Abstracts of papers presented at the Annual Scientific Meeting of the Gastroenterological Society of Singapore from 16 to 15 January 1993.

1. ENDOSCOPIC STENTING IN THE MANAGEMENT OF BILIARY STONES. Law NM, Lim CC, Ng HS, Cheng J. Department of Medicine II, Singapore General Hospital

Endoscopic retrograde pancreatography (ERCP) is now an established mode of treatment in the management of bile duct stones and cholangitis. This is important when the patients are elderly and have other medical conditions rendering them unfit for surgery.

We studied the long term outcome of endoscopic stenting in patients who underwent ERCP for ductal stones. From January 1990 to April 1992, we performed 894 ERCPs in the department, of which, 366 were for biliary stone disease. Of these, 55 patients received a 10 French biliary stent for the treatment of bile duct stone. All the patients had sphincterotomy while Dormia basket extraction or electrohydraulic lithotripsy were attempted in 13 patients. Most of these patients (60%) had an advanced age of more than 70 years. Eighty-two percent had multiple stones. Ninety-one percent had stones greater than 1.2 cm in diameter. The patients were followed up for a mean period of 11 months. Eighty-two percent of patients had relief of jaundice and cholangitis subsided in 95%. Nineteen patients still have their stents in place and no surgery was required. Nineteen patients went for surgery at a later date when they became more stable. None required immediate surgery post-ERCP. Eight patients later died of unrelated illnesses and 4 defaulted follow-up.

The stents were repeatedly changed in 15 patients at an average duration of 5.5 months. While in 5 patients, the stone had either disappeared spontaneously or become smaller and removed at subsequent ERCP. Complications included cholangitis in 2 patients and stent migration in 4 others. There was no mortality. In conclusion, stenting is a valuable alternative to surgical bile duct exploration and in some cases may be the definitive mode of treatment for larger or multiple stones.

2. THE EFFECT OF CHILLI ON ASPIRIN-INDUCED GASTRODUODENAL MUCOSAL INJURY IN HUMANS. KG Yeoh, JY Kang, I Yap, R Guan, CC Tan. Division of Gastroenterology, Department of Medicine, National University Hospital, Singapore

In Singapore, peptic ulcer is commoner in Chinese compared to Malays and Indians. One possible explanation is a beneficial effect of chilli. We and others have shown that chilli and its pungent ingredient capsaicin protects against experimental gastric mucosal injury in laboratory animals. The aim of the present study is to determine if a similar gastro-protective effect of chilli is demonstrable in humans. Eighteen healthy volunteers who had not taken non-steroidal anti-inflammatory drugs abstained as far as possible from the use of chilli for two weeks and underwent two studies two to four weeks apart. After an index gastroduodenoscopy to confirm normality of the stomach and duodenum they took 600 mg aspirin BP orally and repeat endoscopy was performed six hours later. Gastroduodenal mucosal damage was assessed by a previously validated scoring system. A second study was performed on the same volunteer following the above protocol but with prior intake of 20g chilli powder (equivalent to 9.56 mg capsaicin) half an hour before aspirin. The order of the two studies was randomised for each volunteer and the endoscopist was unaware of the order of the studies. The median score after aspirin alone was 4 (range 0 to 9) compared to 1.5 (range 0 to 9) after chilli plus aspirin ($p<0.01$ by the Wilcoxon rank sum test). Chilli therefore has a gastro-protective effect against acute aspirin induced injury in humans. Our results suggest the possibility of a therapeutic role for chilli intake in patients with peptic ulcer disease.

3. NON-ALCOHOLIC FATTY LIVER. I Yap, KG Yeoh, A Wee*, R Guan, R Chan. Departments of Medicine & Pathology*, National University of Singapore.

Fatty change in the liver histologically similar to that seen in alcoholic liver disease may occur in other disorders. We studies the characteristics of our patients who had fatty change diagnosed on liver biopsy.

Consecutive patients with abnormal liver function tests and biopsy-proven fatty change seen between 1986 & 1992 were analysed retrospectively. Those with chronic alcoholism, methotrexate therapy and chronic HBV antigenemia were excluded.

There were 49 patients with mean age of 42 years (range, 20-77) and a slight male preponderance of 3:1. The mean ALT, AST and GGT levels were 93, 62 and 118 u/l respectively. 18% of the patients had hepatomegaly and 49% were overweight (defined as > 10% over ideal weight for height). Histologically, the patients were grouped into steatosis or steatohepatitis categories, the latter being designated when lobular hepatitis with mixed inflammatory cellular infiltrate was present. 76% of the patients (37/49) had steatosis and 24% (12/49) steato-hepatitis. The commonest conditions associated with fatty liver were hyperlipidemia (76% in steatosis; 89% in steatohepatitis group), obesity (45%; 63%) and type II diabetes mellitus (11%; 33%). 88% (38/43) of the patients had abnormal pre-biopsy abdominal ultrasound reports suggesting fatty infiltration. On follow up (mean duration, 27 months), 59% showed biochemical improvement; the rest were stable. There was no mortality.

Non-alcoholic fatty liver generally presents with mild liver function abnormalities. The commonly associated conditions are hyperlipidemia, obesity and diabetes mellitus which can be controlled medically.

4. LAPAROSCOPIC OMENTAL PATCH REPAIR OF PERFORATED PEPTIC ULCERS. J Isaac, Y Tekant, P Goh. Department of Surgery, National University Hospital, Singapore

Simple closure is an accepted treatment method for the emergency management of perforated peptic ulcers. The preliminary results of laparoscopic treatment of six patients with peptic ulcer perforations are reported.

Between March and October 1992, six patients presenting with perforated duodenal ulcers were treated by laparoscopic omental patch repair in the Department of Surgery of the National University Hospital in Singapore. All patients were male, with a mean age of 35 years (range 20-60). Four patients had no previous complaints while the other two had intermittent epigastric pain for more than 10 years. The interval from perforation to laparoscopy ranged from 8 to 12 hours. Peritoneal soilage was found to be moderate in all six cases. The average diameter of perforations was 3.5 mm. The mean operative time was 80 minutes (range 70-90). The perforation was closed with interrupted 2/0 vicryl sutures over a portion of omentum. The peritoneal cavity was copiously irrigated and a suction drain was inserted. All patients received intravenous antibiotics and ranitidine.

There were no post-operative complications. Bowel sounds commenced on the first or second day and all the patients resumed diet by the fourth day. The average hospital stay was five days (range 4-7). All patients received long-term H2-blocker treatment and the mean follow-up period is now five months (range two to eight months) at which time all the ulcers have healed.

Laparoscopic patch repair is a promising new approach to perforated peptic ulcers. The advantage of faster recovery and better cosmesis and makes it an attractive alternative to conventional surgery. Larger series and long term results are awaited.

5. BOWEL DYSFUNCTIONS IN PATIENTS WITH MULTIPLE SCLEROSIS. YW Chia*, PJ Shorvon+, MM Henry+, M Swash+, MA Kamm+, CJ Fowler#. National University Hospital(Singapore)*, St Mark's Hospital (London) +, and The National Hospital for Neurology and Neurosurgery(London)#

Bowel dysfunctions are common in patients with multiple sclerosis(MS). The prevalence of constipation and/or faecal incontinence was reported to be as high as 68%. The aim of this study was to investigate possible pathophysiological mechanisms for these problems.

Methods: 18 patients with clinically definite MS were studied. 10 patients had constipation (Group 1, 9 female, mean age 44) and 8 patients had urge faecal incontinence (Group 2, 5 female, mean age 40). 10 patients without MS and bowel dysfunctions were studied as control (Group 3, 9 female, mean age 35). All patients underwent anorectal physiology studies to record resting (RP) and maximal voluntary contraction(MVC) and pressures, anal(AS) and rectal(RS) threshold mucosal electrosensitivity, right(RPTNML) and left(LPTNML) pudendal terminal nerve motor latencies and single fibre density(SFD). Evacuating proctography was done in all MS patients with constipation.

Results: Comparison of anorectal physiology studies between MS patients and control were as follows:

	Group 1	Group 2	Group 3
RP cmH_2O	75	89	103
MVC cmH_2O	56	46	120
AS mA	5.95	8.78	4.59
RS mA	23.5	25.1	17.6
RPTNML msec	2.4	2.13	2.15
LPTNML msec	2.36	2.13	1.99
SFD	1.67	1.61	1.54

Both groups of patients with MS had significantly lower RP and MVC compared to control. However, PTNML and SFD were not significantly different between all the three groups. Evacuating proctography of the MS patients with constipation showed 8 patients had paradoxical puborectalis contraction.

Conclusion: There was no evidence of peripheral neuropathy in MS patients with constipation or faecal incontinence suggesting the central neurologic disorder of this disease as a cause for these problem.

6. SHOULD APPENDECTOMY BE DONE LAPAROSCOPICALLY? CK Kum, SS Ngoi, PMY Goh, Y Tekant, JR Isaac. National University Hospital, Singapore

A randomised controlled study was conducted between February 1992 to July 1992. The aim was to compare laparoscopic appendectomy to the open method.

137 cases diagnosed with acute appendicitis were randomised to either laparoscopic appendectomy or the conventional procedure. Perforated appendices and normal appendices at histology were excluded.

52 cases of laparoscopic appendectomy and 57 cases of open appendectomy were analysed. Laparoscopic appendectomy did not take significantly longer than the open procedure (mean 45 vs 41 mins). The number of doses of pethidine (1 mg/kgBW) required in the immediate postoperative period did not differ significantly between the two groups (1.3 vs 1.0). However, the number of doses of oral analgesia (naproxen 550 mg bid) required was less in the laparoscoped patient (mean 2.8 vs 5.0) ($p<0.05$). There was no difference in the delay before tolerating fluids, diet and length of hospital stay between the two groups. There were five (8.8%) wound infections in the conventional group compared to none in the laparoscopy group ($p<0.01$). Laparoscoped patients were able to return to full home activities (16 vs 30 days) and social activities (19 vs 32 days) earlier than the open group. In conclusion, there were significant benefits in terms of reduction of wound infection and return to normal activities.

7. A COMPARISON OF CA 125 LEVELS IN PATIENTS WITH CHRONIC LIVER DISEASE AND END-STAGE RENAL FAILURE PATIENTS ON CONTINUOUS AMBULATORY PERITONEAL DIALYSIS. Tambyah PA, Yap I, Lye WC. Department of Medicine, National University Hospital, Singapore

Extremely high levels of CA 125, the ovarian cancer associated antigen, have been found in various non-malignant diseases especially when associated with ascites. This study attempts to determine whether this is due to the presence of fluid in the peritoneum per se.

48 consecutive patients with liver diseases (23 acute hepatitis and 25 chronic liver disease) and 55 dialysis patients (27 on haemodialysis and 28 on chronic ambulatory peritoneal dialysis) were studied together with 25 normal controls. Their serum and ascitic fluid concentrations of CA 125 were measured by a microparticle enzyme immunoassay.

We found elevated CA 125 levels in the serum of 17/25 (68%) patients with chronic liver disease with a mean 234.2 ± 299.9 u/ml. This was highly significant ($p<0.01$) when compared with the normal sample (0/25 elevated; mean 9.4 ± 4.6 u/ml) and acute hepatitis group (1/25 elevated mean 16.2 ± 8.2 u/ml). The degree of elevation did not correlate with the severity of liver disease. Those with moderate decompensation (by the Child-Turcotte criteria) had a mean of 237.9 ± 361.3 u/ml which was not statistically different from the severe cases with a mean of 227.5 ± 158.4 u/ml. Ascitic fluid CA 125 was elevated in all 12 cases which had paracentesis, with a mean of 894.0 ± 677.8 u/ml. For the peritoneal dialysis group, only 2/28 (7%) had mildly elevated values with a mean of 17.8 ± 11.9 u/ml which was within the normal range (<35 u/ml) and significantly lower than the ascitic liver disease group. This meant that the artificially created "ascites" from peritoneal dialysis could not elicit the same elevation in CA 125 as chronic liver disease suggesting that some mechanism other than peritoneal fluid accumulation is responsible for the markedly raised serum CA 125 concentration in cirrhotic patients.

8. COMPARATIVE STUDY OF PAIN LEVELS AND ANALGESIC REQUIREMENTS IN LAPAROSCOPIC AND OPEN CHOLECYSTECTOMY PATIENTS. Iau PTC, Kum CK, Wong CW, Goh PMY, Ti TK. Department of Surgery, National University Hospital, Singapore

The laparoscopic technique of cholecystectomy leads to shorter hospitalization, faster recuperation and earlier return to economic activity. Although reduction in pain is thought to be a major factor, there is no clinical trial confirming this assumption. This is a prospective trial comparing the pain level between laparoscopic (n=28) and conventional (n=9) cholecystectomy. The level of pain was determined by an independent observer using a visual analogue scale (VAS). Intramuscular pethidine or oral naproxen was given intermittently on demand. Patients who underwent the laparoscopic procedure had significantly less pain compared to the open procedure on the day of operation (mean VAS 3.8 vs 7.7) and first post-operative day (mean 2.8 vs 6.2) ($p<0.05$). On the second and third post-operative day, the level of pain was not statistically different. All patients with conventional cholecystectomy required at least one dose of analgesia (pethidine or naproxen) while only 53.6% of laparoscoped patients required analgesia ($p<0.05$). The mean hospital stay was 3 days (range 2-6) in the laparoscopy group and 5 days (range 4-9) in the open group ($p<0.005$). This study supports the clinical impression that there is less pain after laparoscopic cholecystectomy.

9. THE EFFECT OF CAPSAICIN ON PROPHYLAXIS AND HEALING OF STRESS-INDUCED GASTRIC MUCOSAL INJURY IN THE RAT. CH Teng, F Chen*, JY Kang. Division of Gastroenterology, Departments of Medicine and of Physiology*, National University of Singapore

In Singapore peptic ulcer is more common in Chinese compared to Malays and Indians. One possible explanation is that chilli intake has a beneficial effect. We and others have previously demonstrated a protective effect of chilli and its pungent ingredient capsaicin in prophylaxis against chemically induced gastric mucosal injury in animals and humans. The aim of the present study is to determine if capsaicin prevents the development of stress-induced gastric mucosal injury in the rat and whether capsaicin administration accelerates the healing of these mucosal lesions. We produced gastric mucosal injury in adult Sprague Dawley rats (n=80) by water immersion plus restraint. In the first experiment 16 rats were divided into two groups to be given 5 mg of capsaicin or capsaicin solvent by gavage prior to stress. The animals were sacrificed immediately after and their gastric mucosa photographed and later scored for damage. The person assessing the scores was unaware of which group each rat belonged to. In the second experiment rats underwent water immersion plus restraint stress and were then given either 5 mg capsaicin or capsaicin solvent. They were sacrificed 1, 6, 16 and 24 hours afterwards for assessment of mucosal damage. The mucosal score immediately after stress was 71.6 ± 3.3 in the capsaicin group compared to 77.0 ± 7.3 in the control group (NS). The mucosal scores at 1, 6, 16 and 24 hours were 61.0 ± 6.3, 53.8 ± 3.8, 18.1 ± 5.5, 18.0 ± 6.8 in the capsaicin group and 69.8 ± 8.9, 58.0 ± 6.0 , 34.1 ± 6.9, 39.3 ± 11.2 in the control group ($p<0.03$ by the GLM procedure after rank conversion). In the doses used, therefore, capsaicin does not prevent stress-induced gastric mucosal damage but it does accelerate healing of these lesions. Our finding raises the possibility of a therapeutic role for capsaicin in human peptic ulcer disease.

10. CHILLI INTAKE IN PATIENTS WITH PEPTIC ULCER. JY Kang, KG Yeoh, YW Chia*, HP Lee**, R Guan, I Yap. Division of Gastroenterology, Departments of Medicine of Surgery* and Community, Occupational and Family Medicine**, National University of Singapore

In Singapore, peptic ulcer is commoner in Chinese compared to Malays and Indians. One possible explanation is that chilli intake has a beneficial effect. We and others have shown a gastroprotective effect of chilli and its pungent ingredient capsaicin in experimental animals and in humans. The aim of the present study is to compare the intake of chilli in patients with peptic ulcer to patients with functional abdominal pain and those with miscellaneous medical illnesses. Consecutive patients in these various groups were interviewed by a trained investigator and the frequency of chilli intake over the two preceding years determined. 62 patients with peptic ulcer, 62 with functional abdominal pain and 110 with miscellaneous medical illness have completed the study to date. Subjects who had restricted their chilli intake because of abdominal symptoms or because of their illnesses were excluded from analysis. Racial distribution was comparable between the groups but ulcer patients were older and more likely to be males compared to patients with functional pain. The median number of times chilli was taken per month was 8^a, 16 and 16^b in subjects with ulcer, functional pain and miscellaneous illnesses respectively. The median amount of chilli taken per month was 41^c, 50 and 77 $units^d$ respectively. The differences in frequency and amount of chilli taken between the ulcer and miscellaneous illness groups were statistically significant (a v b, $p<0.005$ and c v d, $p<0.05$ by the Wilcoxon rank sum test), whereas the differences between ulcer and functional pain groups were not. These results suggest that the use of chilli has a protective effect against peptic ulcer disease.

11. SERUM AFLATOXIN LEVELS IN PRIMARY HEPATOCELLULAR CARCINOMA IN SINGAPORE. Tan CK, Lo D*, Law NM, Chong R, Ng KY, Cheng J, Leong S, Ng HS, Chao TC*. Department of Medicine II, Singapore General Hospital, *Institute of Science and Forensic Medicine, Singapore

Aflatoxin (AF) has been implicated as a carcinogen in human primary hepatocellular carcinoma (PHC), particularly in cases which are also positive for HBsAg. The aim of this prospective study is to determine if there is evidence of increased exposure to AF in our local cases of PHC.

50 consecutive cases of PHC seen in our unit from January 1992 till October 1992 were enrolled into the study. PHC was diagnosed on WHO criteria. There were 44 males and 6 females with a mean age of 58.7 years. 49 were Chinese and 1 was Malay. HBsAg was positive in 35 cases. Of the remaining 15, 7 were anti-HBc IgG positive, 2 were both anti-HBc IgG and anti-HCV IgG positive, 2 were anti-HCV IgG positive and 2 had a significant history of alcohol intake. 2 patients had no apparent predisposition to PHC.

A sample of venous blood was obtained from each patient by venipuncture. 2 ml of whole blood was then extracted with chloroform and cleaned up with column chemistry. The evaporate obtained was reconstituted and analysed by high performance liquid chromatography using fluorescence detection. All 50 cases were negative for AF B1, B2, G1 and G2 at detection limits of 3 pg/ml, 10 pg/ml, 3 pg/ml and 10 pg/ml respectively.

In conclusion, this is the first study in Singapore on AF and PHC. AF is not detected in the serum of 50 cases of PHC of various implied aetiologies. Hence, there is no evidence of significant exposure to AF in our local cases of PHC.

12. ANTI-NEUTROPHIL CYTOPLASMIC ANTIBODIES IN INFLAMMATORY BOWEL DISEASE AND TUBERCULOUS COLITIS. TM Ng, KM Fock, CN Chew, HH Chng*, Diana Teo+. Division of Gastroenterology, Toa Payoh Hospital; Medical Unit IV, Tan Tock Seng Hospital* and Department of Haematology, Singapore General Hospital+.

Anti-neutrophil Cytoplasmic antibodies (ANCA) have been demonstrated to be present in the sera of patients with Inflammatory Bowel Disease (IBD) involving the colon.

Our study aims to evaluate the prevalence of these antibodies in our patients with IBD, and patients with tuberculous ileo-colitis (TB) as this is a common diagnostic problem in our local context.

Coded serum samples of 23 patients with ulcerative colitis, 9 patients with Crohn's Disease, 7 patients with ileo-caecal TB and TB colitis and 22 patients with Irritable Bowel Syndrome (IBS) were examined by immunofluorescence for the presence of anti-neutrophil cytoplasmic antibodies.

The age of the patients with IBD ranged from 20 to 82 years with a median age of 41 years. Of the 23 patients with ulcerative colitis, 7 patients had demonstrable ANCA in their serum (30%). One of the 9 patients with Crohn's colitis (11%) was positive for these antibodies. None of the control patients with Irritable Bowel Syndrome or TB colitis had ANCA in their serum.

Our study shows that about a third of our patients with Inflammatory Bowel Disease have anti-neutrophil cytoplasmic antibodies in their serum. None of the patients with TB Colitis had positive ANCA test.

13. COMPARISON OF THE BRONCHIAL SENSITIVITY TO INHALED METHACHOLINE IN PATIENTS WITH IRRITABLE BOWEL SYNDROME WITH THAT IN NORMAL, ATOPIC AND ASTHMATIC SUBJECTS. WC Tan, TH Koh, R Guan, TB Chan. Department of Medicine, National University of Singapore.

Patients who suffer from the irritable bowel syndrome(IBS) often give a family history of migraine, atopic diseases and asthma; and often have an excess of respiratory symptoms such as cough and catarrh. Isolated reports suggest that they may have bronchial hyperresponsiveness. We have compared the bronchial responsiveness to inhaled methacholine of patients with IBS with that in normal, atopic and asthmatic subjects (n=11,6,5,7 respectively). Dose response curves to increasing doubling doses of inhaled methacholine were determined, starting at 0.019 mg/ml till sGaw increased by 35% (PC35sgaw) or until the maximum concentration of 100 mg/ml was attained. Specific airway conductance (sGaw) was measured in a body plethysmograph. The results are shown as mean(se). The PD35sgaw was log-transformed before analysis. Comparison was made using the analysis of variance. The ages of the 4 groups of subjects were similar. IBS subjects often had recurrent coughing. The baseline FEV1 (% predicted) of the asthmatic subjects was significantly lower than that in normals, atopics and IBS subjects, $p<0.05$. The baseline sgaw in the 4 groups were: 1.22(.22) asthmatic; 3.17(.21) atopic; 2.47(.19) normal; and 2.49(.24) IBS. In the IBS patients, there was considerable within-group variation in bronchial hyperresponsiveness (PD35sgaw) which overlapped with that of atopic subjects. Geometric mean PD35sgaw of the groups were: 49.24, IBS; 226.63, normal; 27.45, atopic; 2.34, asthmatic. We conclude that patients with IBS have an excess of respiratory symptoms; a tendency for underlying increased bronchial hyperresponsiveness similar to atopic subjects. This underlying abnormality may conceivably reflect a generalised increase in smooth muscle responsiveness and could account for the respiratory symptoms.

14. COMPLICATIONS AND OUTCOME FROM TOTAL PARENTERAL NUTRITION (TPN) IN ICU AND NON-ICU PATIENTS. *#Lim CC, *Kwek KR, *Heng G, @#Cheong WK, *@Ng EH, #Ng HS. * Nutritional Support Service; # Medical Unit II; @ Department of Surgery, Singapore General Hospital.

Nutritional support is an essential aspect of ICU patient care. However, specialised nutritional support is costly. Stratification of patients in ICU would allow the prioritised allocation of such resources. In Singapore, data regarding the efficacy of specialised nutritional support were few.

This study examines the complications and outcome of TPN support in ICU and non-ICU patients. The majority of patients in ICU had multiple medical disorders and organ failure that would affect the complications and final outcome from TPN. The cohort of non-ICU patients receiving TPN support during the same interval was chosen to illustrate the differences in outcome and complications from nutritional support.

From January 1991 to July 1992, 116 patients were managed by the Nutritional Support Service team. 50 ICU patients received TPN for a duration ranging from 1-94 (median 11) days. Of these, 64% had underlying sepsis and 42% had acute renal failure (ARF). A mean of 44% received a targeted caloric delivery of 85% of Resting Energy Expenditure (REE) calculated from the Harris Benedict equation. Catheter related infection was seen in 10% of the patients. During the same period, 66 non-ICU patients received TPN for a duration ranging from 1-48 (median 14) days. Of these, 17% had underlying sepsis, 3% had ARF. All (100%) received a targeted caloric delivery of 85% of REE. Catheter related infection was seen in 18% of the patients.

TPN was stopped in 26% of the ICU patients due to a deterioration in the status of their underlying conditions. Those who were subsequently discharged from hospital constituted 38%, 44% succumbed to their illnesses. In the non-ICU patients, 14% had TPN stopped due to a deterioration in their underlying condition. The majority (64%) were subsequently discharged from hospital and 23% died from their underlying illnesses. The incidence of catheter related infections in ICU patients were comparable to that in non-ICU patients. However, because of their underlying multiple medical disorders and organ failure, less than 50% of ICU patients received 85% of the targeted caloric requirement. About half of the ICU patients died from their disease, despite nutritional support and aggressive therapy. In conclusion, the underlying medical conditions limit the ability to provide adequate nutrition in ICU patients. Intensification of supportive measures in selected rather than all ICU patients based on a scoring system is needed to improve the therapeutic outcome in this group of patients.

15. NON-SPECIFIC ABDOMINAL SYMPTOMS AND INTESTINAL HELMINTHIASIS IN ADULTS. A Riduan, S Mahendra Raj. Department of Medicine, Universiti Sains Malaysia

Over a quarter of the world's population is infected with intestinal helminths but information on the morbidity of intestinal helminthiasis remains scanty. Although acute pancreatitis and biliary colic are known complications of ascariasis, there is little data on the propensity of helminth infections to cause less dramatic abdominal complaints among adults. A survey on abdominal symptoms was conducted on a sample consisting of 333 (241 female) medical inpatients. Mean age was 43 years (S.D. 19 years). Eighty-six were infected with Ascaris lumbricoides, 119 with Trichuris trichiura and 47 with hookworm as diagnosed by stool examination. Median intensities of infection of ascaries, trichuria and hookworm in the stool positive cases expressed as eggs per gram (e.p.g) were 2800 (range 200-35,200), 800 (range 100-11,200) and 600 (range 150-42,200) respectively. We found no difference in the rates of abdominal symptoms between infected and uninfected subjects (23% vs 20%; p=0.51, 95% confidence interval of the difference in proportions 11% to -5%). Using the empirical logistic method we found no evidence of independent associations between infection with either ascaris, trichuris or hookworm and abdominal symptoms. The results reaffirm the view that clinicians in endemic areas should be wary of incriminating intestinal helminths as the cause of non specific abdominal symptoms in adults.

16. LAPAROSCOPIC CHOLECYSTECTOMY - AN AUDIT. Yap C, Kum CK, Goh PMY, Rauff A. Department of Surgery, National University Hospital, Singapore

A survey was conducted in April 1992 whereby all surgeons performing laparoscopic cholecystectomy in Singapore were requested to fill in a questionnaire form. The response was excellent. There were six private surgeons and fourteen government-employed or university surgeons who had between six months to two years of experience in this field. The total number of cases done was 1,066. The most common indication for operation was biliary colic (49%), followed by chronic cholecystitis (30%). The procedure was successfully done for acute cholecystitis in 69 (6.5%) cases. Intraoperative cholangiogram was not a routine practice. Choledocholithiasis was usually dealt with endoscopic retrograde cholangio-pancreatographic (ERCP) techniques. Conversion to the open method was necessary in 57 (5.3%) cases, mostly due to technical difficulties. There were 27 (2.5%) complications, including six (0.6%) transected common bile ducts, four (0.4%) damaged common bile ducts and seven (0.7%) bile leaks. There was one mortality (0.09%) from septicemia. The average hospital stay was three days.