin (100%), cotrimoxazole (100%), polymyxin B (100%) and tetracycline (50%). *Campylobacter jejuni* was resistant to ampicillin, cotrimoxazole and cephalothin.

528 Tin Maung Htwe
TITLE A clinical study on the bleeding peptic ulcer
SOURCE MMedSc(Surgery), Institute of Medicine, Mandalay (IMM), 2002
SUMMARY: This study included 132 patients presenting with bleeding peptic ulcer admitted to Surgical Unit I, II and III of Mandalay General Hospital. They were studied clinically and endoscopically. About 71% of bleeding peptic ulcer stop spontaneously. Peak incidence in my study was between the age of 50 to 59 years. About 50% of patients present with haemodynamic instability. Resuscitation and replacement therapy is the initiative management for emergency life saving. Early endoscopy offers definitive diagnosis and provides proper institution of treatment. The development of multidisciplinary protocols for management has significantly influenced outcome. Compared to other four studies, the outcome of bleeding peptic ulcer was not much differed.

529 van Heurn LW; Saing H and Tam PK
TITLE Portoenterostomy for biliary atresia: Long-term survival and prognosis after esophageal variceal bleeding
SOURCE *J Pediatr Surg.* 2004; 39(1): pp6-9
ABSTRACT: BACKGROUND/PURPOSE: Portoenterostomy is the procedure of choice in patients with biliary atresia. The authors analyzed the long-term survival rate and complications of the procedure in children operated on at The University of Hong Kong Medical Centre between 1979 and 2000. METHODS: Seventy-seven consecutive patients

were analyzed by retrospective chart review. The patients were divided into groups according to postoperative bile flow, decade of operation, and age at operation. The data were analyzed statistically. RESULTS: The overall actuarial transplant-free survival rate was 68% at 10 years after operation. For patients with poor, partial, and good postoperative bile flow, transplant-free survival rate was 0%, 22%, and 96%, respectively ($P < .001$). Age and decade of operation were not significant risk factors. Esophageal variceal bleeding occurred in 13 patients and was a prognostic indicator for end-stage liver failure ($P = .044$); the poor prognosis of patients with variceal bleeding, however, was related to poor or partial initial bile drainage. CONCLUSIONS: The postoperative serum bilirubin level is the most important predictor of long-term survival in patients with portoenterostomy for biliary atresia. Esophageal hemorrhage is not an absolute indication for urgent liver transplantation in patients with good bile drainage.

- 530 Wai Wai Shein
TITLE A study on family and community practices relating to the two leading
 IMMCI target diseases (ARI and diarrhoea) in a selected rural area of
 Gyobingauk Township
SOURCE MMedSc (Paediatric), Institute of Medicine II, Yangon, 2003
ABSTRACT: ARI and diarrhoea are the major causes of morbidity and mortality in children
 under five in the developing countries of the world. Integrated Management of
Maternal and Childhood Illness (IMMCI) is an integrated strategy to reduce morbidity and
mortality of both mother and child. One of the components of the strategy is improving
family and community practices. Families need knowledge, skills, motivation and support in
order to care for their children. This study was a community based qualitative study
conducted to determine knowledge and beliefs of the mothers relating to the causes, danger
signs, health seeking practices and home care practices for children with ARI and diarrhea
and to elicit the promotive and preventive community practices relating to ARI and diarrhea
among mothers residing at rural area of Gyobingauk Township. Ten Focus Group
Discussions were conducted with 88 mothers of two age groups (below 30 years and above
30 years) residing at a randomly selected rural area of Gyobingauk Township.
Regarding ARI, this study showed that the majority of mothers pointed out "coldness" and
some mothers wrong eating and indigestion as a cause of ARI. Majority of mothers could not
express the danger signs of ARI as they have no such previous experience in their children.
Some positive responses were pointed out by some mothers but not including chest
indrawing. There were favourable health seeking pattern as health care facilities were easily
accessible in this study area. But there were indiscriminate usage of western as well as
traditional medicines in their first home treatment. Mothers continued to feed their sick
children but the restricted feeding were also observed among mothers. Mothers followed the
preventive practices which were related to perceived causes like coldness and indigestion.
They did not know the relationship between ARI and microorganisms or air pollution. In the
study area we also observed the risk behaviours that cause indoor air pollution.
Regarding diarrhoea, it was observed that the majority of mothers expressed favourable
contributing factors (such as eating a variety of food, eating food contaminated by flies,
eating over riped fruits, and drinking unclean water) as causes of diarrhea. Only few mothers
could tell the danger signs as majority of mothers did not have serious experience of
diarrhoea. Health seeking pattern, home treatment and feeding practices during diarrhoeal
episodes were the same as mentioned in the practices of ARI. Knowledge of ORT function
and preparation of ORS solution was markedly deficient among mothers. There were positive
knowledge (such as avoid feeding unsuitable fruits, giving cool boiled water, avoiding food
contaminated by flies, using sanitary pit latrines and washing hands properly) about
preventive practices of diarrhea but inadequate practices of sanitation and preparation of safe
water were observed.

Most of the mothers could not express the correct immunization schedule but they accepted to receive immunization as they believed immunization would prevent most of the diseases of their children. Knowledge and practices of ARI and diarrhoea were not markedly different between the two age groups of the mothers.

531 Wai Wai Shein
TITLE A study on family and community practices relating to the two leading
IMMCI target diseases (ARI and diarrhoea) in a selected rural area of
Gyobingauk Township

SOURCE *11th Med Spec Conf*, 2003, Abstract of Papers, pp65-66

ABSTRACT: ARI and diarrhoea are the major causes of morbidity and mortality in children under five in the developing countries of the world. Integrated Management of Maternal and Childhood Illness (IMMCI) is an integrated strategy to reduce morbidity and mortality of both mother and child. One of the components of the strategy is improving family and community practices. Families need knowledge, skills, motivation and support in order to care for their children. This study was a community based qualitative study conducted to determine knowledge and beliefs of the mothers relating to the causes, danger signs, health seeking practices and home care practices for children with ARI and diarrhea and to elicit the promotive and preventive community practices relating to ARI and diarrhea among mothers residing at rural area of Gyobingauk Township. Ten Focus Group Discussions were conducted with 88 mothers of two age groups (below 30 years and above 30 years) residing at a randomly selected rural area of Gyobingauk Township.

Regarding ARI, this study showed that the majority of mothers pointed out "coldness" and some mothers wrong eating and indigestion as a cause of ARI. Majority of mothers could not express the danger signs of ARI as they have no such previous experience in their children. Some positive responses were pointed out by some mothers but not including chest indrawing. There were favourable health seeking pattern as health care facilities were easily accessible in this study area. But there were indiscriminate usage of western as well as traditional medicines in their first home treatment. Mothers continued to feed their sick children but the restricted feeding were also observed among mothers. Mothers followed the preventive practices which were related to perceived causes like coldness and indigestion. They did not know the relationship between ARI and microorganisms or air pollution. In the study area we also observed the risk behaviours that cause indoor air pollution.

Regarding diarrhoea, it was observed that the majority of mothers expressed favourable contributing factors (such as eating a variety of food, eating food contaminated by flies, eating over riped fruits, and drinking unclean water) as causes of diarrhea. Only few mothers could tell the danger signs as majority of mothers did not have serious experience of diarrhoea. Health seeking pattern, home treatment and feeding practices during diarrhoeal episodes were the same as mentioned in the practices of ARI. Knowledge of ORT function and preparation of ORS solution was markedly deficient among mothers. There were positive knowledge (such as avoid feeding unsuitable fruits, giving cool boiled water, avoiding food contaminated by flies, using sanitary pit latrines and washing hands properly) about preventive practices of diarrhea but inadequate practices of sanitation and preparation of safe water were observed.

Most of the mothers could not express the correct immunization schedule but they accepted to receive immunization as they believed immunization would prevent most of the diseases of their children. Knowledge and practices of ARI and diarrhoea were not markedly different between the two age groups of the mothers.

- 532 Win Mar Oo
 TITLE Enteric pathogens associated with diarrhoea in acquired immunodeficiency syndrome patients
 SOURCE MMedSc(Microbiology), Institute of Medicine I, Yangon, 2001
 ABSTRACT: Diarrhoea is one of the most common manifestations of AIDS and may be either among the presenting symptoms or develop as the predominant cause of morbidity. This study was carried out to determine the prevalence of enteric pathogens in AIDS patients with or without diarrhoea and to determine the aetiology of diarrhoea in AIDS patients. Patients admitted to the Infectious Diseases Hospital, Waybargi Township from January 2000 to December 2000 with the clinical diagnosis of AIDS and having diarrhoea were included in the study as cases. A similar number of AIDS patients without diarrhoea were recruited as controls. The controls were free from diarrhoea 48 hours prior to and 24 hours after collection of stool specimens. Sample size was 114 (54 cases and 60 controls). Stool specimens were collected as freshly as possible in screw-capped clean bottles from cases as well as controls. Stool specimens were inoculated into appropriate media for isolation and identification of enteric bacteria. Enteric bacteria that were searched for, included *Salmonella* species, *Shigella* species, enterotoxigenic. Enteropathogenic and enteroadherent *Escherichia coli* and *Vibrio* species employing standard bacteriological techniques. Virological examination was detection of rotavirus by ELISA. Stool specimens were also examined microscopically for protozoa namely *Entamoeba histolytica*, *Giardia intestinalis*, Microsporidium species, Cryptosporidium species and helminth ova and larva using routine and Kinyoun acid fast stains. Enteric bacteria were studied in stool specimens of all 114 patients. *Esch. coli* (untyped) was isolated from 46 (85.18%) out of 54 cases. Enteropathogenic *Esch. Coli* (EPEC) was isolated in 6 (11.11%) cases: the isolates were OIK51, O25K+, O114K90, O142K+, O148K+ and 159K+. Labile toxin producing *Esch. coli* (LT-EPEC) was isolated from 4 (7.4%) cases. Enteroadherent *Esch. coli* was isolated from 11 (20.37%) cases. *Vibrio cholerae* O139 was isolated from 6 (11.11%) cases. *Proteus* spp. were isolated from 9 (16.66%) cases, *Klebsiella* spp. from 8 (14.81%) cases, *Enterobacter* spp. from 3 (5.55%) cases and *Citrobacter* spp. from 1(1.85%) case. From the 60 controls. *Esch. coli* (untyped) was isolated in 53 (88.33%) controls. Enteroadherent *Esch. coli* was isolated from 7 (11.66%) patients. *Proteus* spp. from 5(8.33%), *Klebsiella* spp. from 5 (8.33%), *Enterobacter* spp. from 3 (5%) and *Citrobacter* spp. from 2 (3.33%). Stable toxin-producing *Esch. coli* (ST-EPEC), *Salmonella* and *Shigella* spp. were not detected in this study. No EPEC, LT-EPEC and *Vibriosis* were seen in controls. Rotavirus was not detected in the stool specimens of 114 patients tested, 54 cases and 60 controls. Intestinal parasites in the stool specimens of 54 patients with diarrhoea included *Cryptosporidium parvum* in 23 cases (42.59%), *Cyclospora* in 6 cases (11.11%), *Isospora* in 8 cases (14.81%), *Entamoeba histolytica* in 20 cases (37.03%), *Blastocystis hominis* in 22 cases (40.74%), *Giardia intestinalis* in 3 cases (5.56%), *Trichuris trichiuria* ova in 5 cases (9.26%), *Ascaris lumbricoides* in 5 cases (9.26%), larva of *Strongyloides stercoralis* in 1 case (1.85%), hookworm eggs in 3 cases (5.56%), *Taenia* eggs in 2 cases(3.7%), eggs of *Toxocara* in 2 cases (3.7%), egg of *Dipylidium caninum* in 2 cases (3.7%). No parasite was seen in 6 cases. Among the 60 controls, *Cryptosporidium parvum*, *Cyclospora*, *Isospora*, *Entamoeba histolytica*, *Blastocystis hominis*, *Giardia intestinalis*, *Balantidium coli*, *Trichuris ova*, *Ascaris* eggs, eggs of hookworms species, eggs of *Taenia* were detected in 16 (26.67%), 2 (3.33%), 4(6.67%), 21 (35%), 19 (31.67%), 3(5%), 1(1.67%), 5(8.33%), 5(8.33%), 3(5%) and 2(3.33%), respectively. No parasite was seen in 14 controls (23.3%). Enteropathogenic *Esch. coli*, LT-producing *Esch. coli* and *Vibrio cholerae* O139 were the only organisms that were more frequently found in cases than in controls. Other enteric pathogens and commensals were detected or isolated in almost equal frequency in both cases (AIDS with diarrhoea) and controls (AIDS without diarrhoea). Protozoan parasites were highly prevalent in all age groups and both sexes of

AIDS patients. Thus both cases and controls harboured these enteric organisms in the gastrointestinal tract and probably only when the immune status of the patient was lowered to a certain level that these organisms become diarrheogenic.

533 Win Mya Aye; Than Than Htwe; Myo Khin; Kyaw Hla-S;
Thein Thein Myint and Bolin TD

TITLE Small intestinal mucosal pattern of Myanmar children

SOURCE *J Gastroenterol Hepatol.* 2001 Mar; 16(3): pp297-300

ABSTRACT: BACKGROUND: Little is known about the small intestinal mucosal pattern of Myanmar children. METHODS: Duodenal, jejunal and ileal mucosal specimens obtained from children within 6 h of death were examined under a dissecting microscope with the objective of determining villus pattern in relation to site within the small intestine and then correlated with age. RESULTS: Abnormalities in the small intestinal mucosa were detected at a very young age. In children under 1 year of age, the changes are more marked proximally and become less marked distally, perhaps reflecting exposure to the causative agent(s) in early life. Presumably these agents are ingested orally and inactivated progressively. The pattern in older children reflects more severe changes in the ileum. CONCLUSIONS: It is postulated that frequent intestinal infections or small bowel bacterial contamination could lead to damage of the intestinal mucosa.

534 Win Myint; Win Htein Kyaw; Hla Myint; Myint Myint Than; Hla Hla Htay
and Myat Myat Ohn Khin

TITLE Utilization Patterns of Traditional Medicine in the Treatment of Diarrhoea and Dysentery

SOURCE *Myanmar Health Res Congr.* 2004; pp14-15

ABSTRACT: A field survey was conducted on the private traditional medical clinics to reveal the utilization patterns of traditional medicine in the treatment of diarrhea and dysentery. Fifty professional traditional medical health practitioners who were working general practice in their own clinics within Yangon area were included in this study. Among 50 practitioners, 56% use the single plant therapy alternative to formulations and 44% use only formulation therapy. For the treatment of diarrhoea with single plant therapy of traditional medicine, two plants; *Holarrhena antidysenterica* (လက်ထုတ်ကြီး) and *Curcuma longa* (နွန့်ငါး) were given top priority; recommended by the highest percentage 28.6% (8 of 28) of traditional medicine practitioners. Regarding the formulation therapy, 38% (19 of 50) of practitioners used their own formulations and 62% (31 of 50) used traditional medicine formulations (TMFs) approved in the Traditional Medicine Formulary. Various TMFs were used for diarrhoea depending on the basic principles of traditional medicine and their experience and knowledge. Of the total of 57 approved TMFs, 18 were observed to be used widely, in which TMF-16 (အပူငြိမ်းသွေးဆေး) was found to be most commonly used 64.5% (20 of 31) and TMF-33 (အစာကြေလေသပ်ထုတ်ဆေး) was next, used by 29% (9 of 31) of practitioners. Regarding the treatment of dysentery with single plant therapy, *Euphorbia hirta* (ကျွဲကျောင်းမင်ဆေး) was the most commonly recommended one; recommended by 35.7% (10 of 28) of practitioners, and *Holarrhena antidysenterica* (လက်ထုတ်ကြီး) was next, recommended by 21.4% (6 of 31). With the formulation therapy, 48% (24 of 50) used their own preparations and 52% (26 of 50) used TMFs of Traditional Medicine Formulary. Here again, TMF-16 was found to be the top priority, recommended by 53.8% (14 of 26) and TMF-33 was the second priority used by 26.9% (7 of 26) of the practitioners. The result of this study provided certain contribution on promising traditional medicine to be utilized in Standard Treatment System of Myanmar Traditional Medicine and traditional knowledge resources for the development of scientific preparations of traditional drugs for diarrhea and dysentery.

- 535 Win Nyunt
TITLE A study of celiac lymph nodes involvement in carcinoma
SOURCE MMedSc(Surgery) , Institute of Medicine Mandalay (IMM), 2005
ABSTRACT: This hospital based cross-sectional study was conducted in Mandalay General Hospital from 1st January 2004 to 31st December 2004. It studied 29 patients who underwent oesophagectomy, examined biopsy for the celiac lymph node involvement. In this study, 82.8% was male and 17.2% were female, the sex ratio was 4.8:1, the incidence of oesophageal cancer was highly found in 60-69 years age group. The mean age of study population was 60.9 years. Regarding the site of involvement, middle 1/3 was 58.6% and lower 1/3 was 41.4%. The study showed that tumour length of invasion varied from 2cm to 8cm, the average tumour length was found to be 5.7cm and the majority had tumour length of 6cm. In histological type, squamous cell carcinoma was 69% and the adenocarcinoma was 31%. Concerning the lymph node involvement, 65.5% of carcinoma was associated with lymphnode enlargement and the remaining 34.5% was no gross enlargement of lymphnode. In peri-operative mortality, out of 29 operated cases, 26 cases (89.7%) were alive and 3 cases (10.3%) were dead. There were no significant association between celiac lymph node involvement and tomour depth, length, histological type, site of involvement and histological grading.
- 536 Yan Naing Kyaw
TITLE A study of usefulness of alvarodo score in diagnosis of acute appendicitis in MGH
SOURCE MMedSc(Surgery), Institute of Medicine Mandalay (IMM), 2004
ABSTRACT: The Alvarado scoring system was evaluated in 252 patients (M:F=134:118) with suspected acute appendicitis during one year study period from April 2003 to March 2004. This study found that, 222 (M: F=127: 95) out of 252 patients had acute appendicitis at operation, which was confirmed by histology. All appendicitis patients were Alvarado score 5 and above. The patients withc sore 4 and below did not have appendicitis. The patients with score 7 and above were strongly predictive of appendicitis. The optimum score was 7 and which had 92.3% in sensitivity and 83.3% in specificity.
- 537 Yi Yi Myint; Ngu War Min; Thuzar Win; Wai Wai Khine; Myo Htet Htet Khine; Mya Mya Thwe and Tinzar Than
TITLE A pilot study on association of Epstein Barr Virus (EBV) and stomach cancer in Myanmar
SOURCE *Myanmar Health Res Congr.* 2006, p42
ABSTRACT: EBV infection is common one and 90% of the population has been infected by adulthood. EBV has been linked to the etiology of several cancers including African Burkitt's lymphoma, Hodgkin's disease, nasal NK/T cells lymphoma and nasopharyngeal cancers. About 10% of stomach cancer throughout the world is due to monoclonal proliferation of EBV infected cancer cells. There are regional differences in the incidence of EBV positive stomach cancer ranging from 4.3 to 18%. Previous studies showed genetic and clinicopathological differences between EBV positive and negative stomach cancer. We try to find out how many percentage of stomach cancer is caused by EBV in Myanmar. In this study, paraffin blocks of biopsy or surgically resected specimen are collected, Haematoxylin and Eosin staining is performed for tumor diagnosis, and demonstration of EBV by in situ hybridization using fluorescein- conjugated EBV (EBER) PNA probe are performed. Clinicopathological correlation is also done in possible cases. The literature concerning association of EBV and stomach cancer is reviewed and comparesion of our data and those of foreign countries is also done. Up to date, 23 biopsy specimens are examined and 47.83% of specimen examined (11 patients) is positive for EBV by ISH. Some facts for clinicopathological correlation are similar with previous research findings but others are not. This paper adds more information on causal agents of stomach cancer in Myanmar and includes information for future clinical tumor vaccine trial and immunotherapy of cancer.

Conclusion

The **GI diseases** studied and reported during the period 1960 to 2007 were mostly *communicable infective diseases* of high national priority, viz. cholera, diarrhoea, dysentery and intestinal helminthiasis including a few studies of intestinal tuberculosis. *Peptic ulcer* was the only non-infective medical condition which was studied in some detail. Many of these studies were within the framework of a common theme and some were conducted in accordance with a well planned, coordinated, continuous program. It is unlikely that new forms of GI bacterial infections will be found in future more viruses may be discovered as etiological agents of GI diseases. Rotavirus gut infections may need more in depth studies. *Common acute and non-acute surgical conditions* have also been studied but there was no planned program or connecting theme or continuity. Future surgical studies may need to have consistency and continuity in order to have better impact. With better control of GI infection, gut cancers may account for an increasing proportion of GI disease especially gastric cancer which is prominent in some Asian countries and may merit more attention here. Key-hole surgery has now started in Myanmar and may need to be compared with conventional surgery regarding usefulness and safety in the local setting.

Apart from definitive and serious GI diseases like the above, there are many GI disorders in Myanmar which cause no mortality or serious illness but are very common and pervasive and cause considerable distress in the daily lives of the vast majority of people - such as non-specific gastritis, irritable bowel syndrome, indigestion and flatulence, especially in children and functional GI disorders. They are now being dealt with by folk medicine and empirical treatment and merit more attention and scientific study. Digestive disorders and food digestion, especially of particular Myanmar foods and meals, such as being undertaken in Thailand, is also a relatively unexplored area for study.

Regarding **methodology** – *descriptive epidemiological method* was easily acquired by many and most frequently used yielding extensive data; *analytical epidemiological methods* were also employed and gave useful information about causal relationships ;but more sophisticated methods like *epidemiological model* construction was used only sometimes by very few. Some of the studies have become repetitive and redundant in later years such as the clinical and epidemiological descriptions of intestinal helminthiasis and diarrhoea in different localities and settings, and need no longer be pursued unless a new finding is likely or a new hypothesis is being explored.

Routine *clinical, radiological and clinical laboratory methods* were used at first but gradually large numbers of specific techniques required for special purposes were employed as new, up-to-date technology was acquired in many pre-clinical and clinical disciplines.

Quantitative methods have now been added to qualitative clinical methods used in some GI diseases/disorders; this is an area that may be expanded in future to

include decision analysis and development of more and better algorithms to diagnose and manage GI diseases in different local settings.

Introduction of *ultrasound imaging* to visualize the gross and detailed structure of solid organs related to the gut such as liver and pancreas; and *endoscopy* to visualize gut lumen and biliary tree, had tremendous impact on diagnosis and treatment of GI diseases. The future may bring more advanced and revealing imaging technologies. *Gut function* studies such as measurement of *intestinal absorption* and *malabsorption* were done; but *motility studies* were few and limited to radiological contrast studies.

Studies in some areas have reached the stage of diminishing returns with respect to practical application and use - such as clinical and epidemiological descriptive studies of intestinal helminthiasis and diarrhoea, while some others like epidemiology of dysentery and in-depth investigation of its etiological agents may need more emphasis and acquisition of new up-to-date technology.

Gut function studies may need to be expanded. Methods for the study of food digestion and digestive disorders may need to be introduced. Even simple measurements of gastric and pancreatic enzyme secretions are not easily available here.

While the upper and lower gut can now be visualized and accessed by endoscopy, the small intestine in between still remains out of vision and un-accessible in Myanmar, except with the *Crosby capsule for biopsy* of the proximal ileum. Intestinal capsules that transmit pictures of the gut lumen and other information such as pressure waves are now being used to aid diagnosis in other countries and may be introduced here if financial resources are available. Similarly, expanded studies of normal and abnormal gut motility using electrophysiological measurements and radio capsules are exciting possibilities.

The genomes of many pathogenic micro-organism are being unraveled one by one at an increasing pace in the scientific world, including those causing GI diseases, leading to better understanding of their pathogenetic mechanism as well as opening new approaches to treatment. Efforts will need to be made to acquire appropriate technology and keep pace with the rapidly increasing developments in genetics and seize the opportunity to pursue new avenues and strategic approaches in the diagnosis and treatment of GI infections.

Prof. Aung Than Batu

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