

Abstracts

Abstracts of Theses Approved for the M.Sc., M.Med. and Phd. Degrees at the School of Medical Sciences, University Sains Malaysia, Health Campus, Kubang Kerian, Kelantan, Malaysia.

LASER DOPPLER MONITORING OF FREE FLAPS IN RECONSTRUCTIVE MICROSURGERY

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Introduction : In microsurgery, micro vascular thrombosis is a recognized and potential complication that can occur irrespective of the meticulous surgery performed. Hence microsurgical success will rely on the ability of the surgeon to detect and salvage failing free flaps. Early identification of micro vascular thrombosis will be the first step in order to salvage a free flap. Hence the necessity for a monitoring device arises. Over the past decades various types of monitoring devices have been introduced. An ideal monitoring device is one which is simple, continuous, non-invasive, reproducible, accurate, inexpensive and capable of registering easily interpretable results. Unfortunately till now there is no such monitoring device that can fulfill all the above mentioned criteria. Clinical observation, of course, remains the gold standard in post-operative monitoring of free tissue transfers but a majority of micro surgeons currently prefer to have adjunctive methods to monitor their flaps. Over the past 2 decades laser Doppler flowmetry has gained popularity and is being used in a number of centers worldwide.

Patients and Methods : We conducted a prospective study to monitor free tissue transfers with laser Doppler flowmetry that was performed between July 2002 and January 2005. Thirty patients were studied .Our objectives were to obtain the normal flow values in all uncomplicated free tissue transfers , to obtain the mean flow values on days 1 , 2 and 3 post-reconstruction with different types of flaps and note their significance, to look at any similarity in flow values in the different types of flaps, to look at the flow values prior to thrombosis in failing flaps and be able to determine the duration between decrease in flow values and the actual time of clinically apparent thrombosis and to study the regional variations in flow values.

Results : Median flow values for the flap and the control site were noted to be 17.5 PU and 17.45 PU respectively. The median flow values of the flap and the control sites were observed to be the highest on the second post-operative day . Flow values on the flaps were significantly different in all the flaps with the highest values noticed in the Anterolateral Thigh flaps and the lowest values in the TRAM flaps.($p < 0.05$). A sustained decrease in flow values were noted 2 to 9 hours before clinical signs of thrombosis became evident. The flow values were noticed to be significantly variable in different regions of the body. ($p < 0.05$).

Conclusions : In combination with clinical monitoring, the laser Doppler flowmetry offers additional information on the flap vascularity and is able to detect thrombosis early. Hence laser Doppler flowmetry appears to have the criteria of an ideal adjunct to the micro surgeon in monitoring free flaps.

**Assoc. Prof. Dr. Ahmad Sukari Halim : Supervisor
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OSTEOPOROSIS PREVENTION: KNOWLEDGE AND ATTITUDE OF PRIVATE PRIMARY CARE DOCTORS IN KELANTAN

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Objective : The study was designed to determine the level of knowledge and attitude of private primary care doctors in Kelantan in regards to osteoporosis prevention.

Patients and Methods : It was a cross sectional study conducted from 1st October to 30th November 2004, using a self-administered questionnaire and was sent to 157 private primary care doctors in Kelantan. The questionnaire consisted of 28 questions, which dealt with knowledge of osteoporosis and attitude towards osteoporosis prevention. Data was analyzed using SPSS version 11.

Results : The response rate was 33.1%. The mean age of the respondents was 48 years old and graduated from medical school with the mean of 22 years ago. The mean total score for knowledge section was 11.73 (± 1.73), out of the maximum score of 16. The respondents fared better in questions concerning nutrients for bone mass. The majority of respondents believed that osteoporosis can be prevented and it is important for primary care doctors to spend time on osteoporosis prevention. They also agreed that medications and lifestyle changes could help in its prevention, especially after counselling. However training for osteoporosis risk reduction is important before counselling can be effectively carried out. Lack of time and greater priority on other issues are considered as barriers for counselling in one-third of respondents. A good proportion of the respondents reported that they did not have enough exposure to osteoporosis during medical school. There was no significant correlation between total scores of knowledge and attitude to age and years of experience of respondents.

Conclusion : The respondents were found to be knowledgeable in osteoporosis. Their attitude was positive. However age and years of experience were not found to correlate well to the total scores of knowledge and attitude.

**Dr. Juwita Shaaban : Supervisor
Dr. Shaiful Bahari Ismail : Co-Supervisor**



CORRELATION OF THE SONOGRAPHIC PARAMETERS OF LIVER ABSCESS WITH MODES OF TREATMENT

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Introduction : Liver abscesses are caused by bacterial, parasitic or fungal infection and are usually classified as pyogenic or amoebic. Most pyogenic liver abscesses are caused by polymicrobial infection including gram negative aerobic and anaerobic organism. Pyogenic liver abscesses usually arise from portal bacteremia of whatever cause. Ultrasound is the most common imaging modality to be used for diagnosis of liver abscess. It offers high sensitivity and specificity in diagnosis though it cannot differentiate pyogenic from amoebic abscess. Most often, sonography is diagnostic and no other imaging technique is needed. Ultrasound is useful not only for accurate diagnosis of an abscess but also in guiding aspiration if required. It is a cheaper, easier and reliable technique for follow up of patients. Antibiotics are the basis of the effective therapy for pyogenic liver abscess. The most dramatic change in the treatment of pyogenic liver abscess has been the emergence of guided drainage. Modern management frequently involves radiologically guided aspiration and/ or drainage combined with medical therapy, surgical intervention is now rarely required.

Objective : The aim of the study to identify and study the role of the sonographic parameters of liver abscess in assisting clinician for treatment of liver abscess whether antibiotic therapy alone is required or the need for any percutaneous transhepatic abscess drainage. The focus of this study is to analyse the association between various sonographic parameters and different modes of treatment of liver abscess.

Materials and methods : This is a descriptive study conducted on 34 cases of liver abscess patient treated in Hospital Sains Malaysia. The period of study was from November 2003 till February 2005. The study sample comprised of all patients who were diagnosed sonographically to have liver abscess. The sampling of patients was taken according to Non-Probability Sampling whereby all patients who met the criteria for the study population would be included in this study. Such patients were identified from referral for ultrasound of the hepatobiliary system for suspected liver abscess and from Department of Radiology Database. Once identified, their medical records were traced from medical record office or further data gathering.

Results : A total of 34 patients with a diagnosis of liver abscess were identified and included in this study. The patients' age ranged from 20 years old to 79 years old with mean age of 47. Majority of patients in this study were male which consist of 31 patients (91.2%) of the total patients and 3 patients (8.8%) were female. Majority of liver abscess patients were Malay, which contributed to 85.3% (29) of the total studied population. The two most frequent symptoms documented were abdominal pain and fever which were present in 32 patients (94.1%) and 31 patients (91.2%) of the total studied population, respectively. Most of the ultrasound of the hepatobiliary system for suspected liver abscess were performed on the first and second day of admission. Most patients (41.2%) were diagnosed sonographically as liver abscess between 8 to 14 days of illness. Majority of the patients had solitary liver abscess which contributed 88.2% of the total patients. Most of the liver abscesses were located in the right lobe of the liver (73.5%). The largest diameter of the abscesses ranged from 4.1 cm and 12.9 cm with the mean of 8.1 cm. The volume of the abscesses was ranged from 24.4 cm³ and 781.7 cm³ with the mean of 216.8 cm³. Majority of the abscesses were predominantly hypoechoic (70.6%) and well-defined in outline (58.8%). Majority of the liver abscesses did not show any internal vascular signal (91.2%). Ascites was noted only in one patient. All the patients received antibiotic therapy. Fifteen of 34 patients were treated with antibiotic therapy alone. Eighteen patients received antibiotic and underwent percutaneous transhepatic drainage, whereas one patient had percutaneous needle aspiration of the liver abscess. No open surgical drainage was observed in this studied population. From statistical analysis, three parameters had significant association with the different modes of treatment. These parameters include largest diameter of the abscess, volume of abscess and vascularity of the abscess. The diameter and volume of the abscess had significant relationship with the different modes of the treatment with p value of 0.007 and 0.016, respectively. The mean diameter of the abscess in those who were treated with antibiotic therapy alone

was 7.0 cm. In patients who underwent percutaneous transhepatic drainage the mean diameters was 9.0 cm. The mean volume of abscess in patients who received only antibiotic therapy was 140.5 cm³. In those who underwent percutaneous drainage/aspiration, the mean volume of the abscess was 277.1 cm³. Similarly vascularity of the abscess also had significant relationship with the different modes of treatment with p value of 0.041. No significant relationship found between number, site, echogenicity and wall outline of the abscess and presence of ascites with different modes of treatment. There no significant correlation between the sonographic parameters with the duration of the illness at the time of sonography.

Conclusion : Ultrasound plays an important role for the diagnosis and management of the liver abscess. It offers high sensitivity and specificity and should be used as first line imaging modality in patients suspected liver abscess. Three sonographic parameters had showed significant association with the patients outcome either treated conservatively with antibiotic alone or underwent percutaneous transhepatic abscess drainage. These parameters include diameter of the abscess, volume of abscess and vascularity of the abscess. There is an increased in percentage of patients who underwent percutaneous transhepatic abscess drainage (53%) as compared to previous liver abscess study in HUSM in which drainage was only performed in only 3.4% of studied population. However the duration of hospitalization for patients who were treated conservatively is shorter as compared to those who underwent drainage.

Assoc. Prof. Dr. Nurul Azman Ahmad Alias : (Supervisor)
Dr. Noreen Norfaraheen : (Co-Supervisor)

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A STUDY ON THE PREVALENCE OF DOMESTIC VIOLENCE AND ITS ASSOCIATED FACTORS AMONG PREGNANT WOMEN IN HOSPITAL UNIVERSITI SAINS MALAYSIA, KUBANG KERIAN, KELANTAN.

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Globally, domestic violence is emerging as a significant public health problem. Domestic violence in pregnancy is a double tragedy because it involves both the mother and the fetus. The objectives of this study were to determine the prevalence of domestic violence and its associated factors among pregnant women in HUSM. This was a cross sectional study conducted as face to face interviews with pregnant women aged 16 years and above, at 20 weeks gestation or more, in antenatal clinics and antenatal wards in HUSM. SPSS version 11.5 and Stata version 7 were used to analyzed the data. A total of 261 respondents agreed to participate in this study with a response rate of 93.5%. There was 9.6% of the respondents reported had experienced domestic violence in their adult life, and the prevalence of domestic violence during the current pregnancy was 7.7%. The commonest type of domestic violence reported was emotional violence, reported by 90% of the respondents. The other 10% were combination of emotional and physical abuse occurring concurrently. None reported ever been sexually abused. The significant association between socio demographic

factors with domestic violence found were the marital status and the presence of husbands negative behavior. The obstetrical factors that showed significant association were unplanned pregnancy and unwanted pregnancy. Majority of the women were comfortable discussing the issue of domestic violence. In fact, 75.5% of the respondents thought that health personnel should carry out domestic violence screening during antenatal check up. However the knowledge

regarding the support services and the Domestic Violence Act were still low among them. In conclusion, domestic violence among pregnant women is a common problem and requires a closer attention. Effort should be done to increase the awareness among the population and health personnel regarding the issue of domestic violence and services available.

Dr. Harmy Mohd Yusof : Supervisor
Puan Siti Hawa Ali : Co Supervisor

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A STUDY OF POLYPHARMACY AND ITS ASSOCIATED FACTORS AMONG ELDERLY PATIENTS IN KLINIK RAWATAN KELUARGA HOSPITAL UNIVERSITI SAINS MALAYSIA IN 2005

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Objectives: A study to determine the prevalence of polypharmacy, based on the influence of selection of different time windows and its associated factors.

Methodology: This was a cross sectional study involving 280 elderly patients, age 65 years and above, attending Klinik Rawatan Keluarga, Hospital Universiti Sains Malaysia from March till April 2005. Polypharmacy was based on usage of drugs, using two time window - current used of individual drugs as a random day (index date) and one month following the index date. The patients were interviewed using questionnaires on socio-demography, health care utilization, used of alternative treatment, used of over the counter treatment and the existence of doctor shopping behavior.

Results : A total of 238 patients (85%) completed the study. The prevalence of polypharmacy at index time was 45.8% and 55% after 1 month, (95% CI: 48.68, 61.41). Increasing age ($p<0.05$), female ($p<0.05$), used of over the counter medications ($p<0.05$), increased number of medical illness ($p<0.001$) and patients who commonly took treatment from university hospital ($p<0.001$) were significantly associated with polypharmacy. The types of medications that significantly associated with increase prevalence of polypharmacy were cardiovascular medications ($p<0.001$), central nervous system medications ($p<0.05$) and musculoskeletal medications ($p<0.001$).

Conclusions: The prevalence of polypharmacy among elderly patients in Klinik Rawatan Keluarga, HUSM was high. Polypharmacy in the elderly appears to be predicted by increasing age, female, use of over the counter medications, increased morbidity, used of cardiovascular drugs, central nervous system drugs, endocrine drugs and musculoskeletal drugs.

Dr. Azidah Abdul Kadir : (Supervisor)
Dr. Harmy Mohd Yusoff : (Co-Supervisor)

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A STUDY OF SELF-ESTEEM AMONG OUTPATIENT SCHIZOPHRENIA AT PSYCHIATRIC CLINICS HOSPITAL UNIVERSITY SCIENCE MALAYSIA AND HOSPITAL KOTA BHARU

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Introduction : Self-esteem is an important component of psychological health. Self-esteem of the mentally ill patients should be the target for change of any program aimed at holistic self-improvement. Many studies have been done on the objective psychosocial intervention in schizophrenia but studies on the subjective experience especially the self-esteem in schizophrenia were lacking in our local setting.

Objective : The study aims to determine the distribution of self-esteem, and the socio-demographic and clinical factors that are associated with the level of self-esteem in the schizophrenic patients.

Method : The study consisted of 2 phases. First, the development of a new self-esteem questionnaire (SSES) in a Malay version and followed by a cross-sectional study of self-esteem on a consecutive sample of 165 stable schizophrenia patients attending outpatient psychiatric clinics of HUSM and HKB from February 2004 to February 2005. Patients were diagnosed according to DSM-IV diagnostic criteria for schizophrenia. The following measures were used: SSES, BPRS, GAF, socio-demographic details, simple assessment on the acknowledgment of illness, perceived self-devaluation, social support and overall feeling of quality of life and health satisfaction by using the Q1 and Q2 of WHOQOL-BREF. The SSES provided the main data for this study and the overall score of SSES were used as dependent variables for data analysis.

Results : Using the SSES, only 15(9.1%) of the patient scored in the low self-esteem range, 84 (50.9%) patients scored in the moderate self-esteem range and 66 (40.0%) patients scored in the high self-esteem range. Under multiple linear regression analysis, the socio-demographic factors associated significantly with high level of self-esteem were being married and perceived received social support. Those who perceived self-devaluation was associated with lower self-esteem. Clinical factors associated with high level of self-esteem were those who denied having mental illness, perceived good overall health and quality of life, and those who were free from psychotic and depressive symptoms.

Conclusions : Majority of the schizophrenia had relatively good self-esteem. This should be interpreted cautiously as factors such as executive functioning and social comparison were not assessed in this study. High level of self-esteem in schizophrenia was associated with those who married, received good social support, denied having mental illness, denied being devalued by others, overall satisfied with life and health: and free from psychotic and depressive symptoms.

Assoc. Prof. Dr. Hasanah Che Ismail : Supervisor
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REVIEW OF COLONOSCOPY PRACTICE IN HOSPITAL UNIVERSITI SAINS MALAYSIA FROM 1999 TO 2002

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Colonoscopy has become the gold standard in the investigation of colorectal pathology. Colonoscopy with polypectomy has also reduced the incidence of colorectal cancer. It also contributed in early diagnosis of colorectal cancer, hence improved prognosis. Colorectal cancer is one of the commonest cancer in Malaysia. The resource for colonoscopy service is limited, therefore the yield of Colonoscopy and its efficacy

in colorectal cancer diagnosis need to be studied.

During the period of study from 1 January 1999 to 31 December 2002, there were 489 colonoscopy examinations performed on 448 patients. 76% of patients had good bowel preparation, 10% moderate and 11% poor. Good bowel preparation is associated with better completion rate of colonoscopy examination. 78.1% of patients had complete caecal intubation or passing the anastomotic line to small bowel. The commonest cause of incomplete caecal intubation is poor bowel preparation 26.2%, followed by obstructing or stenosing lesion (24.3%, n=26), redundancy or excessive looping (15.9%, n=17), patients not tolerating the procedure (4.7%, n= 5), acute colitis (5.6%, n=6) and bowel perforation (3.7%, n= 4) and instrument malfunction (0.9%, n=1). In 20 patients the cause was not mentioned (18.7%).

49.5% (242 patients) of patients have abnormal findings. Of the 242 cases with abnormal findings, nonspecific inflammation was the commonest-17.6% of all colonoscopy examinations. This is followed by intestinal polyp and colorectal cancer 7.2% of all colonoscopy examinations each. Inflammatory bowel disease made up 1.6 % (1.4% of them ulcerative colitis). One case of tuberculous colitis was found (0.2%). The rest were- benign ulcers 14 cases (2.9%), diverticular disease 12 cases (2.5%), haemorrhoids 29 cases (5.9%), worm infestation 21 cases (4.3%). There was one case with extraluminal infiltration of large bowel.

Clinical presentation or indications that were significantly associated with colorectal cancer were altered bowel habit (OR= 3.314 and 95%CI= 1.640, 6.695), per rectal bleeding(OR=2.849 and 95% CI = 1.423, 5.706), loss of appetite (OR=3.880 and 95% CI =1.856, 8.112), loss of weight (OR=4.395 and 95%CI= 2.159, 8.945), mass per abdomen (OR=5.387 and 95% CI= 2.577, 11.260), and rectal tumour (OR=8.240 and 95% CI= 2.288,29.673). Other clinical features or indication that were associated with colorectal cancer but has not achieved statistical significant were abdominal pain (OR= 1.234 and 95%CI=0.605, 2.518), constipation (OR=1.398 and 95% CI= 0.650, 3.007) and raised CEA level (OR=3.379 and 95% CI=0.689, 16.557).

Clinical features indicating colonoscopy that turned out to have less chance of really having colorectal cancer (protective effect) are the following signs and symptoms. These were diarrhoea (OR=0.896 and 95% CI=0.380, 2.114), abdominal distension or bloating sensation (OR=0.527 and 95% CI=0.069, 4.015), tender abdomen (OR=0.998 and 95% CI=0.292, 3.407), haemorrhoid (OR=0.645 and 95% CI=0.149, 2.790), unknown primary (OR=0.861 and 95% CI= 0.110, 6.714), anaemia (OR=0.773 and 95% CI=0.178, 3.365) and those undergone surveillance colonoscopy (OR=0.627 and 05% CI=0.145, 2.711). However, all these features or indications failed to achieved statistical significant in protecting the patient from having colorectal cancer, as the sample size is small in this group of patients.

The mean age of the group with colorectal carcinoma was 63.8 with a male to female ratio of 1.7: 1.0. The population in the age group 50 or more has 5 times higher risk that those below this age group. Of those with colorectal cancer 68.6% were Malays, 28.6% Chinese and Indian 2.9%. Comparing the proportion of colorectal cancer cases in this study to the ethnic distribution of Kelantan state population, Chinese has the highest incidence of colorectal cancer. The most common site for colorectal cancer is at the sigmoid and rectum i.e. 75% of cases. These sites can be easily assessed by sigmoidoscope.

The sensitivity of colonoscopy in colorectal cancer diagnosis in this study is 78.1% (95% CI= 59.6, 90.1). The specificity of colonoscopy is 94 % (95% CI=88.6, 97.1). The positive predictive value is 73.5 % (95% CI=55.3, 86.5) and negative predictive value was 95.3% (95% CI=90.2, 97.9). The complication rate in this study includes colonic perforation rate of 0.8% (4/489 colonoscopy examinations). Mortality rate was 0.4 % (2/489). There is one patient who had rectal bleeding after snare polypectomy giving rate of haemorrhage of 0.25%. One patient (0.2%) had postpolypectomy coagulation syndrome. Clinical features with high yield of colorectal cancer are altered bowel habits, bleeding per rectum associated with loss of appetite and loss of weight, abdominal mass and rectal tumour, these patients should be subjected to early colonoscopy examination In patients less than 40 years old

with abdominal pain and constipation, sigmoidoscopy

Dr. Syed Hassan Syed Abdul Aziz : Supervisor
Assoc. Prof. Dr.Abdul Hamid Mat Sain : Co-Supervisor

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CHRONIC SUBDURAL HEMATOMA AFTER BURRHOLE DRAINAGE : WILL IRRIGATION IMPROVE OUTCOME?

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Introduction : Several surgical procedures have been reported for the treatment of chronic subdural hematoma. Despite several modifications and techniques in the treatment of chronic subdural hematoma, burrhole craniostomy & drainage remains the mostly accepted & first line surgical options for non-refractory hematomas. Whether or not irrigation is required, is still of continuous debate. To determine whether or not irrigation plays an important role in the outcome of chronic subdural hematoma after burrhole craniostomy, we conducted a cross-sectional retrospective study on two surgical treatments: burrhole drainage without irrigation (drainage group) versus burrhole drainage with irrigation (irrigation group). By using the classification of chronic subdural hematoma according to the internal architecture on CT scan as described by H. Nakaguchi et al., we would like to determine whether there is any difference in the outcome between the two surgical methods (drainage group and irrigation group). The other - objectives of this study are to determine any association of clinical parameters in each of the drainage and irrigation group & to identify clinical factors associated with clinical outcome.

Methods : 82 patients were treated with either burrhole craniostomy drainage (N=42) or burrhole craniostomy drainage with irrigation (N=40). Each of the two groups, the chronic subdural hematoma was then retrospectively classified into either Homogenous, Laminar, Trabecular and Separated type by means of CT scan. The outcome of the two surgical groups and each hematoma subtypes, were then determined by comparing the pre- and post-operative grade using the Markwalder Neurological grading system.

Findings : There was no statistical significant difference in the outcome between the irrigation group and the drainage group in the management of different types of chronic subdural hematomas. In both of the drainage & the irrigation group, clinical parameters such as the pre-operative Markwalder grades, GCS, hematoma thickness, associated midline shift & types of hematoma (p<0.05), seemed to have an association with the clinical outcome. However from the multivariate statistical analysis, factors that finally associated with clinical outcome were the pre-operative Markwalder grades (p=0.014) and the presence of post-operative hematoma recurrence (p=0.004).

Conclusion : There is no difference in the outcome between the drainage group and the irrigation group. Whichever method used; burrhole drainage with or without irrigation, the outcome of the different subtypes of chronic subdural hematoma is generally good & is associated with a low recurrence rate (12.2%). I We conclude that single burr hole drainage without irrigation is as safe and effective for chronic subdural hematoma as burr hole drainage with irrigation. Factors which associated with clinical outcome are pre-operative Markwalder grades & post-operative hematoma recurrence. The recurrence of chronic subdural hematoma seems to be independent of the surgical method used.

Prof. Jafri Malin Abdullah : Supervisor
Dr. Johari Siregar Adnan : Co-Supervisor

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AN EVALUATION OF DIGITAL PHOTOGRAPHY AND IMAGE ANALYSIS SOFTWARE FOR ASSESSMENT OF CORNEAL ULCER SIZE PROGRESSION

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Introduction : Infective keratitis is one of the ocular diseases which carries high ocular morbidity and even blindness. The incidence of infective keratitis has increase with the escalating use of contact lens especially among younger generation. Thus early detection, prompt treatment and good monitoring method are crucial to prevent blindness.

Objective : To evaluate the effectiveness of digital imaging and analysis software for the assessment of corneal ulcer size progression.

Methodology : A cross-sectional evaluation study with a non-randomized sampling was conducted involving of all the patients admitted for corneal ulcer in the Department of Ophthalmology, Hospital Universiti Sains Malaysia from January to December 2004. Twenty-three eligible patients were enrolled in this study and ulcer size was measured clinically and digitally once every two days. The photograph of the cornea was taken with a slit-lamp digital camera (Nikon D1X). The images were analyzed with *Scion Image®* software for the measurement epithelial defect dimension and size. The corneal ulcer measurements were compared between the two techniques. All patients underwent corneal scraping for gram stain and culture. Patients were treated with intensive broad spectrum topical antibiotics.

Result : The major risk factors for developing corneal ulcer were ocular trauma (52.2%) and contact lens wear (30.4%) and ocular pathology (8.7%). In this study, culture was positive in only 78.3% and the most common isolated bacteria was *Pseudomonas* spp. The interclass correlation coefficient (ICC) was statistically significant ($p < 0.001$) for vertical and horizontal measurements. Progression in any dimension was detected using digital and clinical assessment. Ulcer size area measurement is more sensitive in detection of ulcer progression ($p < 0.05$) compared to vertical or horizontal dimension measurement alone.

Conclusion : The digital photograph and analysis software has excellent agreement with clinical assessment. Digital measurement is better than clinical assessment in corneal ulcer progression. Area measurement using digital photography may be more sensitive in detecting ulcer progression in any single dimension.

Dr. Elias Hussin : (Supervisor)
Dr. Wan Hazabbah Wan Hitam : (Co-Supervisor)

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PREVALENCE OF OBSTRUCTIVE SLEEP APNOEA SYNDROME IN CHILDREN WITH ADENOTONSILLAR PATHOLOGY IN HSM – A PILOT STUDY

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Objective : The objectives were to study the prevalence of Obstructive Sleep Apnea Syndromes (OSAS) in children with adenotonsillar enlargement in Hospital Universiti Sains Malaysia (HUSM) and the association of adenoid and tonsillar pharyngeal ratio

with severity of OSAS in children at HUSM.

Methodology : This pilot study is a cross sectional study done from October 2003 to October 2004 in children age 1 to 17 years old in HUSM, Kubang Kerian. History of symptoms of Obstructive Sleep Apnea Syndrome (OSAS) were obtained from the parents and all subjects are subjected to a Ear, Nose and Throat examination , lateral soft tissue x-ray of nasopharynx and oropharynx and all are subjected to a Polysomnography. The Adenoids size was determine by measuring the adenoid to nasopharyngeal ratio and the tonsil size was determined by the Tonsillar to Pharyngeal ratio (T-P ratio) on the lateral soft tissue x-ray. The severity of OSAS was assessed using Apnea Index (AI) in the overnight Polysomnography recording.

Results : A total of 12 males and 4 females with median age is 7 years were involved in this study. The commonest symptoms are snoring, restless sleep and mouth breathing during sleep and during daytime. Tonsillar enlargement present in 87.5% of the subjects. The prevalence of OSAS among patients with Adenotonsillar pathology in this study is 93.8%. The median for TP ratio was 0.83. The median Adenoid ratio was 0.58 and the median for Apnea Index was 12.05. The clinical tonsil size did not associated with AI. The TP ratio and Adenoid ratio also did not correlate with AI.

Conclusion : The prevalence of OSAS among children with Adenotonsillar pathology is high. The commonest symptoms of OSAS were snoring, restless sleep, mouth breathing during sleep and daytime mouth breather. Symptoms of OSAS should be asked regularly by the health provider to those children with Adenotonsillar pathology because certain symptoms of OSAS are under detected by the parents. It is important to recognized and treat the disease early.

Dr. Shamim Ahmed Khan : Supervisor
Assoc. Prof. Dr. Din Suhaimi Sidek : Co-Supervisor

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A STUDY ON ASSOCIATION BETWEEN TUMOUR VOLUME AND THE OCCURRENCE OF PULMONARY METASTASIS IN MALIGNANT BONE AND SOFT TISSUE TUMOURS OF THE EXTREMITIES AT PRESENTATION

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Since the development of MRI imaging technique in delineating tumour margins, it is now possible to measure the actual tumour volume (ATV) with better accuracy. Tumour volume is one of the factors that has been previously studied to predict the patients' survival. However studies looking for tumour volume as a predictor to the occurrence of lung metastasis are still scanty. Tumour volume calculation by equation has been shown to be a reliable and simple method for estimation of tumor size. Metastatic disease is the major cause of death in patients with extremity bone and soft tissue sarcomas, therefore an indicator able to predict the occurrence of pulmonary metastasis is worth searching for.

This is a cross sectional study to look for any association between tumour volume and the occurrence of pulmonary metastasis in bone and soft tissue sarcomas of the extremities at presentation. All data were acquired from patients' medical records, radiological records and histopathological records in Hospital Universiti Sains Malaysia (HUSM), Kubang Kerian, Kelantan. A total number of one hundred and sixty six case studies fulfilled the inclusion and exclusion criteria. These cases were selected from January 1999 till September 2004. In this study, there was a difference in tumour volume between metastatic and nonmetastatic groups observed in bone sarcoma as a whole and in

osteosarcoma. There was no difference in tumour volume found in soft tissue sarcoma. There was an increase in the occurrence of lung metastasis in osteosarcoma once tumour volume exceeded 371 cm³. The increase in the range of tumour volume was associated with an increasing rate of pulmonary metastasis.

The study concluded that there was an association between tumour volume and the occurrence of pulmonary metastasis. This was noted particularly in osteosarcoma.

Prof. Zulmi Wan : (Supervisor)
Dr. Wan Faisham Nu'man Wan Ismail : (Co-Supervisor)
Dr. Nur Azman Mat Zain : (Co-Supervisor)

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STUDY OF RADIATION EFFECTS ON THE INTIMA-MEDIA THICKNESS OF COMMON CAROTID ARTERY IN POST RADIOTHERAPY PATIENTS WITH HEAD AND NECK MALIGNANCY

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Introduction : Post-radiation large vessel injury has not received as much attention as microvascular irradiation injury. However, it is increasingly recognized that large vessel injury is a major sequela of neck irradiation (Moritz et al., 1990). Radiation exposure to the carotid artery and other large arteries in the body results in changes similar to those occurring with age-related atherosclerosis. Common carotid intima-media thickness has been shown to be useful in the evaluation and monitoring of atherosclerotic burden in patients at risk of cardiovascular and cerebrovascular events (Chambless et al, 2000).

Few studies (Muzaffar et al, 2000, So et al, 2002) have shown that intima-media thickness is increased in subjects after radiotherapy. However, in all of these studies the irradiated subjects had other major traditional risk factors as well, such as hypertension or diabetes. In this study, irradiated subjects with other major traditional risk factors of atherosclerosis such as hypertension, diabetes mellitus, history of previous CVA and connective tissue disorder were excluded.

Objective : Aim of this study was to demonstrate if radiotherapy to the carotid area used for treatment of head and neck malignancy has any effect on intima-media thickness of the common carotid artery in comparison to the fully matched non-irradiated group.

Material and Method : A validation study was performed prior to the main study in which the researcher's measurements of intima-media thickness were shown to be reproducible and accurate. Twenty six subjects were recruited for this study. Thirteen subjects with head and neck malignancy who had undergone radiotherapy to the neck region with the dose range of 46 - 70 Gy at least one year before with no history of diabetes mellitus, hypertension, previous CVA or connective tissue disorder and thirteen age, sex and race matched non-irradiated subjects with no history of diabetes mellitus, hypertension, previous CVA or connective tissue disorder. Using high resolution B-mode ultrasound, the intima-media thickness of both common carotid arteries of every subject was measured in longitudinal plane 1cm from the carotid bulb by the examiner using same technique and equipment. The results of these two groups were then compared using statistical analysis software.

Results : The irradiated subjects were found to have significantly larger intima-media thickness measurements (mean intima-media thickness of 0.74 mm) compared to the fully matched non-irradiated subjects (mean intima-media thickness of 0.46 mm). The difference was statistically significant (p<0.001).

Conclusion : This study proves that there is a measurable, statistically

significant (p<0.001) increase in intima-media thickness of the carotid artery after radiotherapy for head and neck malignancy in comparison with the non-irradiated matched controls. This knowledge is important for risk-benefit assessment of prophylactic or therapeutic neck irradiation. Increased awareness of this complication can provide an opportunity to intervene and prevent future cerebrovascular accidents in majority of such patients. However due to the limited number of patients, further studies including larger number of patients may be needed to improved our understanding of radiation effect on carotid arteries.

Assoc. Prof. Dr. Nurul Azman Ahmad Alias : Supervisor
Dr. Abdul Rahman Mohd Arif : Co-Supervisor
Assoc. Prof. Dr. Biswa Mohan Biswal : Co-Supervisor

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THE PROFILE OF URINARY TH-1 AND TH-2 CYTOKINES IN PATIENTS WITH LUPUS NERPHRITIS.

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Introduction : Systemic lupus erythematosus (SLE), considered as the prototype of human systemic autoimmune disease, is a chronic life-long disease. It occur secondary to a dysregulated immune system, which, via various cytokine productions, leads to the production of pathogenic autoantibodies and immune complex deposition in multiple organs. Renal involvement, or lupus nephritis, can be one of the most serious complications seen in SLE. Th cells (CD4 cell) can be divided into few subsets, whose action is mediated by cytokine production. Abnormality in The cell activity, mainly Th1 and Th2, is postulated to play an essential role in the pathogenesis of LN.

Objective : The study was conducted to determine the level of four urinary cytokines, IL-2 and IFN- γ representing Th 1; and IL-6 and IL-13 representing Th2, in SLE patients and healthy control. The study also wants to compare the level of the 4 cytokines with the activity of LN. In addition, this study also wants to assess the association between degree of proteinuria and the 4 urinary cytokines level in active LN.

Methodology : In a cross-sectional study, 80 SLE patients attending HUSM and HKB were selected and they were divided active and inactive LN, plus non-renal SLE. Twenty eight controls were included in the study. Urine cytokine levels for each group, plus control, were function, amount of 24-hour urine protein, WHO class of LN for those with renal biopsy and treatment record.

Results : The majority of the patients were Malays (91%) and female (85%) in gender, with mean age of 31.2 years. Proteinuria was highest in the active LN group (2.95 +/- 2.8gm/day) compared to 0.2 +/- 0.2 gm/day in inactive LN and 0.1 +/- 0.1 gm/day in non renal SLE group. Calculated creatinine clearance was comparable among the 3 SLE groups. Marginal difference in detectable IL-2 level was found in the different groups, although still highest in active LN (median value in active LN 13.3 pg/ml, inactive LN 11.6pg/ml, non-renal SLE 11.9pg/ml, control 10.2pg/ml). IL-6 level was highest in active LN (median value active LN 10.5pg/ml, inactive LN and non-renal SLE 0pg/ml, control 1.0pg/ml). However, the result for IFN- γ was the opposite of previous results, being slightly higher in the control group instead of the SLE groups (median value 0pg/ml in active LN, inactive LN, non-renal SLE and 1.3pg/ml in control group). As for IL-13, median values for all groups were similarly low (median value in active LN 0.3 pg/ml, inactive LN and non-renal SLE 0.7 pg/ml, control 1.2 pg/ml). Comparison between groups revealed an association between the activity of LN and urinary levels of IL-6 and IL-2 (Active LN compared to inactive LN: for IL-6, p= 0.001 ; for IL-2, p=0.003. Active LN

compared to control: for IL-6, $p=0.001$; for IL-2, $p=0.001$. P is significant if <0.008) However, the present study showed significant but opposite findings for IFN- γ with higher level in control when compared to both active and inactive groups ($p=0.001$ for both comparison). The result for IL-13 was not significant for all group comparison. The study also did not find statistically significant association between degree of proteinuria with the 4 urinary cytokine levels in active LN group.

Conclusion : Cytokines from both Th subsets were found to be significantly elevated in the active LN group ie IL-6 from Th2 subset, IL-2 from This subset. This indicates the importance of both cytokines in the pathogenesis of LN and may provide another method in monitoring disease progression and response to treatment in LN.

Assoc. Prof. Dr. Kamaliah Daud : Supervisor
Dr. Sukeri Mohamed : Co-Supervisor

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OUTCOMES OF VENTRICULAR SEPTAL DEFECTS IN CHILDREN RECEIVING TREATMENT IN HUSM FROM 1996 TO 2003 AND FACTORS ASSOCIATED WITH PATIENTS SURVIVAL

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Introduction : Ventricular septal defect is the commonest congenital heart disease contributing about 20-30 % of all congenital heart diseases . It's incidence is estimated to be about 1.5 - 3.5 per 1000 live births in full term infants .There are many studies on the natural outcomes of VSDs conducted overseas but there had been no studies on the outcomes of VSDs in our Malaysian community. Local data will prove useful in understanding its prognosis and stimulate greater research.

Objectives : To study the outcomes of VSD in children receiving treatment in HUSM and prognostic factors associated with the survival of patients with VSDs.

Methodology : All cases of VSDs admitted to HUSM from 1996 to 2003 were reviewed. Inclusion criteria were Isolated VSD and at least 2 echocardiograms recordings done. Exclusion criteria were cyanotic heart disease with VSDs and only 1 echocardiogram finding

Results : Over a period of 7 years(1996-2003), 351 cases of VSD were diagnosed at HUSM and the 7-year period prevalence was 1.4%. Mean follow up was 4.0 -I-/- 3.6 years and a median of 3 years. VSDs were perimembranous in 67.8%, outlet in 21.9%, muscular in 8.5% and inlet in 1.7%. Thirty seven out of 238 (15.5%) perimembranous and 12 out of 30 (40 %) muscular VSDs closed spontaneously ($p = 0.013$). Aneurysmal transformation was detected in 90 (25.6%), AVP in 17 (4.8%) and AR in 19 (5.4%). Aortic regurgitation was higher in outlet (55%) than perimembranous (45%) VSD's, ($p =0.758$). Univariate Cox regression of survival of patients with VSDs revealed that 3 factors had prognostic significance namely sepsis. Down's syndrome and large VSDs. With multivariate Cox proportional hazard model only sepsis was found to be significant.

Conclusion : Perimembranous VSDs are the commonest subtypes of VSDs compared to other subtype Muscular VSDs in general have better prognosis. The incidence of outlet VSDs is high in our population and therefore careful observations and regular follow up are important because this type of VSD is highly associated with AVP and AR.

Dr. Abdul Rahim Wong Adullah : (Supervisor)
Dr. Wan Pauzi Wan Ibrahim : (Co-Supervisor)

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A PILOT STUDY OF THE ROLE OF DOPPLER SONOGRAPHY IN PREDICTING BENIGN OR MALIGNANT TUMOURS OF THE THYROID

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Introduction : Thyroid tumours are the most common endocrine neoplasm. Worldwide, the prevalence of thyroid nodules is 4-12% of the populations. Majority of them are benign and less than 5% are malignant. Previously, the sonographic role in evaluation of thyroid nodules does only rely on B-mode imaging (2- dimensional real time imaging). With the advance of sonography and the emergence of Doppler sonography, it has further increased the amount of information that can be obtained during an ultrasound examination of the thyroid nodules as it evaluates the presence of vascularity, its distribution and estimates of the intravascular resistance.

Methods and Materials : This study was conducted prospectively from April 2003 till January 2005 for a total of 21 months. Type of sampling was cumulative sampling and data from a total of 50 patients were collected. All the patients were from Hospital Universiti Sains Malaysia, Kubang Kerian Kelantan. All the patients had undergone ultrasound examination, followed by FNAC (Fine Needle Aspiration Cytology) or operation (Histopathological Examination) to confirm the diagnosis.

Results : No single pattern on Color Flow Doppler (CFD) have shown a significant specific pattern to differentiate between benign and malignant thyroid nodules. Although between all the patterns of CFD, the intranodular vascularity is the most common pattern seen in malignancy as compared to the others patterns. However all the patterns gave high negative predictive value. On the other hand, the pulsed Doppler has given a significant high values of resistive index(RI) and pulsatility index(PI) in malignant thyroid tumours as compared to benign thyroid tumours.

Conclusion : Color flow sonography alone is unable to give a good description and differentiation between benign and malignant thyroid tumours. Pulsed Doppler (PD) sonography has given a significant value for benign and malignant thyroid tumour. With combination of CFD and PD findings, the accuracy of sonography in predicting benign and malignant thyroid nodules has been improved.

Dr. Latifah Mohd Basheer : (Supervisor)
Assoc. Prof. Dr. Shahid Hassan : (Co-Supervisor)
Dr. Ahmad Zahari Zakaria : (Co-Supervisor)

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A STUDY TO EVALUATE THE EFFECTIVENESS OF INTRATHECAL FENTANYL IN SUBARACHNOID BLOCK OF HEAVY BUPIVACAINE FOR CAESAREAN SECTION DURING POST-OPERATIVE PERIOD

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Introduction : The use of neuraxial opioids has gained an increasingly popularity among the anesthetist over the last few years; they may augment the analgesia produced by local anesthetic through direct binding with the specific spinal receptors. Fentanyl, a Upophilic

opioid has rapid onset of action, it does not tend to migrate intrathecally to the respiratory centre in the brain in sufficient concentration to cause delayed respiratory depression.

Objectives : Seventy healthy parturients of ASA grade 1-2 scheduled for an elective caesarean section was randomly allocated to receive either 2 ml of 0.5 % hyperbaric bupivacaine mixed with 0.5 ml of sterile normal saline (group 1, n = 75) or receiving 2 ml of 0.5 % of hyperbaric bupivacaine mixed with 0.5 ml (25 microgram) of fentanyl (group 2, n = 35) for the subarachnoid block.

Materials & Methods : Intraoperatively, hemodynamic parameters, onset and regression of motor and sensory block, side-effects of neuraxial opioid and postoperative morphine requirement was observed for the first 24 hours. Morphine requirement was observed at 8-hour interval for the first 24-hour postoperative period.

Results : Hemodynamic parameters and onset and intensity of motor and sensory block was not significantly different in both groups. As expected, the marcain-fentanyl group has a longer duration of sensory block (135.00 ± 33.80 minutes) in comparison to the marcain-saline group (100.60 ± 22.92 minutes). Unexpectedly, the use of 25 microgram of intrathecal fentanyl was significantly prolonged the duration of motor block (136.89 ± 33.87 minutes as compared to 115.34 ± 20.19 minutes in the marcain-saline group). The capability of intrathecal fentanyl in producing acute tolerance to intravenous morphine was shown in this study with the significant increase in intravenous morphine requirement in the marcain-fentanyl group (7.69 ± 4.45 milligram of morphine as compared to 4.91 ± 4.37 milligram of intravenous morphine in marcain-saline group) especially at the second 8-hour interval of 24-hour early postoperative period. In general intrathecal fentanyl did not improve the postoperative analgesia for parturients after caesarean delivery. Hence, supplementation of intrathecal fentanyl in subarachnoid block of hyperbaric bupivacaine did not improve significantly the postoperative analgesia for the first 24-hour period after caesarean section.

Conclusions : Supplementation of intrathecal fentanyl in subarachnoid block of heavy bupivacaine dose improve the hemodynamic stability during the operative period but it is not a good choice in improving post-operative analgesia for the parturients after the caesarean section.

Assoc. Prof. Dr. Nik Abdullah Nik Mohamad : (Supervisor)
Dr. Mahamarowi Omar : (Co-Supervisor)

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EFFECT OF DAILY VERSUS WEEKLY IRON SUPPLEMENTS IN PREGNANT WOMEN

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Introduction : Iron-deficiency anemia is an important nutritional problem in developing countries. Despite large-scale programs, the prevalence of anemia has not decreased. The main factors are due to inefficient health services and low compliance. Compliance is influenced by the undesirable side effects of the ingested iron, and possibly also to the frequency of supplement ingestion. Weekly Iron Supplementation is based on "Mucosal block theory". Studies in rats showed that iron supplements every third day is as effective in improving iron status as daily supplementation. It is suggested that saturation of iron binding protein, apoferritin, in the mucosal cell is the rate-limiting step. Mucosal turn over times is 3 days in rats & 5-6 days in human, which is the basis for weekly iron supplementation.

Objectives : To compare the effect of weekly versus daily iron supplementation in pregnant women.

Material & Method : This prospective study was carried out at Obstetrics and Gynaecology clinic HUSM from March 2004 until August 2004. All women attending the clinic and fit the criteria were included in the study. Total of 80 patients were randomly allocated into the two treatment groups. Period of study were eight to twelve weeks. The daily group (Group two) received 200 mg ferrous fumarate (64 mg elemental iron) and 5 mg Folic acid to be ingested daily. The weekly group (Group one) received similar tablets but were instructed to take two tablets (400 mg ferrous fumarate = 128 mg elemental iron) once a week, one tablet to be taken on Friday morning and evening. Number of medication prescribed and consumed was recorded at each antenatal visits and subject also were asked to tick in a card given, each time medication is ingested. To evaluate the effect on both groups, three blood samples were taken from each subject and sent for Haemoglobin and serum ferritin estimation at booking and during subsequent two visits which was 4-6 weeks apart. Haemoglobin and serum ferritin estimation were carried out using automation technique at HUSM laboratory.

Results : There was no significant difference in age, education, parity, gestational age at first and third visit, haemoglobin level at first and third visit and serum ferritin level at first visit between weekly group and daily group (p value > 0.05). We conclude that both groups have similar mean haemoglobin and serum ferritin level at the beginning of the study. However there was significant difference in serum ferritin at third visit (p value < 0.05). Serum ferritin level was significantly higher at the end of the study in the weekly group as compared to the daily group (32.4 µg/L vs. 21.1 µg/L). There was no significant difference between group 1 and group 2 were observed in term of income (Chi-square value = 1.668, p = 0.197) and education (Chi-square value = 2.273, p = 0.132). However, a significant difference between group 1 and group 2 in term of compliance were noted (Chi-square value = 43.183, p < 0.001).

Conclusions : We conclude that supplementation of pregnant women once per week with 128 mg of elemental iron (corresponding to 400 mg of ferrous fumarate) and 0.5 mg folic acid was as effective as daily supplementation with 60 mg of elemental iron (corresponding to 200 mg of ferrous fumarate) and 0.5 mg folic acid in terms of haemoglobin response under conditions resembling routine antenatal care. A higher level of serum ferritin is seen in those given weekly supplement compared to with daily supplementation.

Dr. Nik Hazlina bt Nik Hussain : (Supervisor)
Dr. Rosline Hassan : (Co-Supervisor)

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A STUDY OF EPIDURAL MORPHINE WITH RECTAL DICLOFENAC IN POST CAESAREAN PATIENTS

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Introduction : The purpose of this study is to compare, the efficacy of a multi-modal analgesic regimen of an epidural morphine and rectal diclofenac for postcaesarean analgesia for quality of analgesia and relation to the side effects of pruritus, nausea and vomiting.

Materials & Methods : Thirty ASA I-II term, parturients undergoing elective caesarean delivery under epidural anaesthesia were enrolled and randomized to receive multi-modal postoperative pain treatment with a single dose of epidural morphine 3 mg and a single dose of rectal diclofenac 100 mg after delivery (Epidural morphine group, n = 15) or a single dose rectal diclofenac 100 mg (Control group, n = 15). A patient-controlled analgesia (PCA) device was used to provide free access to additional intravenous morphine. PCA morphine use, pain

score and side-effects score were recorded at 4, 8, 12, 16, 20 and 24 hour postoperation. The incidence of side-effects and the need for treatment interventions were recorded for 24 hours.

Results : There were no significant differences in patients' characteristic data. The mean to first PCA morphine analgesia in the epidural morphine group was almost six time longer than those in the control group (17.90 ± 7.84 hours vs 2.88 ± 1.70 hours). The median of cumulative 24-hour PCA morphine requirement were lower in the epidural morphine group (0.0 ± 2.0 mg vs 21.0 ± 15.0 mg). The pain scores were significantly better in the epidural group during the first 16 hour observation, $P < 0.05$. The side-effects scores of pruritus, nausea and vomiting were higher in the epidural group but the differences were not significant, $P > 0.05$. The incidence of side-effects and the treatment required were higher in the epidural group but the differences were not significant, $P > 0.05$.

Conclusion : Multi-modal pain therapy resulted in improved postoperative analgesia during the first 24 hour after caesarean delivery. The severity and incidence of side-effects of pruritus, nausea or vomiting and the incidence of treatment required for side-effects were higher in the multi-modal therapy group but the differences were not significant

Dr. Wan Aasim bin Wan Adnan : (Supervisor)
Dr. Aisai Abdul Rahman : (Co-Supervisor)

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UTERINE ARTERY EMBOLIZATION FOR THE TREATMENT OF SYMPTOMATIC FIBROIDS

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Introduction : Uterine Artery Embolization (UAE) became available as a service procedure in Hospital University Sains Malaysia (HUSM) in March 04. The first 8 cases performed form the basis of this study.

Objective : The objectives of this investigation were to assess the place for uterine artery embolization [UAE] in the HUSM as an alternative to hysterectomy in the treatment of symptomatic fibroids, assess the fibroid response in terms of immediate post operative symptoms and the final fibroid volume reduction achieved and to assess ovarian response to the effects of uterine artery embolization, determine the early complication rate, determine the acceptability of UAE, as a new procedure to the HUSM and the Kelantan community.

Patients and Methods : This is a cross-sectional study conducted in Department of Obstetrics and Gynaecology in collaboration with the Department of Radiology, Hospital USM from March to October 2004. Patients with symptomatic fibroids, who had completed childbearing were recruited after full counseling. Where indicated, cervical smear and endometrial sampling were carried out to exclude a pre malignant or malignant lesion. Pre procedure Ultrasound and MRI were also performed to assess the fibroid and uterine size. UAE was carried out by the radiologist under a combined spinal and epidural regional analgesia. Post operatively the patients were admitted from three to seven days for observation and management of possible complications and then followed up in both the radiology and gynaecology clinics. MRI was repeated at three month post procedure to determine fibroid size and ovarian function was assessed from the serum FSH/LH levels. Throughout - pre, intra and post operatively to a six month follow up, the investigator, Dr Hakim, was closely involved with patient care.

Results : Eight patients were recruited with a mean age group of 44 years and followed up for a mean of five months. The results showed an 85.7% improvement in menorrhagia. The mean fibroid volume

reduction was 48.1 %, although the mean uterine volume reduction was only 10%, 66.7 % reported an improvement in menorrhagia and each of the two patients with bulky symptoms reported improvement. One patient of the 8 (12.5%) had to undergo TAH due to persistent menorrhagia where embolization had been unsuccessful. One patient was found to be pregnant during the follow up period. She had conceived a few days prior to UAE. Two patients had menopausal levels of FSH (74 and 99.4 u/1) post UAE, one of whom also had vasomotor symptoms and amenorrhoea. The other patient, who had had hysterectomy had no menopausal symptoms. The post embolization syndrome characterized by pelvic pain, increase in temperature and increase in white blood cell count was noted in 37% of the patients. There were otherwise no major complications to date.

Conclusion : Although the sample size was necessarily small, as this is a new service at the HUSM, most of the findings in general are in keeping with those of previous studies carried out in other centers around the world. With proper selection of the patients, counseling and informed consent, uterine fibroid embolization is a good alternative therapy for patients with symptomatic fibroids who have completed childbearing. The preliminary results suggest that there is a definite place for UAE in the management of symptomatic fibroids. The procedure was readily acceptable to the patients and would appear to be appropriate as a service to the women of Kelantan with uterine fibroids and symptoms who otherwise would have had TAH or myomectomy. To date the results are satisfactory, the complication rates are low, and the procedure costs less than surgery. This procedure can be carried out safely here in HUSM by the department of Radiology in collaboration with Department of Obstetric and Gynaecology. It is hoped that UAE will become an established procedure at HUSM to benefit the people of Kelantan and East Coast of Malaysia.

Dr. Abdul Rahman Abdullah : (Supervisor)
Dr. Mohamed Shafie Abdullah : (Co-Supervisor)

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A CROSS-SECTIONAL STUDY ON THE PREVALENCE AND ASSOCIATED FACTORS OF HELICOBACTER PYLORI INFECTION IN RELATION TO PEPTIC ULCER DISEASE

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Introduction : *Helicobacter pylori* (*H. pylori*), a bacteria consistently found in the gastric mucosa biopsy of patients suffering dyspeptic symptoms and subsequent investigations by endoscopic biopsy confirmed its presence (1). *H. pylori* was first discovered by Warren and Marshall in Australia (2) in 1982. The discovery was considered a landmark (1) because it changed the way the medical fraternity viewed and treated peptic ulcer disease particularly since *H. pylori* was subsequently isolated in almost all gastric mucosa biopsies in patients suffering from peptic ulcer disease (3). Subsequent studies confirmed *H. pylori* as the main contributing factor in the development of peptic ulcer disease (8). *H. pylori* infection is not uncommon in a developing country like Malaysia (6). *H. pylori* infection prevalence among various ethnic communities in Malaysia are well known with variation to the prevalence of infection depending on the ethnicity and geographical location of the affected communities, a high prevalence rate is seen in the Indian and Chinese community but a consistently low prevalence is seen among ethnic Malays (7). Recently there has been a study regarding the prevalence of *H. pylori* infection among the indigenous Orang Asli population in Peninsular Malaysia, which showed a lower prevalence compared to the ethnic Malay community (8).

Objective : The objective of this study was to determine the prevalence of *H. pylori* infection among patients who have been diagnosed to have peptic ulcer disease in Hospital Taiping and its associated factors.

Patients and Methods : A cross sectional study was conducted in the Department of Surgery in Hospital Taiping to determine the prevalence of *H. pylori* infection in peptic ulcer disease in Hospital Taiping between 1st January 2001 to 31st December 2002. The study population was calculated and amounted to a total sample size of 323 subjects. Total subjects that were included was 416. During this 24 months, consecutive patients who had undergone oesophagogastroduodenos-copy (OGDS) and diagnosed with peptic ulcer disease at Hospital Taiping, Department of Surgery, were considered for inclusion into this study. In all these patients , OGDS was done as a diagnostic workup of symptoms such as dyspepsia and epigastric pain. A peptic ulcer was considered to be present when a duodenal or gastric ulcer, erosive gastritis or duodenitis was detected endoscopically. Case notes of patients were retrieved from the Medical Records Office and their demographics, diagnosis, *H. pylori* status, medication history and other relevant clinical data were recorded. The *H. pylori* status was assessed by using the "Rapid Urease Test" or also known as "CLO test".

Inclusion criteria : Patients who had been diagnosed to have peptic ulcer disease after having had undergone endoscopic examination. In all these patients, OGDS was done as a diagnostic workup of symptoms such as dyspepsia and epigastric pain .

Exclusion criteria : The patients who were pregnant and breast-feeding women, were anaemic, active bleeding, had clinical presentation of perforated peptic ulcer, had severe vomiting, had previous gastric surgery, had history of peptic ulcer disease, had carcinoma of stomach, had history of recent use of antibiotics and proton pump inhibitors and who had history of renal or liver disease were excluded from the study.

Results : A total number of 416 patients were included in this study and it was shown that 207 patients were infected with *H. Pylori*. Out of these 151 patients (51.9%) were males and 56 patients (44.8%) were females. A total of 142 patients (73.6%) with *K pylori* infection were smokers and 71 patients (39.7 %) used NSAIDs . Among those patients with *H. Pylori* infection, it was found that 66 patients (47.8%) were having gastric ulcer, 102 patients (50.2 %) were having duodenal ulcer and 39 patients (52.0 %) were having both gastric and duodenal ulcers. Amongst the patients who were tested negative towards *H. Pylori*, 140 of them (48.1 %) were males and 69 of them (55.2 %) were females. Among these patients who were tested negative to *H. Pylori*, 51 subjects (26.4%) were smokers and 108 subjects (60.3 %) were NSAID users. Among these patients who have been diagnosed to have peptic ulcer disease but not tested positive to *H. Pylori* , 72 patients (52.2%) were having gastric ulcer , 101 patients (49.8%) were having duodenal ulcer and 36 patients (48.0 %) were having both gastric and duodenal ulcers .

Conclusion : The prevalence of *H. Pylori* infection among the patients who were diagnosed to have peptic ulcer disease in Hospital Taiping was 29.6 % among the Malay patients, 57.5 % among the Chinese patients, 85.2 % among the Indian patients and 88.9% among the patients who were under the category of "Others". It would be interesting to know if other unknown environmental factors protect or expose these patients to *H. Pylori* infection and whether other genetic predisposed factors are operating. These issues may be the basis for further observational studies later on.

Dr. Harjinder Singh : (Supervisor)
Dr. Myint Tun : (Co-Supervisor)

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THE ASSOCIATION OF SHIFT WORK AND CORONARY HEART DISEASE RISK FACTORS AMONG MALE FACTORY WORKERS IN KOTA

BHARU, KELANTAN

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Introduction : Modern society is changing quite rapidly in terms of economic, social and human behaviour. Consequently, various types of work schedules have been applied by organizations and companies. Working hours are extended to evenings and nights, as well as on weekends. Shift work is one of the work hour systems in which a relay of employees extends the period of production beyond the conventional 8-hour working day. It potentially disrupts workers' normal biological or social diurnal rhythms or both. Shift work has been found to be associated with various health problems and there is a concern that shift workers are at higher risk to develop risk factors for coronary heart disease (CHD) such as hypertension, hypercholesterolaemia, obesity and diabetes mellitus (DM).

Objective : The study was undertaken to examine relationships between shift work and CHD risk factors, namely high blood pressure (BP), dyslipidaemia (either hypercholesterolaemia, hyper-low density lipoprotein-cholesterolaemia, hypo-high density lipoprotein-cholesterolaemia or hypertriglyceridaemia), high body mass index (BMI), diabetes mellitus and physical inactivity among male factory workers in a factory in Kota Bharu, Kelantan.

Methods : This study was a cross-sectional study of 76 shift and 72 day workers from a factory in Kota Bharu, Kelantan. Data was collected through a questionnaire on psychosocial and life-style factors. Anthropometric and blood pressure measurement,

fasting blood sugar and fasting lipid profiles analyses were obtained. Chi-square test was used to determine the significant difference in the prevalence for each CHD risk factors between the two worker groups. Multiple logistic regression was used to evaluate the odds ratio for each CHD risk factors associated with shift work.

Results : The prevalence of high BP, hypercholesterolaemia, hypertriglyceridaemia and body mass index (BMI) of equal to or more than 25 kg/m² were significantly higher among shift workers compared to day workers. There was no difference in the prevalence of diabetes mellitus, hypo-high-density lipoprotein-cholesterolaemia, hyper-high-density lipoprotein-cholesterolaemia and physical inactivity. When the shift workers were compared with the day workers, the adjusted odds ratio (OR) for high BP, BMI of equal to or more than 25 kg/m² and physical inactivity were 9.1 (95% CI 1.4-56.8), 2.9 (95% CI 1.3-6.1) and 7.7 (95% CI 2.1-27.5) respectively. There was neither association of shift work with dyslipidaemia, nor with diabetes mellitus.

Conclusion : There were positive association between shift work and high BP, BMI of equal to or more than 25 kg/m² and physical inactivity which denotes a higher risk of CHD risk factors among shift workers compared to day workers.

Dr. Tengku Mohd. Ariff Bin Raja Husin : (Supervisor)
Dr. Sohail Redza Choudhury (Co-Supervisor)
Dr. Than Winn : (Co-Supervisor)

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A COMPARISON FOR EASE OF INSERTION AND ADEQUACY OF VENTILATION USING THE LARYNGEAL TUBE BETWEEN SPONTANEOUSLY BREATHING PATIENTS AND PARALYZED PATIENTS

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Introduction : The laryngeal tube (VBM) has been proven to perform well in paralyzed mechanically ventilated patients but was found to be unsatisfactory in spontaneously breathing patients. We compared the use of the laryngeal tube (VBM) in spontaneously ventilating adult patient undergoing general anaesthesia with patients paralyzed with a neuromuscular blocking agent and given positive pressure ventilation.

Objective : Ease of insertion, the effectiveness of ventilation and incidence of airway complication when using the laryngeal tube for airway maintenance were evaluated between the two groups.

Patients and Methods : In a prospective, single blinded randomized trial, 80 ASA class I and II adult patients, aged 18 to 65 years, scheduled for elective surgery, were randomly allocated into two groups in which the laryngeal tube will be used for airway management. After a standardized induction of anaesthesia with fentanyl $1.5 \mu\text{g.kg}^{-1}$ and propofol 2 mg.kg^{-1} , a size 3 or 4 laryngeal tube (VBM) was inserted in 40 patients and the patients were allowed to breathe spontaneously throughout the surgery. In another 40 patients, the laryngeal tube was inserted after administration of atracurium 0.5 mg.kg^{-1} and confirmation of neuromuscular blockade. Patients were mechanically ventilated throughout the planned procedure. Anaesthesia was maintained with nitrous oxide, oxygen and isoflurane. The airway device was removed at the end of surgery after complete reversal of neuromuscular blockade and with the patients fully awake. The ease of insertion (easy: require one attempt; difficult: require 2 or 3 attempts; or failed), the rate of successful insertion and the incidence of airway complication such as bleeding, sore throat, dysphagia, nausea and vomiting were evaluated between the two groups. Episodes of airway manipulations and difficulty in maintaining a patent airway intraoperatively were also recorded.

Results : The laryngeal tube was placed successfully in 33 patients (82.5%) in the spontaneously breathing group and in 38 patients (95%) in the paralyzed group. In the spontaneously breathing group, the laryngeal tube was considered easy to insert in 32 patients, difficult in 1 patient, and it was easy in 35 patients, difficult in 3 patients in the paralyzed group. The ease of insertion and success rates of insertion between the two groups were not significantly different ($P=0.141$ and 0.154 respectively). Difficulty maintaining a patent airway intraoperatively (difficult in 8 out of 33 patients in the spontaneously breathing group; difficult in 2 out of 38 patients in the paralyzed group) was significantly higher ($p=0.037$) in the spontaneous group. There was no significant difference in the incidence and severity of the postoperative airway complications between the two groups.

Conclusion : We conclude that the laryngeal tube provide a satisfactory alternative for airway maintenance in anesthetized patients during positive pressure ventilation and during spontaneous ventilation.

**Assoc. Prof. Dr. Nik Abdullah NikMohamad : (Supervisor)
Dr. Rhendra Hardy Mohamad Zain : (Co-Supervisor)
Dr. Ghazaim Ghazali : (Co-Supervisor)**

**A PILOT STUDY OF PARAOXONASE ACTIVITY IN THE
HEALTHY POPULATION OF THREE MAJOR ETHNIC
GROUPS IN MALAYSIA**

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MMed (Chemical Pathology)*

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Introduction : Ischaemic heart disease (IHD) is one of the leading causes of mortality globally with varying risk across different ethnic groups. Recent evidence has suggested a role for paraoxonase, an high density lipoprotein (HDL)-associated enzyme in the prevention of atherosclerosis by inhibiting the oxidative modification of low density lipoprotein (LDL). Genetic polymorphism in paraoxonase 1 (PON1) gene (Arg192 and Gln192) with varying abilities to degrade oxidized LDL is being implicated as one of the risk factors for IHD. The distribution of PON1 polymorphic forms has been found to differ among the ethnic groups but conflicting results have been reported regarding their association with IHD risk. Indians, compared to other ethnic groups have been reported to carry a higher risk of IHD but the risk factors are still not well understood. In Malaysia, the existence of three separate ethnic groups with varying IHD incidence provides an ideal opportunity to carry out this study.

Objective : The purpose of this study were to find out the PON1 activities, the phenotypic polymorphism of PON1 and the level of lipid profiles among the three major ethnic groups in Malaysia and their association with varying IHD risk among them.

Methods : A prospective pilot study was carried out on a total number of 150 healthy volunteers who fulfilled the inclusion and exclusion criteria from September 2003 until July 2004. Fasting serum samples were analyzed for basal paraoxonase, NaCl stimulated paraoxonase, arylesterase and diazoxonase activities as well as for total cholesterol (TC), triglycerides (TG), HDL-Cholesterol (HDL-C), LDL-Cholesterol (LDL-C), TC:HDL-C and LDL:HDL-C ratio. The PON1 phenotype was assigned based on the ratio between the NaCl stimulated paraoxonase activity and the arylesterase activity. They were confirmed by their specificity towards the substrates paraoxon or diazoxon.

Results : The results revealed lower PON1 activities among Indians as compared to Malays and Chinese. There were no significant differences in the distribution of PON 1 phenotypic polymorphism as well as the level of lipid profiles among the three major ethnic groups in Malaysia. Except for the total cholesterol, no significant correlations were observed in the lipid profiles and PON1 activities among the different ethnic groups.

Conclusion : Our pilot study suggested that the varying risk in IHD among the three major ethnic groups in Malaysia cannot be explained by the level of lipid profiles and PON1 phenotypic polymorphism but a higher risk among Indians may be explained by their lower PON1 activities. Our observations are in agreement with other studies reporting an association between IHD risk and a low PON1 activity but not the polymorphism. A larger scale study is required to confirm our observation.

**Dr. K.N.S Sirajudeen : (Supervisor)
Prof. H. A Nadiger : (Co-Supervisor)**

**IMMUNOHISTOCHEMICAL STAIN; CARCINOEM-
BRYONIC ANTIGEN, VIMENTIN AND ESTROGEN
RECEPTOR IN THE DIAGNOSIS OF PRIMARY
ENDOMETRIAL AND ENDOCEVICAL
ADENOCARCINOMA**

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Introduction : In Malaysia cancer cervix is the second commonest cancer in women after breast cancer, whereas endometrial carcinoma is also among the common cancer in women. The frequency of occurrence for endocervical adenocarcinoma is in increasing trend. Primary endocervical adenocarcinoma (ECA) and primary endometrial

adenocarcinoma (EMC) show some overlapping in histologic features. Endometrioid variant of ECA is a major type of ECA while classical endometrioid variant of EMC is the commonest type of endometrial carcinoma. The histologic differentiation between ECA and EMC is a common diagnostic problem of clinical importance, because the treatments of these lesions are different.

Objectives : We investigated the possibility of distinguishing between primary ECA and EMC by using a panel of immunohistochemical stains, which included Carcinoembryonic antigen (CEA), vimentin and estrogen receptor (ER).

Patients and Methods : A total of 36 archived blocks each for ECA and EMC were obtained from Pathology Department Hospital University Sains Malaysia (HUSM) and Hospital Kota Bharu (HKB), Kelantan.

Results : Primary ECA cases fell into 4 categories, of which the mucinous variant being the commonest type (14 of 36), followed by endometrioid (12 of 36), villoglandular (9 of 36) and clear cell adenocarcinoma (1 of 36). The primary EMC consisted of with 33 endometrioid variant, followed by three cases of villoglandular adenocarcinoma. Immunohistochemical stain employing monoclonal mouse anti-human carcinoembryonic antigen antibody (DAKO Clone D-7), monoclonal mouse anti-vimentin antibody (DAKO Clone Vim 3B4) and monoclonal mouse anti-human estrogen receptor antibody (DAKO Clone IDS) was done. Envision System is used for immunohistochemical staining method. CEA was positive in 33 of 36 (91.7%). ECA mostly with diffuse cytoplasmic and membranous staining. Positivity with CEA was present in only 6 of 36 (16.7%) EMC, exhibiting focal membranous staining. Vimentin was positive in 32 of 36 (88.9 %) EMC but in only 1 of 36 (2.8%) ECA. There was diffuse positive nuclear staining for ER in 26 of 36 (88.9%) EMC. ER was negative in 35 of 36 (97.2%) ECA and only 1 case exhibited positivity to ER.

Conclusions : In summary, primary EMC was characterized by diffuse strong positive staining for vimentin and ER, and negative or weak focal positive staining for CEA. In contrast primary ECA was characterized by CEA positivity which most of the time was diffuse and negative for vimentin and ER. It is concluded that an antibody panel consisting of CEA, vimentin and ER are useful immunohistochemical markers in distinguishing between EMA and ECA.

Assoc. Prof. Mutum Samrendra Singh : (Supervisor)
Dr. Saleena Awang : (Co-Supervisor)

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COMPARATIVE STUDY BETWEEN PETHIDINE AND DICLOFENAC AS POST-OPERATIVE ANALGESIA AFTER CAESAREAN SECTION

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Introduction : The goal of post caesarean analgesia is to provide efficacious, safe analgesia in a manner which interferes minimally with maternal-infant interactions. Several techniques have been shown to be effective in providing analgesia for post caesarean section patient. Patient-controlled analgesia has been used for post operative pain relief in most western countries and it is extremely effective analgesic technique. However, it requires a special equipment such as infusion pump and patient is usually observed in post anaesthesia care unit. This is not practical in most of the set up, as there is lack of facility and manpower. Most of general hospitals in our country practice the use of

Intramuscular (IM) or subcutaneous (S/C) opioids as post operative analgesia. In certain centre, rectal diclofenac is the main drug used for post caesarean section analgesia.

Objective: The objective of the study was to compare the effectiveness of IM pethidine and diclofenac sodium suppository as post elective caesarean section analgesia.

Patients and Methods : This was a prospective study, carried out at post natal ward, Hospital Tengku Ampuan Afzan. Group A was given IM pethidine 75 milligram 6 hourly while group B was given diclofenac suppository 100 mg 12 hourly. The Visual analogue score (VAS) were evaluated at 6, 12 and 24 hours. Also, the additional analgesic requirement, side effects, maternal-infant bonding and satisfaction score were compared.

Results: A total of 100 patients were recruited. There were 48 patients for group A and 52 patients for group B. The patients' characteristics did not differ significantly between the two groups. VAS at 6, 12 and 24 hours were lower in group B (4.87, 3.13, 2.15) but was not statistically significant. There was a significant downward trend of pain relief over time, irrespective of the group. None of the patients receiving pethidine required additional analgesia, while seven patients receiving diclofenac sodium required additional analgesia and this was statistically significant (P<0.05). Maternal-infant bondings and satisfaction score were similar between groups, although more side effects were noted in patients receiving pethidine.

Conclusion : Diclofenac suppository, in combination with IM pethidine provides good analgesia after elective caesarean section under spinal anaesthesia and can be used to reduced the side effects of regularly administered IM pethidine.

Dr. Awang Nila : (Supervisor)
Prof. Madya Dr. Shukri : (Co-Supervisor)

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THE PRACTICE OF OTTAWA ANKLE RULES IN RADIOGRAPHS TAKEN FOR ACUTE ANKLE AND MIDFOOT INJURY IN ED HUSM

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Introduction : Ankle and foot injuries are common in every ED and it is a common practice to order radiographs for almost every patient. This will lead to a lot of unnecessary radiographs as less than 15% of patients have fracture. OAR is a world wide well-validated and well accepted CPG to assess these injuries in making the decision for the need of radiographs. The final aim would be reducing unnecessary radiographs. This is a study of 172 patients with 226 radiographs for ankle and foot injuries. The practice of OAR in making decision for radiographs was assessed retrospectively and all the radiographs were reviewed for any fracture.

Methods and materials : The aim of this study was to determine the prevalence of OAR practice in the patients with radiographs ordered for the ankle and midfoot injuries and the prevalence of fracture in groups which practicing and not practicing OAR. All patients who had radiographs taken after sustaining acute ankle and midfoot injuries were included in this 14-month study period. The patients' clinical records were used to evaluate the practice of OAR by looking at the clinical variables and the radiographs were then reviewed for presence of fracture.

Results : High percentage radiographs ordered were not based on OAR that was 59.7%. There was a significant difference in detecting fracture in group which practiced OAR, 70.6% compared with 29.4% of patients where the radiographs that were ordered not based on OAR.

This can reduce unnecessary radiographs to 62.2%. Significant proportion of the radiographs ordered, 51.3% had improper documentation in the patients' clinical record.

Conclusion : There was a quite poor Ottawa practice in acute ankle injuries in HUSM ED resulting in high percentage of unnecessary radiograph ordered. Significant proportion radiographs ordered had poor or improper documentation in the clinical records.

Dr. Mohd. Ezane Aziz : (Supervisor)
Dr. Nik Hisammudin Nik Abd. Rahman : (Co-Supervisor)

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CLOSURE OF PFANNENSTILE INCISION : STAPLES VERSUS SUBCUTICULAR SUTURE

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Introduction : Any method of skin closure should provide cm adequate approximation of the tissue with less postoperative pain and good cosmetic results. There were not many studies especially in our local setting which compare the method of skin closure in obstetric practice.

Objectives : The main aims basically to determine which type of skin closing method is better in terms of time saving, less painful and acceptable cosmetic appearance.

Methodology : A prospective study was conducted from 1st June to 31st September 2004 in 96 women who underwent caesarean section, whom fulfill the inclusion and exclusion criteria then were randomized to two groups; staples and subcuticular groups. The time for skin closure was recorded. The visual analogue pain score was also being charted on Day 3, 5, 10 postcaesarean and during postnatal follow up. Staples clips were removed on Day 10. Skin photograph was taken during follow up together with feedback of the scar by patient and attending medical officer. An independent observer (plastic surgical registrar) was asked to assess the photographs. Samples were analysed by using SPSS version 11.0. A p value of less than 0.05 was considered significant.

Results : There was no significant different in the demographic characteristics between the two groups.

It took significantly less time for skin closure in staples group as compared to subcuticular group (62,6 seconds =b 79.7 versus 257.5 seconds ± 31,4). It was significantly less postoperative pain in subcuticular group on Day 3, Day 5 and Day 10. On Day 3 postcaesarean., the pain score in staples group was 2.8 ±0.8 as compared 2.2 ±0.4 in subcuticular group. On the Day 5 postcaesarean, the pain score was 2.4 ± 0.4 m staples group whereas 1.8 ±0.4 in subcuticular group. On the Day 10 postcaesarean, the pain score in staples group was 0.4 ± 0.07 as compared to 0.1 ± 0.03 in subcuticular group. The cosmetic appearance assessed by patient, attending medical officer and independent observer were better in subcuticular group as compared to staples group. All these characteristics show a statistically significant values.

Conclusion : The use for skin staples shorten the skin closure time but more painful postoperatively and less cosmetically attractive.

Assoc. Prof. Dr. Nik Mohd Zaki Nik Mahmood :
(Supervisor)
Assoc. Prof. Dr. Mohd Shukri Othman : (Co-Supervisor)
Dr. Mohd Ismail Ibrahim : (Co-Supervisor)

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VALIDATION OF OFT KIT AS A SCREENING AND DETECTION METHOD OF LPHA THALASSEMIA (SEA TYPE)

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Introduction : The Southeast Asia (SEA) type deletion of a thalassemia 1 is the most common type of a thalassemia 1 in Southeast Asia countries including Malaysia. Affected heterozygous individuals are asymptomatic, thus left undiagnosed. These undiagnosed individuals will be potential carriers to more severe forms of _ thalassemias, particularly Hydrops fetalis and HbH disease. Therefore, an effective and simple method of screening is essential for prevention and control of a thalassemia in the population.

Objectives : This study is aimed at establishing a confirmatory diagnosis for carrier status of a thalassemia. One of the objectives of this study is to evaluate the validity of a screening method by using modified single tube red cell osmotic fragility test (OFT) for detection of a thalassemia 1 (SEA type). Study subjects are antenatal patients in HUSM.

Patients and Methods : This study was conducted on 113 peripheral blood samples taken from antenatal patients. Preliminary screening was done using OFT, followed by full blood picture, HbA2 quantitation and serum ferritin assay. Detection of a thalassemia 1 (SEA type) were performed by Polymerase Chain Reaction (PCR).

Results : The osmotic fragility was applied to a total of 113 subjects to evaluate its effectiveness as screening test for a thalassemia carriers with SEA type deletion. The sensitivity of the test was 75% and specificity was 96.6%. The predictive value of the positive test was 34.6% and that of the negative test was 96.6%. The group with OFT positive showed significantly lower MCV and MCH values as compared to the OFT negative group (p<0.001).

Conclusion : With some optimization in the concentration of modified single tube red cell osmotic fragility test (OFT), it has a potential to be a very efficient, simple, reliable and inexpensive screening method for a thalassemia 1 (SEA type) in our population where a program of prevention and control of the disease remains underserved.

Dr. Normah Jamaluddin : (Supervisor)
Dr. Rosline Hassan: (Co-Supervisor)

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A STUDY ON FACTORS AFFECTING NEWBORN WEIGHT AND LARGE FOR GESTATIONAL AGE NEWBORNS IN NON-DIABETIC MOTHER : THE ROLE OF MATERIAL SERUM TRIGLYCERIDES

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Introduction : Triglycerides has been shown to be a biochemical predictor of newborn weight and risk of large for gestational age (LGA) in a few previous small studies. The objective of this study is to ascertain whether mid-pregnancy fasting serum triglycerides can predict the risk of developing LGA and newborn weight in non diabetic pregnant mothers.

Methodology : Universal sampling of pregnant mothers attending the ante natal clinic at the HUSM and nearby clinics between 24-32 weeks gestation was carried out between December 2003 and July 2004. Expectant mothers were screened for exclusion criteria including diabetes, hypertension, preeclampsia, fetal anomaly and multiple gestations. Those who were sure of dates and consented for the study were enrolled. Modified oral glucose tolerance test (MOGTT) and the fasting serum triglycerides and total cholesterol were taken. The subjects were followed up at delivery when the period of gestation, the birth weight and the sex of newborn were noted. Subjects with premature delivery and/or any of the complications mentioned above were excluded. From the data collected, the correlations of the variables with newborn weight were tested and multiple linear regressions were used to find the associations. Bivariate logistic regression was used to look at the association. Bivariate logistic regression was used to look at the association of LGA newborn and the variables including triglycerides which were divided into two groups. The associations of the 2 groups of the triglycerides and fasting plasma glucose (FPG), with incidence of LGA were tested in cross tabulations.

Results : A total of 310 subjects were enrolled and 267 completed data were analyzed, 246 were normal glucose tolerant (NGT) and 21 impaired glucose tolerant (IGT). In NGT, triglycerides correlated poorly ($r=0.4$, $p=0.03$) with newborn weight while maternal body mass index (BMI) ($r=0.30$, $p<0.001$) and FPG ($r=0.28$, $p<0.27$) were the only two variables moderately correlated with newborn weight after adjustment of the gestation and gender of the newborn. FPG (OR 3, $p=0.027$), high triglycerides value ($>2.78\text{mmol/l}$) ($p=0.039$) and 2HPPPG ($p=0.044$) were associated with risk of LGA newborn. With high triglycerides ($>2.78\text{mmol/L}$) and FPG ($>4.3\text{mmol/L}$), risk of getting LGA is 31.8% ($p<0.001$)

Conclusions : In NGT subject, mid-pregnancy high FPG and high triglycerides value could be used predict risk of getting LGA newborn.

Dr. Nik Hazlina bt Nik Hussain : (Supervisor)
Assoc. Prof. Dr. Faridah bt Abd. Rashid : (Co-Supervisor)
Dr. Che Anuar bin Che Yaacob : (Co-Supervisor)

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MODULATION OF PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR (PPAR) γ EXPRESSION AND APOPTOSIS BY CIGLITAZONE IN MCF-7 CELL LINE

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MMed (Pathology Chemical)

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Introduction : Breast cancer is the commonest malignancy in women and chemotherapy is one of the main forms of treatment used in treating breast cancer, but it not only kills cancer cells but also cause adverse effects to patients. Current research focuses on a greater understanding of the response and resistance of tumours to treatment, which also includes the role of apoptosis. Finding drugs that do not cause such adverse effects in patients receiving chemotherapy may thus improve the treatment outcome and also the quality of life of these patients. A group of nuclear receptors, called the peroxisome proliferator-activated receptors (PPARs) may be involved in cellular proliferation and cancer. PPARs belong to the nuclear hormone receptor superfamily. Three major isoforms have been described (PPAR α , PPAR β and PPAR γ). As a subfamily of nuclear receptors, PPARs are ligand-dependant transcriptional factors that regulate the expression of target genes. These target genes will then affect processes such as cellular proliferation, differentiation and apoptosis. PPAR γ ligands have been suggested to be used as adjuvant therapeutic agents for primary cancers such as colonic cancer, eosophageal cancer, osteosarcoma and others. These

findings suggest that selective exogenous PPAR γ ligands such as ciglitazone, (a drug in the group of thiazolidinediones (TZD) may serve as biological modifiers of cancers and that the therapeutic potential of such drugs should be further investigated.

Objectives : In this preliminary study, we quantified the expression of PPAR γ in MCF-7 cells (human epithelial metastatic breast cancer cell line) and we also assessed the apoptotic activity of this cell-line following treatment with ciglitazone.

Materials & Methods : To determine the EC $_{50}$ (effective concentration of ciglitazone that kills 50% of cells), MCF-7 was treated with ciglitazone in a time- and dose-dependant fashion. The EC $_{50}$ after 36 hours for ciglitazone (50 μM) was then used to treat MCF-7 cells in a time-dependant fashion. Real-Time PCR was used to quantify the expression of PPAR γ and apoptosis was assessed by flow cytometry.

Results : The results revealed that the quantity of PPAR γ expression was reduced in a time-dependant manner compared to the control following treatment by ciglitazone. Furthermore, ciglitazone caused an increase in the number of apoptotic cells after 48 hours incubation.

Conclusions : In summary, we have demonstrated that the expression of PPAR γ in MCF-7 cells treated with ciglitazone was reduced and the activation of this receptor induces apoptosis. These findings suggest that PPAR γ ligands may be potentially useful therapeutic agents in the treatment of breast cancer.

Assoc. Prof. Dr. Nik Soriani Yaacob : (Supervisor)
Prof. Dr. Norazmi Mohd Noor : (Co-Supervisor)

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PREDICTIVE VALUES OF CLINICAL AND VARIOUS INVESTIGATIVE MODALITIES IN THE DIAGNOSIS OF CHOLEDOCHOLITHIASIS

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Introduction : About 10% to 20% of patients presenting with symptomatic gallstone disease have common bile duct stones. The symptoms of common bile duct stones may be difficult to distinguish from those of gallbladder stones. The management of choledocholithiasis in the laparoscopic era remains debatable. A common policy is to perform preoperative endoscopic retrograde cholangiopancreatography (ERCP) on patients suspected of having common bile duct stones, using standard risk criteria. ERCP is a well established technique, used widely in the investigation of pancreatic and biliary disease. ERCP is currently the investigation of choice for suspected choledocholithiasis, but is not without morbidity. ERCP is generally regarded as the 'gold standard' for the preoperative recognition of bile duct stones before laparoscopic cholecystectomy. Complications may occur, however, and a significant proportion of investigations are negative, even when applied to patients thought to be at high risk of harboring bile duct calculi.

Objectives : The objective were to study patients clinically suspected of choledocholithiasis at the time of presentation to a major teaching hospital who were subjected to ERCP, determine the significance of various clinical presentations in the patients clinically suspected to have common bile duct stones, and define the significance of biochemical criteria and ultrasound findings against ERCP for patients clinically suspected having choledocholithiasis.

Methodology : This is a retrospective study. A total of 102 patients who were referred with risk factors (on the basis of clinical suspicion) for common bile duct stones and had their common bile duct imaged at ERCP from January 2000 to August 2003 in Hospital Universiti Sains Malaysia were included in this study. List of patients names

were collected from ERCP registration file. Only those cases suspected of common bile duct stones (based on clinical findings - history, physical examination and initial blood investigations) that underwent ERCP successfully were included. The sex, age, duration of symptom, mode of presentation, physical examination findings, blood investigation result, ultrasonographic and ERCP findings were collected from patient's record. The univariate association between presence of common bile duct stones and other factors were tested using the chi square test. The sensitivity and specificity of the investigative modalities were estimated.

Results : There were 102 patients, suspected having common bile duct stones successfully underwent ERCP. There was almost equal sex distribution among (the patients. 72.5% patients were above the age of 40 years old with a mean age at presentation was 50.1. The duration of symptoms ranges from few days to 2 years with a median duration of 0.75 months. The main clinical presentation were abdominal pain(92.2%) and jaundice(75.5%) whereas the main physical sign was abdominal tenderness(64.7%). Analysis of the blood investigation results revealed hyperbilirubinemia was present in majority of the patients (88.2%) and liver enzymes, especially serum alkaline phosphatase level, were raised in 78.4 - 89.2% of patients. Ultrasound detected common bile duct stones in 59.8% of patients analyzed in this study. 71.6% of the patients were confirmed to have common bile duct stones by ERCP. Notably, 28.4% of ERCP study done in this series was negative. Univariate analysis of clinical, biochemical and radiological parameters showed jaundice, Charcot's triad and serum alkaline phosphatase level as predictors for presence of common bile duct stones (*p* value of 0.013, 0.048 and 0.042 respectively). All the clinical and biochemical parameters had a sensitivity less than 80% and lower specificity.

Conclusions : Univariate analysis of clinical, biochemical and radiological parameters showed only jaundice, Charcot's triad and serum alkaline phosphatase level to be predictors for presence of common bile duct stones (*p* value of 0.013, 0.048 and 0.042 respectively). Overall, this study showed clinical, biochemical and sonographic data were poor predictors for common bile duct stones as noted in few other studies.

Dr. Zainal Mahamood : (Supervisor)
Assoc. Prof. Dr. Abdul Hamid Sain : (Co-Supervisor)

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RISK IDENTIFICATION FOR MSXI MUTATION IN NON-SYNDROMIC CLEFT LIP AND PALATE DEFORMITIES FOR THE FORMULATION OF PREVENTION STRATEGIES

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Introduction : Orofacial clefts are congenital structural anomalies of the lip and/or palate that affect between 1 in 2000 and 1 in 500 live births worldwide. In Kelantan, it affect 1 in 600 live births. Their frequent occurrence as well as their extensive psychological, surgical, speech and dental involvement emphasize the importance of understanding the underlying causes. The etiology is complex, including multiple genetic and environmental factors. They can occur as one component of multiple congenital anomaly syndromes or as non-syndromic forms. The non-syndromic forms are more common and are likely due to secondary gene-environment interactions. Recent advances in both molecular and quantitative approaches have begun to identify the genes responsible for the rare syndromic and the more common and complex non-syndromic variants.

Objectives : From January, 1999 until December, 2002, 102 non-syndromic cleft lip and/or palate patients and parents have been studied in Reconstructive Sciences Unit, Universiti Sains Malaysia.

Patients and Methods : All the studied patients have been interviewed to detect the common environmental factors that may contribute to the occurrence of the clefts deformity. From 102 patients included into the study, 41 venous blood samples (patient, father and mother) have been studied for MSX1 mutation.

Results : MSX1 mutation shows a significant contribution to the occurrence of the cleft group compare to the non-cleft control group ($P < 0.0001$). Parents MSX1 mutation shows a significant contribution to the mutation of the MSX1 gene in the cleft patient ($P = 0.011$) predominantly paternal contribution ($P = 0.001$). There is a highly significant possibility for the cleft child to inherit the mutation of the MSX1 gene if both parents has the mutation, odd ratio 10.5 at $P = 0.007$.

Conclusions : There is no significant contribution of the environmental factors to the mutation of the MSX1 gene, but there is a significant contribution of the paternal cigarette smoking to the incidence of clefts in general ($P < 0.0001$) in 102 compared to 100 controls.

Assoc. Prof. Dr. Ahmad Sukari Halim : (Supervisor)
Prof. Mohd Nizam Isa : (Co-Supervisor)

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A PREVALENCE STUDY OF PLATELET ALLOANTIBODIES IN MULTIPLY TRANSFUSED THROMBOCYTOPENIC PATIENTS IN HUSM

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MMed (Patology/Haematology)

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Introduction : Multiply transfused patients are frequently subjected to platelet alloimmunization. These platelet alloantibodies produced can result in refractoriness to platelet transfusion.

Objectives : The aim of this study is to detect the presence of anti-platelet alloantibodies in multiply transfused thrombocytopenic patients in HUSM

Patients and Methods : Ninety five thrombocytopenic (platelet count $< 100 \times 10^9/l$) and multiply transfused (more than 2 times transfusion of any blood component with last transfusion more than 2 weeks prior to the study) patients were recruited prospectively. The blood samples were tested using a Solid Phase system (Capture P).

Results : There were 45 males (47.4%) and 50 females (52.6%) recruited with ages from 3 to 90 years. The frequency of transfusions ranged from 10-168. Seven patients (7.4%) were detected to have platelet alloantibodies, predominantly anti-HPA-5b in 4 patients (4.2%). Three of them (3.2%) showed a non-specific pattern. Six patients (6.3%) had received packed cells less than 20 units and another 1 (1.1%) received more than 20 units of packed cells. Four patients (4.2%) received platelet transfusion of less than 20 units and another 3 patients (3.2%) received more than 20 unit platelets.

Conclusions : The study may have future implications for the selection of platelet donors for alloimmunized recipients in HUSM.

Dr. Rapiaah Mustafa : (Supervisor)
Dr. Sarimah Abdullah : (Co-Supervisor)

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EFFICACY OF TOPICAL TOCOTRIENOL IN THE PREVENTION OF HYPERTROPHIC SCARRING IN THE RABBIT EAR MODEL

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Introduction : The complex interplay of events which occur following injury to the skin may sometimes cause an overzealous response, resulting in the development of a hypertrophic scar or keloid. In susceptible individuals, scars may lead to serious cosmetic, functional and psychological problems. This has led to the introduction of an array of treatment modalities to manage this difficult problem. One of the therapies includes topical application of vitamin E. It is tremendously popular among the public to speed up wound healing and improve the cosmetic appearance of scars. However, there has been a lack of randomized, controlled studies to prove the efficacy of vitamin E. In the vitamin E group, alpha-tocopherol is considered to be the most active form. However, recent research has suggested tocotrienol to be a better antioxidant with improved absorption ability through the skin. The vitamin E component of palm oil, a local Malaysian product, provides a rich source of tocotrienol. Tocotrienol-rich fraction from palm oil is being tried as a more economical and efficient substitute for alpha-tocopherol. The popular and widespread use of topical tocopherol and the recent discovery of tocotrienol, is the basis for the study of this agent using an animal model, in a controlled manner.

Objectives : The present study was undertaken to evaluate the efficacy of tocotrienol in the prevention of hypertrophic scars by both histomorphometric analysis and photographic assessment and also to determine if there are any local allergic reactions from the tocotrienol preparation.

Materials & Methods : Full thickness wounds, down to perichondrium, six per ear, were created on the ventral surface of four New Zealand White rabbits, for a total of 48 scars. Twelve days after the initial wounding, the newly healed scars were photographed, and treatment of two third of the scars was begun with either 5% tocotrienol cream alone or with 5% tocotrienol and an occlusive dressing with Micropore, for a total of 4 weeks. The remaining one third of the scars served as control scars and was left exposed to air. After 4 weeks of treatment, the scars were once again photographed. The rabbits were then sacrificed, and the scars were analyzed histologically. The scars at the end of treatment were photographically assessed and scored according to their cosmetic appearance.

Results : Histologic analysis demonstrated no significant reduction in scar hypertrophy or scar elevation index. There was no significant difference in dermal vascularity, inflammation, or collagen organization. Photographic assessment of the scars did not show any significant difference in the cosmetic appearance of the scars in all the groups. There was no significant local allergic or irritant reaction to the 5% tocotrienol preparation.

Conclusions : Vitamin E, in the form of α -tocopherol, has been shown to have antiproliferative effects on fibroblast and collagen synthesis, which is comparable to steroids, and a stabilizing effect on lysosomal membranes. Tocotrienol, has recently been proven to be more potent than tocopherol, with greater bioavailability due to a preferential cellular uptake. These properties could theoretically prove beneficial in reversing the inflammatory and proliferative responses noted in hypertrophic scars. However, this study was not able to show any reduction in scar hypertrophy or improvement in the cosmetic appearance in the tocotrienol treated scars as compared to the control untreated scars.

Assoc. Prof. Dr. Ahmad Sukari Halim : (Supervisor)
Prof. Dato' Dr. Ahmad Ridzwan Arshad : (Co-Supervisor)

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THE QUALITY OF CARE COMPLICATIONS STATUS AMONG PATIENTS WITH 15 YEARS HISTORY OF DIABETES MELLITUS IN HUSM

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Introduction : Diabetes Mellitus is associated with high morbidity and mortality. Only with good quality standard of care, this unwanted effect can be prevented or delayed. Hospital Universiti Sains Malaysia (HUSM) as a tertiary center should provide good quality standard of care for patients with diabetes mellitus. However, there was no study looking at the quality of care as well as outcome of patients managed by HUSM personnel.

Objectives : The main objective of this study was to determine quality of care in patient with diabetes in HUSM diagnosed 15 years ago. The other objective was to describe the complications of diabetes in the study population.

Materials & Methods : It was a cross sectional, retrospective study. Patients diagnosed in 1987/88 were identified from HUSM Diabetic Registry. A total number of 176 patients were recruited. Complications were determined by clinical assessment but without special tests such as nerve conduction or stress test. We used study checklist to obtain data for patients demographic; type of diabetes; glycaemic control, monitoring and treatment; co morbid condition screening and management; diabetes acute and chronic complications from patients medical record. Three points of analysis were done; at 5 years, 10 years, and 15 years.

Results : Majority of patients were type 2 diabetes (97.7%) with mean age at diagnosis was 48 ± 11.6 years. About 64.2% was in age group of 40 - 59.9 years at time of diagnosis. Fifty percent of them have died and 21.6% were unknown status. About 49% died due to cardiovascular complication. Mean BMI was 26.2 ± 4.7 kg/m² and 73.5% had BMI > 23 kg/m² (latest body weight). Smoking were noted in 23.8% but 38.8% had never been asked on smoking history. Only 7.2% had self- glucose monitoring. Means HbA1c were 9.1%, 9.8% and 9.5% at 3 points of analysis. Majority had HbA1c $> 8\%$ (63.6%, 83.3%, 83.6% respectively at 3 points of analysis). At 15 years, 83.3% had dyslipidemia but only 36.7% had TG and 18.3% had TC optimally controlled. Hypertension also noted in 87.3% but only 21.3% had their blood pressure controlled. The prevalence of complication were: IHD 62.1%, CVA 31.4%, renal glomerulosclerosis 59.8%, CRF 29.3%, ESRF 20.7%, sensory neuropathy 70%, foot. amputation 9.3%, background retinopathy 68.2%, maculopathy 25.7%, proliferative retinopathy 14.2%, cataract 55.0%, dermopathy 25.2% and impotence 10.5% at 15 years.

Conclusions : Quality of care in HUSM, received by patients with diabetes mellitus diagnosed in 1987/88 was poor. The prevalence of complications in the study population was high.

Dr. Shaiful Bahari Ismail : (Supervisor)
Prof. Dato. Mafauzy Mohamed : (Co-Supervisor)

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A COMPARISON STUDY OF THE HEALING TIME OF DIABETIC PODIATRIC WOUNDS SUBJECTED TO FAR INFRARED RED LIGHT AND POVIDONE IODINE DRESSINGS AND POVIDONE-IODINE DRESSING ALONE

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Introduction : Wounds have been the bane of physicians since time immemorial. The use of light of various colours (i.e. wavelengths) has shown potential as an adjuvant to be used in the armament of the surgeon treating wounds. The utility of infrared radiation is a relatively newer modality which shows encouraging promise, especially in the setting of diabetic wounds, which are unique and nefariously more complex due to poorly understood pathophysiology and systemic derangement. These wounds often run an indolent course and readily recur. This study attempts to assess the augmentation to wound healing the utility of a far-infrared device confers on diabetic wounds of Wagner grade 2.

Patients and Methods : The study performed was a double-blinded non-randomized controlled trial, comparing two cohorts; a control cohort of diabetics undergoing standard treatment of wound care, inclusive of antibiotics, sharp surgical debridement and povidone-iodine and saline dressings. The second cohort was comparable to the first, except these patients were also subjected to exposure of pulsed far-infrared light over the involved foot (dressed) for a daily exposure of 30 minutes

Results : From November 1st, 2003 till October 31st, 2004 a total of 66 patients were chosen for this study based on inclusion criteria; type 2 diabetic with a Wagner grade 2 wound, haemoglobin (Hb) level of at least 100 g/dL, absolute lymphocyte count (ALC) of > 1500 ml⁻¹, serum albumin of \geq 25 gm/L, serum AST of \leq 80 units/L, absence of end stage renal failure, and transcutaneous oxygen tension (TcO₂) of \leq 30 mm Hg. Dropout criteria was necessity for a repeat debridement, poor sugar control of > 20 mmol/L on 3 consecutive readings and adverse reactions to either treatment modalities. The studied variable in this study was the readiness of the debrided wound for split-thickness skin grafting or secondary surgical closure of wound (end point) as measured from the time of the debridement till the end point

A total of 33 patients were enrolled in the Povidone cohort, of which 3 dropped out. That of the Infrared cohort enrolled 33, of which 4 dropped out. Parameters considered were age, sex, smoking status, exposure to smoking, comorbid medical illnesses, duration of diagnosis of diabetes, region of wound involvement, area of ulceration after debridement, Hb, ALC, albumin, AST, TcO₂, HbA_{1c} and creatinine.

Cohorts were comparable from the evaluation of independent t-test testing differences in means, with a strong significance of P = 0.007 in readiness of wound for SSG, comparing the infrared cohort to that of the povidone cohort. A mild significance was also arrived at in consideration of HbA_{1c} (P = 0.36). However, in the ANCOVA, with readiness for SSG as the backdrop, the cohort was found to be strongly significant (P = 0.004), while all other parameters were not, except for TcO₂, which was also significant at P = 0.007, as has been repeatedly demonstrated by earlier studies on healing of diabetic wounds. The 4 patients who had dropped out of the Infrared cohort were all noted to have large sole and heel wounds and borderline albumin and TcO₂ levels. All developed desiccation of wound and all but one developed blisters.

Conclusion : The utility of pulsed far infrared light as an augmentation to wound healing in type 2 diabetics with Wagner grade 2 wounds seems to result in accelerated wound healing at an exposure of 30 minutes daily through the dressed wound. A word of caution is added, however that the optimum duration of exposure is yet to be

ascertained in those wounds denuding the calcaneum and associated with borderline levels of TcO₂ and serum albumin.

**Dr. Abdul Halim Yusof : (Supervisor)
Dr. Mohamad Iskandar Mohamad Amin : (Co-Supervisor)**

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PROPHYLAXIS OF HYPOTENSION FOLLOWING SPINAL ANAESTHESIA: A COPARATIVE STUDY BETWEEN METARAMINOL AND EPHEDRINE

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Introduction : Spinal anaesthesia, one of the neuraxial block, is a popular method of giving anaesthesia. Although spinal blocks provide excellent anaesthesia for many operations, there are frequently accompanied by hypotension. This is largely due to the blockade of the sympathetic nerve system. One of the mainstay of management of hypotension is the use of a vasopressor agent. Ephedrine was the first agent used for this purpose. However, it could not be relied upon to be successful all the time and other agents must be considered when it was inadequate. In general, ephedrine had a good track record in the treatment of post-spinal anaesthesia hypotension, but other potent vasopressor like metaraminol should be considered in certain situations. The judgement could only be made on an individual patient basis as ephedrine produced tachycardia while metaraminol did not.

Objectives : The purpose of investigation was to compare the effectiveness of intravenous ephedrine and metaraminol as prophylaxis agent to prevent hypotension following spinal block in adult non obstetric patients. Other consequences after injection of these drugs were also noted.

Patients and Methods : Ninety patients age between 18 to 55 undergoing elective lower extremity and/or genitourinary surgery were studied in a double-blind randomized fashion. They were divided into two equal groups (45 patients each). Group E received 0.2 mg/kg ephedrine and group M received 0.01 mg/kg metaraminol. All drugs were given immediately after subarachnoid space injected with local anaesthetic (3.2 - 3.4 ml of hyperbaric bupivacaine 0.5%). Dermatomal level of spinal sensory was assessed by pinprick in the midclavicular line bilaterally. Blood pressure and heart rate were monitored one minute after injection of vasopressor, every minute for the first five minutes and every five minutes for 30 minutes later.

Results : Both ephedrine and metaraminol were effective to maintain the blood pressure within the baseline (within 20% of baseline). The percentage decrease in blood pressure (SBP, MAP and DBP) from baseline was significantly lower in group E (p < 0.05). However, the incidence of hypotension in group E was higher (15.5%) than group M but statistically was not significant (p > 0.05). The percentage of increase in heart rate was significantly higher in group E (8.8%) but was not statistically significant. The incidence of using rescue drug was significantly lower in group M (2.2%) compared to group E (15.5%) (p < 0.05). No incidence of hypertension, bradycardia and arrhythmia was noted in both groups.

Conclusion : We concluded that prophylactic use of both intravenous ephedrine 0.2 mg/kg and metaraminol 0.01 mg/kg were effective to prevent hypotension following spinal anaesthesia for elective surgery. Both were able to maintain blood pressure within 20% of the baseline. However, the choice of which drug is better should be individualised on the patient's status as ephedrine caused increased in heart rate while increase in heart rate was not seen in metaraminol.

Dr. Ghazaimie Ghazali : (Supervisor) Assoc. Prof. Dr. Nik Abdullah Nik Mohamad : (Co-Supervisor)

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A STUDY ON THE PREVALENCE AND DEMOGRAPHIC FACTORS OF URINARY INCONTINENCE IN WOMEN WHOM ATTENDING KLINIK RAWATAN KELUARGA (KRK) HOSPITAL UNIVERSITI SAINS MALAYSIA (HUSM)

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Introduction : Urinary incontinence (UI) is an underdiagnosed and underreported condition with major economic and psychosocial effects on society. Studies have shown that UI is very prevalent among adult women. However not many study is carried out in Malaysia to look on its prevalence and associated demographic factors.

Objectives : To determine the prevalence of UI and it's associated socio-demographic factors. It is also to evaluate the degree of bother to social activity and whether the involved subjects have asked for medical assistance or not.

Patients and Methods : This was an observational study conducted from January to April 2004, among 329 adult female patients aged 18 years and above whom attending KRK, HUSM through systematic random sampling. It was conducted as face- to- face interview using validated questionnaire on UI. A pilot study was carried out to ensure that the questionnaire was both understandable and simple. Data was analyzed using SPSS version 11 and Stata version 7.

Results : Of 329 women who participated in this study, 40.4% (95% CI: 35.1-45.9) of them had UI. The most common type of UI was stress incontinence (SUI) of 67%. The majority of the respondents (87.2%) were not significantly bothered by the condition. Only 39.2% of them needed some forms of leakage protection. Only 29.3% of the incontinent women had sought treatment. Women with age 40 to 49 years old, had both vaginal and forceps delivery , from rich income group and overweight were significantly associated with higher prevalence of UI. However parity, occupation, education, past gynaecological history and hysterectomy, place of residence and type of toilet were not statistically significant associated with the occurrence of UI.

Conclusion : The prevalence of UI among women whom attending KRK, HUSM was high. It is a significant and common problem requiring closer attention and a significant effort must be given to increase the awareness and improve the delivery of continence care among health care professionals. It has also highlighted the low treatment-seeking rate among its sufferers that must be overcome.

**Dr. Juwita Shaaban : (Supervisor)
Dr. Mohd. Nor Gohar Rahman : (Co-Supervisor)**

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FLOW CYTOMETRIC IMMUNOPHENOTYPING OF THE RESIDUAL FINE NEEDLE ASPIRATION OF LYMPH NODES.

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Fine needle aspiration (FNA) cytology is a well- established tool for the diagnosis of malignant neoplasms, but its role in the diagnosis of lymphoma remains controversial. With recent advances in the understanding of biology, immunology and molecular genetics of lymphoma, lymphoid neoplasms are now defined by a combination of morphologic, immunophenotypic, genotypic features and clinical presentation. In applying flow cytometry (FCM) to lymphoid disorders by measuring the expression of cell markers and particular immunoglobulin light chain expression will help in identification of clonality and classification of B cell non Hodgkin's lymphoma. The objectives of this study were to detect monoclonality in patients subjected for FNAC for lymphadenopathy and/or from excision lymph nodes biopsy by FCM and to determine the agreement between FCM analysis and morphological examination.

93 patients with lymphadenopathy who underwent FNA and 7 cases of lymph node biopsies were recruited in this study. FNA and excision biopsy of the lymph nodes were performed by a standard technique. The cells were submitted for both conventional morphologic examination and three colors flow cytometric analysis. Data acquisition and analysis were done using cell Quest software and Becton Dickson flow cytometer.

Of the 93 samples taken, 64.52% (60) were adequate for further analysis with flowcytometry. Out of this, 15% (9/60) had shown monoclonality with 7 cases confirmed with tissue biopsy as B cell NHL, whereas in reactive hyperplasia or lymphadenitis, there were various patterns of lymphoid cell surface marker. Good agreement was observed between both methods of flowcytometric analysis and cytomorphological examination with the *kappa* value of 0.739. In six of the seven cases (85.7%) of lymph nodes biopsies flow cytometric analysis showed concordant with the eventual histopathological diagnosis.

Adjunctive flow cytometry immunophenotyping of fine needle aspiration cytology and biopsy of lymph nodes were reliable, rapid and a good tool for detecting clonality, thus help in the diagnosis of B cell type non Hodgkin's lymphoma.

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Dr. Saleena Awang : (Co-Supervisor)
Dr. Assoc.Pof. Dr. Manoharan Madhavan : (Co-Supervisor)**