

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.

COMPARISON OF THINPREP™ MONOLAYER CYTOLOGY VERSUS CONVENTIONAL PAP SMEAR AND THE CORRELATION WITH HUMAN PAPILLOMAVIRUS DETECTION USING HYBRID CAPTURE® 2 SYSTEM.

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Introduction : Pap smear is a useful screening tool for cancer of the cervix. Screening has resulted in the tremendous fall in cervical cancer incidence worldwide. However, the conventional pap smear has many limitations due to significant false negative and false positive rate, and unsuitability due to thick smears. Liquid-based cytology, such as ThinPrep™ technique is an alternative to conventional pap smear. This method provides monolayer cells which make cytological examination easier. HPV is the cause of cervical cancer. Identification of the virus is helpful in cervical cancer screening. Hybrid Captures 2 systems is one of the examples of HPV testing that is useful to detect high-risk HPV in a large number of samples.

Objectives : We embarked on pap smear split-sampling study to determine if monolayer cytology would give better results than conventional cytology.

Patients & Methods : Six hundred eighty eight women who gave consent were recruited We collected the exfoliative cervical samples from all the subjects. Each sample was smeared as for the conventional pap smears as done routinely and then rinsed into a liquid buffer (PreservCyt) for monolayer cytology and HPV testing The cytological examination was performed in blinded fashion. The performance of conventional and ThinPrep™ monolayer cytology pap smears was compared. Smears were based on The 2001 Bethesda classification All cases which had epithelial abnormalities were further tested for HPV by Hybrid Captures® 2 technique.

Results : We found that adequacy of sampling was 943% in conventional pap smear and 894% in ThinPrep™ cytology. The commonest organism identified was Candida spp (4.1% in conventional smears, 3.9% by ThinPrep™) and the agreement study is fair ($k=0.27$). Diagnosis of ASCUS, LSIL, HSIL and squamous cell carcinoma, were low in both techniques. The glandular cells abnormalities were also low in numbers. The agreement studies for LSIL showed $k=0.40$. The agreement studies for ASCUS, HSIL, squamous cell carcinoma, AGC (NOS) and adenocarcinoma (NOS) were not done as the number was too few. The HPV testing of cases with abnormal cytology showed low positivity (38.5%).

Conclusions : The overall performance of ThinPrep™ is no better than conventional pap smears. The usage of the ThinPrep™ pap smear does not improve in detecting certain infective organisms nor abnormal epithelial cells. The low positivity of Hybrid Captures® 2 technique is questionable. Confirmation with other techniques like PCR is essential. Split sampling gives adequate smears for cytological assessment. It can be carried out in laboratories working to change from one technique to

another.

Prof. Dr. Nor Hayati Othman : Supervisor

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STUDY ON ORAL N-ACTYLCYSTEINE IN PREVENTION OF CONTRAST INDUCED NEPHROPATHY IN PATIENTS UNDERGOING CORONARY ANGIOGRAPHY IN HOSPITAL UNIVERSITI SAINS MALAYSIA.

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Introduction : Contrast induced nephropathy (CIN) is defined as acute renal failure within 48 hours of exposure to radiographic contrast media in the absence of another underlying aetiology. It is one of recognized complications of diagnostic or therapeutic angiography procedures. Contrast induced nephropathy has been reported to account for 10% of in-hospital acute renal failure, making it the third leading cause of ARF. The known risk factors are increased age, decreased renal function, diabetic nephropathy, hypertension and congestive cardiac failure. The type and amount of contrast agent also play a vital role in the development of CIN. The role of antioxidant acetylcysteine in prevention of CIN has been studied in many trials but produced inconclusive results There were significant heterogeneity in these studies in terms of NAC regimen, hydration protocol and the use contrast agents. Larger randomized controlled trials are needed to evaluate the effectiveness of NAC in reducing CIN in patients undergoing coronary angiography. This study was designed to eliminate possible confounders and by standardizing the type of contrast agent, the hydration and NAC dose protocol the use of placebo.

Patients & Methods : We prospectively studied 100 patients with renal impairment with or without diabetes (mean serum creatinine $124.1 \pm 19.68 \mu\text{mol/l}$) who underwent elective coronary angiography whether for diagnostic or therapeutic purposes. Patients were randomly assigned to receive either N-acetylcysteine (600mg orally BD for 4 doses) or placebo, in addition to 0.45% saline hydration at a rate of 1ml/kg of body weight per hour for 24 hours, starting 12 hours before angiogram. The main objective was to compare the proportion of patients who developed CIN between patients in NAC and placebo groups. The secondary objectives were to assess the changes of serum creatinine after contrast administration and the risk factors for development of CIN. Only low osmolar non-ionic contrast agent was used (Iohexol;Omnipaque 3 50mg 1/ml). Serum creatinine was measured at 24 hours before and 24 and 48 hours after coronary angiography. A rise of serum creatinine > 25% from baseline after 48 hours was considered as CIN incidence.

Results : An increase of >25% in the baseline creatinine level 48 hours after the procedure occurred in 2 of 49 (41%) patients in NAC group and 6 of 51 (11.8%) patients in Placebo group The difference was not statistically significant ($p=0.269$) The baseline serum creatinine concentration in both groups were similar ($123.7 \pm 17.08 \mu\text{mol/l}$ in

NAC and $124.4 \pm 21.89 \mu\text{mol/l}$ in Placebo). Changes of serum creatinine after 24 and 48 hours coronary angiography were not significant between the two treatment groups ($p=0.821$). No patients who developed CIN required dialysis. Side-effects (mainly gastrointestinal upset) occurred in 2 of 49 (4%) patients in NAC group and 1 of 51 (1.9%) patients taking placebo. The only significant risk factor for the development of CIN was the contrast volume (mean diff- 112.44, 95% CI -184.22, -40.66, $p=0.002$).

Discussion & Conclusion : Oral N-acetylcysteine has limited role in prevention of contrast induced nephropathy among patients with mid to moderate renal failure. The incidence of CIN in this group of patients is low. The amount of contrast agent is a good predictor of renal function deterioration and incidence of CIN after coronary angiography.

Assoc. Prof. Dr. Zainal Darus : Supervisor
Assoc. Prof. Dr. Zurkurnai Yusoff : Co-Supervisor

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THE METABOLIC SYNDROME AMONG OBESE PATIENTS ATTENDING OBESITY CLINIC IN HOSPITAL UNIVERSITI SAINS MALAYSIA.

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Introduction : The increase prevalence of Metabolic Syndrome worldwide is closely related to the rising obesity epidemic. However, the assessment on prevalence of Metabolic Syndrome in obesity is lacking.

Objectives : The objectives of the study were to determine the prevalence and identify the associated and prognostic, factors that influence the risk of metabolic syndrome among obese patients attending obesity clinic in Hospital Universiti Sains Malaysia..

Patients & Methods : A cross sectional study was conducted involving 102 obese persons who attending the obesity clinic Hospital Universiti Sains Malaysia from 1 January 31 December 2005. All patients who fulfilled the criteria were included in the study. The patients' clinic records were reviewed by the researcher. The Metabolic Syndrome was defined to the International Diabetes Federation (IDF) criteria; included central, obesity, blood pressure, fasting glucose, triglyceride and high density lipoprotein (HDL) cholesterol. The required information on the demographic and physical and biochemical parameters related to the metabolic co-morbidities was recorded into a data collection form.

Results : The overall prevalence of Metabolic Syndrome among obese patient attending obesity clinic in HUSM was 40.2 percent. The prevalence of N4e Syndrome was noted to increase with increase BMI class; from class 1 to class 2. However, the prevalence was lower in obesity class 3. The prevalence of metabolic co-morbidities of raised blood pressure, low high density lipoprotein, raised fasting blood glucose and high triglyceride were 42, 40, 36 dan 17 percent respectively. A quarter of obese patients in this study had no other co morbidity. Based on Logistic Regression multivariable analysis, age was the only significant associated factor that influenced the risk of having Metabolic Syndrome among obese patients attending obesity clinic in HUSM (OR=1.03, 95% CI: 1.01, 1.09).

Discussion : The prevalence of Metabolic Syndrome among obese patients attending obesity clinic in HUSM was high compared to the general population but lower as compared with other studies in obese person. Age was the only identified parameter to significantly influence risk of Metabolic Syndrome.

Conclusions : The obesity class was found not to influence the risk of Metabolic Syndrome. A further study is highly recommended to confirm the findings in This study.

Prof. Dato' Mafauzy Mohamed : Supervisor
Assoc. Prof. Dr. Abdul Aziz Al-Safi bin Ismail : Co-Supervisor

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COMPARISON OF INFRARED TYMPANIC MEMBRANE, AXILLARY, ORAL AND RECTAL THERMOMETRY IN ADULT NEUTROPENIC PATIENTS.

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Introduction : Patient with hematological malignancies undergoing chemotherapy is bound to experience myelosuppression. Despite routinely treating these patients with prophylactic broad spectrum antimicrobial therapy they are still at risk of developing severe gram negative sepsis, which can rapidly turn fatal. Hence patients are closely monitored for early signs of infection. Temperature monitoring has been the standard practice worldwide for patient with neutropenia. Any rise in body temperature above 38.3°C with clinical evidence of infection or two consecutive reading of temperature above 38°C without clinical infection indicates febrile neutropenia and warrants aggressive empirical broad spectrum antibiotics. The subsequent management protocols are tailored to the outcome of investigations and assessments. The trigger activating clinical management of febrile neutropenia is the detection of a rise in body temperature. Such a situation calls for an accurate temperature measuring tool with good sensitivity in detecting fever.

Objective : The purpose of this study are to assess the agreement between infrared tympanic membrane, axillary, oral and rectal temperature among adults neutropenic patients. This study also designed to assess the sensitivity and specificity of tympanic membrane, axillary, oral temperature for detecting fever (rectal temperature $>38^{\circ}\text{C}$) using rectal temperature as reference among adults neutropenic patients.

Patients & Methods : This is a diagnostic test study comparing tympanic membrane infra-red thermometer, oral, axillary and rectal mercury bulb thermometer in agreement and sensitivity detecting fever among adult neutropenic patients, conducted from 1st January 2007 to 30 April 2007. Total of 300 sets of temperature readings were randomly selected using SPSS 12.0. Intraclass correlation and 2X2 contingencies table are used to analyze the data as appropriate.

Results : 29 patients agreed for the study, 400 sets of temperature readings were obtained. Tympanic membrane thermometer (mean TM ICC=0.806, right TM ICC=0.810, left TM ICC=0.770) has better agreement compared to unadjusted axilla (ICC=0.486) and unadjusted oral (ICC=0.629) temperature compared to rectal temperature. This study also found that adjusted oral and axilla temperature also have moderate agreement with rectal temperature. (Adjusted Oral ICC= 0.700; adjusted Axilla ICC=0.607). The sensitivity of tympanic membrane thermometer (Left TM 71.25%, Right TM 65%, Mean TM 63.6%) are found to be statistically superior than unadjusted axilla (34.8%).

Discussion & Conclusion : This study found that tympanic membrane thermometer is highly in agreement with rectal thermometer among adult neutropenic patients. This study also suggests that the mean of right and left tympanic membrane temperatures has the best sensitivity and specificity compared to unadjusted oral and unadjusted axilla thermometry. This study also found that the adjusted axilla and adjusted oral temperature readings (by adding 0.5°C and 0.3°C) improved the agreement, specificity and sensitivity.

Dr. Abu Dzar Abdulah : Supervisor
Dr. Azlan Husin : Co-Supervisor

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SERUM FERRITIN IN TYPE 2 DIABETES MELLITUS AND ITS RELATIONSHIP WITH HBA1C AND METABOLIC SYNDROME

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Introduction : Type 2 diabetes mellitus (DM) is one of the most common endocrine disorders affecting more than 135 million people in the world. The aetiology of the disease is not fully understood, but recently subclinical haemochromatosis has been considered as one of the probable causes. It is known that both beta cell defects and insulin resistance are present in overt DM. Apart from measurement of iron storage, ferritin levels can also be used as an inflammatory marker. The metabolic syndrome is closely linked to insulin resistance and increase cardiovascular risk. Accumulating evidences suggest a link between body iron excess and insulin metabolism and risk of metabolic syndrome. Serum ferritin level may be associated with glycaemic control and also related to components of metabolic syndrome like serum triglycerides, high density lipoprotein, blood glucose level, blood pressure and body mass index.

Objectives : To determine association between serum ferritin with glycaemic control in diabetic patients and its association with components of metabolic syndrome. The correlation with age, gender and menopausal status were also studied

Patients & Methods : This was a cross-sectional study. The subjects with type 2 DM who come for their regular blood taking were included using systematic random sampling ie every third patients. Their BMT were calculated and blood pressure were measured. Their disease characteristics were taken from medical records. Ferritin, haemoglobin, HbA1c, FBG, RFT, LFT and fasting lipid profile were measured in blood samples.

Results : By using linear regression analysis, there is significant linear relationship between serum ferritin and HbA1c (r = 0.3, p <0.01), TG (r = 0.4, p < 0.01) and gender (p <0.01). Mean serum ferritin was 199.6 ± 107.8 g.tg/L which is at upper limit of normal values for serum ferritin. Age and menopausal status are not significantly related to serum ferritin levels. Mean serum ferritin levels was highest in male with bigger number of criteria for metabolic syndrome followed by postmenopausal women and lastly premenopausal women.

Discussion & Conclusion : Serum ferritin is raised in patients with type 2 diabetes. It is positively correlated with glycaemic control and risk for metabolic syndrome. Metabolic syndrome is more common in those with the highest compared with the lowest level of serum ferritin.

Prof. Mustafa Embong : Supervisor
Dr. Wan Syamimee Wan Ghazali : Co Supervisor

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TREATMENT OF INTRACRANIAL SUBDURAL EMPYEMA (ISDE) : AN ANALYSIS OF TWO SURGICAL METHODS USED (BURR HOLE AND CRANIOTOMY) IN HOSPITAL KUALA LUMPUR

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Introduction : Intracranial subdural empyema (ISDE) is one of the most common intracranial suppuration seen in Hospital Kuala Lumpur (HKL). Despite modern antibiotic therapy and advanced neurosurgical and imaging facilities, these pus collections remain a formidable challenge, sometimes resulting in significant morbidity and mortality.

Objectives : The purpose of this study was to determine the association

between two surgical methods used (burr hole and craniotomy) in the treatment of ISDE with survival of the patients, improvement of neurological status, radiological clearance of empyema on computed tomography (CT) brain, re-surgery and morbidity among the survivors at three months after surgery.

Patients & Methods : A retrospective analysis of all the patients who had undergone surgery in HKL for ISDE in the last six years (1999 to 2005) identified 110 cases but only 90 cases were included into this study. These patients were broadly categorized into two groups based on their first surgical method performed (burr hole or craniotomy). The case notes and CT brain films of these patients were analyzed with respect to its clinical, radiological, surgical treatment and outcome data. Statistical analysis was performed to study the association.

Results : ISDE was second most common type of intracranial suppuration. Operated in HKL over the last six years accounted for 27.6% of surgery for intracranial infection. There was male predominance with male to female ratio of 2.6:1. The median age was 16 years old (IQR of 33.0). 44 patients (48.9%) presented with good level of consciousness (Bannister & William grade I or II) and in 46 cases (51.1%), the origin of empyema were unknown. 40 patients (44.4%) had undergone craniotomy and evacuation of empyema as their first surgical method for ISDE treatment while the other 50 patients (55.6%) had undergone burr hole and drainage. Patients underwent craniotomy had better results, 32 patients (80.0%) showed significant neurological improvement and 34 patients (85.0%) had satisfactory radiological clearance of empyema following first operation. Re-surgery was more common in the burr-hole group (58.0%). Six patients died after the first surgery making the mortality rate among surgically treated ISDE of 6.7%. Among 84 ISDE survivors, 64 patients (71.1%) had morbidity. Henk W Mauser grade A and B after three months of surgery. Univariate statistical analysis which was performed found that there was significant association between the surgical method used for ISDE and improvement of neurological status (p value = 0.006), radiological clearance of empyema on CT brain (p value < 0.001) and re-surgery (p value < 0.001).

Discussion : Craniotomy and evacuation of empyema was the better surgical method for ISDE compared to burr hole and evacuation because it has a higher rate of improvement in neurological status of the patients, better clearance of empyema and lesser rate of re-surgery. Survival of the patients and long term morbidity among survivors were not significantly related to surgical method used (both p values > 0.05).

Conclusions : Type of surgical method used was determined to be associated with the treatment results of ISDE in terms of improvement of neurological status of the patients, clearance of empyema and re-surgery. From this study, we concluded that craniotomy and evacuation of empyema was more effective than burr hole and drainage as a surgical method for the treatment of ISDE.

Dr. Mohammed Saffari bin Mohammed Haspani : Supervisor
Prof. Dr. Jafri Malin bin Datuk Abdullah : Co-Supervisor

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A STUDY OF PREVALENCE AND FACTORS ASSOCIATED WITH CAESAREAN HYSTERECTOMY IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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Introduction : Obstetric hysterectomy is done to save patient's life in case of uncontrolled bleeding during caesarean section. It is also done as elective for case of cervical cancer. Caesarean hysterectomy was defined as one performed for the haemorrhage unresponsive to other treatment following caesarean section including for uterine rupture. Wan Abu Bakar (1993) showed the percentage of caesarean hysterectomy was 0.3% (1:

1926 total of delivery). During that study period, 24 cases of caesarean hysterectomy was reported in which 18 patients had underwent total hysterectomy and 6 patients underwent total hysterectomy. The study also showed the major indication for the operation was uterine atony.

Objectives : To determine the prevalence and the associated factors for caesarean omy. The complications of the operation also were identified.

Patients & Methods : This study was conducted at Hospital Universiti Sains Malaysia from January 1996 till December 2005. All patients who underwent caesarean hysterectomy in the study period were included in the sample size, included patients with uterine rupture. The patient who underwent postpartum hysterectomy were also recorded as to compare with caesarean hysterectomy. Patient's information were obtained from the record office. The permission was obtained from Pengarah Hospital Universiti Sains Malaysia. The study was ethically approved from the HUSM ethical committee (Number 170.4(5)).

Results : There were 65 cases of caesarean hysterectomy was done through out the study period where the total number of deliveries were 70 842 deliveries. Therefore the caesarean hysterectomy rate is 0.9 : 1000. Most frequent indications were placenta accreta (46.2 % , 30 out of 65), uterine atony (33.8 % , 22 out of 65), uterine rupture (16.9 % , 11 out of 65), carcinoma of cervix (1.5 % , 1 out of 65). From this study undergone uterine curettage. The number of caesarean deliveries and ERPOC were increasing tend and increased the risk of placenta accreta proportionally. Fifty three (81.5%) of the hysterectomy cases were total hysterectomy and twelve (18.5 %) of the cases were subtotal hysterectomy. In this study, 18.5% (12 out of 65) of the patients complicated by coagulopathy and 16.9% (11 out of 65) had febrile illness. 92% (6 out of 65) had bladder injury and one patient developed complicated by amniotic fluid embolism.

Discussion & Conclusion : The prevalence of caesarean hysterectomy was 0.92 per 1000 deliveries. The rate of the caesarean hysterectomy is comparable with other studies. Placenta accrete was the most common indication for caesarean hysterectomy. The most common complication of the operations were and coagulopathy (16.9%) and febrile illness (9.2%). The limitation of the study was improper documentation of the cases in the patient's folder and some of the informations were missing.

Dr. Wan Mohd. Pazudin : Supervisor
Dr. Wan Abu Bakar Wan Yusof : Co-Supervisor

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SURVIVAL OUTCOME FOR OVARIAN CANCER AT HOSPITAL UNIVERSITI SAINS MALAYSIA – A RETROSPECTIVE RECORD REVIEW: 995-2004

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Objective : This study was designed to determine the epidemiology and survival outcome for ovarian cancer cases at the Hospital Universiti Sains Malaysia, over a period of ten years. The study was also designed to identify areas, within the management, for possible improvement.

Patients & Methods : This was a retrospective record review, conducted at HUSM. It covered a period between 1995 and 2004. It included all the 121 recorded cases of ovarian cancer, diagnosed and treated at HUSM. Information was obtained from the patients' medical records using a standard data collection form.

Results : A total of 121 recorded cases were involved in the study. Majority of the patients were Malays (84 3%), with Chinese (15 7%) displaying a three fold higher risk of developing ovarian cancer. About 80% of all cases were aged above 40, with the highest incidence rates in age-group 41-45. Few patients had history of fertility treatment (10 7%) and 19 8% had family history of malignancy. Only 16% of the patients

were nulliparous and 11% had a single child. About 54% of the patients were multiparous and diagnosed during their perior post menopausal period (70%), most of whom presenting with abdominal distension as a torn (65%) and with the abdominal mass size ranging between 14 and 26 centimeters (78.5%). Serous carcinoma and mucinous carcinoma were the commonest encountered ovarian malignancies (68.6%). Majority of the patients (62.8%) were treated with combination therapy of surgery and chemotherapy, with platinum based chemotherapy being the standard treatment given. Death was recorded in 27 patients (22.3%), all deaths having occurred within the first year following treatment. Surgical staging was the only covariate which displayed prognostic significance in this series. The 2 year survival rate for the individual stages of the disease were 96.3% for stage I, 82.2% for stage II, 80.0% for stage III and 33.3% for stage IV.

Discussion & Conclusion : Despite the inability to come up with 5 years survival rates, secondary to logistic problems encountered, the calculated rates at two years demonstrate a strong prognostic influence of surgical stage of the disease at the time of diagnosis. Other parameters such as histological nature of the mass, lymph node involvement, mode of treatment and peritoneal metastases failed to demonstrate their influence on patients' survival in this study. This was mostly attributed to the shortness of the survival time that could be calculated from this study.

Assoc. Prof. Dr. Nik Mohd. Zaki Nik Mahmood : Supervisor
Dr. Wan Abu Bakar Wan Yusof : Co-Supervisor

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A PROSPECTIVE, RANDOMIZED, STUDY OF TISSUE ADHESIVE VERSUS STANDARD WOUND CLOSURE TECHNIQUE FOR LAPAROSCOPIC ABDOMINAL PROCEDURE.

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Objective : To compare the effectiveness of cyanoacrylate tissue adhesive with conventional suture in closing laparoscopic abdominal incision. This was a prospective, randomized controlled study done in the Gynaecology ward of Hospital Tengku Ampuan Afzan, Kuantan from April 2005 till November 2006. 64 patients underwent laparoscopic abdominal procedure.

Patients & Methods : They were chosen based on inclusion and exclusion criteria & were randomly assigned to receive either tissue adhesive or suture. The main outcome measure were time taken for skin closure, post operative days of discharge, complications such as haematoma formation, wound infection, wound dehiscence as well as patient's satisfaction.

Results : Sixty four patients were recruited into the study: 32 in suture group and 32 in tissue adhesive group. Both groups were comparable with respect to age, parity, education level, type of occupation and number of holes. There was a significant difference in the time taken for skin closure (suture: 7.0±4.2 tissue adhesive:4.3±1.0, p0.002). No difference in Day 1 post operative pain (suture:3.8±2.0, tissue adhesive:4.3±1.7, p=0.344). No patients were reported to have any haematoma at either day 7 and day 21. No significant difference in wound infection and wound dehiscence at day 7 and day 21 in each groups. Patients satisfaction was also comparable in either group (suture:8.4±1.5, tissue adhesive:8.0±1.8 p=0.26). There was a significant difference in skin apposition at day 7 (suture:8.1±0.7, tissue adhesive:7.3±1.2 P=0.001). However no difference in skin apposition at day 21.

Discussion : In the study, there was a significant difference in time taken for skin closure where tissue adhesive was much more faster compared to suture. Whereas in terms of complications and patient's

satisfaction they were comparable in both two groups.

Conclusions : The use of tissue adhesive is easy and safe with complications comparable to suture and results in equally good cosmesis. Therefore tissue adhesive is a suitable alternative to suture in small wounds and low tension areas.

Assoc. Prof. Dr. Nik Hazlina Nik Husssain : Supervisor
Datuk Dr. Ghazali Ismail : Co-Supervisor

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RANDOMISED CONTROLLED TRIAL ON INTRAMUSCULAR NALBUPHINE VERSUS INTRAMUSCULAR PETHIDINE (MEPERIDINE) FOR ANALGESIA IN LABOURING PRIMIGRA VIDA

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Introduction : Pain is the dominant symptom of labour and is multifactorial in origin. The appropriate pain relief may influence the general course and success of labour. Opioids are the cornerstone of pain management. Despite their extensive use, little is known about their effectiveness and whether certain opioids produce fewer side effects. Pethidine is one of the most commonly used opioids for labour pain relief. However, there are many unintended effects that have been found with its prescription during labour. Nalbuphine, a synthetic agonist-antagonist opioid analgesic agent is a potentially good alternative in view of the similar efficacy and better side effects profile.

Objectives : To study and compare the efficacy of 2 different types of intramuscular opioids as labour analgesia and the adverse effects to both mothers and babies

Patients & Methods : Labouring primigravida in Labour room, Hospital Alor Star from December 2004 to March 2005 who required analgesia were randomised to intramuscular Meperidine 75mg or intramuscular Nalbuphine 20mg. Main outcome measures changes in severity of labour pain after administration of opioids, the adverse effects experienced by the mothers, the acceptability of treatment by mothers, the mode of delivery, the Apgar score of baby and the need of opioid antidote for resuscitation of the baby.

Results : A total of 480 patients were randomised, 240 received intramuscular Meperidine and 240 intramuscular Nalbuphine. Efficacy of the opioids was similar but patients who received Meperidine reported statistically significant ($p < 0.05$) adverse effects. There were no difference in the mode of delivery and 5 minute apgar score between the two groups but more babies in the Meperidine group needed resuscitation with opioid antidote at birth (43.3% versus 22.8%)

Conclusion : Intramuscular Nalbuphine seems to be the better choice of labour analgesia in our study group.

Prof. Dr. Mohd. Shukri Othman : Supervisor
Prof. Madya Dr. Nik Mohamed Zaki Nik Abdullah : Co-Supervisor

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BASAL GONADOTROPHINS AND OESTRADIOL IN RELATION TO OVARIAN RESPONSE AND INTRAUTERINE INSEMINATION OUTCOME

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Objectives : To determine the association between basal gonadotrophins and oestradiol with ovarian response and the outcome of IUI.

Patients & Methods : This was a 12 months prospective study which was conducted in Hospital Kuala Terengganu. It involved 128 patients undergoing 191 cycles of COH-IUL. The blood sample was taken from the patients on day 2 of the COH-TUI cycle to measure the levels of serum FSH, LH and oestradiol. The ovarian response in term of number, status (ruptured or unruptured) and size of follicles to with the outcome of IUI that is clinical pregnancy were the outcome measures

Results : Twenty six patients from 91 LYLies of IUI achieved pregnancy. This gave an overall pregnancy rate (PR) of 13.6%. The highest PR was among patients with unexplained infertility (PR 15.3%) and the lowest was in the endometriosis group, 3.7%. The mean level of day 2 serum FSH, LH and oestradiol was not significantly different between pregnant and non-pregnant cycles, $p = 0.343$, $p = 0.449$ and $p = 0.344$, respectively. However, when different range of FSH was compared between the two groups, there was significant difference ($p = 0.030$) with a higher PR (20.8%) seen in the group with FSH ranging from 4.0 - 7.9 mIU/ml. In relation to the number of ovarian follicles measuring ≥ 20 mm, there was a statistically significant difference ($p = 0.012$) in day 2 serum oestradiol when the level was < 40 pg/ml. The chances of pregnancy was highest (PR 19.3%) in the cycles with day 2 oestradiol ranging from 40.0 - 59.9 pg/ml. There was no pregnancy occurred with oestradiol < 20.0 pg/ml and $= 60$ pg/ml. The chances of achieving pregnancy in a treatment cycle decreasing with an increasing age (PR 18% in age < 30 years as compared to 4.2% in age > 40 years). BMI, race, parity, duration and cause of infertility, type of infertility, day and number of IUI performed, stimulation agent and its dose, sperm count, number, status and size of follicles and also endometrial thickness were all not statistically significant.

Discussion & Conclusion : Day 2 serum FSH, LH and oestradiol do not have significant difference when compared between pregnant and non-pregnant cycles. However, the day 2 FSH between 4.0 - 7.9 mIU/ml and oestradiol < 60 pg/ml was associated with a higher chance of pregnancy.

Prof. Dr. Mohd. Shukri Othman : Supervisor
Prof. Madya Dr. Nik Mohamed Zaki Nik Abdullah : Co-Supervisor

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A STUDY ON THE ASSOCIATION OF SEXUAL FACTORS AND PERSONAL HYGIENE BETWEEN COUPLES IN RELATION TO CERVICAL CHANGES IN PAP SMEAR

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Objectives : This study was conducted to determine the association of sexual factors and personal hygiene between couples in relation to cervical changes in Pap smear.

Patients & Methods : This multicentre cross sectional study was conducted in the Obstetric and Gynaecology Clinic of Hospital Universiti Sains Malaysia, Hospital Kota Bharu and Hospital Kuala Terengganu from June 2004 till May 2005. A total of 99 couples who fulfilled the criteria were interviewed and the Pap smear performed on the female spouse. Their sexual habits and personal hygiene in relation to cervical changes in Pap smear were then compared and analysed using SPSS Version 12.0

Results : There were 55 (55.6%) of female respondents found to have

reactive cervical changes in Pap smear. The degree of inflammatory changes were 33 (60%) mild, 13 (23.6%) moderate and 9 (16.4%) severe features. Three percent (3%) of the cervical smears organisms (trichomonas, candidiasis and IUV infections) and 14.1% had per 1 discharge. There were 31 (31.3%) from both female and male respondents who had early sexual activity (<20 years). There were three male respondents whom had engaged in coitus before the age of 16 years. Sixty-eight percent (68%) of couples had coitus "two to three times per week. There were only 7 (7.1%) female respondents whom had more than two sexual partners (divorce and remarried) and only one male respondent whom engaged with sexual workers. Among the males, 87 patients (87.9%) had good genital hygiene and 95 patients (96%) practiced the habit of genitalia washing after sexual intercourse. There were 86 males (86.9%) who were circumcised. There were 88 (88.9%) females who practice the habit of genital wash prior to intercourse.

Discussion & Conclusion : From the statistical analysis, there was no significant association of cervical changes in relation to the age of first intercourse among the male and female spouses, the number of partners among female participants, the frequency of sexual activity among female participants, male of whom had sex with multiple sexual partners or sexual workers, the practice of applying condom, the status of circumcision, washing genitalia before or after intercourse in both couples and the status of genital hygiene.

Prof. Madya Dr. Nik Mohamed Zaki Nik Abdullah : Supervisor
Dr. Haji Abdul Rahman : Co-Supervisor

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A COMPARISON OF EFFICACY BETWEEN SWEEPING OF MEMBRANES AND NON SWEEPING OF MEMBRANES IN INDUCTION OF LABOUR.

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Objective: 1-The study was done to determine whether cervical membranes sweeping (stripping) during induction of labour is beneficial and to determine whether cervical membranes sweeping during induction of labour has association with increased peripartum complications.

Patients & Methods : This was a prospective randomised controlled trial, duration of 6 months from February 2006 until July 2006, done in Universiti Sains Malaysia, Kubang Kerian, Kelantan. Women who were admitted to Obstetric wards in Hospital Universiti Sains Malaysia for formal induction of labour were randomized into 2 groups: ie - group 1 : which was sweeping of membranes performed prior to induction of labour, and group 2 : which was sweeping of membranes not performed prior to induction of labour. The number of prostaglandin (PGE2) used for induction, interval of induction to onset of labour, duration of labour, maximum use of oxytocin, mode of delivery and peripartum complications were studied.

Results : Membranes sweeping shorten labour interval (mean 9.42 hours \pm 3.13 SD versus 15.14 hours \pm 3.03 SD, p-value = 0.001), has shorter labour duration (mean 5.9 hours \pm 2.76 SD versus 9.0 hours \pm 1.99 SD, p-value = 0.001), lower used dosage of oxytocin (mean 11.5 mU/min \pm 8.86 SD versus 17.2 mU/min \pm 7.74 SD, p-value = 0.001) and higher rate of spontaneous vaginal delivery (92.5% versus 87.5%, p-value = 0.001) with lower caesarean rate (7.5% versus 12.5%, p-value = 0.001). The number of PGE2 for labour induction was not statistically significant between both groups (mean 1.35 \pm 0.50 SD versus 1.50 \pm 0.49 SD, p-value = 0.30). Analgesia used between both groups was not statistically significant (72.5% versus 70% respectively, p-value = 0.06). Women in membranes sweeping group experienced more discomfort compared to non membranes sweeping group (82.5% versus 30%, p-value = 0.001). primigravidas were the majority who experienced

discomfort during vaginal examination due to the procedure of membranes sweeping (27.5% versus 14%, p-value 0.01). There was no incidence of intrapartum fever but more patients had postpartum fever in non membranes sweeping group (7.5% versus 2.5%) compared to membranes sweeping group respectively. The incidence of postpartum fever was statistically significant (p value = 0.001), however the incidence of postpartum fever occurred in the patients who had undergone caesarean section. Similarly, the usage of antibiotics peripartum was statistically significant in non membranes sweeping group (12.5% versus 7.5%, p-value = 0.001) compared to membranes sweeping group respectively. The antibiotics were given to patients who delivered via caesarean section. The postpartum fever may be contributed by postoperative morbidity and the usage of antibiotics were due to routine usage of prophylactic antibiotics given postoperatively. Thus, the incidence of postpartum fever and the usage of antibiotics was not significant in this study. The incidence of meconium stained liquor was not statistically significant between both groups (5.0% versus 7.5%, p-value = 0.07) respectively and the incidence of abnormal CTG was not statistically significant between both groups (5.0% versus 2.5%, p-value= 0.42). Apgar score at 1 minute and at 5 minutes after birth were comparable between both groups and there was no incidence of neonatal sepsis and neonatal death.

Discussion : This randomized study concluded that membranes sweeping in conjunction with formal method of labour induction at term has values and benefits in term of maternal and fetal outcomes. It was a safe procedure but women who had membranes sweeping experienced more discomfort especially in primigravidas. Membranes sweeping with formal methods of labour induction shorten labour interval, duration of labour, lower mean dose of oxytocin used in labour and increased spontaneous vaginal delivery rate. The number of PGE2 needed to induce labour and the analgesia used in labour was not statistically significant between both groups. There was no increased in the incidence of maternal fever associated with membranes sweeping.

Conclusions : The perinatal outcomes was favourable between both groups and membranes sweeping did not increase the incidence of meconium stained liquor, abnormal CTG, neonatal sepsis and neonatal death.

Prof. Dr. Mohd. Shukri Othman : Supervisor
Prof. Madya Dr. Nik Mohamed Zaki Nik Abdullah : Co-Supervisor

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THE METABOLIC SYNDROME AMONG OBESE PATIENTS ATTENDING OBESITY CLINIC IN HOSPITAL UNIVERSITI SAINS MALAYSIA.

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Introduction : An A single nucleotide polymorphism (SNP) at nucleotide 153,104 in the retinoblastoma susceptibility gene was identified to be found exclusively in Asian population with higher frequency in Southeast Asian population as compared to South Asian population.

Objectives : To determine the presence of A* G SNP at nucleotide 153,104 in our Malaysian children with retinoblastoma and their parents and its possible association with laterality staging of the disease

Patients & Methods : Children with retinoblastoma and their parents who fulfilled the inclusion criteria were included in this study. Ocular evaluations which include external ocular examination and binocular indirect ophthalmoscopy were done under general anesthesia for the selected patients. The staging was done according to International Classification of Retinoblastoma (ICRB). The control subjects comprised of ethnic-matched normal healthy individuals. Dilated fundus

examination was performed on the parents and control subjects rule out abnormal retinal finding. Three mls of blood were taken for genetic study. DNA extraction was done using Gene/AII Blood Mini kit. Primer pairs were designed to amplify exon 19 of RB1 gene and its flanking intronic region by using Primer3 software. The presence of the RB1 SNP at nucleotide 153,104 was detected by RFLP with the use of Tsp 5091 enzyme.

Results : Forty-four retinoblastoma patients were recruited in this study; 35(79.5%) were Malay, 5(11.4%) were Indian and 4(9.1%) were Chinese. The frequency of G variant among Malaysian retinoblastoma patients was found to be twice (0.14) higher as compared to the controls (0.07), however it was not statistically significant. G variant was found exclusively among Malay patients. There was also no significant association between laterality ($p=0.73$) and severity of the disease ($p=1.00$) and the presence of G variant. Interestingly, there was significant association in the presence of polymorphism in the retinoblastoma patients with the fathers ($p=0.01$) but not with the mothers ($p=0.40$).

Discussion & Conclusion : SMP at nucleotide 153,104 was found exclusively among Malay Malaysian children with retinoblastoma but there was no evidence of its role in susceptibility, laterality and prognosis of retinoblastoma. However, paternal SNP may play an important role in susceptibility of the disease. Thus, screening of the siblings may provide important understanding of the possible paternal transmission.

Dr. Liza Sharmimi Ahmad Tajudin : Supervisor
Dr. Zilfalil bin Alwi : Co-Supervisor

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THE STUDY OF REFRACTIVE ERROR AND OCULAR BIOMETRY IN LOW BIRTH WEIGHT CHILDREN AGED 9 TO 12 YEARS OLD IN KOTA BHARU.

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Objectives : The study was to determine the prevalence of refractive errors and study the ocular biometry parameters in low birth weight children aged 9 to 12 years old.

Patients & Methods : A comparative cross sectional study was conducted on 493 students (250 were low birth weight children and 243 were normal birth weight children) aged 9 to 12 years old. Eight out of 96 primary schools in Kota Bharu District were randomly selected. Written consent was obtained from parent prior to examination. Visual assessment includes visual acuity, ocular motility, external eye examination and ocular biometry measurement were conducted at the selected schools. Cycloplegic automated refraction using Retinomax Nikon was performed to those students who had visual acuity of 20/40 or less. Applanation ocular biometry measurement was done using A scan machine (Sonomed, mc) to all children in this study. Comparisons of ocular biometry were done between low birth weight and normal birth weight children. The correlation between each parameter and spherical equivalent was tested. Significant correlation was further tested with linear regression analysis.

Result : The prevalence of visual impairment was 9.8%. Refractive errors is the main caused. Myopia is the primary type of refractive errors (8.8%) followed by astigmatism (0.8%) and no hyperopia noted in the low birth weight group. These figures are slightly lower as compared to normal birth weight group. Low birth weight children had a significantly shorter axial length ($p=0.006$) and shallower anterior chamber depth ($p=0.029$) compared to normal birth weight children. There was no difference in lens thickness and radius corneal curvature between both groups. There was also a significant correlation between spherical equivalent and axial length ($r=-0.611$, $p=0.003$) and between spherical equivalent and lens thickness ($r=0.483$, $p=0.023$).

Discussion & Conclusion : Although the prevalence of refractive errors (8.8%) in low birth weight group was slightly lower as compared to the normal group, they showed arrested anterior segment growth that may contribute to different pathophysiology of refractive errors than the normal birth weight group. There was also progressive elongation of the eye ball as the degree of myopia increases and thicker lenses as the degree of myopia reduces noted in study among the low birth weight children.

Dr. Raja Azmi Mohd. Nor : Supervisor
Assoc. Prof. Dr. Nik Zainal Abidin Nik Ismail : Co-Supervisor

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CENTRAL CORNEAL THICKNESS AND CORNEAL CURVATURE IN NORMAL TENSION GLAUSMA

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MMed (Ophthalmology)

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Objective : The study was done to evaluate the central corneal thickness and cornea! curvature in normal tension glaucoma and to determine the correlation between these two parameters.

Patients & Methods : A case controlled study involving 31 eyes of 31 normal tension glaucoma patients and 34 eyes of 34 non-glaucoma control patients. Eyes with previous intraocular surgery, pterygium surgery and corneal pathology were excluded. The central corneal Thickness was measured with Topcon SP2000P non-contact specular microscope (Topcon Corp., Japan) and the corneal curvature was measured with Carl Zeiss Humphrey automated refractor/keratometer (Model 599, Humphrey System, USA). The central corneal thicknesses and corneal curvature between two groups were compared with independent T test. The correlation between central corneal thickness and corneal curvature in I tension glaucoma was tested with Pearson correlation coefficient.

Result : The mean central corneal thickness in normal tension glaucoma group was $522.83 \pm 28.32 \mu\text{m}$ and for the control group was $523.78 \pm 19.25 \mu\text{m}$. There was not statistically significant difference two groups ($p=0.873$). Subgroup analysis showed central s increased with duration of treatment with topical anti-glaucoma eye drops in normal tension glaucoma ($p=0.008$). The mean corneal curvature in normal tension glaucoma group was 43.93 ± 1.61 diopters and for the control group was 43.98 ± 1.61 diopters. There was no statistically significant difference found between two groups ($p=0.618$). Female in control group was found to have steeper cornea than male counterpart ($p=0.020$). There was no correlation found between central corneal thickness and corneal curvature in normal tension glaucoma ($r=-0.040$, $p=0.31$).

Conclusion : The central corneal thickness and corneal curvature in normal tension glaucoma are not statistically different from the normal population in our local community. There is no correlation between central corneal thickness and corneal curvature in normal tension glaucoma.

Dr. Zunaina Embong : Supervisor
Dr. Wan Hazabah Wan Hitam : Co Supervisor

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EXPRESSION OF Ki 67 PROLIFERATIVE CELL MARKER IN AGGRESSIVE GIANT CELL TUMOUR OF THE BONE AMONGST MALAYSIAN POPULATION

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Introduction : Giant Cell Tumour of bone is a benign disease with a tendency to recur and metastasize. It's behaviour is unpredictable. To date, there are no clinical, radiological or histological parameters to predict the behaviour of this unique disease. Locally presenting cases of Giant Cell Tumour of bone are more aggressive and tend to metastasize to the lung more frequently.

Objectives : We assessed the expression of Ki 67 proliferative marker of 31 cases of aggressive Giant Cell Tumour of bone presented to our institution from January 1999 to December 2006 as a predictor of behaviour of the tumour.

Results : There was a male predilection of the disease with a mean age of 33.8 years. Majority of the cases were in the third and fourth decade of life. The Malays predominated (88%) followed by the Chinese (6%), Indians (3%) and other races (3%) The main site of location was around the knees (64.5%) followed by distal radius (12.9%) In this study, 83.9% of cases did not have tumour recurrence. However, 19.44% (6) of the cases had lung metastasis There was no recurrence of tumour recorded in all of the 25 cases (80.64%) that was treated with wide resection The mean Ki 67 index was 8.15.

Discussion & Conclusion : This was not statistically significant when compared with tumour behavior, tendency for local recurrence and lung metastasis. Ki 67 index is not a predictor for the behaviour of aggressive Giant Cell Tumour of bone.

Dr. Wan Faisham Wan Ismail : Supervisor
Prof. Dr. Zulmi Wan : Co-Supervisor

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**TREATMENT OUTCOME OF CHILDREN WITH ACUTE
LEGMYELOBLASTIC LEUKAEMIA IN HUSM**

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Introduction : Treatment Outcome of Children with Acute Lymphoblastic Leukaemia In HUSM. Acute lymphoblastic leukaemia is the most common malignant disease in children. There is neither national or international consensus about risk assignment, and no uniformed chemotherapy regime accepted. As a result, it is often difficult to compare the outcome from one group with another. In Hospital Universiti Sains Malaysia (HUSM), the children were treated using EORTC protocol. Other centers in Malaysia treat childhood ALL with different treatment protocol. There was only one formal study reported regarding the outcome of children with ALL in Malaysia. However none comparative study of the effectiveness of each treatment protocol carried in Malaysian population. This study was the first to analyse childhood ALL in HUSM.

Objectives : The main objective was to evaluate treatment outcome of children with ALL who received chemotherapy at Pediatric Oncology Unit in HUSM. The specific objective was to determine survival rate and risk factors for relapsed ALL and death among children with ALL treated with EORTC treatment protocol.

Patients & Methods : The study was conducted at Pediatric Oncology Unit in HUSM. This was a retrospective study involving children with ALL who was diagnosed and treated between 1 January 1990 and 31st December 2003. Children aged 1 to 13 years and fulfilled the inclusion and exclusion criteria would be enroll in the study.

Results : There were a total of 138 children with diagnosis of ALL and received treatment at Pediatric Oncology Unit in HUSM from 1st January 1990 to 31st December 2003. A total of 102 children who fulfilled all inclusion and exclusion criteria were available for further review. The mean duration of follow-up was 93 months (SD 40). The minimum follow-up duration was 37 months and maximum duration was 186 months. Most of relapse occurred within 2 year after diagnosis. Only 2 cases of relapse occurred 5 years after diagnosis. Isolated BM relapse

(22%) was the most common site of relapse. Overall EFS rate at 1, 3 and 5 years was 81.4% (SE \pm 3.9), 59.8% (SE \pm 4.9) and 55.3% (SE \pm 5.0) respectively. Multiple Cox proportional analysis showed children aged, WBC count at diagnosis and early response to single prednisolone were the significant prognostic factors for the outcome of children with ALL. There was increased risk of poor outcome (relapse or death) in children aged at 10 to 13 years at about 4 times (95% CI 1.47; 10.44, p=0.006); 2.3 times (95% CI 1.09; 5.00, p=0.030) in children with WBC count at diagnosis more than 100.0 X10 and those poor early response to single prednisolone at about 2.6 times (95% CI 1.28; 5.20, p=0.008).

Discussion & Conclusion : Survival in this was comparable to developing countries but study remained low compared to developed countries. Most of relapse occurred within 2 year after diagnosis with isolated BM relapse was being the most common site of relapse.

Dr. Ariffin Nasir : Supervisor
Dr. Norsarwan Mohamad : Co-Supervisor

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**CARDIOPULMONARY ASSESSMENT IN
TRANSFUSION DEPENDENT THALASSEMIA IA
PATIENTS AT HOSPITAL UNIVERSITI SAINS
MALAYSIA.**

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Introduction : The thalassemias, a disease that result from mutations of genes encoding the synthesis of α - and β -globin chains of haemoglobin are responsible for anaemia of variable severity. The β -Thalassemia is widespread throughout the Mediterranean region, Africa, the Middle East, the Indian subcontinent, Burma and Southeast Asia including southern China, the Malay Peninsula and Indonesia. Morbidity due to cardiovascular, endocrinological, and hepatic disease is considerable in β -thalassemia syndromes. Heart failure remains the major cause of death (60%), greatly exceeding deaths from the other causes such as infection (13%) and liver disease (6%). Abnormal pulmonary function tests were described in thalassaemic patients who need regular blood transfusion. However this is not well described and has mixed results from the previous studies These abnormalities could be due to anaemia, iron deposition in the lungs, or other factors

Objectives : The study was done to describe the abnormalities in cardiac function (i.e. left ventricular systolic and diastolic functions), respiratory function (i.e. flow rates and lung volumes) in transfusion dependent thalassemia (TDT) patients attending paediatric day care centre, determine the correlation between the abnormalities of the cardiac and the respiratory functions with serum ferritin.

Patients & Methods : This is a cross sectional study, conducted at the Day Care Centre Unit, Department of Paediatrics, Hospital Universiti Sains Malaysia (HUSM) from January 2006 till December 2006. It involved all the transfusion dependent thalassemia (TDT) patients who were attending the paediatric day care centre at HUSM. A total of 41 subjects were included in this study, aged 11.4 ± 4.4 years, with the diagnosis of thalassaemia (including both α and β thalassaemia). Doppler echocardiographic indexes of systolic and diastolic ventricular function were assessed. Pulmonary function test was performed using Microloop Spirometer SPIDA and it only involved 29 subjects.

Results : This study revealed that cardiac assessment showed that when compared to the mean of normal values, there was no significant difference of LV systolic function but LV diastolic function showed significant differences and compatible with restrictive heart disease. Lung functions test showed that the majority of the patients, 26 (89.7%) of them predominantly had restrictive lung pattern, one patient had obstructive lung pattern and only 2 of them were normal There were no

correlation of serum ferritin level with LV systolic function and diastolic function only showed weak correlation lung function test had no correlation at all with serum ferritin level.

Discussion & Conclusion : LV systolic performance is well preserved in TDT patients despite high serum ferritin level., However diastolic dysfunction affected earlier than systolic dysfunction. Majority of TDT patients had predominantly restrictive lung pattern. Severe iron overload and deposition in the myocardium may leads to the restrictive abnormalities of left ventricular filling. However relationship between altered lung function tests and iron deposition in the remains unclear.

Dr. Ariffin Nasir : Supervisor
Dr. Norsarwany Mohamad : Co-Supervisor

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THE ETIOLOGY OF BACTERIAL MENINGITIS IN CHILDREN AGED 2-60 MONTHS DIAGNOSED AT QUEEN ELIZABETH HOSPITAL, KOTA KINABALU: BEFORE AND AFTER THE INTRODUCTION OF HEMOPHILUS INFLUENZAE (HIB) VACCINE.

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Introduction : Bacterial meningitis in children is a serious threat to global health. Hemophilus influenzae type b (Rib) was an important cause of bacterial meningitis in children less than 5 years old prior to the introduction of Rib conjugate vaccine. Several studies have proven the effectiveness of routine Hib vaccination in protecting Rib meningitis worldwide. Since the implementation of Hib conjugate vaccine in Malaysian Primary Inmuniuzation Program in June 2002, no study has been done to evaluate the effectiveness of this vaccination against Hib meningitis in this country.

Objectives : The objective of this study is to establish a local data about the incidence of Rib meningitis and the effectiveness of Rib vaccination against the disease among children aged 2 to 60 months in Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia We also look at the pattern of etiological agents of bacterial meningitis following a routine use of Rib vaccine

Patients & Methods : This was a retrospective study, conducted at Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia. All case notes of patients with meningitis admitted before Hib conjugate vaccine introduced from Jan 1999 to Dec 2001 and after the implementation of the vaccine between Jan 2004 to Dec 2006 were evaluated in the study. The patient must be aged between 2 to 60 months at the time of the diagnosis and the diagnosis was confirmed by clinical findings and cerebrospinal fluid assessment (CSF). The etiologic agents were based on positive CSF culture and/or latex agglutination test. Clinical information from the case notes, including CSF results and the outcome on discharge, were obtained. Analysis of extracted data was performed using SPSS version 12.0 and STATA.

Results : 216 case notes of patients were included in the study, 103 patients before and 113 patients after the introduction of the Hib vaccine. Hib meningitis incidence decreased from 2.27 to 0.3 cases per 100 000 overall population, and from 21 to 2.85 cases per 100 000 population in children less than 5 year Rib meningitis before the vaccination was 33 0% (95% CI 24 0, 43 0) and after the introduction of the Hib vaccine Hib meningitis nificantly reduced to 6.2% (95% CI 2,5, 12,4) (p:<0.001). Following the Rib cmation, the complicatio were less severe and the mortality from Rib meningitis Significantly reduced. Pacumococcal meningitis however, was notably increased in frequency from 5.8% before the Hib vaccination period to 18.6% after the implementation of Hib vaccine. Other organisms that caused bacterial meningitis were not affected by the Hib vaccination.

Discussion & Conclusion : The implementation of the Hib vaccine not only reduced the incidence of Hib meningitis but has reduced the incidence of bacterial meningitis as a whole. Patients with Hib meningitis who received Hib vaccination has developed less severe complications and results in less mortality. Pneumococcal meningitis however, alarmingly increased during the period studied.

Dr. Mohd. Suhaimi Ab. Wahab : Supervisor
Dr. Noorizan Abd.Majid : Co-Supervisor

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NEOVASCULARIZATION FROM A ARTERIOVENOUS LOOP IN CHITOSAN CONSTRUCT : AN EXPERIMENTAL MODEL IN RABBIT

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Introduction : The principle of tissue engineering research is based on the seeding of cells onto porous biodegradable polymer scaffolds, which are used to support, reinforce and in some cases organize the regenerating tissue. Chitosan, the N-deacetylated derivative of chitin, is biocompatible and biodegradable, enabling it to be used effectively as a biomaterial scaffold.

Objectives : The main purpose of this study is to study the induction of neovascularization and tissue response that occur in chitosan films that are placed with an arteriovenous bundle in an isolated PTFE chamber. The second objective was to determine the degrees of increase of neovascularization with time.

Methodology : Twelve rabbits were used and they were divided into three groups (Group A, Group B and Group C). Arteriovenous bundles were created and placed inside a PTFE chamber. On the right side, the PTFE chamber was filled with chitosan film (test group); while on the left side the PTFE chamber was empty (control group). The PTFE chambers on both sides were then placed in separate submuscular pockets created in the anterior abdominal wall on each side. At the second week, rabbits from group A would be sacrificed and the contents of the chambers harvested. Tissue response and neovascularization of the tissue inside the PTFE chambers would be assessed by histopathological examination. Similar procedure was to be repeated at the fourth and sixth weeks for Group B and Group C respectively.

Results : Showed the presence of chitosan provoked significant inflammatory reaction in the tissues adjacent to it with areas of tissue necrosis. No granulation tissue, new tissue formation and neovascularization were observed in the vicinity of the chitosan. The level of inflammation at second week was more intense than those at the forth and sixth weeks. There was no difference in term of scarcity of neovascularization among the test groups at second, forth and sixth weeks. In the control group, neovascularization and new tissue formation were observed.

Discussion : Based on these observations, the results indicate that chitosan in the form we used in this experimental study did not support neovascularization from the arteriovenous bundle in the PTFE chambers. Chitosan may bring about desirable effects like promotion of wound healing or causes tissue destruction, depending on its physicochemical properties.

Conclusions : The effects of chitosan of various physicochemical properties on animal tissue need to be studied in more details. Further studies are warranted to elucidate detailed information of the various properties of chitosan.

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

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BULLYING BEHAVIOUR AMONG SECONDARY SCHOOL STUDENTS IN THE DISTRICT OF KUALA TERENGGANU AND ITS ASSOCIATION WITH SELF-ESTEEM AND PSYCHOSOCIAL ADJUSTMENT

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Introduction : Bullying among school-aged youth is being recognized as an important problem affecting well-being and social functioning. However it is infrequently addressed and up-to-date no data on the prevalence of bullying among secondary school students in Terengganu is available.

Objectives : The study was done to determine the prevalence of bullying among secondary school students and its association with socio demographic background, indicators of psychosocial adjustment which include problem behavior, social emotional adjustment and reaction toward school and self esteem

Patients & Methods : This was a cross-sectional study, done in public schools in the District of Kuala Terengganu, where 309 students from Form one to Form three (mean age 13.9), participated. They were selected randomly from five schools which were also randomly selected from 33 secondary schools in the District of Kuala Terengganu. The studied outcome measured were self-reported involvement in bullying, as bully victim or both bully and victim. Psychosocial adjustment dimensions assessed include happiness with friend, ease of making friendship, assistance by friend, loneliness feeling and social isolation. Smoking and absenteeism were included as problem behaviours among students. Reaction toward school was assessed by asking about their safety feeling at school and whether they like their school or otherwise.

Result : 51.1% of participants were involved in bullying behaviour as bullies, 53.4% as victims and 27.8% as both bully-victim. All 3 bullying behaviour groups were significantly more likely to occur among male (bullies Adjusted OR = 4.06, 95% CI), victims Adjusted OR 2.54 95% CI and bully-victim Adjusted OR =3.77, 95% CI). Bullies and bully-victims were more likely to be assisted by friends (Adjusted OR= 2.90, 95% CI and 2.79, 95% CI respectively) Victims were more likely from lower middle socio-economic class (Adjusted OR =3.15, 95% CI) and isolated by friends (Adjusted OR = 3.32, 95% CI) Loneliness was found to be a protective factor for bully (Adjusted OR= 0.44, 95% CI) and bully-victim (Adjusted OR=0.25, 95% CI) Bully-victims were more likely to be protected by liking their school (Adjusted OR= 0.16) Self esteem was not significantly associated with all three groups of bullying behaviour

Discussion & Conclusion : The prevalence of bullying among secondary school children is substantial especially among male students. Bullying was also significantly associated with psychosocial adjustment.

**Prof. Madya Dr. Mohd. Jamil Yaacob : Supervisor
Dr. Sarimah Abdullah : Co-Supervisor**

SPECTRUM OF PSYCHIATRIC DISORDERS IN CHILDREN WITH EPILEPSY.

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Introduction : Previous studies found that children with epilepsy were at higher risk to have psychiatric comorbidity compared to children with

other illnesses. Factors associated with this comorbidity are seizure related factor like age of onset, frequency and type of seizure, treatment related factor like number and type of antiepileptic drug and personal factor like mental retardation and family history of mental illness.

Objective : This study was done to study the psychiatric comorbidity and associated risk factors in children with epilepsy.

Patients & Methods : A cross sectional study was carried out to detect psychiatric disorder in children with epilepsy. Data on sociodemography and seizure characteristics were collected. Screening for psychiatric disorders was done by using MINI Kid screen followed by clinical interview based on DSM-IV criteria for the diagnosis. Descriptive analysis was used for sociodemographic data and seizure characteristics. The association between risk factors and psychiatric comorbidity was found by applying chi-square and independent test

Result : 14 (15.2%) out of 92 patients were found to have psychiatric disorders. Among children with psychiatric disorders, 1 (7.1%) patient was diagnosed to have Major Depressive Disorder, 2 (14.3%) patients had psychotic disorder, 1 (7.1%) patient had Separation anxiety disorder, 8 (57.1%) patients had Attention Deficit Hyperactive Disorder (ADHD) and 2 (14.3%) patients had Tic Disorder. There was significant association between psychiatric comorbidity and mental retardation but no association with age of onset, frequency and type of seizure, number of antiepileptic drug and family history of mental illness.

Discussion & Conclusion : Psychiatric comorbidity was relatively frequent among children with epilepsy and the most common diagnosis was ADHD. Screening for psychiatric disorder in children with epilepsy is useful for early detection and intervention.

**Prof. Madya Dr. Mohd. Jamil Yaacob : Supervisor
Dr. Salmi Ab. Razak : Co-Supervisor**

HIPPOCAMPAL VOLUMETRIC STUDIES ON MRI IMAGES IN PATIENTS WITH REFRACTORY EPILEPSY..

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MMed (Radiology)*

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Introduction : Epilepsy is a common chronic disorder that affects 1% to 3% of the population and seizure cannot be controlled in 30% of the patients, despite adequate anti epileptic drugs. Current advances in epileptic treatment have found that among those medically refractory epilepsy patients, there was a subgroup of patients whom have surgically remediable syndromes. In this group, majority of them had hippocampal sclerosis (60 to 70%).

Objectives : The objective of this study was to determine and compare the hippocampal volume and signal intensity changes between refractory temporal lobe epilepsy patients and controls.

Patients & Methods : This was a comparative cross sectional study comparing the hippocampal volume in chronic epileptic patients with normal populations. Forty-three (43) refractory epilepsy patients were investigated with quantitative MRI examinations during the study period from September 2004 until March 2007. Similar number of controls was included in this study. All the patients had undergone thorough clinical and "logical assessment for the epileptic localization before the MRI examination. The 1, for the MRI examination was developed in our institute, Hospital Univeristi Sains Malaysia. A single observer who was blinded for the patients' clinical parameter performed a manual hippocampal measurement and observation on the MRI images. The mean and standard deviation (SD) of hippocampal volumes of both groups were calculated. A hippocampal volume of less than 2 SD from the normal volume was taken as atrophy. Correlation was made between the hippocampal volume and sclerosis with the EEG findings. Other anatomical abnormality observed was also recorded.

Results : Mean and SD of the hippocampal volume of refractory epilepsy patients were 2412.91 ± 570.09 mm on the right and 2391.01 ± 620.01 mm on the left. For the controls, the right hippocampal volume was 2921.51 ± 394.70 mm and left volume was 2943.41 ± 367.67 mm. There were differences in hippocampal volumes in between these two groups which were statistically significant. Majority of the patients had abnormal signal intensity in the hippocampus and this was consistent with the expected findings in refractory temporal lobe epilepsy. These findings were important for the patients' selection for epilepsy surgery as this was the only treatment that offers hope of cure.

Discussion & Conclusion : Our study showed that there was a significant reduction of the hippocampal volume and abnormal signal intensity changes in refractory epilepsy patients.

Prof. Madya Dr. Meera Mohaideen Abdul : Supervisor
Prof. Madya Dr. John Tharakan : Co-Supervisor
Dr. Salmah @ Win Mar : Co-Supervisor

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THE METABOLIC SYNDROME AMONG OBESE PATIENTS ATTENDING OBESITY CLINIC IN HOSPITAL UNIVERSITI SAINS MALAYSIA.

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MMed (Radiology)

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Introduction : Kacip Fatimah is a traditional herb that contains phytoestrogen and is commonly used by the Malay population in Malaysia to treat various gynecological illnesses. It is also used as an alternative to hormone replacement therapy due to its estrogenic effect. Postmenopausal hormone use is associated with increase in mammographic density and mammographic density is an independent risk factor for breast cancer.

Objective : Our purpose was to evaluate the effect of Kacip Fatimah (*Labisia pumila*) water extract on mammographic density in postmenopausal women.

Patients & Methods : A prospective, randomized, double-blind placebo-controlled pilot study was conducted. A total of 69 postmenopausal women were equally randomized to receive Kacip Fatimah water extract 140 mg/day, 280 mg/day, 560 mg/day or placebo. Mammograms were performed at baseline and after 6 months of treatment. Mammographic density was evaluated according to percentage scale, BIRAD classification and computer assisted measurement of breast density.

Result : The categorical assessments showed that there was no significant shift in categorical classification as assessed by BIRAD and percentage categories in either control or treatment groups. There was slight increase in breast density as assessed by computer assisted although the increases were not statistically significant. The increases in breast density over pretreatment baseline were 0.2 %, 0.1 %, 1.5 % and 0.6 % for placebo, 140 mg. group, 280 mg group and 560 mg group, respectively. These values were not significantly different from one another. This small increase in breast density might be due to the fact that phytoestrogen is a weak estrogen.

Conclusion : Kacip Fatimah extract given over a period of 6 months did not significantly affect mammographic density.

Dr. Nik Munirah Nik Mahdi : Supervisor
Assoc. Prof Dr. Nik Hazlina Nik Hussain : Co-Supervisor
Dr. Latifah Mohd. Basheer : Co-Supervisor

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MRI ASSESSMENT OF PREOPERATIVE CHEMOTHERAPY RESPONSE IN OSTEOSARCOMA

AND A PRELIMINARY STUDY OF DWI ON VIABLE AND NECROTIC TUMOUR TISSUE.

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Introduction : Magnetic Resonance Imaging is the method of choice for the preoperative assessment of osteosarcoma to differentiate responders from non-responders. It is reliable, noninvasive and have better spatial resolution. Parameters used in conventional MRI for assessment include tumour volume, tumour signal intensity changes, peritumoral oedema, development of tumour necrosis and neovascularity on MRA. Other method such as gadolinium chanced MRI is a sensitive but not specific and dynamic MJU is more reliable assessment of response. However, the use of contrast agents increases the cost, imaging time and discomfort to the patient. The latest technique being used is the diffusion-weighted imaging shows promising result to assess in-vivo tumour necrosis without administering contrast agent.

Objective : This study is to evaluate the MRI assessment of preoperative chemotherapy response in osteosarcoma using volume and signal intensity changes, and to assess viable and necrotic tumor tissue with diffusion-weighted imaging.

Patients & Methods : This study was a cross sectional study for 62 months from January 2002 till February 2007. A total of 24 patients were analyzed for tumour volume changes and 14 patients were analyzed for signal intensity changes. Five patients were analyzed for ADC value using diffusion weighted MR imaging to differentiate viable and necrotic tumour tissue.

Result : No significant changes in tumour volume and signal intensity were noted during pre and post Chemotherapy. There was no correlation between changes in volume and changes in signal intensity with histopathological response. Difference in mean ADC value were seen in viable tumour tissue and tumour necrosis.

Conclusion : Tumour volume and signal intensity changes on MRI are not reliable for assessment of preoperative chemotherapy response. However, DWI is a promising MRI technique to be used for the evaluation of chemotherapy response.

Dr. Nik Mohd Ezanee Aziz : Supervisor
Prof. Zulmi Wan : Co-Supervisor
Dr. Tg. Norbanee Tg. Hamzah : Co-Supervisor

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A COMPARATIVE STUDY OF TUBERCULOUS SPONDYLITIS ON PLAIN RADIOGRAPH AND MRI FINDINGS.

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Introduction : TB spondylitis is the commonest and most dangerous form of skeletal tuberculosis. Complications caused by the disease may cause severe morbidity especially from neurological point of view. Early treatment might prevent further complications and sequelae of the disease. Plain radiograph is cheap and easily accessible in many primary health centres in Malaysia. Correlation with clinical history is needed to diagnose TB spondylitis. Magnetic resonance imaging of the spine is useful diagnostic tool for evaluating early involvement and extent of the disease. In advanced cases, spinal cord compression and damage can be assessed thoroughly due to its multiplanar capability. According to the literature,

the involvement of posterior element of the vertebra is less commonly seen in TB spondylitis.

Objective : The purpose of this study is to provide demographic data and clinical characteristics of TB spondylitis patients attending HUSM, Kubang Kerian, Kelantan. Companson and correlation of TB spondylitis on plain radiograph and MRI findings based on the site of involvement, pattern of vertebral ions (contiguous/ non contiguous), soft tissue involvements and disc space involvement are determined Evaluation of the involvement of the posterior element is also performed.

Patients & Methods : This was a cross sectional study over a period of 16 months (September 2006 until 31 April 2007). The plain radiograph and MRI images were analysed by a radiologist who was blinded. Demographic, relevant clinical and laboratory data were also analyzed.

Results : A total of 19 patients were studied which comprised of 42.1% males and 57.9 % females patient diagnosed and treated as TB spondylitis with plain radiograph and MRI done. The thoracic region was the commonest site of involvement (47.4 %) on plain radiograph and on MRI (42.1 %). Thirteen out of 19 patients were found to have contiguous lesions on plain radiograph and MRI. The disc space involvement was found in 16 out of 19 patients (84 %) on plain radiographs. On MRI, the disc space involvement was found in all 19 patients. Soft tissue involvement was found in 12 out of 19 patients (63.2 %) on plain radiograph and MRI. Abscess formation was found in 84.2 % of patients Cord compression was found in 57 9 % of the patients The posterior element involvement was found in 12 out of 19 patients (63 2%)

Discussion & Conclusion : There was good correlation between plain radiographic and MRI findings :n the site of involvement, pattern of vertebral lesions (contiguous/ non) and disc space involvement (all patients involved on MRI in comparison with 84.2% on plain radiograph). A fair correlation was seen based on soft tissue involvements. There was a high incidence of posterior element involvement in this study (63.2%)

Dr. Rohaizan Yunus : Supervisor

Dr. Latifah Mohd. Basher : Co Supervisor

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A COMPARATIVE STUDY BETWEEN COBRAPLA AND LARYNGEAL MASK AIRWAY CLASSIC IN SPONTANEOUS VENTILATING ADULT PATIENTS.

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Introduction : The purpose of this study is to assess whether the newly developed CobraPLA is a reliable, easy and safe device for use in adult patient undergoing general anaesthesia.

Objectives : We analysed the use of the CobraPLA with the laryngeal mask airway in spontaneously ventilating adult patients undergoing general anaesthesia for elective surgery.

Patients & Methods : A randomized prospective Study was conducted on 56 premedicated adult patients of ASA 1 and 2, aged between 18 to 65 years. They were divided into 2 groups (n= 28/ group) receiving either CobraPLA or LMA as airway device. After inhalational induction of anaesthesia with intravenous propofol 2mg/kg and intravenous fentanyl 1 mcg/kg, the CobraPLA or LMA was inserted and the patients breathed spontaneously throughout the surgery. Anaesthesia was maintained with nitrous oxide, oxygen and sevoflurane. The airway device was removed at the end of surgery with the patients fully awake. The duration of insertion and number of attempts needed to successfully secure the airway was recorded. Systolic blood pressure, diastolic blood pressure, mean arterial blood pressure, heart rate, saturation and end tidal carbon dioxide at different time interval were recorded The incidence of post operative complications were also recorded.

Results : We found that there was longer time of insertion in the

CobraPLA group as compared to LMA group and the difference was statistically significant. However there was no difference in the number of attempts needed to secure the respective airways. The ETCO2 was higher in the CobraPLA group as Compared to LMA group and the difference was statistically significant. Saturation was found to be higher in the LMA group and the difference was also statistically significant. However there was no difference in haemodynamic changes. Incidence of blood staining of the airway devices was higher in the CobraPLA group and was statistically significant. Nevertheless the incidence of sore throat was equal in both groups.

Discussion & Conclusion : We concluded that during spontaneous ventilation in adult patients undergoing general anaesthesia, the CobraPLA is not as reliable in providing a satisfactory airway and we consider it is not a suitable alternative to the laryngeal mask airway.

Dr. Rhendra Hardy Mohd. Zaini : Supervisor

Assoc. Prof. Dr. Nik Abdullah Nik Mohammad : Co-Supervisor

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A STUDY ON FACTORS THAT INFLUENCE INSULIN REFUSAL AMONG TYPE 2 DIABETES MELLITUS AT DIABETIC CENTRE HOSPITAL UNIVERSITI SAINS MALAYSIA (HUSM)

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Introduction : Generally insulin refusal is emerging as a significant public health problem. In Malaysia there is no reported data on prevalence and associated factors of insulin refusal.

Objectives : The objective of this study was to determine influencing factors of insulin refusal among Type 2 Diabetes Mellitus (T2DM) patients in Hospital Universiti Sains Malaysia (HUSM).

Patients & Methods : The study was carried out in two phases In phase one, in-depth interviews were carried out to explore the patients' knowledge, attitude and practice towards their illness, and its management. To fulfill this objective, five volunteered T2DM patients who refused insulin were interviewed. Their responses were transcribed and analyzed based on the framework questions directed to them. Data obtained were used to formulate a questionnaire which consists of few domains namely socioeconomic and demographic, knowledge on diabetes and insulin, attitudes on insulin injection and practices on diabetes care. In phase two, a case-control study was conducted using the questionnaire on 100 I patients for each group (refused and accept insulin) in Diabetic Centre HUSM. The Data were analyzed using SPSS version 12.0.

Results : The result found that, there was a significant association between accompanied during clinic visit and insulin refusal. Being I clinic visit has a higher risk to refuse insulin. There was no other c and demographic factor associated with insulin refusal. There were a negative association between knowledge score on insulin and insulin refusal. However, negative attitudes towards insulin injection had positive association with refused insulin.

Discussion & Conclusion : In conclusion, insulin reluctance among T2DM patients is a common problem and requires a closer attention. Therefore, the knowledge on insulin and it's injection should be propagated to patients through health education because the information may influence their decision making in using insulin in future.

Dr. Harmacy Mohamed Yusoff : Supervisor

Prof. Dato' Wan Mohamed Wan Bebakar : Co-Supervisor

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BLOOD LACTATE AS A DETERMINANT OF END POINT AND OUTCOME OF RESUSCITATION IN EMERGENCY

DEPARTMENT HOSPITAL UNIVERSITI SAINS MALAYSIA

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Introduction : Adequate resuscitation of shock early in the Emergency Department (ED) is essential to ensure improved patients' outcome. The conventional end-points of resuscitation used are inadequate to determine systemic perfusion and oxygenation. Serum lactate is a more reliable endpoint of resuscitation. This study examines the use of serum lactate at various points of resuscitation in ED and their association with patients' survival time.

Objectives : This study was done to determine the association between pre-resuscitation blood lactate level in ED with that of shock patients' and the 30-day survival time, the association between admission blood lactate level in ED with that of patients' 30-days survival time and the association between the differences of pre-resuscitation and admission blood lactate level in ED with that of shock patients' 30-days survival time

Patients & Methods : A survival analysis study was done from June 2006 until December 2006 on eligible patients with shock presented to ED HUSM. Physiological parameters along with serum lactate were recorded before and after resuscitation. Patients' outcome were followed-up within 30 days following resuscitation in ED. The association between survival time and serum lactate as well as other parameters were analyzed using SPSS version 12.0.

Results : There were 34 patients enrolled into the study during the study period. Eight (23.5%) patients died within 30 days following resuscitation. The 30-days survival rate for all patients was 76.5% with a mean survival time of 24 days (95% CI 20.3, 27.7). The pre-resuscitation lactate, admission lactate and difference of lactate readings were categorized into low and high category based on their mean value. The mean survival flow and high category of pre-resuscitation lactate values were 25.3 days (95%CI 14.6, 28.7) respectively and 21.2 days (95% CI 14.6, 28.7) respectively. There was no significant of survival time between the two categories ($p=0.31$). The mean survival time of low and high category of lactate difference were 21.7 days (95% CI 15.6, 27.8) and 26.1 days (95% CI 21.7, 30.4) respectively. However, there was no significant difference between the two categories ($p=0.32$). The mean survival times of low and high category of lactate difference were 21.7 days (95% CI 15.6, 27.8) and 26.1 days (95% CI 21.7, 30.4) respectively. However, There was no significant difference of survival time between the two category of admission variables having significant difference between the two categories ($p=0.32$). The mean survival times of low and high category of admission lactate were 27.6 days (95% CI 15.6, 27.8) and 261 days (95% CI 21.7, 30.4) respectively. There was significant difference of survival time between the two categories ($p=0.02$). Other variable having significant difference were admission systolic blood pressure ($p=0.02$) and admission mean arterial pressure ($p=0.01$). On multivariate analysis, only admission serum lactate was significantly associated with survival time.

Discussion & Conclusion : Only admission lactate readings is significantly associated with that of shock patients' thirty-days survival time.

**Dr. Mohd. Idzwan bin Zakaria : Supervisor
Assoc. Prof. Dr. Kamaruddin Jaalam : Co-Supervisor**

NEBULIZED COMBINED LIGNOCAINE AND SALBUTAMOL IN TREATMENT OF ACUTE ASTHMA (A PILOT STUDY)

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Introduction : Management of asthma in Emergency Department remains a challenge to all Emergency Physician and Allied Health Personnel. Various modality of treatment has surfaced since the last decade and lately, anaesthetic medications have found a place in treatment of mild to moderate asthma patients. Anaesthetic medications have long been found to have direct effect on airway smooth muscle and it causes relaxation of the bronchial smooth muscles. The anaesthetic medication in question is Lignocaine. Lignocaine is an local anaesthetic and anti-arrhythmic medication that is easily available. It has a rapid onset of action and short duration of action. Lately it has been found to have property to attenuate reflex bronchoconstriction and also anti-inflammatory.

Objectives : The objective of this study is to compare the result of relief of bronchoconstriction in patients with acute asthma when they are given either combined nebulized lignocaine & salbutamol or salbutamol only This study also would like to document the side effects of combined nebulized lignocaine and salbutamol

Patients & Methods : A prospective study was conducted on 50 patients who had come to the emergency department and required treatment for acute exacerbation of mild to moderate asthma. Patients who fulfilled the criterias for inclusion were randomized to receive either plain salbutamol or combined salbutamol with lignocaine nebulized treatment. Measurements of peak expiratory flow rate and other clinical datas such as blood pressure, pulse rate, respiratory rate and oxygen saturation level will be taken in intervals.

Results : The results from 50 patients requiring treatment for acute exacerbation of asthma showed that there were no significant difference between those randomized to receive plain salbutamol treatment and those receiving combined salbutamol and lignocaine nebulizers. At 15 minutes of treatment, the mean percentage of increased PEFr value of 20.92 ± 28.23 (Single) and 18.01 ± 22.09 (Combined) . The p value seen was 0.687 at 15 s interval of treatment Even at 30 minutes of treatment shows the mean . value of increased PEFr at 33.91 ± 34.79 (Single) and 36.02 ± 41.15 (Combined) with p value of 0.846. Out of 25 patients who were given combined salbutamol and lignocaine treatment, 16 patients experienced numbness of the oral cavity tients experienced both bitterness taste and numbness of the oral cavity.

Discussion & Conclusion : Combined sulbutamol and lignocaine did not have a better relief of bronschoconstriction as compared to salbutamol nebulization in mild to moderate asthma. The expected side effects of lignocaine were encountered and there were no new ones.

**Assoc. Prof. Dr. Wan Aasin Wan Adnan : Supervisor
Dr. Nik Hisamuddin Nik Abd. Rahman : Co-Supervisor**

A STUDY ON THE DEMOGRAPHIC PROFILES, DISEASE CHARACTERISTICS AND ONE-WEEK OUTCOME OF RED-TAG PATIENTS IN THE EMERGENCY DEPARTMENT, HOSPITAL UNIVERSITI SAINS MALAYSIA

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Introduction : The red zone of Emergency Department (ED) provides treatment to critically-ill patients with life-threatening conditions. There have been many improvements achieved in saving the life of the patients.

However, very minimal data can be found within Malaysian context regarding the patients' demographic profiles and disease characteristics along with the relationship between the types of illness and their outcomes. Knowledge from this study will serve as a guide on future management of critically-ill patients to improve the quality of services.

Objectives : The study was done to obtain the demographic data and disease characteristics of critically-ill patients in ED HUSM red zone. The sample was analyzed a week later. Two scoring systems i.e. the Revised Trauma Score for the trauma patients and Shock Index the non-trauma patients were used to see the correlation between the factors and the mortality.

Patients & Methods : A prospective observational study for a period of 6 months was carried out to achieve the sample size (440 patients). The demographic data in terms of age, sex, race, history of illness and types of disease were analyzed. Follow-up was done a week later to see whether patients were still alive or had succumbed to their illness.

Results : The sample size was 440 patients. Trauma patients were 23.0%, the rest were non- trauma patients (77.0%). The mean age of the population was 47.21 +1- 21.78. For trauma cases, the mean age for population of patients was 31.61 +1- 21.41 years old. 67.27% were male patients and about 95.0% were Malays. The highest number of patients was in the medical category (58.6%). Neurosurgical cases contributed to 25.0% of the total cases. Most of the trauma cases involved patients less than 60 years old (84.1%). The mean duration of stay in ED was 3.92 +1- 1.5 hours. A total of 27 patients died. Seven (1.59%) of them were trauma patients. There was a significant difference between the RTS value and the mortality Within the period of one week (<0.05, 95% CI: -4.4,-1.0). There was also a significant difference between the SI value and the mortality within the period of one week (p<0.05, 95% CI: 0.3 — 0.8).

Discussion : There were no significant differences comparing the mean of age, sex, mean duration of ED stay as well as the duration of one week stay with the mortality (p>70.05). There were also no significant differences when comparing the individual components of the individual components of RTS (GCS, P.R and SBP) and SI (HR and SBP) with the mortality (p>0.05).

Conclusions : The patients of red zone of ED HUSM vary in age, illness and their severity. The majority of patients attending the ED HUSM were medical patients. The mortality rate within the period of one week was small. RTS and SI can be used, in assessing the prognosis of trauma and non-trauma cases respectively in ED HUSM.

Dr. Rashidi Ahmad : Supervisor
Dr. Nik Hisamuddin Nik Abd. Rahman : Co-Supervisor

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A PILOT STUDY ON THE EFFECTIVENESS OF INTRAVENOUS TRAMADOL IN THE MANAGEMENT OF ACUTE TRAUMA PAIN

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Introduction : Tramadol is a centrally acting analgesic with weak opioid agonist properties. It has been in clinical use since 1970 and has proven effective without causing serious cardiovascular or respiratory side effects. It acts through binding to neuronal opioid receptors and inhibition of neuronal reuptake of norepinephrine and serotonin. It is used to treat moderate to severe pain whether acute or chronic type. However, the common practice in Malaysia especially in emergency department, the usage of tramadol are limited and the dose used are very low compared to the dose recommended.

Objectives : The purpose of this study is to prove that tramadol is very effective in relieving acute trauma pain of moderate to severe

intensity with satisfactory pain reduction and give satisfaction to the patient toward the treatment.

Patients & Methods : This prospective pilot study involved adult patients aged more than 16 years who presented to emergency department with acute trauma pain of moderate to severe intensity. The patient who fulfills the inclusion criteria, first will be given loading dose of intravenous tramadol 2mg/kg. Pain score (using visual analogue score) together with vital sign monitoring will be monitored at the beginning of the study and every 10 minutes till 30 minutes. Intermittent bolus intravenous tramadol 20 mg will be given every 10 minutes after the loading dose if the pain score still not achieve 30 mm or below, till 20 minutes study. At 30 minutes study, rescue medication will be given if patients still did not have satisfactorily pain relief. A prophylactic intravenous maxolon 10 mg also been given 1-2 minutes before the study to reduce the side effect of tramadol.

Results : A total of 47 patients with fracture and soft tissue injury were involved in this study. Their median initial VAS score was 90.00 (10.0) mm and at 30 minutes their median VAS score was 20.00 (20.0) mm. There is high percentage of the patients (83.0%, n=39) who achieve pain score . 30 mm at 30 minutes study. There was a significant change in medium pain score at 10, 20 and 30 minutes treatment whereby p<0.001. The percentage of patients who satisfy with the treatment at 30 minutes was very high (83.0%, n39).

Discussion & Conclusion : Tramadol is very effective in relieving acute trauma pain of moderate to severe intensity with high patient's satisfaction toward treatment.

Dr. Rashidi Ahmad : Supervisor
Dr. Nik Hisamuddin Nik Abd. Rahman : Co-Supervisor

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A STUDY ON THE USE OF CAPNOMETER V IN THE PATIENT PRESENTED WITH ACUTE BREATHLESSNESS.

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Introduction : Acute breathlessness is an ever increasing problem in Malaysia. In Malaysia heart disease and pulmonary disease is the second leading cause of death in hospital (14.3%) and fourth to fifth leading cause of admission to government hospitals (13.1%). (Ministry of Health Annual Report ,2005). Capnometry measures carbon dioxide in expired air and provides clinician with a non- invasive measure of systemic metabolism, circulation and ventilation. This study was done on the patient with acute breathlessness in Emergency Department HUSM to define the utility and role of capnometry in emergency department.

Objectives : The objectives of the study are: 1. To determine the agreement between end tidal CO₂(ETCO₂) partial pressure of arterial CO₂(ETCO₂) in non intubated acute breathlessness patient; 2. To determine correlation between end tidal CO₂ and PaC₂ in non intubated acute breathlessness patient; 3. To determine the association of age, gender, existence of pre morbid condition and clinical diagnosis with ETCO₂; 4. To determine factors that will influence the ETCO₂; 5. To study the socio-demographic patterns of acute breathlessness patient seen in HUSM; 6. To determine correlation between ETCO₂ with PaCO₂ in patient presented with pulmonary disorders.

Patients & Methods : 150 of acute breathlessness patient arriving at the emergency department HUSM fulfilling the inclusion and exclusion criteria were chosen during a study period of six months. The patient were given written consent, triaged and study proformas were filled. Demographic data and the ETCO₂ data were recorded. The data were compiled and analyzed using various descriptive studies from the Statistic Program for Social Studies (SPSS) version 12. The association between age, sex, race, premorbid condition and clinical diagnosis with ETCO₂ were analyzed, using simple linear regression. Correlation between

ETCO₂ and PCO₂ was analyzed using Pearson correlation coefficient. Other variables also were analyzed to see correlation. Between ETCO₂ using simple linear regression. The agreement and difference in between ETCO₂ were analyzed using paired sample t-test.

Results : From this study was found that: 1. There is a strong correlation in between ETCO₂ and PaCO₂ with Pearson's correlation coefficient 0.716 and p value of 0.00 (p<0.05); 2. From the paired t-test, with a mean difference of 4.303 and p value 0.00 (p<0.05), we could conclude that there is a significant difference between ETCO₂ and PaCO₂ with a 95% confidence interval (2.818..5878); 3. This study shows that there is no correlation in between age, sex, race, presence of pre morbid condition and clinical diagnosis on presentation with ETCO₂. 4. There is a good correlation between ETCO₂ and acidotic state where the Pearson's coefficient correlation of 0.374 and p value 0.02 (p<0.05). Strong correlation also being observed in between ETCO₂ and hypocapnia state where the Pearson's correlation coefficient of 0.738 and p value 0.00 (p<0.05). Weak correlation were observed in alkalosis with ETCO₂ where the Pearson's coefficient of 0.171 with p value 0.00 (p<0.05); 5. This study also shows that there is a strong negative correlation in between ETCO₂ with hypercapnia where the Pearson's correlation coefficient of 0.738 and p value of 0.00 (p<0.05); 6. This study also shows that the majority of patient with acute breathlessness that came EDHUSM are from the elderly group of people (more than 60 years old). Most of them will present with acute coronary syndrome, acute heart failure, pneumonia and stroke. Most of the patient needed further investigation and ward admission; 7. This study shows that there is good negative correlation in between ETCO₂ and patients presented with pulmonary disorder in where the Pearson's correlation coefficient of 0.336 and p value of 0.00 (p<0.05)

Discussion & Conclusion : Based on the results of this study, the following have been proposed. There is strong correlation between ETCO₂ and PaCO₂ in non intubated acute breathlessness patient presented to ED HUSM and hence ETCO₂ is applicable in HUSM as a form of non invasive cardiopulmonary monitoring in non intubated acute breathlessness patient. This study shows that ETCO₂ can be used to predict PaCO₂ level where the difference between PaCO₂ and ETCO₂ is between 2 to 6 mmHg especially in the case of pure acidosis and hypocapnia. The usage of ETCO₂ to predict PaCO₂ should be done with caution especially in cases that involve in pulmonary disorder. Age, sex, presence of pre morbid condition did not show good correlation with ETCO₂

Dr. Nik Hisamuddin Nik Abd. Rahman : Supervisor
Dato' Dr. Abu Hassan Asaari Abdullah : Co-Supervisor

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A PILOT STUDY ON THE USE OF KETAMINE-DIAZEPAM COMBINATION FOR PROCEDURAL SEDATION AND ANALGESIA IN THE EMERGENCY DEPARTMENT.

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MMed Emergency Medicine

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Introduction : This is a pilot study looking at the safety, efficacy, side-effects and patient's satisfaction towards ketamine-diazepam combination for procedural sedation and analgesia in Intermediate Care ward Emergency Department Hospital Kuala Lumpur. This study also compare the ketamine-diazepam combination with the pethidine-diazepam combination. Pethidine-diazepam combination is the most frequent combination for procedural sedation and analgesia in the Intermediate Care Ward. This ward was designed to treat orthopaedic cases requiring interventions such as reduction of bone fractures and joint dislocations.

Objectives : Objectives are ; 1. To compare the safety, efficacy, side-effects and patient's satisfaction of ketamine-diazepam combination and

pethidine-diazepam combination; 2. To observe the efficacy of the combination through their onset of sedation, duration of time to recovery and sedation level during procedure; 3. In regard to safety and side-effects, vital sign and side-effects were recorded during and after the procedure; 4. Patient's satisfaction recorded after the procedure and sedation effects completed

Patients & Methods : Forty patients were needed for the study. Combination to be used were randomly selected by using random selection of envelopes containing the combination of drugs by a medical worker not involved in the study. This was a single blinded method. This forty patients were then equally grouped into either ketamine-diazepam group or pethidine-diazepam group. Patients selected were the one to go for closed manual reduction of fractured bone or dislocation of joints. This patients will be monitored for all of the above measurement needed. Dose given was 0.5 mg/kg of ketamine, 1.0 mg/kg of pethidine and 0.1 mg/kg of diazepam.

Results : In this study 55 % of the cases were presented by the Malay ethnic, 20 % by the Indians 12.5 % by the Chinese and another 12.5% by the other races. 67.5 % of the samples were presented by male patients and 32.5% of the cases were females. The youngest were 16 age and the oldest were 76 years of age. In this study, sedation onset and recovery time was faster in the ketamine - diazepam group. The sedation depth during procedure was better in ketamine and diazepam group. Mean onset of sedation for ketamine-diazepam were 1.60 minutes with standard deviation (SD) of 2.25 (95% CI 0.54, 2.66). In pethidine - diazepam group mean onset were 6.95 minutes with SD of 5.11 (95% CI 1.456, 9.34), p=0.00. Mean recovery time for ketamine-diazepam group was 43.80 mm SD 2.99 (CI 95% 33.04, 54.56) and mean recovery time for pethidine-diazepam group was 65.25 mm SD 20.35 (CI 95% 55.72, 74.78), p = 0.003. The discharge time between ketamine-diazepam group and pethidine - diazepam was not significant statistically. Mean discharge for ketamine-diazepam group was 66.50 minutes, SD of 32.48 (CI 95% 51.29, 81.70), while for pethidine - diazepam group mean discharge was 83.75 minutes, SD of 26.50 (CI 95% 71.34, 96.15). p = 0.07. In the monitoring of vital signs, the ketamine-diazepam group showed significant raised of blood pressure, heart rate, and respiratory rate at 5 minutes duration into the sedation. Oxygen saturation were maintained at all times. p value of less than 0.005 in each measured. In pethidine-diazepam group, oxygen saturation were lower at 5 minutes into sedation p = 0.005. Ketamine-diazepam group presented with significant 55% vertigo, p = 0.00 and 50% of giddiness p = 0.04, hypertension p = 0.00 and tachycardia p = 0.008, no emergence phenomenon were reported. Respiratory depression were in the pethidine-diazepam group, p = 0.03. The side effects experienced by the patients, had not effected their overall satisfaction score. Both combinations were rated as being very satisfying by 80% of the subjects.

Discussion & Conclusion : This pilot study had proved that ketamine-diazepam combination in the dose stated, are more efficacious than pethidine-diazepam group in term of sedation onset and recovery time from sedation. Although this was so, it had not been able to reduce the discharge time from the ward. The cardiovascular effects in the ketamine-diazepam group were short in duration and safe. Side-effects were tolerance and patient's satisfaction were good in both group. Pethidine-diazepam group was found to cause respiratory depression, especially in the elderly.

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PROSPECTIVE RANDOMIZED COMPARATIVE STUDY OF LAPAROSCOPIC APPENDICECTOMY (LA) VERSUS OPEN APPENDICECTOMY (OA) IN HOSPITAL UNIVERSITI SAINS MALAYSIA.

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Introduction : Since the demonstration of laparoscopic appendectomy by K. Semm in 1983, it is performed worldwide though criticized by many. Open appendectomy is a brief procedure but is definitely associated with morbidity and can cause difficulty in uncertain diagnosis. Laparoscopic appendectomy has been a standard surgical procedure performed in Hospital Universiti Sains Malaysia, but a prospective randomized study comparing various parameters in between LA and OA has not been done before.

Objectives : This study was done to compare various surgical times, complications and outcomes in between LA and OA in HUSM.

Patients & Methods : This was a prospective randomized comparative study. which was conducted in Hospital Universiti Sains Malaysia from February 2006 till November 2006. Total of 97 patients were randomized in the study. Amongst 1 patients underwent open appendectomy (OA) and 44 patients underwent laparoscopic appendectomy (LA). In the study, 54.6% patients were males and 45.4% were females (P = 0.2). The median age in LA and OA groups was 18 and 20 years respectively. The mean Body Mass Index (BMI) in both groups was same. (22kg/m²) patient in LA group had to wait longer for appendectomy compared with OA group and it was 22.2 hours versus 15.8 hours (P = 0.04). The operating time for laparoscopic appendectomy group as well as for open appendectomy group was similar (70.2 minutes). Patients in LA group tolerated normal diet significantly earlier (36.6 hours versus 55.4 hours, P = 0.05) and were discharged earlier compared to OA group (2.4 days versus 3.6 days, P0.2). Eight patients in the laparoscopic group were converted to OA, intra-operatively (18.1%). Acute appendicitis was the commonest intra-operative finding (72.2%) followed by perforated appendicitis (20.6%). Wound infection rate in OA group was 7.5% compared to 2.8% in LA group. The overall negative appendectomy rate was 3.1% in the study.

Discussion : The results of this prospective randomized comparative study disapproves the concept that laparoscopic appendectomy is a prolonged procedure, when compared to open appendectomy. So the perception that laparoscopic appendectomy is a prolonged procedure should be avoided. There is early return of bowel function, shorter post operative hospital stay, less pain and lower wound infection rate after laparoscopic appendectomy when compared to open appendectomy.

Conclusions : Perforated and gangrenous appendicitis can also be handled by laparoscopic appendectomy safely and are not the contraindications for laparoscopic appendectomy. Diagnostic laparoscopy should be considered among females in reproductive age group with uncertain diagnosis.

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RISK FACTORS ASSOCIATED WITH OPERATIVE MORTALITY IN PERFORATED PEPTIC ULCER DISEASE IN KELANTAN.

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Introduction : Deep, penetrating ulcers on the duodenal surface may perforate into the abdominal cavity or cause bleeding. During the past decade, an increased peptic ulcer incidence has been attributed to widespread use of nonsteroidal anti-inflammatory drugs (NSAIDs). Recently, most of the studies reported that, peptic ulcers formation associated with the Helicobacter pylori bacteria, which may found on

the mucosa of stomach and duodenum. Perforated peptic ulcer is a serious complication and carries a high mortality and morbidity which was reported ranging between 6% to 18% that follow treatment. Mortality and morbidity of perforated peptic ulcer is believed to be influenced by patient age and sex, treatment delay, ulcer size and site, type of treatment, concurrent disease, and the preoperative shock

Objectives : This study was done to determine the risk factors associated with operative mortality in perforated peptic ulcer patients.

Patients & Methods : Retrospective study conducted in the department of surgery in Hospital Raja Perempuan Zainab II, Kota Bharu and Hospital Universiti Sains Malaysia, Kubang Kerian from year 2000 to 2005.

Results : In our study a total of 140 subjects that fulfilled the criteria were evaluated. The incidence of perforated peptic ulcer patients that underwent emergency surgical intervention in these hospitals was 12.9% to 22.9%. The mortality rate in this study was 28.6% Most of the patients died because of septicemia, 45.0%. The most common complication in this study was respiratory infection 57.1%, followed by L 47.9%. Most of the patient's age is between 55 to 75 year old. Co morbidities in the studied subjects are diabetes mellitus, hypertension, ischaemic heart disease, chronic obstructive airway disease and cerebrovascular accident. Mortality rate is higher for this group of patients which was 62.1%. The group of patients who had symptoms duration more than 3 days and who received surgical intervention after 24 hours of admission also had higher mortality rate (52.4% and 50.0%). The patients who had preoperative shock had a mortality rate of 69.7%. More than half of the studied subjects underwent operation of simple closure and the rest underwent gastric resection Size of perforation more than 1.0 cm and perforation located at the gastric region showed higher mortality rate but statistically revealed not significant of p value. The severe peritoneal contamination is another factor that caused higher mortality rate which was 65.8%.

Discussion & Conclusion : The mortality rate in this study was 28.6%. The risk factors associated with post-operative mortality are age, pre-operative co morbidities, symptoms duration and delayed in operation, shock and severe peritoneal contamination. Most of the literature found that the most common post-operative complication is sepsis, however in this study we noted that respiratory infection is the commonest and the main cause of death is septicemia.

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STUDY ON COMPLICATIONS AND THEIR ASSOCIATED FACTORS OF TOTAL THYROIDECTOMY FOR MANAGEMENT OF BENIGN THYROID DISEASE.

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Introduction : Total thyroidectomy is an operation that has generally been reserved for the management of differentiated thyroid carcinoma. But lately, it become increasingly used for multinodular goiter especially in diffuse multinodular goiter where the entire gland is involved, because it will remove the disease adequately; prevent patients from undergoing re operation for recurrent disease with associated higher risk of complications. Protection of recurrent laryngeal nerve and parathyroid glands is still being the important aspect in dealing with benign thyroid disease.

Objectives : This study was done to analyse the safety of total thyroidectomy as a management of benign thyroid disease done at Hospital Universiti Sains Malaysia (HUSM) and Hospital Kota Bharu (HKB) and the prevalence of occult malignancy in benign thyroid disease.

Patients & Methods : A retrospective study using previous record of

patients with benign thyroid disease who underwent total thyroidectomy, admitted to Hospital Universiti Sains Malaysia (HUSM) and Hospital Kota Bharu (HKB) from 1st January 2000 until 31st December 2005 (6 years duration)

Results : 156 patients involved in this study with 143 (91.7%) female and 13 (8.3%) male with mean age 42.36 ± 13.58 years. Majority 136 (87.2%) were Malays. 98 (62.8%) had multinodular goiter, 38 (24.4%) and 20 (12.8%) had diffuse and solitary goiter respectively. FNAC showed 67 (42.9%) and 66 (42.3%) had multinodular goiter and colloid goiter respectively. 138 (88.5%) were euthyroid whereas 17 (10.9%) had thyrotoxicosis and 1 (0.6%) had hypothyroidism. No mortality was reported in my study. Postoperative bleeding occurred in 8 (5.1%) whereas 3 (1.9%) had postoperative surgical site infection. 27 (17.8%) and 10 (6.6%) of patients had transient and permanent recurrent laryngeal nerve palsy respectively whilst 38 (24.7%) had transient hypocalcaemia and 27 (17.5%) had permanent hypocalcaemia. Shortness of breath (p value = 0.022) and preoperative hoarseness of voice (p value = 0.038) were significantly associated factors for RLN injury whereas preoperative diagnosis of multinodular goiter (p value = 0.006) was significantly associated factor for post-operative hypocalcaemia. The prevalence of frank malignancy from HPE report was 13 (8.3%) whereas that of occult malignancy was 11 (7.1%).

Conclusion : Higher rates of recurrent laryngeal nerve palsy and hypocalcaemia contributed by the facts that the total thyroidectomies were done at non-specialized hospital by general surgeons or surgical trainees with supervision.

Dr. Zainal bin Mahmood : Supervisor

Dr. Mohd. Nor Gohar bin Abdul Rahman : Co Supervisor

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