A SURVEY OF BLOOD COMPONENT USAGE IN HOSPITAL USM

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Introduction: There is paucity of comprehensive data on the blood component usage in our population. The purpose of this retrospective study is to analyse data for blood component usage in Hospital USM (HUSM) in order to obtain additional information on transfusion practices.

Methodology: A survey was carried out on blood component transfusion between January to December 2006. Packed red blood cells, platelet concentrate, fresh-frozen plasma, cryoprecipitate, whole blood and buffy coat were extracted from the computerized registers.

Results: A total of 29,229 blood components have been used in this survey. Of 10,421 (35.65%) units of red cell, 8345 (28.55%) units of platelet concentrates, 8347 (28.56%) units of fresh frozen plasma, 2076 (7.10%) units of cryoprecipitate, 33 (0.11%) units of whole blood and 1 (0.0003%) of buffy coat were used in patients admitted to HUSM.

Conclusion: This survey provides information on blood component usage in HUSM. It demonstrates last year's blood utilization of blood components and is relevant for quality management of transfusion practice, cost analyses and for planning local and regional blood donation programmes.

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THE EFFECT OF LONG-TERM REGULAR PLATELETPHERESIS ON DONOR PLATELET COUNTS

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Introduction: Plateletpheresis is used to obtain large numbers of platelets from random volunteer donors. One unit of plateletapheresis is equal to 4 to 6 random donor platelets. Because large numbers of platelet have been collected, transient but significant decreases in donors' platelet counts have been known as outcome of plateletapheresis donation. The aim of this study was to determine the effect of multiple and regular plateletpheresis donations on donor platelet counts.

Methods: A retrospective study was performed from 2001 to 2006 at Transfusion Medicine Unit, Hospital Universiti Sains Malaysia. The data of plateletapheresis donors were obtained from a computerized database. Data were analyzed using SPSS software.

Results: Seventeen subjects were studied in this study. The age was between 33 – 54 years. The duration of the study was 1.4 – 5.3 years. Donation rate of subjects were 3.8 to 19.9 times per year. Average platelet count dropped from 277.8 x 109/L to 262.5 x 109/L but this drop was not statistically significant (P=0.174). Donation rate and duration of donation between the subjects was not significantly different (P=0.567 and P=0.575 respectively). Our results have shown that the donation rate did not influence the reduction of platelet count between subjects using repeated measure of ANOVA (P=0.272).

Conclusions: Long-term and regular plateletapheresis donation does not influence donors' platelet counts. However, a decrease in platelet counts was noted transiently after donation.

AN AUDIT OF FRESH FROZEN PLASMA USAGE IN HOSPITAL USM

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Introduction: The appropriate use of blood and blood products means the transfusion of safe blood products only to treat a condition leading to significant morbidity or mortality that cannot be prevented or managed effectively by other means. The safety and effectiveness of transfusion depend on the appropriate clinical use of blood and blood products. This audit was conducted to review the appropriateness of fresh frozen plasma usage (FFP).

Methodology: A retrospective review of blood bank records and coagulation profile results of the patients given FFP from October to December 2006 in Hospital USM were undertaken. The criteria set by the College of American Pathologists in 1994 were used as the guidelines.

Results: One thousand six hundred and ninety-eight units of FFP were used during this study period. Only 806 (47.47%) units were deemed appropriate. FFP used in the setting of inadequately prolonged coagulation profiles was the commonest reason for the inappropriate use.

Conclusion: Our results showed significant proportion of FFP used outside the established criteria. We recommend the continuous education on proper use of FFP may help to reduce the inappropriate usage.

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FUNCTIONING OF BLOOD BANK – STUDENTS' EXPERIENCE DURING AN ELECTIVE PROGRAM

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Introduction: Blood bank is the 'corner stone' of emergency and surgical medicine. In an update on Transfusion Medicine, it was declared that 'Blood banking has changed. We are no longer the blood bankers we used to be. Even greater changes appear to lie ahead with promising technologies being developed in blood banking'. The practice of blood transfusion has been through turbulent times in recent years. The old rules-of-thumb that served well before the development of AIDS are re-addressed. Therefore, blood banking system finds itself in a changed regulatory, litigious environment. Considering its key role and the very little or no exposure to the blood banking system during their course work, the medical students should have a good knowledge of the working of the blood banks. Therefore, we utilized the opportunity to work on this project during our elective posting.

Objectives: The objectives were to understand the 'standard settings' for the operation of blood banks, know about the regulatory bodies those govern blood banking system, understand and evaluate the functions and facilities of blood bank in a public hospital, identify the challenges the blood bank encounters in emergency situations, gather the relevant statistics of the previous years regarding the work load, number of donors, complications of transfusion if any and have a feed back from the blood bank personnel of the handling of challenges they face routinely and in emergency situations, their job satisfaction, opportunity to upgrade their knowledge and skill and from donors regarding the knowledge on blood banking, their participation and so on.

Methods: A thorough survey of the literature, visit the Blood bank and suitable questionnaires were used in this study.

Results of the study will be discussed during the presentation.

Conclusions: The hands-on experience was good and worthwhile. The public hospital utilised for this study had enough facility for satisfactory discharge of responsibilities in blood banking. It followed the standard settings of NATA for the operation and screening tests were conducted on a 'need based' manner. We recommend that the medical students should have compulsory posting for at least one week in blood banks.

A STUDY OF PARASITES IN THE LUMINAL CONTENT AND TISSUE SECTIONS IN ACUTE APPENDICITIS

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Introduction: Appendicitis has a worldwide prevalence and affects all age groups. The aetiology of acute appendicitis is still much debated, many factors have been suggested. The pathology is likely to be due to obstruction of the lumen of the appendix. Parasites, both helminths and protozoa have been suggested to be the cause of acute appendicitis. Studies have demonstrated that parasites were present in the appendix specimens removed from surgery. The objective was to determine the prevalence of parasitic infections in a double study examining both the tissue sections and also the luminal contents in appendices removed during appendectomy.

Methodology: One hundred appendectomy specimens were taken from Batu Pahat Hospital. Three bits of tissue from each appendix, two from the body and one from the tip were taken for histopathological analysis. Tissue specimens were sectioned at 4 µm and stained using haematoxylin and eosin staining method. The tissue sections were classified on their degree of inflammation as per standard criteria. They were classified as early acute, acute, acute suppurative or chronic inflammation. Luminal contents were stored in both 10% neutral formalin and polyvinyl alcohol and stained by both trichrome and modified Ziehl-Neelsen methods.

Results: Sixteen percent of the cases were positive for parasites. Most of the parasites were detected in the luminal content. In cases that were positive for parasites, 81.25% occurred in patients aged 30 years old or younger. In addition, acute appendicitis was seen in 81.25% of cases that were positive for parasites. Helminths were not detected in the study, only protozoa were present. Unusual parasites that had rarely been reported were detected in this study. This includes Blastocystis hominis, Isospora belli and Microsporidia.

Conclusion: Detection of parasites in 16% of the cases was considered significant as previous studies did not show such a high incidence. Examination of the luminal content has proven to be valuable as most cases of parasites infection were detected in the luminal extract. Statistical analysis did not show association between acute appendicitis and parasitic infection. In conclusion, a larger sample size should be used in future studies to be able to draw absolute conclusions.

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ISOLATION AND CHARACTERISATION OF VEGETATIVE PROTEINS EXPRESSED IN MOSQUITOCIDAL Bacillus thuringiensis AND Bacillus sphaericus ISOLATED FROM THE MALAYSIAN SOIL

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Introduction: Bacillus thuringiensis (Bt) and Bacillus sphaericus (Bs) are soil bacteria with two distinct growth phases- the sporulative and vegetative growth phase. During sporulation, the bacteria produce parasporal proteins which may be active as haemolytic, cytotoxic and larvicidal agents. Lesser studied are the vegetative proteins, which have been previously reported to have a distinct amino acid sequence. The aim of this study was to isolate and characterize the vegetative proteins of the Malaysian Bt and Bs isolates via in vitro and in vivo assays.

Methodology: The bacteria were isolated from the soil samples using methods reported earlier. These isolates were identified and serotyped by Pasteur Institute, Paris. The vegetative proteins were subjected to SDS-PAGE analysis for molecular mass estimation, red blood cell lysis assay (human and rabbit) for haemolytic activity determination, Aedes aegypti bioassay for larvicidal activity and MTT assay for cytotoxic effect against cancer cell lines.

Results: Of the 19 strains of Bt studied, 12 have been subjected to all tests mentioned. Of these 12 strains, five showed polypeptide bands with similar molecular mass to the previously reported vegetative insecticidal proteins (Vip) of Bt. Six strains showed potential as therapeutic agents as the vegetative proteins were non haemolytic to human erythrocytes but were cytotoxic especially to CEM-SS cells. The remaining strains were more toxic towards HeLa cells compared to CEM-SS. These strains also showed selective haemolytic activity against rabbit and human erythrocytes. The vegetative proteins from selected Bt strains showed larvicidal activity. Interestingly the LC50 was higher when compared to the parasporal proteins from the same strains. The analysis of the remaining Bt and Bs strains are currently ongoing. Preliminary haemolytic and cytotoxic assay data indicates that high haemolytic activity is associated with increased cytotoxic activity. However there are strains that are non-haemolytic yet cytotoxic to CEM-SS cell lines

Conclusion: The results available thus far prove that there exists a family of vegetative proteins within the Malaysian Bt strains that display selective haemolytic and cytotoxic activity.

NON-TYPHOID SALMONELLA (NST) BACTEREMIA IN TERTIARY-TEACHING HOSPITAL

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Introduction: Nontyphoid Salmonella (NTS) isolates lead to not only self-limited, acute gastrointestinal infections, but also bacteraemia with or without extraintestinal focal infections (EFIs). The risk factors associated with NTS bacteraemia were not clearly elucidated in our region. The purposes of this study were to investigate the epidemiologic, clinical and microbiologic features of nontyphoidal salmonellosis in our hospital.

Methodology: We retrospectively reviewed the records of patients with non-typhoid Salmonella bacteremia, who were admitted to the Hospital of Universiti Sains Malaysia between January 2001 and Desember 2005. Demographic factors, presenting signs and symptoms, antimicrobial susceptibility patterns were recorded. SPSS® Version 12.0 was used for data entry and analysis. Descriptive statistics and cross-tabulations were used to explore all data.

Results: Altogether, thirty-seven patients with positive blood culture for nontyphoid Salmonella bacteremia were identified. 100% of patients had fever as the main clinical presentation but only 35% were associated with diarrhea. 27% (10) of cases were among children less than two years old, 14% (5) were among children between 2-12 years old and the rest occur among patients more that 12 years old. Three commonest risk factors identified include diabetes mellitus, malignancies and HIV infection. Children les then two years old noted to have high prevalence of NTS bacteremia. Interestingly, among all these children no specific risk factors were identified. All the strains isolated from the patients were remained highly susceptible (80-100%) to seventeen antibiotics tested.

Conclusion: Non-typhoid Salmonella bacteremia is still prevalence in our region. Cases in children less then two years old noted to be remarkably high and need special attention.

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POTENTIAL COMPARISON OF FOUR FISH SPECIES AS THE BIOLOGICAL CONTROL AGENT FOR CULEX QUINQUEFASCIATUS SAY (DIPTERA: CULICIDAE) MOSQUITOES

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Introduction: Biological control is one of the components in Integration Pest Management (IPM). This method is widely used in order to control various species of pest or vector because it serves as long term control and safe to the environment. In this study, the potential of four fish species to control Culex quinquefasciatus larvae was compared.

Methodology: The fish that were used in this experiment were Poecilia reticulata (Guppy fish), Betta splendens (Fighting fish), Aplocheilus panchax (Blue panchax) and Danio regina (Queen danio). Experiment was conducted in laboratory within 12 hours in 3 replicates. Individual test was performed using different total number of larvae from 20, 50, 100, 120 and 150. Standard length of every fish species, time taken to finish eating and balance of larvae were recorded.

Results: Result shows that all the four species have a significant difference ($P<0.05$) between time taken to finish eating and total number of larvae. But, there was no significant difference ($P>0.05$) between standard lengths of fish and time that were taken to cause 100% larvae mortality and the total number of larvae that had been eaten by fish. Betta splendens showed the best time taken to cause 100% larvae mortality compared to the other three species, followed by Poecilia reticulata that have 168.65 ± 172.63 minutes and 368.00 ± 193.87 minutes mean time respectively. While Danio regina and Aplocheilus panchax did not cause 100% mortality of larvae whereby they took 478.00 ± 243.26 minutes and 470.00 ± 287.37 minutes mean time respectively.

Conclusion: Betta splendens and Poecilia reticulata were the most potential fish as biological control agent against Cx.quinquefasciatus.

EPIDEMIOLOGY OF CRYPTOSPORIDIOSIS IN A RURAL MALAYSIAN COMMUNITY

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Introduction: Human cryptosporidiosis has been recognized as a common cause of protozoal diarrhoea leading to significant morbidity and mortality in developing and industrialized nations. Cryptosporidium is highly associated with immunosuppressed patients and has been responsible for multiple waterborne outbreaks worldwide. Although cryptosporidiosis is prevalent in Malaysia, it has not received much attention, especially in communities where the infection is still underestimated. This study was conducted to study the epidemiology of cryptosporidiosis in Orang Asli communities in Pahang, Malaysia.

Methodology: A cross-sectional survey was conducted. About 276 individuals (139 males and 136 females) aged 2- 76 years have voluntary participated. Faecal samples were collected in screw-cupped containers and faecal smears were prepared and stained by Ziehl-Neelsen staining technique. Biodata, personal hygiene, environmental sanitation and socio-economic factors were collected throughout well structured questionnaires.

Results: The overall prevalence of Cryptosporidium species was 4.3%. Infection rate was more predominant among children and females. Individuals using pipe water for drinking and bathing were more infected (3.9%) than those did not use pipe water (1.6%). Cryptosporidium infection was also more prevalent among people living in houses without toilet (3.9%) compared to those using toilet (2.3%). Children whose mothers were working had more infection rate than those their mothers were not working. Families with $\geq$ 5 members and household income $\leq$ 450 RM had higher infection rate than household members < 5 and household income > 450 RM, respectively. Eating raw vegetables appeared to be a significant protective factor of cryptosporidiosis (OR = 0.181, 95% CI (0.034-0.956), p = 0.025).

Conclusion: Cryptosporidiosis is still a public health problem in rural Malaysian communities. Beside socioeconomic factors, waterborne transmission should be considered. The improvement of health sanitation together with health education could be the most practical intervention to control cryptosporidiosis.

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STUDY OF ANTIMICROBIAL POTENTIALS OF MALAYSIAN PLANTS

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Introduction: Herbs and plant substances are used in different societies around the world to nourish and support immunity, and also used for their medicinal potentials to protect from a multitude of disease caused by microorganisms, viz., bacteria, virus, fungi and parasites. The present study is designed to ascertain the role of antimicrobial properties of plants used in Malaysia for medicinal purpose.

Methodology: The study of antimicrobial activity of traditional herbs/plants was carried out using the Kirby Bauer's disc diffusion method. Activity of 9 plants, based on their local usage, were selected randomly, and tested against a set of bacteria including laboratory strains of E.coli, Klebsiella spp., Pseudomonas aeruginosa, Shigella spp., Staphylococcus aureus and Vibrio cholerae. Methanolic and 20% aqueous methanol extracts of the plants were used for the study.

Results: The study showed daun sireh to be active against the bacteria tested, followed by akar semalu and daun kari, active against a few of the organisms tested.

Conclusion: Search for newer plants and furthering research to confirm effectiveness of alternative medicinal practices, especially by including species which have been rarely used in studies, should be envisaged.

EVALUATION OF HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) FOR ROUTINE ESTIMATION OF HEMOGLOBIN A2 (HBA2) AND F (HBF)

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Introduction: Quantitative hemoglobin A2 an F determination is a critical test for identification of b thalassemia and other forms of hemoglobin diseases. Several laboratory techniques have been developed for both qualitative and quantitative hemoglobin analysis but they are laborious, long analysis time and operator-dependent. The aim of this study was to evaluate the automatic Variant ll high performance liquid chromatography (HPLC) analyzer for routine estimations of hemoglobins A2 and F.

Methodology: The Variant ll HPLC analyzer was tested for its precision and accuracy in measuring HbA2 and HbF. Precision studies were performed using 2 samples with normal and raised values of HbA2 and HbF. Each sample was analyzed in 10 replicates on the same day using the same reagent kit and under unchanged measurement conditions and again was analyzed in 10 replicates on 10 different days. 12 samples taken at random were tested against another Variant ll HPLC machine and another 33 samples were tested using a manual elution technique.

Results: Data analysis showed good reproducibility and precision. Linear regression analysis of HbA2 and HbF values measured by HPLC showed excellent correlations with both the conventional elution method and measurements done by another Variant ll HPLC.

Conclusion: Measuring HbA2 and HbF by Variant ll HPLC is rapid, reproducible and accurate. It can thus be used as an efficient method for rapid population screening of b thalassemia and other forms of hemoglobin diseases.

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DETECTION OF AQUAPORIN 7 (AQP7) GENE FRAGMENT FROM RATTUS ARGENTIVENTER (RICE-FIELD RAT) TESTES

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Abstract : Aquaporin is a water channel that forms as an integral membrane protein serving the permeation of water molecules through the membrane. Aquaporin exists in the plasma membrane as homotetramers. Besides facilitating the transport of water, in some cases, other small solutes such as glycerol are also transported across the membrane through aquaporin. Aquaporin 7 (AQP7) is an aquaglyceroporin that is permeable to water, glycerol and urea. AQP7 is expressed in plasma membranes of adipose tissue, testis and kidney. The ontogeny and distribution of AQP7 in rat testis suggest involvement of major physiologic changes of testis development and spermatogenesis. In this study, we aim to amplify the AQP7 from *Rattus argentiventer* (rice-field rat) testes using one specific set of primer. AQP7 from 3 different rat's testes were successfully amplified using Reverse Transcriptase - Polymerase Chain Reaction (RT-PCR) technique. The amplified 810bp fragments derived from our optimization is then sequenced and compared to the various AQP7 sequences available from the NCBI database. *Rattus argentiventer* is the most important pest in paddy fields in tropical Asian countries. Rice farmers lost more than 8% of their rice crop each season due to these rats. Discovery of highly conserved AQP7 among these pests indirectly leads to the possibility of curbing the increase in rat populations. It may also serve as an alternative in biocontrolling of these rats. This will indirectly control rats' populations in paddy areas, reducing crop losses and also in the end increasing farmers' income.

THE EFFECT OF DIABETES MELLITUS ON IN VITRO PREIMPLANTATION EMBRYO DEVELOPMENT IN MICE

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Introduction: Maternal hyperglycemia adversely affects the total number of normal embryo structures recovered following hCG injection and subsequent retarded embryo development in vitro of many species except that of spontaneously diabetic hamsters. The present study is therefore conducted to clarify the effects of diabetes on in vitro preimplantation embryos development in mice.

Methodology: Sexually matured female ICR mice of 6-8 weeks old were rendered diabetic by streptozotocin. Embryos were obtained from superovulated diabetic (n=10) and normal (n=10) mice at 48 hours post-hCG treatment and rinsed extensively in hepes-buffered Whitten's media. Normal two-cell embryos were cultured in 50 ml droplets Whitten's media with bovine serum albumin in 5% CO2 in humidified air at 37∞C in groups of 10 embryos. The embryo development was then examined using an inverted microscope after 24, 48 and 72 hours of culture.

Results: The number of normal two-cell embryos obtained from the diabetic group was less than half of the control group (42 versus 123). The percentages of normal developing embryos at each stage of development, 24 (4-cell or greater), 48 (morulae or greater) and 72 (blastocysts) hours, were 92.7, 89.4 and 81.3%, respectively, for the control group as compared to 83.3, 88.1 and 88.1%, respectively, for the diabetic group ($p>0.05$).

Conclusion: It can be concluded that the number of normal two-cell diabetic embryos was lowered compared to that of control mice. There was no statistical difference between the two groups in terms of percentages of these embryos that developed to blastocysts stage. However, it is possible that the diabetic blastocysts were likely not normal and may fail to develop following implantation or may develop to congenital malformation or lead to fetal resorption.

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PRE-ANASTOMOSIS STUDY OF INTERCOSTAL NERVES IN CRAB-EATING MONKEY (Macaca fascicularis)

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Introduction: Lumbar plexus injury is common following motorcycle accidents. Most patients have closed traction injury to the plexus, which can produce nerve root avulsion from the spinal cord. Neurotization procedures represent an important therapeutic option in patients with complete root avulsion due to traumatic injuries. A variety of normal donor nerves can be used, including spinal accessory nerve, parts of the cervical plexus and phrenic nerve. The aim of this study was to determine the feasibility of using intercostal nerves T7 – T10 to neurotize the proximal part of the femoral nerve in the crab-eating monkey (Macaca fascicularis).

Methodology: Six adult male macaca fascicularis were chose for the experiment. The macaque was killed by given overdose of mixing Zoletil. Measurement for intercostal nerves (ICN) T7-T10 was started from each intervertebral foramen (IVF) of ICN until the sternum. The distance between proximal part of the femoral nerve to each IVF of intercostal nerves (T7 –T10) was also measured.

Result: The length of intercostal nerves for T7 - T10 in most monkeys were from 11.2 to 8.8 cm, in addition, the mean distance between IVF of each ICN to proximal part of femoral nerve was also decreased. Due to the distance from proximal part of femoral nerve to intervertebral foramen T7 – T10 were longer than the length of T7 – T10 intercostal nerves, T7 to T10 intercostal nerves length were not enough to anastomose directly to the proximal part of the femoral nerve. Therefore, the donor nerve is required to fill the gap between the two ends of nerve.

Conclusion: The lengths of the intercostal nerves T7 – T10 were insufficient to be anastomosed directly to the proximal part of the femoral nerve. However, it can be used for neurotization to the proximal part of the femoral nerve aided by a nerve graft.

SCREENING OF NUTRITIONAL STATUS IN GERIATRIC PATIENTS USING MALNUTRITION RISK SCREENING TOOL - HOSPITAL

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Introduction : Nutritional screening is a dynamic process to identify changes in a patient's condition that effect nutritional status.

Objective : The purpose of the nutrition screening was to determine if a more detailed nutrition assessment was necessary. In the elderly, a Malnutrition Risk Screening Tool – Hospital (MRST-H) has been developed. The aim was to evaluate, with regard to validity, the MRST-H as a screening tool for malnutrition in elderly acute hospital patients in Kuala Lumpur Hospital.

Methodology : This is an observational study where a scoring of MRST-H is compared to comprehensive assessment. Hundred patients aged 65 years and older and admitted to medical and oncology ward in year July to August 2004 were included.

Results : Seventeen (17%) scored positive for risk of malnutrition (MRST-H ≥5). MRST-H was validated against Subjective Global Assessment (SGA), Body Mass Index (BMI), Mid Upper Arm Circumference (MUAC) and Calf Circumference (CC) indicators. Results indicated that MRST-H was acceptable with high sensitivity (88.2 – 100) %, specificity (83.1 – 98.8) % and positive predictive values (54.8 – 93.8) % respectively.

Conclusion : When screening elderly acute medical and oncology patients in wards for risk of malnutrition, the MRST-H have a high sensitivity and can be useful. In conclusion, the MRST-H can be used for early intervention and thus reduce morbidity and health care cost.

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Antagonistic Effects of Probiotics on Human Pathogens

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Introduction: A key element of recent developments in the food industry is the use of probiotics which include lactic acid bacteria (LAB). Probiotics are generally living microorganisms which when consumed in adequate amount confer a health benefit in the host. The efficiency of probiotics has been discussed extensively, but the mode of action of probiotics remains unclear. It has been suggested that probiotics may modulate gut microbial composition by increasing the number of beneficial bacteria to inhibit pathogenic bacteria, thereby leading to improved gut health. The inhibition may be due to the production of organic acids, hydrogen peroxide and/or bacteriocins. The aim of this study was to investigate the production of antagonistic effects of LAB isolated from local fermented food on two human pathogens.

Methodology: The 12 LAB strains used in the present study were selected from 125 LAB strains based on their inhibitory activity against human pathogens (*E. coli and S. aureus*). The LAB were cultured in MRS broth and incubated at 37º C for 18 h and centrifuged at 650 g for 20 min at 4º C. The culture supernatants were assayed for organic acids (neutralized to pH 6.5), bacteriocins (treated with trypsin) and hydrogen peroxide (treated with catalase).

Results: The results showed that the 12 LAB were able to inhibit the growth of the pathogens in varying degrees. The inhibitory zones remain unchanged when culture supernatants were treated with catalase and trypsin. No inhibitory zones were observed when LAB culture supernatants were adjusted to pH 6.5 which indicates that the LAB used in the present study inhibit the growth of pathogens through organic acids.

Conclusion: The inhibitory activities of LAB were not due to the production of hydrogen peroxide or bacteriocins, but the production of organics acids.

OXIDATIVE AND HYDROLYTIC DETERIORATIONS OF SELECTED FRIED-NIGHT MARKET FOODS

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Introduction : Deep-fried food is popular among Malaysians. Various kinds of fried foods can be purchased from street hawkers, night market and restaurants.

Objective : This study was carried out to determine oxidative deterioration in selected fried foods (cakoi [C], peneram [P] and fish balls [FB]) and frying oil-used collected from night market in Sri Serdang, Selangor.

Methodology : The samples were collected at 3 different time; 4pm [T1], 8pm [T2] and 11pm [T3] and analyzed for peroxide value (PV), free fatty acid content (FFA) and fatty acid composition (FAC). FFA and PV were determined by titration method while FAC was determined using Gas Chromatography.

Results : Generally percent FFA and PV in used-oil increased in the order of [T3] > [T2] > [T1] but not in food samples as these values are affected by the nature (ingredients) and water content of the frying foods. The range for mean FFA (%) in [C], [P] and [FB] samples were 0.11-0.30, 0.03-0.22 and 0.08-0.25 respectively while mean for PV (mEq/Kg) were 2.5-24.5, 45.0-66.0 and 5.0-13.5 for [C], [P] and [FB] respectively. The oxidation occurred in both food and oil samples also was characterized by a decrease in the total unsaturated fatty acid content. Most of the changes observed in this study were significant at p£0.05.

Conclusion : Even though the sample size was not big enough to generalize for all fried foods in night market, however the finding is indicative that excessively high intake of fried foods especially toward the end of night market session could be harmful as some fried-foods might contain high level of hydrolytic and oxidative deterioration products.

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PREVALENCE AND CORRELATES OF PROTEIN-ENERGY MALNUTRITION IN ORANG ASLI SCHOOLCHILDREN

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Introduction: Despite great development in socioeconomic status throughout 50 years of independence, protein-energy malnutrition (PEM) remains a public health problem in Malaysia especially in rural communities. This study aimed to investigate the prevalence and predictors of PEM in Orang Asli children.

Methodology: A cross-sectional study was carried out on Orang Asli schoolchildren living in remote areas in Pos Betau, Kuala Lipis, Pahang. A total of 241 children (120 males and 121 females) aged 7-12 years were voluntarily participated and underwent physical examination including anthropometric measurements. Socioeconomic data were collected using pre-tested questionnaires. All children were screened for *Ascaris lumbricoides*, *Trichuris trichiuara* and hookworm by Kato-Katz and Harada Mori techniques and for *Giardia duodenalis* by trichrome staining technique.

Results: The overall prevalence of mild and significant underweight was 52.3% and 37.3% respectively and the prevalence of mild stunting and wasting was 43.6% and 43.1% respectively while the prevalence of significant stunting and wasting was 43.6% and 5.6% respectively. Bivariate analysis indicated a higher prevalence of significant underweight and stunting among boys than girls (P=0.029, P=0.045)). There was a significant association between large family size (≥8 members) and significant wasting (P=0.009). Findings also showed a higher prevalence of stunting among children aged >10years than children aged ≤10years (P=0.000). There were no significant associations between malnutrition indices and parasitic infections and socioeconomic status including low household income, parents' education and employment status among these children.

Conclusion: This study vividly revealed that PEM is highly prevalent in schoolchildren in rural areas of Malaysia and therefore of a public health concern as PEM may diminish immune functions and impair their cognitive functions and academic performance. Hence school-based programs like prevention through health education and interventions should be considered as an essential part of efforts to improve the quality of life of Orang Asli children in rural Malaysia.

CHEMICAL COMPOSITION AND ANTIOXIDANT ACTIVITY OF WHITE AND BROWN RICE

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Introduction: Considerable scientific evidence suggests that rice is the staple food for Asians. The cardioprotective role of rice diets was suggested several decades ago. Rice bran contains tocotrienols, g-oryzanol, _-sitosterol and unsaturated fatty acids, as part of the unsaponifiable matter, which have well-studied antioxidative properties and all of which may contribute to cholesterol reduction. The aim of this experiment was to investigate the nutritional value and antioxidant activity of white (WR) and brown rice (BR).

Methodology: Proximate analyses were determined by AOAC (1990) methods which included moisture, ash, fat, protein and dietary fibre. Mineral content was analyzed using scanning electron microscopy (SEM) combined with energy-dispersive x-ray analysis (EDX). Antioxidant activity was determined by free radical 2,2-diphenyl-1-picrylhydrazyl (dPPH), ferric thiocyanate (FTC) and thiobarbituric acid (TBARS) methods.

Results: Brown rice extracts presented high contents of ash (1.3%) as a result of a high amount of minerals which included selenium, potassium, magnesium, iron and zinc. At the extremes of the nutritional values, brown rice contained more dietary fibre (2.9%) and protein (7.8%) compared to white rice extracts respectively. Brown rice expressed highest antioxidant activity when compared to white rice and vitamin E in FTC and TBARs methods, meanwhile dPPH assay denoted that brown rice exhibits strong scavenging activity. This activity was superior to those of a commercial synthetic and natural antioxidants tested.

Conclusion: BR contains the additional nutrients and antioxidants needed in the body which has strong preventive effects against free radical-mediated diseases such as cardiovascular disease (CVD), atherosclerotic disease or coronary heart disease (CHD).

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FORENSIC HAIR ANALYSIS DISPROVE THE CLAIM OF RARE ANIMAL SPECIES

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Introduction : An unidentified animal species, named as 'Jenglot', is claimed as a rare living animal species which is only found in the deep jungle of Irian Jaya, Indonesia. Three 'Jenglots' were exhibited in one of the museums in Malaysia and had attracted numerous visitors.

Objective & Methodology : A request had been made by the owner of the jenglots, who bought them from West Java, to perform DNA analysis of the unidentified animal species. Since the muscle appeared very dry and most probably had been preserved using formalin, recovery of DNA may be extremely difficult if not impossible. We therefore used hair for our analysis. Four hair samples which were different in color and physical appearance, labeled as sample A,B, C and D were collected from the 3 'jenglots'.

Results : Microscopic characteristic indicated that all four hair samples were of human origin, with medullary index less than 0.3 and pigment density towards the periphery. Dried root sheath was found in sample C while sample D appeared to have black dye granules over the cuticular surface. Amplification of mtDNA HVI region was performed using two sets of primers and the sequences were aligned using the Cambridge Reference Sequence (CRS). The sequences showed polymorphisms at position 16140, 16182C, 16183C, 16189, 16217, 16274 and heteroplasmy at position 16112, 16232 and 16251. This haplotype was consistent for all the samples.

Conclusion : Based on these findings, supported by X-Ray examination and the physical appearances of the jenglots, it can be concluded that the jenglots are probably not an animal species as claimed.

STUDYING OF MRSA AT HOSPITAL UNIVERSITI SAINS MALAYSIA

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Introduction: MRSA: is a common illness and potentially life threatening, especially in older adults and those with co-morbid disease.

Methodology: The study was retrospective based on the records of 200 patients from January 2004 till December 2005. Convenience sampling technique was followed. This method made use of the records or patient profiles only available at record office according to inclusion criteria employed in this study.

Objectives: To estimate occurrence of MRSA in HUSM, and to determine relationship between physician response to TDM recommendations and treated MRSA infection outcome.

Results: showed that the highest rate were among male 61.5 %(123), Malay {176 (88.8%)}, in ages of patients was between 16-29 years old, most of patients received monotherapy of vancomycin {(179) 89.5%}, and rest of patients received various combinations of antibiotics., target duration of hospitalization was set at 108 to 140 days &mortality rate in adult patients hospitalized at University Science Malaysia for MRSA was {(29) 14.5%}.

Conclusion: the cases were found in almost all ward types, the yield of MRSA was highest from wounds/ulcers/skin swabs then in sputum cultures, Vancomycin was the drug of choice with no resistance detected, there are weak relationship between TDM result & outcome, and TDM follow recommendation & outcome. The Limitation of study were only 200 patients records cannot generalize this result for all MRSA patients in Malaysia.

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MAPPING PATTERNS OF FOS EXPRESSION IN THE SPINAL CORD AFTER ACUTE HEAT SHOCK

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Introduction: The expression of proto-oncogene c-fos in brain is very dependent upon physiologic processes and experimental manipulation. Studies have suggested that after thermal stress, animals exhibit cardiovascular and neuronal changes. In addition, stress and pain induced expression of Fos. However, information of Fos expression in the spinal cord after exposure to stress in rats is still lacking. This study investigates the changes in gene expression in the spinal cord after acute thermal shock applied in both hind limbs.

Methodology: Twelve adult male Sprague dawley rats were used. Anaesthesia was induced with pentobarbital at dose 50 mg/kg i.p. Heat was given at 42°C for 15 min. Six male rats were used in each group: thermal and control groups. At 2 h after heat stimulation, animals were deeply anesthetized, perfused and fixed with 4% paraformaldehyde. L4-L5 segments of spinal cord were removed, post-fixed in the same fixative for 2-3 h and cryoprotected with sucrose at 4°C overnight. Fos expression in the spinal cord was evaluated by immunohistochemical study. Data were expressed as mean ± SD. The difference of Fos among control and heated rats were determined by T-test. Effects were considered to be statistically significant if $P < 0.05$.

Result: The amounts of Fos were significantly increased ($P < 0.001$) in the heated group than control group. There were huge numbers of Fos in the medial part of laminae I and II of the L4-L5 segments of spinal cord. Little or no Fos was observed in the other laminae of spinal cord. The numbers of Fos positive neurons were not equal in both sides of the spinal cord.

Conclusion: This study showed that thermal stress leads to the expression of Fos in the superficial layer (laminae I and II) of the dorsal horn of spinal cord. There is a possibility that each hind limb has different power and mechanism to combat the heat stress.

PREVALENCE AND SPECIFICITY OF RED CELL ALLOANTIBODY IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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Introduction: Alloimmunization after exposure to red cell (RBC) alloantigens depends on many factors. Alloimmunization due to donor red cells, white blood cells, platelets, and serum proteins frequently follows the transfusion of homologous blood. These problems, which may pose additional risks to the transfusion recipient, are reviewed. The purpose of this study were to estimate the rate of alloimmunization against RBC alloantigens in hospitalized patients and the frequency and specificity of alloantibodies detected during pretransfusion testing.

Method: A retrospective analysis of RBC alloimmunization among 13771 HUSM patients was analysed for the period of January 2004 until December 2005.

Results: The prevalence of positive antibody screen in HUSM was 1.97%. The five most frequently identified alloantibodies were anti Mia (50%), anti E (13%), anti M (8.7%), anti c (6.5%) and anti D (4.3%). Frequency of alloimmunization was greater among female than male patients (4.1 F to 1 M). Anti Mia, anti E, anti c and anti D were also more frequently identified alloantibody among female patients in HUSM.

Conclusion: Anti E, anti M, anti c and anti D were the most common clinically significant alloantibody among HUSM patients. The results showed predominance of RBC alloimmunization in females than males.

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FLOW CYTOMETRIC AND DEMOGRAPHIC ANALYSIS OF T-CELL ACUTE LYMPHOBLASTIC LEUKEMIA IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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Introduction: Acute leukemia results from clonal proliferation of immature hematopoietic cells at an early stage of differentiation including primitive cells with multilineage potential. ALL is broadly classified as having T- or B-cell origin. This study was carried out to analyse the proportion of T cell acute lymphoblastic leukemia (T-ALL) among all acute leukemia (ALL) in HUSM patients and its correlation with the demographic features. Accuracy of cell surface markers used in flow cytometric analysis of the leukemic cells was also determined.

Methodology: A retrospective analysis of 81 cases of acute lymphoblastic leukemia presented in 2004 till 2006. Flow cytometry was performed on all ALL cases using standard protocols. T-ALL markers included CD3, CD5 and CD7.

Results: Proportion of T-ALL among known ALL patients in HUSM was 26%. It was higher in adults than in children (81% vs. 19%). Male to female ratio among T-ALL patients was 1.6:1. However, the proportion (%) of T-ALL in females was higher than in males (37.5% vs. 31%). CD7 was found to be the most sensitive marker among both adult and children. It was positive in 95% of the T-ALL cases.

Conclusion: Proportion of T-ALL in our study was slightly higher compared to previous literature. However, due to some aberrant and cross reactivity found by each marker, we strongly recommend a panel approach including B-lymphoid and myeloid markers to ensure a correct diagnosis of T-ALL.

MEDICATION RELATED KNOWLEDGE, ATTITUDES AND PRACTICE AMONG STAFF AND STUDENTS AT USM

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Introduction: The aim of this study was to assess the knowledge, attitude and behaviour towards safe medication use of college students and staff at USM.

Methods: The developed questionnaire consisted of three parts to evaluate the knowledge with 14 true/false questions, attitude using 4 questions with a 5-point scale, and practice with 10 questions in a 5-point scale. Using convenience sampling method, 538 potential respondents were divided into two groups. Group A included the staff and Group B comprised postgraduate and undergraduate students

Results: The mean knowledge score on medication was 8.7±2.2 of 14 points. The rates of correctness for all knowledge items ranged from 85.0% to 15.5%. Knowledge relating to eye drops, antacid, hypertensive use and storing of medication had the lowest number of correct responses. Overall, the respondents showed positive attitudes toward (13.3±2.7) and trusted (3.4±0.9) pharmacists' consultation. ($p<0.05$).The most serious unsafe practice that 35% of participants discontinued their prescription medicines upon symptom relief without consulting their doctor or pharmacist. Only 32.3%of participants always informed their doctor or pharmacist about medications currently being used.

Conclusion: This study showed staff and students at USM have positive attitudes toward medication consultation, but lacked knowledge and practice on proper use of medications and drug safety.

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Screening plant extracts for activity on ligand- and voltage-gated ion channels expressed in Xenopus oocytes

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Introduction: A perfusion system for automated screening of plant extracts on ion channels was expressed in *Xenopus* oocytes.

Methodology: Voltage-clamp experiments were performed in a small (15µl) bath that was covered by a glass plate. Two inlet channels in the glass cover enable access of two microelectrodes to the oocyte. A funnel for drug application surrounds these access channels. Compared to a previous version we modified the chamber construction by placing the oocyte onto a cylindrical pedestal, surrounded by an annular perfusion gap. The perfusion gap was connected to the chamber outflow. Drugs or neurotransmitters were applied to the funnel by means of a pipetting robot ("ScreeningTool", npi electronic, Tamm, Germany) under computer control.

Results: A mean time of solution exchange ($t_{10\text{-}90\%}$) of about 50 ms was estimated. The system required only small amounts of test solution (about 100 µl) for drug screening. After an initial fast perfusion step the chamber was continuously perfused at a slower rate (usually at 1 - 8 µl/second). The ScreeningTool robot system has been successfully applied for screening of HERG channel blockers, modulators of $GABA_A$ channels or nicotinic acetylcholine receptors (nAChR).

Conclusion: The system was found to be highly suitable for screening plant extracts for sedative, anxiolytic, anticonvulsant and muscle relaxant effects. Active compounds were identified in extracts from *Valeriana officinalis*. Examples will be given to illustrate the new screening technology.

THE EFFECTIVENESS OF WATER PURIFICATION METHODS USE FOR THE PREPARATION OF CARBONATED DRINKS

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Introduction: Water is the main constituent of carbonated soft drinks; hence the treatment of water by different chemical and disinfection methods are very important in the determination of the quality of carbonated soft drinks produced.

Method: In this study, water samples used for producing carbonated cola and orange flavoured drinks were tested for its chemical contents and also microbial tests. These samples were treated with soda lime and reverse osmosis accompanied with ozone treatments before being used for the preparation of the carbonated soft drinks. The tests were performed on day 0, 15 , 30 and 60 post production of the carbonated soft drinks.

Results: Results shows that soft drinks using water treated with reverse osmosis contained lowest total ash, brix and pH. This sample was shown to have the highest total acidity in comparison with other method water treatment. However, the amount of dry juice and density in the drinks, produced from water treated differently did not show any statistical differences. ($P < 0.01$) Water treated with ozone gas and reverse osmosis were found to be sterile and safe for use in carbornated drinks. In the test panel quality experiments, the produced carbonated soft drinks using such water samples show minimum level of unfavourable odours such as fermentation odour and alcohol flavour. The tests also show that the favourite flavour was at the maximum level with no turbidity and sedimentation detected.

Conclusion: The reverse osmosis and ozone disinfection treatment methods proved to be the most effective and economical methods for the preparation carbonated soft drinks.

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THE USE OF HUMAN SPECIMEN IN RESEARCH: AN ASSESSMENT BASED ON THE PERCEPTION OF 429 RESPONDENTS

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Introduction: Human specimen usage has been integral in medical research for many years. So far the response of the public particularly in the local context on this is not known.

Methodology: A questionnaire survey was given to patients attending HUSM outpatient clinics and the blood donors of the hospital. Data was collected from 429 respondents who returned the completed survey forms.

Results: Majority of the respondents were young (<35 years), have had at least primary education and lived in rural area. 82.1% respondents have had their specimen taken for some investigations on their illness but only 68.5% of them had been informed about the purpose. Of those informed, just 50.8% had been told about the risk of the action. More than half of the respondents had not been informed about the tests that were done on the specimen nor the results. Majority proud to submit their specimen and hoped their specimen will be discarded after the research has ended. Less than half knew human specimen could be used in research. Majority said they would be upset if research on their specimen is done without their knowledge. There were only 21.2% of the respondents who had been involved in research as subjects. Majority of the respondents agreed to submit their specimens for research, disseminate the research findings to others. Almost all respondents were in consensus that research is important in improving health.

Conclusion: This survey shows that the majority of the public is receptive to be involved as subjects for research if properly informed and motivated.

THE COMPLEXATION OF FE-CATECHIN FROM FERROUS AND FERRIC IONS AT DIFFERENT pH

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Introduction: Herbal medicines and foodstuffs have been credited for their preventive effects on chronic disease due to their radical scavenging activities or antioxidant properties. Increased usage of such products has rendered the need for the development of safe and effective functional foods and the extraction of novel antioxidants from medicinal plants. Polyphenolic compounds of the flavanoid groups are commonly found in fruits, tea leaves, wine, potatoes, vegetables and plants. Most of these compounds are strong antioxidants that inhibit kinetic of spontaneous autoxidant reactions taking place in the above mentioned food products.

Methodology: Fe-catechin was prepared by reacting 0.02M Fe(II) and Fe(III) salts respectively with 0.02 M catechin solution at room temperature. Complexations of ferrous-catechin and ferric-catechin were studied at pH 1.0, pH 3.0, pH 5.0 and pH 8.0. Fe-catechin solution was incubated at the room temperature for 24 hours. After incubation, the solution was centrifuged for 30 minutes at 7500 rpm using centrifuge KUBOTA 5920. The supernatant was separated before analyzed using UV-Vis, while the precipitate was dried in an oven at 38 ^{o}C for 2 days. Infra-red spectroscopy (FT-IR) and scanning electron microscopy (SEM) analyses were carried out on the precipitates.

Result: All precipitates produced from ferrous-catechin and ferric-catechin solution are blue-black in colour for all pH values except at pH 1.0. Results showed that the complexation of Fe-catechin has occurred at all pH tested. While the results from UV-Vis analysis showed that ferrous ions were oxidised into ferric ions and the catechin was possibly oxidised to quinone. Ferric-catechin complexes were formed when catechin reacted with either ferrous chloride or ferric chloride.

Conclusion: The most stable complexes began at pH 3.0. At pH 8.0, the ion hydrolysis occurred leading to other complexation products being formed. However, the ferric-catechin complex remained as the major product.

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STUDY THE COMPLEXATION BETWEEN PHYTIC ACID WITH NICKEL (II), COBALT (II) AND IRON (II)

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Introduction: Phytic acid (myoinositol hexaphosphate) is an important plant constituent. It accounts for up to 85% of total phosphorus in cereals and legumes. Phytic acid has 12 replaceable protons in the phytic acid molecule rendering it the ability to complex with multivalent cations and positively charged protein. The immobilized phytic acid can adsorb heavy metal ions such as cadmium, copper, lead, nickel, and zinc ions from aqueous solutions conducted at room temperature. Hence, phytic acid has the potential for removing metal ions from industrial or mining waste water.

Methodology: The phytic acid was extracted from bran. The presence of the phytic acid compound was confirmed with infrared spectroscopy analysis. The experiment was carried out using phytic acid with 0.01 M concentration added to solutions containing different ion [nickel (II), cobalt (II) & iron (II)] of 0.1, 0.01 & 0.001 M concentration. Optimum pH was determined for complexation and the percentage of metal ion loss was calculated using ultraviolet spectroscopy.

Results: The complexation of phytic acid with (i) nickel (II), (ii) cobalt (II) and (iii) iron (II) occurred at pH 6.4, pH 6.1 and pH 3.4 respectively. The percentage of ion loss for nickel (II) was higher than cobalt (II) while no loss was detected for iron (II) even though it was speculated that iron would exhibit the highest ion loss among the three.

Conclusion: This study shows that phytic acid is able to form a complex with the three types of ions tested. The net loss for each type of ions was found to be in linear relationship with the volume of the phytic acid used as shown in the decreased of the absorption value from the ultraviolet spectrum.

DETERMINING QUALITY OF STREAM ECOSYSTEM USING AQUATIC INSECT LARVAE IN KOTA BHARU, KELANTAN: A PRELIMINARY STUDY

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Introduction: Rivers/streams are living freshwater systems that include groundwater, springs, wetlands, ponds, streams, lakes and estuaries. These systems reflect the natural characteristics of their basins and the effects of all human activities within them. Everything we do can affect water quality, people and natural systems from upper stream to downstream (i.e., river continuum concept). The studies on aquatic insect larvae have been expanding exponentially in the last three decades. In 70's and 80's, aquatic insects became the principal forms used in freshwater investigations (i.e. ecologically, taxonomically and management applications wise). In Malaysia, measuring water quality using aquatic insects have been actively explored since 1980s. Studies in Penang River Basin and Kedah River Basin (1999) showed that aquatic larvae have a potential role for bioindicator of water pollution. However, in Kelantan, survey on aquatic insect in relation to water quality is quite new and has not yet been established.

Methods: In 2006, invertebrates were sampled in dry and wet seasons (N = 12 samples/stream) with Hester-Dendy multiple plate samplers having disk diameters of 14 cm and depths of 15 cm. Sampling was conducted in the polluted (CLASS V) and fairly polluted streams (CLASS III-IV). Each sampler contained 10 disks, with eight disks separated by 0.5 cm spaces, and two disks separated by 1.0 cm spaces. On collection dates, the samplers were individually placed in plastic bags and transported to the laboratory for processing. Benthic macroinvertebrates were then separated from background debris and enumerated by taxon and size group. The process was facilitated by staining with Rose Bengal (1.0 -1.5 g of crystals dissolved in 100 ml of 70% ethanol). Ten ml of the stain was added to 90 ml of sample material and left soaked for 24 h. Samples were then rinsed through a fine-meshed sieve (0.5 mm), transferred to a white dissecting pan and sorted according to family level. Macroinvertebrates were preserved in 10% buffered formalin for storage prior to final processing.

Results: Two hundred aquatic insect larvae were collected and identified. Midges (Diptera: Chironomidae) was widely distributed in the studied stream and was found to be the most abundant invertebrates collected. Chironomidae were also found to be most abundant in the polluted stream. In the fairly polluted streams, dragonfly (Odonata: Gomphidae, and Aeshnidae) and water boatmen (Hemiptera: Corixidae) were the most collected.

Conclusion: This study shows that the aquatic insect larvae bioindicator may be a reliable tool for assessing water quality on stream macroinvertebrate communities in Kelantan; indicating studied streams harbored a benthic macroinvertebrate community composing of species that are highly tolerant of poor water quality conditions.

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ADVERSE DRUG REACTIONS OF COMPLEMENTARY AND ALTERNATIVE MEDICINE IN MALAYSIA

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Introduction: There is an increase in the use of complementary and alternative medicine (CAM) worldwide. Their use is not without risk and incidences of their associated adverse drug reactions (ADR) have been widely reported. Much of adverse drug reaction monitoring and reporting in Malaysia rely on voluntary reporting from health professionals.

Methodology: This retrospective study describes the adverse events related to CAM in Malaysia based on reports received by the Malaysian Adverse Drug Reaction Advisory Committee (MADRAC) from the year 2000 – 2004.

Results:133 (2.7%) reports of ADR on CAM were evaluated. The majority of the population affected was adult, of Malay ethnic origin (58.7%) and female (52.7%). The most common ADR reported were skin reactions (39.1%), followed by reactions involving the liver (15.0%) and central nervous system effects (12.8 %). There were eight cases of fatality reported associated with the use of homeopathy medicine and dietary supplement. Traditional Chinese medicine contributes to the majority of ADR reported (30.3%).

Conclusion: This finding is hoped to increase awareness of the potential of CAM associated adverse events.

EFFECTS OF ANACARDIUM OCCIDENTALE LINN. LEAVES EXTRACT IN DIABETIC RATS

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Introduction: Diabetes mellitus was found to be associated with oxidative damage which coexists with a reduction in the antioxidant status. The Malay folklore medicine in Malaysia believed that consumption of the decoction of the vein and leaves of *Anacardium occidentale* Linn. (cashew-nut) will lower blood glucose level of diabetic patients. The objective of this study was to verify the potential hypoglycemic effects of *A. occidentale* leaves aqueous extract (AOE) in Type II Diabetic rats.

Methodology: Freeze-dried AOE of various doses (50, 250,500,1000mg/kg body weight) were administered to streptozotocin induced Type II diabetic rats. The rats were force-fed with the extracts once daily for six weeks. Oral glucose tolerance test (OGTT) with 1.5g/kg body weight of glucose challenge was then conducted to monitor the serum glucose level.

Results: The results showed a significant improvement in the glucose tolerance after six weeks of treatment as compared to the diabetes control group ($p<0.05$). After treatment, the rats treated with AOE at all doses have lower fasting glucose levels compared to the pre-treatment week. It was also noted that with all the doses of the leaves extract there is a delay in the rise of glucose level in oral glucose tolerance curve. Histological study of the pancreas showed an extensive damage of islets of Langerhans and reduced dimensions of islet in the diabetic-induced rats. There were significant increase in the area, perimeter and diameter of pancreatic islets in both glibenclamide and AOE treated rats. The diabetic rats treated with AOE 250 mg/kg have the highest increase in area, perimeter and diameter of the islet of Langerhans and have no significant difference compared to the normal control rats.

Conclusion: The results suggest that the *A. occidentale* leaves extract might possess hypoglycemic activity and could improve and protect the islet Langerhans cells from oxidative degeneration resembling the normal rats.

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COST OF THERAPEUTIC DRUG MONITORING –A PRELIMINARY STUDY

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Introduction: In an attempt to minimize the hospital medical care costs, we conducted a study to calculate the cost of providing Therapeutic Drug Monitoring (TDM) service for hospitalized patients with bronchopneumonia in Hospital Universiti Sains Malaysia (HUSM).

Methodology: Data of adult patients with bronchopneumonia caused by gram-negative bacteria and treated with gentamicin were collected retrospectively from year 2001 to 2005. All adult patients who have been proven or suspected gram-negative infection diagnosed as bronchopneumonia, admitted for at least 72 hours, treated with gentamicin and monitored with TDM service were included in the study. Patients with renal impairment prior to gentamicin therapy or patients received concurrent treatment with nephrotoxic drugs were excluded. All TDM operating costs, laboratory and clinical investigations costs, gentamicin therapy costs, ward staff costs, and hospital stay cost were calculated. Kruskal-Wallis test was used to compare the difference in costs. A priori p value < 0.05 was considered statistically significant.

Results: A total of 109 patients received gentamicin for bronchopneumonia and monitored with TDM service during the five-year period. Only 50 patients fulfilled the study criteria. The mean cost of TDM service was RM56.65. The mean cost of laboratory and clinical investigations was the highest (37%), followed by cost of gentamicin therapy (28%), ward staff cost (15%), TDM cost (14%), and hospital stay cost (6%). The mean costs of TDM reagents and consumables were significantly the highest (83%) among TDM operating costs followed by staff cost (14%).

Conclusion: The cost of TDM reagents contributes a major portion to the TDM service costs. The TDM cost is minimal compared to the cost of other medical and laboratory services. Therefore, providing TDM service to bronchopneumonia patients is a cost effective measure.

TRADITIONAL USAGE OF COLEUS AMBOINICUS LOUR BATAKNESE LACTATING WOMEN IN INDONESIA

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Introduction: Traditional herbal medicine is widely practiced in Asia and about 8.000 plant species have been recorded to be used in traditional remedies. *Coleus amboinicus* Lour (CA) has been used as a breast milk stimulant (a lactagogue) by Bataknese people in Indonesia for hundreds of years. However, the traditional use of CA is not well documented, and scientific evidence is limited to establish CA as a lactagogue. This investigation was conducted to elucidate the effect of traditional use of CA during the first month of lactation on quantity of the breast milk.

Methodology: Sixty seven lactating women, aged 20 to 39 years, participated in the study. The study was conducted in Simalungun District, North Sumatera Province, Indonesia, where the beliefs and traditions have been practised for hundred years and adherence is still strong. The study was executed to assess the benefits of CA supplementation in augmenting lactation, in comparison with Molocco+B12‘, which was widely used among Indonesian lactating women, and Fenugreek seeds, which was believed to be a lactagogue by lactating women in European countries.

Results: The results of the study showed that the CA supplementation increased the breast milk production. Lactating women receiving CA supplementation had a 65% increase in milk volume during the last two weeks of supplementation (from Day 14 to Day 28). This increase was greater than that of lactating women receiving Molocco+B12™ tablets (10%) or Fenugreek seeds (20%). The residual effects of CA supplementation were seen even after the supplementation had ended for one month.

Conclusion: Results of the intervention study confirmed the belief and the practice amongst the Bataknese people that CA can be used as a lactagogue in humans, and the use of CA might be suitable for lactating women in general.

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ESTIMATING THE EFFECT OF PREVENTABLE DRUG-RELATED PROBLEMS ON THE HEALTHCARE UTILIZATION

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Introduction: Apart from morbidity and mortality linked to preventable drug-related problems (PDRPs), they have economic and humanistic consequences. This study estimates the effect of the PDRPs on the healthcare utilization (HCU).

Methodology: Two consecutive academic years data of about the users of University Sains Malaysia (USM) healthcare services were extracted from USM computerized databases. A user is a USM health scheme beneficiary who utilized the services at least once in the study period. Variables collected were age, gender, race, eligibility type, enrollment period, hypersensitivity and dispensed medications with their doses, frequencies and duration. The investigated PDRPs categories were overprescribing (based on DDD methodology), drug interactions and allergenic prescriptions. The numbers of PDRPs in each DRPs category were calculated for each user. Health status was estimated from the dispensed medications. Demographic variables and health status were used to calculate propensity score (PS) for the PDRPs. PS was used to match users who were exposed to PDRPs to their counterparts. Weighted least square method (WLS) was used to estimate the effect of PDRPs on utilization. The number of visits (as a utilization measure) was calculated as well.

Results: After matching users who were exposed to PDRPs to their controls, PDRPs explained 7% of the number of visits ($p < 0.001$). Users who were exposed to PDRP visited more than their counterparts (Wilcoxon signed-rank test, $p < 0.001$).

Conclusion: PDRPs caused more healthcare utilization.

SELF-POISONING IN NORTHERN MALAYSIA: VARIABILITY IN PATIENT'S DEMOGRAPHY, CHOICE OF TOXIC SUBSTANCES AND FINAL OUTCOMES

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Introduction: Deliberate self-poisoning (DSP) is the most common method of deliberate self-harm and has been associated with significant mortality and morbidity. We report the characteristics of adult cases admitted to the Hospital Pulau Pinang due to DSP during 2000-2004. Our objective was to compare drug overdose exposures with chemical poisoning with regards to demography, associated factors and final outcomes.

Methodology: Data during the period from January 2000 to November 2002 were collected retrospectively. Data from September 2003 to February 2004 were collected prospectively. Chi-square, independent t-test and Mann-Whitney were used to conduct comparison between groups when ever applicable. P value < 0.05 was considered statistically significant.

Results: Of 320 cases admitted, 61.9% were drug overdose while 38.1% were chemical poisoning. Those who were in the middle aged group (31-60) were almost two times more likely to be admitted for chemical poisoning compared to those who were older or younger (OR= 1.8). Indian were more likely to use household products (OR= 2.69) whereas, Malay and Chinese were more likely to be involved in drug overdoses (ORs= 2.01 & 1.61, respectively). Drug overdose cases were more likely to be associated with histories of alcohol intake (OR= 1.7), smoking (OR= 1.5) and previous poisoning (OR= 1.4). Drug overdose patients experience more socioeconomic and health problems (ORs= 1.96 & 1.97, respectively). Chemical poisoning patients presented earlier and hospitalized for shorter time than drug overdose patients. Drug overdose patients were more likely to be admitted to the intensive care unit (OR= 7.6). However, there was a higher rate of deaths among chemical poisoning exposures (OR= 13.4).

Conclusion:
Many factors affect choice of substance in DSP. DSP associated with drug overdose showed significant morbidity, but increased mortality was seen in chemical poisoning.

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EVALUATION THE KNOWLEDGE & PERCEPTION OF DIABETICS & NON DIABETICS TOWARDS ERECTILE DYSFUNCTION IN USM MAIN CAMPUS

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Objectives: To evaluate the knowledge & perception of diabetics & non diabetics in USM main campus towards erectile dysfunction & to assess treatment used among them.

Methodology:
A cross-sectional survey was conducted in USM main Campus & in Diabetic Clinic in the main campus. At the end of the study a total of 200 individuals were surveyed, 52 of them were diabetics and the rest were non-diabetics .The respondents were required to answer 37 questions from a pre-tested questionnaire divided into five main sections, namely, Knowledge regarding causes of ED, knowledge regarding prevention of ED, Perception regarding sexual activity, perception regarding the effect of ED on quality of life & finally treatment of ED.

Results: The mean total knowledge score obtained by diabetics was significantly higher(63.7 % of the maximum possible total knowledge score) than non diabetics score (53.8 %). Diabetics scored significantly lower regarding perception towards sexual activity (65.1%) than non diabetics (70%), also, diabetics scored non significantly higher scores regarding perception towards effect of ED on quality of life (61.3%) comparing with non diabetics (59.7%). There was significant association between diabetes & using medicine for ED ($p<0.001$) .Viagra ®(Seldenafil) was the most commonly used medicine between diabetics & non diabetics .

Conclusion: Diabetics are more knowledgeable but with lower perception towards sexual activity & higher perception regarding the effect of ED on their quality of life. Health care professionals should be more proactive in disseminating health information about ED to the public. Oral therapy by PDE 5 inhibitors particularly Sildenafil (Viagra ®) are the most widely used among both groups.

Keywords: ED, Diabetics, non diabetics, knowledge, perception, treatment, Viagra®

PROTECTIVE EFFECT OF PALM VITAMIN E AND α-TOCOPHEROL AGAINST GASTRIC LESIONS INDUCED BY WATER IMMERSION RESTRAIN STRESS IN SPRAGUE-DAWLEY *RATS*

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Introduction: Stress can lead to various changes in the gastrointestinal tract of rats. The present study was designed to compare the effect of palm vitamin E and α-tocopherol supplementations on gastric parameters which are important in maintaining gastric mucosal integrity in rats exposed to water immersion restrain stress (WRS). These include gastric acidity, gastrin level, gastric prostaglandin E_2 (PGE_2) level and gastric lesions.

Methodology: Sixty male *Sprague-Dawley* rats (200-250g) were divided into three equal sized groups; a control group which received a normal rat diet (RC) and two treatment groups each receiving oral supplementation of either palm vitamin E (PVE) or α-tocopherol (α-TF) at 60 mg/kg body weight. After the treatment period of 28 days, each group were further divided into two groups, the non-stress and stress groups. The stress groups were exposed to WRS for 3.5 hours once. Blood samples ware taken to measure the gastrin level, after which the rats were killed and the stomach removed to collect gastric juice for the measurement of gastric acidity, gastric PGE_2 and gastric mucosal lesions.

Results: Gastric acidity in the PVE and α-TF stressed groups were significantly increased in comparison to the stressed control, but no significant difference was observed when comparing the PVE and the α-TF stressed groups. Exposure to WRS leads to a reduced gastrin level, while the gastrin level in the stressed PVE group and α-TF group were significantly increased in comparison to the stressed control. The gastric PGE_2 content of stressed PVE group and stressed α-TF group were significantly increased in comparison to the stressed control. Gastric lesions of PVE and α-TF stressed groups were significantly reduced in comparison to stressed control. No change in the value of the gastric lesions index when comparing the PVE and the α-TF stressed groups.

Conclusion: We conclude that, WRS leads to a reduction in the gastric acidity, gastrin level and gastric PGE_2 with an increased formation of gastric lesions. Supplementation with PVE and α-TF have the ability to reduce the formation of gastric lesion, possibly by blocking the changes in the gastric acidity, gastrin and gastric PGE_2 induced by stress.

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THE EFFECTS OF PALMVITEE ON LIPID PEROXIDATION IN RATS FED A HIGH-METHIONINE DIET.

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Introduction: Oxidative stress is involved in various pathogenesis of diseases. Hyperhomocysteinemia has been suggested as one of cause. It can be achieved by supplementation of a high-methionine diet. Thus, the objective of this study is to determine the effects of palmvitee and folic acid on lipid peroxidation marker in male Wistar rats fed a high-methionine diet.

Methodology: Male Wistar rats weighing 180 to 200 gram were divided into six groups. The control group was given rat chow throughout the ten week study period. The second group, positive control, was fed a high methionine diet (10g methionine/kg diet) only. The four treatment groups (group 3, 4, 5 and 6) were given a high methionine diet (from start until end) into which folic acid 8 mg/kg diet or palmvitee at 30, 60 or 150 mg/kg diet were added respectively from week 6 onward. The weights were measured weekly. Animals were sacrificed at the end of the study. Liver and plasma thiobarbituric-acid-reactive substance and protein were measured. The result, i.e. malondialadehyde (MDA) level, was expressed as nmol/mg protein.

Results: Student's t-test was used to compare means between two groups. Data are presented as mean $\pm$ S.E.M. Results are considered significant at $P < 0.05$. Compared to control, the high methionine diet (in group 2) significantly increased hepatic MDA level but not the plasma level. Palmvitee at 60 mg/kg diet or 150 mg/kg diet and folic acid significantly reduced MDA level. The initial weights among the groups were not significantly different. The final weights achieved were also not significantly different.

Conclusion: A high methionine diet increases oxidative stress marker. Palmvitee and folic acid appear to protect the liver against this. Further studies on palmvitee's role as a therapeutic agent in oxidative stress related diseases is warranted.

OIL PALM FROND METHANOLIC EXTRACT ATTENUATES BLOOD PRESSURE INCREASES IN NITRIC OXIDE DEFICIENT RATS

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Introduction: Many plants exhibit excellent nutraceutical values, with disease prevention properties e.g. tea and grapes, which both have been documented to have powerful effects on the prevention of cardiovascular disease. Malaysia, which has a diverse range of green plants, may be a good source of phytochemicals with nutraceutical potential. In this study, oil palm frond which is considered as waste was studied to evaluate its potential as a cardiovascular protective agent.

Methodology: Wistar Kyoto (WKY) rats were given *N-ω-nitro L-arginine methyl ester (L-NAME) to induce nitric oxide (NO) deficiency. The rats were treated with oil palm frond methanolic extract (OPFME) and captopril was used as a reference, both given simultaneously with L-NAME. 10 WKY rats which were not administered with L-NAME served as normotensive control group. BP was monitored weekly for 12 weeks. Serum nitric oxide and RBC superoxide dismutase, catalase, and glutathione peroxidase were determined.

Result: Blood Pressure increase was significantly attenuated in the OPFME treated group comparable to that of the captopril administered group. Nitric oxide (NO) level in the extract level was almost normal in the OPFME group towards the end of the study. Antioxidative enzyme levels however do not significantly differ to those of the control group.

Conclusion: OPFME was able to normalize blood pressure even in the presence of NO inhibition. Increase in NO bioactivity may be due to either the free radical scavenging of OPFME or the increase expression of endothelial NOS activity.

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IDENTIFICATION OF TOXIC ADULTERANTS IN HERBAL PREPARATIONS – THE NATIONAL POISON CENTRE EXPERIENCE

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Introduction: The use of herbal medicines for the promotion of healing and maintenance of health has becoming popular throughout the world. Herbal medicine preparations are often regarded as being safe and harmless due to their natural origin, many of which are taken with or without a physician's prescription. A number of these products were found to be adulterated with synthetic modern drugs as well as heavy metals. To identify toxic and adulterated substances in herbal products commonly available in the Malaysian market, 83 samples of such products were analyzed.

Methodology: Samples (pills, powders, liquids, pastilles, capsules, and tablets) received between January 2004 to February 2007 from hospitals, clinics, manufacturers, distributors and others were extracted and analyzed by either gas or liquid chromatograph using Mass Spectrometer or Tandem Mass Spectrometer respectively. The identification of adulterants was based on mass spectral matching with positive reference standards or those substances in NIST and Wiley libraries. Heavy metals were detected using Atomic Absorption Spectrometer. As quality control measures, specimen, blank and positive control samples were run together.

Results: It was found that 39.7 % of the herbal products tested were adulterated with a maximum number of five adulterants in one herbal product. By dosage form, the adulteration rate was the highest in liquids (66.7 %), followed by powders (50.0 %), capsules (26.9 %) and tablets (25.0 %). Forty (40) drugs not listed on product labels were identified in the herbal products, examples of which are: sibutramine, chlorpheniramine, betamethasone, chlorzoxazone, indomethacin, and ethenzamide. Heavy metals such as lead, cadmium, arsenic and mercury were detected within permissible limit.

Conclusion: The adulteration of herbal products available in local market is high. The adulterants include dangerous and toxic chemical compounds. National Pharmaceutical Control Bureau should be more stricter in registering herbal products and post surveillance studies should be frequently conducted to ensure all manufacturers follow the established guidelines.

ROLE OF QUERCUS INFECTORIA OLIV ON WOUND HEALING

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Introduction: The Quercus *Infectoria Oliv (QIO)* otherwise known as Manjakani, is well-known since ancient times. Arabs, Persians, Indians, Chinese and the Malays have traditionally used Manjakani after childbirth as part of postpartum care, to treat vaginal discharge and related postpartum infections. QIO is found to have a variety of pharmacological properties including astringent, ant diabetic, antitremorine, local anesthetic, antiviral, antibacterial, antifungal, larvicidal and antiflammatory. So this present study is aimed to find out the possible wound healing properties of QIO.

Methods: The Sprague-Dawley rats were anesthetized using diethyl ether and incision of 2 cm length x 1.5 mm depth was made on both side of the dorsum using a sterile surgical blade. Group 1 (vehicle control group) received saline dressing (0.9% sodium chloride), group 2 (control comparative) treated with povidone iodine solution, group 3 (experimental group) subdivided into two group (X & Y). Group X received water suspension QIO (0.1 mg/mL, 1 mg/mL and 10 mg/mL) and Group Y (0.1 mg/mL, 1 mg/mL and 10 mg/mL) received organic QIO. Saline, povidone iodine and QIO suspension were topically applied on wounds daily until the wounds completely healed.

Results: The time taken for the closure of wound by QIO was similar to that of providine iodine and saline. Histological finding showed the appearance of granulation tissue and collagen fibers. The collagen in the dermis is arranged in discrete fascicles separated by considerable interstitial space. The newly formed dermis and epidermis was significantly demarcated from other areas.

Conclusion: It was found that the elements and compounds present in the QIO have wound healing properties. It had many essential elements. The calcium element which is one of the most important elements during recuperation, tissue repair, haematological reactions and many other bodily functions was found on the gall part of QIO. The efficacy of QIO in wound healing is significant as that of providine iodine and saline.

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PRODUCTION OF EDIBLE COTTONSEED PROTEIN CONCENTRATES BY MIXED SOLVENT (WATER: ACETONE:HEXANE)

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Introduction: Cottonseed is considered among the most important crops. It contains about 26% oil that is used for vegetable oil production. After oil extraction, the remaining part of the seed known as cottonseed cake with 45% protein is routinely used as a protein supplement in feed rations of livestock and less for food use due to presence of gossypol, a toxic constituent of cottonseed.

Methodology: In this study, the production of edible protein concentrate from Varamin variety of cottonseed cake was evaluated according to protein Advisory Group Standard by using mixture of water : acetone : hexane in a ratio of (1:39:60) , (3:53:44), and (3:67:30) of protein. The fiber and protein contents were act as a solvent and wet extraction, respectively. Nitrogen solubility value, oils as well as free total gossypol contents of all samples were determined.

Results and Conclusion: The results showed that the protein concentrate extracted by the mixture of water, acetone, and hexane in a ratio of 1 : 39 : 60 were found to meet the world standards as edible protein.

AN INVESTIGATION ON REDUCING POWER AND ANTIOXIDANT ACTIVITY OF TEA WASTE.

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Introduction: This experiment was conducted in order to study antioxidant activity of tea wastes (old and new leave and black tea waste).

Methodology: Methanolic extracts of these materials were prepared and their Iron reducing power and antioxidant activity in Linoleic acid emulsion were determined.

Results and Conclusion: It was showed that reducing power was lowered in below order: new leave > old leave > black tea waste. There was no significant difference between the effects of various extracts in prolonging the induction period of Linoleic acid emulsion but oxidation rate ratio (ORR) of emulsions containing various extract was significantly differenct. Black tea waste extract produced lowest ORR (0.26).

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CARRAGEENAN AS A PROTECTIVE AGENT AGAINST ULTRAVIOLET RADIATION-INDUCED TOXICITY AND MUTAGENICITY

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Introduction: Carrageenan, a sulfated galactans isolated from red seaweeds, may acts as a free-radical scavenger, thus it may protect against ultraviolet radiation(UVR) induced oxidative damage on DNA. Carrageenan is used as an excipient for most skincare products but studies on bioactivity of carrageenan in such products are still lacking. If carrageenan shows protective activity against UVR-induced DNA damage, both photoprotective ingredient and carrageenan may work synergistically in skincare products. However, if carrageenan shows some degree of toxicity, then the efficacy of protective effect of the active ingredient may be questionable. This study investigates whether carrageenan can protect against UVR-induced toxicity and mutagenicity.

Methodology: Before selecting appropriate concentration of carrageenan for photoprotection assay, the toxicity of ι(II)-, ι(V)-, κ-, λ-carrageenan was determined by MTT assay on normal mouse fibroblast(3T3) cells. The cells were then exposed to ultraviolet B(UVB) radiation for 2 and 6 hours in the presence or absence of carrageenan. The percentage of survived cells was determined. The cells were then grown in HAT medium to exclude spontaneous mutations thus selecting cells with delayed mutations. 6-thioguanine was incorporated into the culture to select clones with hypoxanthine phosphoribosyltransferase(HPRT) mutation. The HPRT gene of surviving cells was amplified by PCR to confirm if this gene is deleted as a result of UVB radiation.

Results: Carrageenan did not show significant toxic effect against 3T3 cells within the range of concentrations tested(0.78–50µg/ml). Of the four types of carrageenan tested, ι(V)-carrageenan was found to be most toxic. Photoprotection assay showed that carrageenan has protective effect on survival of cells exposed to UVB radiation, with k-carrageenan(0.78µg/ml) being most active which increases 35% of cell survival. The PCR work and mutation frequencies measurement are in progress.

Conclusion: The results showed that carrageenan was not toxic to fibroblast cells and have some protective effect against UVB radiation.

HEALTH-RELATED QUALITY OF LIFE EVALUATION AMONG CONSUMERS OF HERBAL PRODUCTS

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Introduction: Of all complementary and alternative medicines, herbal products remain as the most popular mode of therapy. Nevertheless, amidst the increasing emphasis on humanistic values in health outcome assessment today, little is known about the health-related quality of life (HRQoL) profile of herbal users. This study aims to compare HRQoL profile of 1) users vs. non-users of herbal products 2) users of different durations and 3) users with different reasons.

Methodology: A cross-sectional survey was conducted, randomly targeting 550 adults at various cities in Malaysia. Besides demographic data, the SF-36 generic HRQoL instrument was completed, assessing: General Health (GH), Physical Functioning (PF), Role Physical (RP), Role Emotional (RE), Bodily Pain (BP), Vitality (VT), Mental Health (MH) and Social Functioning (SF). The Physical Component Summary (PCS) = Mean (PF, RP, BP, GH) while Mental Component Summary (MCS) = Mean (RE, VT, MH, SF). Results were analysed using SPSS version 14.

Results: Altogether, 463 respondents were recruited (84.2% response rate). Of this, 324 admitted as consumers (70%) of herbal products (female=207, married = 184, Malay = 304, semi-professionals = 234) with majority between 25-44 years old (n= 177). Most had used these products for < 1 year (n=164). No significant difference was found in all HRQoL areas between: users vs. non-users or consumers of different durations. However, the HRQoL profiles of those stating various reasons for use were significantly different in all areas except RE and BP ($p < 0.05$). Those who indicated the reasons of illness prevention and health maintenance consistently reported highest scores in PF, RP, BP and MCS.

Conclusions: Results reiterated the trend of popular herbal usage in Malaysian cities. The better HRQoL of those using herbs for illness prevention and health maintenance was most likely due to them being healthy. However, the possible influence of other confounding factors requires further elucidations.

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STUDY OF ANTIBIOTIC UTILIZATION IN PAEDIATRIC UPPER RESPIRATORY TRACT INFECTIONS.

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Introduction: Upper respiratory tract infection (URTI) in children is a common illness and account for substantial proportion of consultation to doctors. More than 80% of URTIs have viral aetiology The spread of antibiotic-resistant bacteria is associated with antibiotic use in URTI of viral origin. Aim: To observe the common paediatric URTI and pattern of antibiotic prescription.

Methodology: A cross sectional study was conducted at Greentown outpatient clinic at Ipoh. Prescription surveys of 500 paediatric URTI were obtained from pharmacy records using systemic sampling.

Results: Most common diagnosis was URTI (94.4%) followed by tonsillitis (2.8%), pharyngitis (2.2%) and otitis media (0.6%). Antibiotic was prescribed in 35% of cases and amoxicillin was most frequently prescribed.

Conclusion: Educational interventions for health care providers can promote judicious use of antibiotics in this community and to control the development of bacterial resistance

NITRIC OXIDE, LIPIDPEROXIDATION AND TOTAL ANTIOXIDANT STATUS IN DIFFERENT REGIONS OF RAT BRAIN IN KAINIC ACID MEDIATED EXCITOTOXICITY

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Introduction: Neuronal excitation involving the excitatory glutamate receptors is recognized as an important underlying mechanism in neurodegenerative disorders. Nitric oxide (NO) is known to be involved in the pathophysiology of many epilepsy models resulting from increased action of excitatory neurotransmitter namely glutamate. Reactive Oxygen Species (ROS)/Reactive Nitrogen Species (RNS) have been implicated in the pathogenesis of various neurological disorders including epilepsy. To understand the NO production and oxidative status in excitotoxicity, nitrate /nitrite (NOx), lipid peroxidation products as Thiobarbituricacid reactive substances (TBARS) and Total antioxidant status (TAS) were analyzed in cerebral cortex (CC), cerebellum (CB) and brain stem (BS) of rats subjected to excitotoxicity by kainic acid.

Methodology: Male Sprague-Dawley rats (weighing 200-250 grams) were used as experimental animal and divided into control and test group (n=6 rats/group). Control group received normal saline and in the test group excitotoxicity was produced by subcutaneous administration of kainic acid (15mg/kg body weight, dissolved in normal saline). The animals were sacrificed after 2 hours of injection and brain regions (CC, CB and BS) were separated and homogenized. In the homogenates, the NO was estimated as Nitrate/Nitrite colorimetrically and the oxidative stress parameters TBARS and TAS were estimated by colorimetric methods. The results were analyzed by independent student t-test.

Results: The concentration of NOx was significantly increased ($p<0.001$ in CC, CB and $p<0.01$ in BS) and TBARS level was also showed an increase ($P<0.001$ in CB, BS and $p<0.01$ in CC) in excitotoxicity. TAS level showed a significant decrease ($p<0.001$ in CC, CB and BS) in kainic acid mediated excitotoxicity.

Conclusions: The results of this study clearly demonstrated the increased formation of NO and suggest the involvement of NO in the pathophysiology of excitotoxicity. The increased formation of TBARS and decreased TAS indicate the presence of oxidative stress in excitotoxicity and support the beneficial role of antioxidant therapy in excitotoxicity.

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EFFECT OF QUERCETIN ON STRESS INDUCED CHANGES IN INTERLEUKIN 6 (IL-6) LEVELS IN ALBINO RATS

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Introduction: Stressors can directly affect the cells of the immune system and modulate the secretion of proinflammatory cytokines. Stress related immune dysregulation may be one of the central mechanisms behind a large and diverse set of health risks associated with chronic stress. Bioflavonoid quercetin is a powerful antioxidant and also known to have immunomodulatory effect. Our objective was to determine if pretreatment with quercetin affects the stress induced modulation in proinflammatory cytokine levels in albino rats.

Methodology: Male albino rats were (i) treated with saline (ii) treated with quercetin alone (15mg/ kg body weight; intraperitoneally) (iii) exposed to swimming stress (for 5 days; acute stress group(iv) pretreated with quercetin, 30 minutes before acute stress (v) exposed to swimming stress (for 15 days; chronic stress) (vi) pretreated with quercetin 30 minutes before chronic stress. At the end of the experiment, animals were sacrificed and serum interleukin -6 levels were estimated.

Results: There was a significant increase in the interleukin 6 levels in both acute and chronic stressed animals when compared to control and quercetin alone group. Pretreatment with quercetin reduced the proinflammatory cytokine levels significantly irrespective of the duration of stress. Quercetin alone also had significantly reduced the IL-6 levels in the rats.

Conclusion: Forced swimming increases the proinflammatory cytokine, IL-6 levels after acute and chronic stress exposure. Pretreatment with bioflavonoid quercetin reduced the stress induced increase in interleukin 6 levels. Quercetin inhibition of inflammatory responses may protect the organism against pathophysiology of chronic stress.

THE EFFECTS OF GAMAT ON PAIN BEHAVIOUR IN ACUTE INFLAMMATORY PAIN MODEL

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Introduction: A well known traditional medication, gamat or sea-cucumber is believed to have anti-inflammatory and antinociceptive property. This preliminary study was conducted to investigate the effects of gamat on pain behaviour in a rat model of acute inflammatory pain.

Methods: Nine Sprague-Dawley male rats (220-300 gram) were allocated to three different groups. Gamat extracts from *Holothuridae spp*. (2 mg/kg or 4 mg/kg) or distilled water was administered intraperitoneally immediately after intraplantar injection of 0.05 ml formalin (1%). The rats' behaviour was recorded with a digital camcorder for one hour. The tape was viewed and behaviour score was tabulated at every minute and averaged at five minutes interval. Behaviour data were analysed using SPSS, version 13. Statistical analysis of pain behaviour was analysed using repeated measures analysis of variance (ANOVA) with post hoc Scheffe's test and significance level was taken as 0.05.

Results: The pain behaviour in the group receiving gamat was significantly ($P<0.05$ for each) reduced at 5 minutes (2 mg/kg gamat - 0.8 ± 0.2; 4 mg/kg gamat - 0.8 ± 0.3; placebo- 2.0 ± 0.8) and 10 minutes (2 mg/kg gamat - 0.3 ± 0.1; 4 mg/kg gamat - 0.6 ± 0.6; placebo- 1.5 ± 0.1) compared to placebo group The pain behaviour was significantly depressed throughout the one hour observation in the group receiving 4 mg/kg of gamat compared to the placebo group ($P<0.01$). There was also significant difference in the pain behaviour in the group that received 2 mg/kg and 4 mg/kg of gamat from 20 minutes to 50 minutes of observation ($P<0.05$).

Conclusion: The gamat extracts from *Holothuridae spp* has significantly suppressed the pain behaviour seen in formalin injected rat and the analgesic effects of gamat is dose dependent. Results from this investigation throw some light as to the possible use of gamat extract as an analgesic.

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EFFECT OF ORAL SEA CUCUMBER (STICHOPUS SP1) EXTRACT ON FRACTURE HEALING

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Introduction: For centuries, sea cucumber was known to promote internal and external wound healing. Various researchers had shown positive effects of sea cucumber in enhancing soft tissue repair. Unfortunately, little study is conducted to demonstrate the effect of sea cucumber on fracture healing. Our present study aimed to study the effect of oral sea cucumber *(Stichopus sp1)* extract on fracture healing in rabbits.

Methodology: Our study consisted of 10 adult New Zealand White rabbits, which were subjected to tibial osteotomy to simulate fracture. The fracture was stabilised with intramedullary wiring and plaster cast. The subjects were divided into 3 groups. The first group received daily oral low dose *Stichopus* sp1 extract (1mg/Kg) and the second group was given daily oral high dose Stichopus sp1 extract (10mg/Kg). The last group was used as control. The extract was prepared in liquid form to aid with oral administration. At 3 and 6 weeks, half of the subjects from each group were euthanised and the tibias were harvested and prepared for histological assessment.

Result: Following histological assessment, our study had shown that low dose Stichopus sp1 extract promote early fracture healing in rabbits' tibial fracture. Ironically, high dose extract had lead to adverse outcome where fracture healing was delayed when compared to the other 2 groups at both 3 and 6 weeks.

Conclusion: *Stichopus sp1* extract does not behave in a dose–dependant manner on facture healing in rabbits

THE EFFECTS OF SMILAX MYOSOTIFLORA (UBI JAGA) RHIZOME ON PLASMA LEVELS OF CORTICOSTERONE IN MALE RATS

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Introduction: The rhizome of the *Smilax myosotiflora* (Ubi Jaga) is traditionally consumed by the indigenous community in Malaysia, for its aphrodisiac effects. However, scientific data regarding its effects on plasma hormone levels remain obscure. This study, therefore aims to explore the effects of *Smilax myosotiflora* rhizome on plasma levels of corticosterone in rats.

Methodology: Male Wistar rats weighing 200-250g were gavaged with saline suspension containing 8 mg/kg body weight of *Smilax myosotiflora* rhizome for one (UJ 1), two (UJ 2), three (UJ 3), seven (UJ 7) or fourteen (UJ 14) consecutive days. Plasma levels of corticosterone were determined in the blood samples drawn 24 hours after the last gavaging schedule, using commercially-available radioimmunoassay kits.

Results: Plasma levels of corticosterone in rats treated with *Smilax myosotiflora* for a day (group UJ 1) did not differ significantly from that of the control value. However, *Smilax myosotiflora* increased plasma levels of corticosterone in groups UJ 2 ($P<0.05$), UJ 3 ($P<0.05$) and UJ 7 ($P<0.01$) compared to that of the untreated controls. However, plasma levels of corticosterone in rats treated with *Smilax myosotiflora* for fourteen consecutive days (group UJ 14) did not differ significantly from that of the control value, but rather decreased ($P<0.05$) compared to rats treated with *Smilax myosotiflora* for seven consecutive days (group UJ 7).

Conclusion: The elevated plasma levels of corticosterone in rats administered with 8 mg/kg body weight of *Smilax myosotiflora* for two, three and seven consecutive days could be caused either by an increased secretion of ACTH or due to a direct effect of *Smilax myosotiflora* on the adrenal cortex. The proposed possibilities related to the mechanism of action of *Smilax myosotiflora* have yet to be determined.

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A COMPARISON STUDY TO DETECT PLATELET SENSITIVITY TO ASPIRIN BY PLATELET AGGREGATION METHODS.

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Introduction: Aspirin or acetylsalicylic acid is an anti-platelet agent used to prevent thrombo-embolic complications related to cardiovascular diseases. Unfortunately aspirin's anti-platelet effect may not be uniform in all patients. The aim of this study is to detect platelet sensitivity to aspirin by different platelet aggregation methods in aspirinized patients.

Method: Whole blood (WB) and platelet rich plasma samples from 9 patients were prepared and analyzed with Chronolog aggregometer. Twenty five other patients WB were analyzed using the same aggregometer and Multiplate platelet function analyzer (Dynabyte GmbH).

Results: Abnormal platelet aggregation compatible with aspirin effects were seen in both methods Chronolog aggregometer and Multiplate analyzer. By using these methods, laboratory aspirin insensitivity can be defined.

Conclusion: In this preliminary study, we found that both methods have a good correlation to detect abnormal platelet function in patients on aspirin. The Multiplate analyzer gives rapid results and hence a suitable test for screening platelet sensitivity to aspirin.

THE MOLECULAR MECHANISM OF ACTION INDUCED BY IBUPROFEN AND INDOMETHACIN ON HUMAN COLORECTAL CANCER CELL LINES

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Introduction: Non-steroidal anti-inflammatory drugs (NSAIDs) exert anti-colorectal cancer (CRC) activity by inhibiting the cyclooxygenase-2 (COX-2) expression. However, inhibition of the activity of COX-2 alone is insufficient to induce apoptosis. Other factor such as peroxisome proliferator-activated receptor-gamma (PPARγ) is likely to mediate the apoptotic effect induced by NSAIDs. Our previous study showed that ibuprofen and indomethacin significantly inhibit CRC cell growth *via* induction of apoptosis. The current study provides further understanding of the molecular mechanism of action of ibuprofen and indomethacin in apoptosis.

Methodology: Two CRC cells (HT-29 and HCT-116) with different levels of COX-2-expression were treated with ibuprofen or indomethacin at their EC_{50} concentrations. The modulation of COX-2, *c-myc*, β-catenin, TCF-4, PPARδ and PPARγ mRNA expression was then quantified using Real-time PCR.

Results: Both ibuprofen- and indomethacin-induced apoptosis in HT-29 cells was associated with up-regulation of c-*myc* and PPARδ mRNA expression, as well as down-regulation of COX-2, TCF-4 and PPARγ mRNA expression. In ibuprofen-treated HCT-116 cells, apoptosis was associated with up-regulation of COX-2 and PPARγ mRNA expression, and down-regulation of TCF-4 mRNA expression, whereas in indomethacin-treated HCT-116 cells, the apoptosis correlated with up-regulation of PPARγ mRNA expression and down-regulation of TCF-4 and PPARδ mRNA expression.

Conclusion: Both NSAIDs promote apoptosis of CRC cells *via* different molecular mechanisms involving various target genes in COX-2-dependent and/or COX-2-independent pathway.

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AMELIORATION OF CISPLATIN INDUCED NEPHROTOXICITY BY METHIMAZOLE

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Introduction: Cisplatin (cis – diammine dichloroplatinum II) is a platinum containing co-ordination complex, an antitumor agent with proven efficacy against a wide spectrum of malignancies. Glutathione peroxidase (GPx) is a very important enzyme in the hydroperoxide scavenging system. The maintenance of adequate levels of reduced Glutathione (GSH) is thought to be necessary to protect membrane proteins and lipids against oxidative damage resulting from the formation of hydrogen peroxide, superoxide and other free radicals.Glutathione is the substrate for the antioxidant system; glutathione peroxidase and glutathione-S-transferase (GST) are involved in detoxifying organic hydroperoxides, hydrogenperoxides and xenobiotics.

Methodology: The levels of GSH, GPx and GST were estimated in the kindney of albino rats treated with cisplatin.

Results: These levels were found to be significantly decrease ($P<0.001$) when compared to the control animals. After the co-administration of methimazole along with cisplatin, the enzyme levels were found to be significantly increased ($P<0.001$) when compare to cisplatin only treated animals.

Conclusion: From the results it can be concluded that methimazole modulates the altered levels of enzymes which clearly shows the antioxidant potential of methimazole.

ROLE OF CITRULLINE-NITRIC OXIDE CYCLE ENZYMES AND ARGINASE IN KAINIC ACID MEDIATED EXCITOTOXICITY

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Introduction: Nitric oxide (NO) is known to be involved in the pathophysiology of many epilepsy models resulting from increased action of excitatory neurotransmitter namely glutamate. NO is synthesized from arginine by nitric oxide synthase (NOS) via the citrulline-NO cycle. Generation of NO is intertwined with the synthesis, catabolism and transport of arginine which thus ultimately participates in the regulation of normal and pathophysiological consequences of NO production. In order to understand the functional role of NO and citrulline-nitric oxide cycle enzymes in excitotoxicity, AS, AL and NOS activities along with arginase activity were analyzed in cerebral cortex (CC), cerebellum (CB) and brain stem (BS) of rats subjected to excitotoxicity by kainic acid.

Methodology: Excitotoxicity in rats was produced by subcutaneous administration of kainic acid (15mg/kg body weight, dissolved in normal saline) and control rats received normal saline. The animals were sacrificed after 2 hours of injection and brain regions (CC, CB and BS) were separated and homogenized. In the homogenates, the activities of NOS, AS and AL were assayed by colorimetric methods. Statistical analysis of results was done by using independent student t-test.

Results: The activity of NOS was increased significantly ($p<0.001$ in CC, CB and $p<0.01$ in BS) and AL activity also showed an increase ($p<0.001$ in CB and $p<0.01$ in CC,BS) in excitotoxicity. AS activity was significantly increased ($p<0.001$) and no significant change observed in arginase activity of CC, CB and BS in kainic acid mediated excitotoxicity.

Conclusions: The increased activity of NOS in this study support the formation of high amounts of NO in kainic acid mediated excitotoxicity. The increased activities of AS and AL indicate the effective supply of arginine for NO formation by NOS. The results of arginase indicate that there was no increased breakdown of arginine to ornithine and urea in the brain regions in this condition.

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HYPOLIPIDEMIC AND ANTI-PLATELET AGGREGATORY EFFECTS OF L-CARNITINE AND α–LIPOIC ACID ON EXPERIMENTALLY INDUCED ATHEROSCLEROSIS

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Introduction: Cerebrovascular accident is associated with increased thrombogenic-tendency, circulation dysfunction, dyslipidemias, and it is recognized that macrovascular complications are the main cause of morbidity and mortality. Oxidative stress is closely related to L-Carnitine (LC) and α–Lipoic acid (ALA) deficiency which occurs in diabetes, atherosclerosis, neurological disorders and in aging. The abnormalities underlying diabetic, atherosclerotic and senile neuropathies involve metabolic, membrane-molecular, neuronal-vasomediated defects. The present study was to determine whether administration of LC and ALA would exert antiatherosclerotic effects.

Methodology: Male albino rats weighing about 180-200 g were divided into 5 groups: a control, saline and LC/ ALA/ LC-ALA-treated atherosclerotic groups. Hypercholesterolemia was induced by giving synthetic atherosclerotic diet for 4 months. A pharmacological dose (300 mgs LC and/or 100 mgs of ALA/kg b.wt, i.p in saline) of LC and ALA was administered for 28 days at the end of the experimental period.

Results: Atherosclerotic rats elicited a significant decline in the antioxidant status and HDL-C as well as a significant increase in lipidperoxidation (LPO), protein-carbonyl-content (PCC), xanthine-oxidase (XO), plasma fibrinogen, platelet-aggregation, lipid profile and LDL-C when compared with controls. Supplementation of LC and ALA was effective in reducing plasma fibrinogen, platelet aggregation, LPO, PCC and XO as well as a significant increase in the overall antioxidant status.

Conclusion: These results demonstrate that LC and ALA has protective antiatherosclerotic effects. Thus, the unique actions of LC and ALA as potent lipotrophic, antiperoxidative, iron-chelating-antioxidant, eicosanoid-modulatory and antiplatelet-aggregator might be useful in the prevention and repair of stroke and ultimate degenerative changes.

SEALING ABILITY OF HYDROXYAPATITE AS A ROOT CANAL SEALER: IN VITRO *STUDY*

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Introduction: Obturation in root canal treatment consists of placing an inert filling material in the space previously occupied by pulp tissue. Gutta-percha is used with various techniques for obturation of the root canal system. Throughout the years, a variety of techniques using gutta-percha in combined with a root canal sealer have been developed for root canal fillings. Gutta-percha and lateral condensation remain the most widely accepted and used obturation techniques; hence this study used these techniques. The most common cause of failure involving endodontic treatment can be attributed to the lack of an apical seal leading to leakage at the apex. Hydroxyapatite is the most thermodynamically synthetic calcium phosphate ceramic, and has indicated useful as a sealer because can seal a furcation perforation, is shown to be biocompatible and also has potential to promote the healing of bone in endodontic therapy.

Objective: To determine the sealing ability of hydroxyapatite when used as a sealer in root canal obturation, compare with Tubli-seal (zinc-oxide base) and Sealapax (calcium hydroxyde base) sealers.

Methodology: Forty five single rooted human anterior teeth were instrumented and randomly divided into three experimental groups of 15 teeth each. All teeth in the experimental groups were obturated with laterally condensed gutta-percha technique. Teeth in the first group were sealed using zinc-oxide based sealer and those of second group using calcium hydroxide based root canal sealer. Third experimental group was sealed using hydroxyapatite from School of Materials and Mineral Resources, Universiti Sains Malaysia. Teeth were then suspended in 2% methylene blue. After this, teeth were demineralized dehydrated and cleared. Linear dye penetration was determined under magnifying lense with calibrated eye piece. Statistical analyses of the linear dye penetration were performed with Kruskal Wallis test. As for the inter group comparison between hydroxyapatite and zinc-oxide groups and between hydroxyapatite and calcium hydroxide groups were analysed by Mann-Whitney test.

Results: The dye penetration for group which were sealed with hydroxyapatite exhibited the lowest penetration and it showed that there was a statistically significant difference both between hydroxyapatite and zinc-oxide groups and also between hydroxyapatite and calcium hydroxide groups ($p<0.001$)

Conclusion: Hydroxyapatite can be used as a root canal sealing materials since it leaked comparatively less as compared to zinc oxide and calcium hydroxide sealers when used with laterally condensed gutta-percha. Before reaching a definitive conclusion, this material requires further extensive exploration both clinically and *in vitro* with larger sample size and on a larger scale to find the best consistency in base and catalyst.

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BIOCOMPATIBILITY OF NOVEL CHITOSAN PASTE DERIVATIVES IN CULTURED PRIMARY HUMAN SKIN FIBROBLASTS IN VITRO

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Introduction : The *in vitro* biocompatibility of novel chitosan paste derivatives on primary human skin fibroblasts were evaluated by the MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide) assay. The challenge is to exploit the antimicrobial effects, immuno-enhancing effects, bioadhesive, biocompatibility, biodegradability, bioactivity and wound healing properties of chitosan.

Methodology : Two types of chitosan paste derivatives (provided by SIRIM/MINT) were used; oligo-paste (11% PVP) SA/N-080806P126 and oligo-paste (14% PVP) SA/N-080806P127. Human dermal fibroblasts were established from skin samples of electively operated patients in HUSM.

Results : In general, the results indicated that chitosan paste derivatives were well tolerated. The stimulatory effect on fibroblasts proliferation was observed at 24 hours in the presence of both test materials. In contrast, at 48 and 72 hours, the chitosan paste derivatives inhibited up to 18.4% inhibition of proliferation.

Conclusion : In conclusion, both the chitosan paste derivatives in this study were found to have appropriate compatibility on normal fibroblasts proliferation *in vitro.*

A COMPARISON ON THE PREVALENCE OF DENTAL FLUOROSIS AMONG 12-YEAR-OLD CHILDREN FROM FOUR STUDY SITES WITH DIFFERENT FLUORIDE LEVELS IN PENINSULAR MALAYSIA

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Aim: This study was conducted to compare dental fluorosis occurrence among 12-year-old children in four study sites (Kuala Lumpur, Kuala Kangsar, Kajang and Pasir Mas).

Methodology: A total of 320 respondents, were recruited after fulfilling a few inclusive criteria, such as being life-long residents of the areas and having a complete set of permanent teeth. Fluoride levels in drinking water for those study sites were predetermined beforehand and score of dental fluorosis were determined visually using the Tooth Surface Index of Fluorosis (TSIF) by a competent dentist.

Results and Discussion: Mean fluoride levels from the four study sites were as follows: Kuala Lumpur – 0.36 $\pm$ 0.16 mg/L, Kuala Kangsar – 0.40 $\pm$ 0.17 mg/L, Kajang - 0.62 $\pm$ 0.09 mg/L and Pasir Mas - 0.44 $\pm$ 0.13 mg/L. From 320 respondents, 200 respondents had score 0 and 120 (37.5%) had dental fluorosis of score 1 (minimum) to score 4 (maximum), with a mean score of 0.55. 81 (67.5%) had score 1, 23 (19.2%) had score 2, 12 (10.0%) had score 3 and 4 (3.2%) had score 4. Among the study sites, Kuala Lumpur had the highest number of dental fluorosis cases (44 - 51.8%), followed by Kajang (32 - 42.7%), Pasir Mas (23 - 27.1%) and lowest in Kuala Kangsar (21 - 28.0%). Levels of fluoride in drinking water were within or below the standard approved by the Ministry of Health, Malaysia, which is in the range of 0.5 – 0.7 mg/L.

Conclusion: Dental fluorosis was present in the study population, even though not severe (mean score of 0.55). Percentages of dental fluorosis cases were also lower than reported by Ministry of Health, Malaysia at 75.0 %. More in-depth analysis is required to determine the exact causes of dental fluorosis among children.

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GROSS ANATOMICAL AND OPTICAL MICROSCOPICAL CHANGES WITHIN THE MAMMALIAN INTEGUMENT POST-TREATED WITH ALUMINIUM NITRATE AND ALUMINIUM CHLORIDE SOLUTIONS

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Introduction: Aluminum chemicals are used in a variety of cosmetics and personal care products. Aluminum chloride and Aluminium nitrate are used as antiperspirants in concentrations of 10% to 20%. These chemicals are toxic and capable of causing a variety of allergic reactions. Modern life styles of the public were kept unaware of utilizing antiperspirants containing metallic salts that are detrimental and of hazardous affects. Therefore the present study was conducted as an advancement of knowledge and an as evidence-base study of the toxicological affects of aluminium nitrate and of aluminium chloride especially on the mammalian skin *vis to vis* in regulating complications manifested by exploitation by cosmetics producers.

Methodology: To observe the toxicity, 10% and 20% W/V solutions of aluminium chloride and aluminium nitrate was applied daily with a soft textured brush on the outer surface of ear skin of 72 albino rabbit, (36 animal per groups). The two groups were then further divided into two groups comprising of 24 experimental and 12 control animals. Half of the animals both experimental and control were sacrificed after 15 days of treatment to observe immediate histo-morphological changes, whereas rest of the animals were kept for another month without treatment and then sacrificed to see the delayed effects. The tissues were routinely processed, semi-thin sectioned and post-stained under four metachromic stains.

Results: The epidermal tissue was thickened with moderate hyperkeratosis, acanthosis, epidermal micro-abscesses features, while the dermis showed presence of edema, increased vascularity, decrease in hair follicles, sweat and sebaceous glands and the infiltration of inflammatory cells. The observed histo-morphological changes presented were far more severe in both the aluminium chloride and aluminium nitrate 20% W/V solutions as compared to than of 10% W/V solutions. After discontinuation of the treatment, the changes persisted in a milder form. However these changes persisted in a moderate form following discontinuation of both aluminium salt compound applications.

Conclusion: It may be concluded that antiperspirant containing aluminium salts compounds in higher concentrations w/v, may cause direct detrimental damage to the integuments, especially if applied continuously over a long time-periods.

DEVELOPMENT AND CHARACTERIZATION OF POLYMER GEL DOSIMETERS BASED ON POLYMERIZATION OF ACRYLIC MONOMERS (HEA & HEMA)

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Introduction : Acrylic monomers based polymer gel dosimeter incorporated with magnetic resonance imaging (MRI) potentially used in 3D dose distributions of radiotherapy modalities will be discussed. The polymerization of the dosimeter is commonly studied indirectly using water proton relaxation rate by nuclear magnetic resonance (NMR) and directly using Raman scattering of light due to covalent bonds of the polymer. The sensitivity of polymer gels to oxygen has been discussed extensively, and several investigators have responded by developing gels that contain oxygen scavengers, such as the MAGIC gel. The oxygen scavenger removes oxygen present in the gel at the time of manufacture, even if this is done in normoxic conditions. It can remove additional small amounts of oxygen, but ultimately will be overwhelmed if exposure to normal atmosphere is ongoing. While this problem has been addressed, it still creates minor inconvenience that might limit the successful introduction of gels into routine clinical use.

Objective: In this research we proposed to use of 2-Hydroxyethyl Acrylate (HEA) and 2-Hydroxyethyl Methacrylate (HEMA), N, N'-methylene-bis-acryalmide (BIS) as cross-linker, ascorbic acid as an anti-oxidant with gelatin-based formulation.

Methodology : In polymer gel dosimeters, acrylic monomers are distributed homogeneously in a water-based gelatine matrix. When irradiated with ionizing radiation, polymerization restricted to the irradiated area is induced in the gel.

Results : As a result of the polymerization, a number of gel properties (e.g., the NMR relaxation rates of water protons in the gel) are altered. The response to absorbed dose can thus be evaluated using, e.g., magnetic resonance imaging (MRI), optical tomography, x-ray computed tomography (x-ray CT), FT-Raman spectroscopy or ultrasound. In this research we use Raman spectroscopy for the data analysis.

Conclusion : The dose sensitivity of polymerization can been determined directly using photon inelastic scattering of Raman spectroscopy by following the change of the Raman shift intensity at CH_2, CH_3 and C=O stretching peaks for polymer formations and at C=C stretching peak for monomer and cross-linker consumptions.

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RADIATION RESPONSE-INDUCED POLYMERIZATION OF POLYMETHACRYLIC GEL (PMAAG) AS A POINT DOSIMETER

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Introduction & Objective : The aim of the present work is to investigate the effect of radiation on methacrylic acid (MAA) crosslinked with N, N'-methylene-bisacrylamide (BIS) for the purpose of developing a polymer gel dosimeter, namely, Polymethacrylic gel (PMAAG). PMAAG of different concentrations of MAA and BIS were irradiated using γ-rays produced by ^{60}Co radionuclide with the absorbed doses ranging from 0 Gy to 19 Gy.

Methodology : Due to the radiation-induced polymerization processes, the formation of Polymethacrylic gel (PMAAG) occurs, which causes the dose response mechanism increased in the Nuclear Magnetic Resonance (NMR) relaxation rates of protons. The relaxation rate R_2 ($1/T_2$) are fitted to the functional form y as a function of absorbed dose D was found to have a monoexponential expression in the form; $y=y_0 +A(1-e^{-D/D_0})$.

Results : The relaxation rate (ΔR_2) dose sensitivity value (12.5 $\pm$ 0.1 Gy) of MAA monomer by Lepage, et al 2001 is comparable with PMAAG experimental value gained which are 12.6 $\pm$ 0.1 Gy. The dose sensitivity, D_0 and half dose, $D_{1/2}$ was found increasing with the concentrations of MAA monomer and BIS crosslinker. The slope parameter $k_{BIS} > k_{MAA}$ indicates that consumption of crosslinker is much faster than monomer. Eventually, UV-Vis spectrophotometer was used to records PMAAG degree of absorption. The PMAAG has a mean value of absorption of 0.614 at 375 nm. The dose derived from PMAAG is comparable to Fricke dosimeter and ionization chamber readings between 4.7 ± 0.1% and 11.6 ± 0.1%. The dose errors of less than 10 ± 0.1% are considered acceptable in radiation processing, an improvement of accuracy less than 5.0 ± 0.1% is acceptable in radiotherapy.

Conclusion : This effort is to undertake the study of precision and accuracy associated with the use of Fricke and polymer gel in optimizing the usage of gels for dosimetry. Based on the basic principle of dosimetry, a dosimeter must be both reliable and accurate, which its calibration should be traceable to a national or international standard.

IN VITRO STUDY: THE APICAL SEALING ABILITY EVALUATION OF A NEW EXPERIMENTAL NANO HYDROXYAPATITE-FILLED EPOXY RESIN BASED ENDODONTIC SEALER

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Objective: The purposes of this study are to evaluate *in vitro* the apical sealing ability of experimental nano hydroxyapatite (HA)-filled epoxy resin based endodontic sealer and to compare it with the commercial AH26 silver-free endodontic sealant material.

Materials and Methods: The study was conducted on 76 extracted single rooted human anterior teeth. The teeth were instrumented endodontically using Profile Taper Series 29 files with crown-down technique and randomly divided into two groups of 33 teeth each and two control groups of 5 teeth each. Teeth in the first group were obturated using gutta percha in a lateral compaction technique with AH26 silver-free as a root canal sealer. The second group was obturated in a similar technique with the experimental nano HA-filled epoxy resin based as a sealer. All the specimens were placed in an incubator for one week with 100% humidity at 37˚C and then coated with nail polish except 2 mm from foramen apical. The teeth were then suspended in 2% methylene blue for 7 days. All teeth were then sectioned longitudinally for measuring the penetration of the dye using stereo-microscope (*x*36) with Leica Imaging Systems. All the measurements were then noted and tabulated.

Results: Statistical analysis of the results was performed with independent sample *t* test. The mean penetration was 0.44(0.63) mm mean (S.D.) for AH26 silver-free and 0.75(0.81) mm for experimental nano HA filled sealer. The result showed that there was no statistically significant difference (*P* >0.05) in apical sealing ability between AH26 silver-free sealer and experimental nano HA filled sealer.

Discussion: The application of nano HA with the formula $Ca_{10}(PO_4)_6(OH)_2$ has extended into dental applications, therefore the School of Dental Science together with School of Chemical Sciences, USM, decided to prepare a new experimental nano HA-filled epoxy resin based endodontic sealer. The HA nanocrystal were prepared by wet chemical using $Ca(OH)_2$ and H_3PO_4 as Ca and P precursors. Nano HA is totally biocompatible and reactive material that is completely similar in chemical and physical nature to the enamel and dentin. The material was prepared at nano level (40–60 nm) and the large surface area of HA nanocrystal increases intermolecular physical bonding (*van-der Walls* Forces). This phenomenon explains that the nano structured HA are more reactive and adhesive compared to micro structured HA (Nörenberg, 2002). It is the unique functional properties such as high degree of surface activity that is important in achieving hermetic sealing of root canal space as one of the objectives in root canal therapy (RCT). The common cause of failure involving RCT can be attributed to the lack of an apical seal leading to leakage at the apex.

Conclusion: Experimental nano HA-filled epoxy resin endodontic sealer provided an adequate apical seal against dye penetration at a similar level to AH26 silver-free and could be used as an alternative to the commercially available endodontic sealer.

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EVALUATION OF COMMUNITY ACQUIRED PNEUMONIA AMONG PATIENTS OF HOSPITAL UNIVERSITY SAINS MALAYSIA

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Introduction: Community Acquired Pneumonia (CAP) is a common illness and potentially life threatening, especially in older adults and those with co-morbid disease.studys conducted in Malaysia, the overall in-hospital mortality rate in adult patients hospitalized for CAP was 11.1%. The most common pathogens identified gram-negative bacilli other than *Haemophilus influenzae* this study has been conducted for CAP patients at Hospital UNIVERSITY SAINS MALAYSIA. The study was based on the records of 208 patients between from January 2004 till December 2004 &from January 2005 till December.

Methodology: Sampling used for this study was convenience sampling technique. This method made use of the records or patient profiles only available at record office. The patient records were sorted out according to inclusion and exclusion criteria employed in this study. The objective was to determine pattern of CAP at HUSM, to evaluate the pharmacotherapy of CAP and to determine the outcome of the treated cases among HUSM.

Results: The results showed that the highest rate were male 52.4 %(109), Malay {(92.8%), in ages between High percentage (35.0%) of patients was between 60-73 years old The goals of therapy in CAP are include eradicating the causative pathogens, resolving the clinical signs and symptoms, minimizing hospitalization, and preventing reinfection .

Conclusion: In this study most of patients received combined therapy of antibiotics in form of amoxicillin &clavulanic acid {(38) 18.3%}, erythromycine and cefuroxime axetile {(37)17.8%}, cefuroxime axetile alone on {(24)11.5%}, rest of patients received various combinations of antibiotics., target duration of hospitalization was set at 1 to 14 days&mortality rate in adult patients hospitalized at Universiti Sains Malaysia for community acquired pneumonia was 2.9%. The limitation of study was only 208 patients records cannot generalize this result for all CAP patients in Malaysia.

DEVELOPMENT OF A FULL-FEATURED WEBSITE FOR INFORMM USING JOOMLA!™

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Introduction: Joomla!™ is a full-featured web content-management system (CMS), and was released as a public domain software in September 2005. While still in its first release, it is supported by an active and well organized open-source development community. In July 2005, INFORMM was faced with the gruesome task of maintaining an ever expanding website, which was fragmented and becoming increasing difficult to manage using Adobe Dreamweaver™. The aim of the project was to investigate whether the entire contents of the INFORMM website could be transferred over to Joomla!™, and thus to test a new approach to website development using CMS technology.

Methodology: Joomla!™ version 1.0 was installed in an internet server equipped with Apache™, MySQL and PHP. Using the extensible template system in Joomla!™ all data were transferred to the CMS. User access control, administrative control, and content display scheduling and calendaring, were all built-in, thus greatly easing the migration process, while enabling new applications to be developed.

Results: Joomla!™ is easy to use for creating websites whilst having the power and flexibility to support complex web applications. Our complex website containing 250 MB of data was completed in 2 weeks. The website supports a broad spectrum of applications including User Forums, Announcements, Photo Gallery, and a full-featured Conference Management system. Built-in database features also enable access to statistical data for monitoring visitor numbers and contents viewed.

Conclusion: We have adopted Joomla!™ as our platform of choice for development of INFORMM's website. Joomla!™ is suitable for anyone who wants to develop a full-featured web presence in a simple and straight-forward process. An IT-confident individual will be able to use this public-domain software to produce an impressive web site, as we did with INFORMM's website, which now serves 32 registered content providers and over 1,200 visitors each month.

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DREAM EXPRESSION DUE TO FORMALIN-INDUCED PAIN IN REM SLEEP DEPRIVED RATS

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Introduction: Rapid eye movement (REM) sleep deprivation has been shown to decrease pain threshold after various pain stimuli and cause changes in synaptosomal calcium concentration after neuronal activations. DREAM is an intracellular calcium binding protein and a transcriptional repressor of prodynorphin gene that involved in endogenous opioid system. This study evaluates the relationship between the pain responses of chemical (formalin)-induced pain and DREAM positive neurons (DPN) in REM sleep-deprived rats.

Methodology: Adult male Spraque Dawley rats (200-250g) were assigned to free moving control (FMC, n=6), free moving control with formalin (FMCf, n=6), REM sleep deprived (REMsd, n=6) and REM sleep deprived with formalin (REMsdf, n=6). REM sleep deprivation was elicited for 72 hours using the inverted flower pot technique. 2.5% formalin was injected subcutaneously to the plantar surface of the rat's right hindpaw. The frequency of flinches, time spent licking the injected paw and weighted pain scores were assessed for the phase 1 (0-5 min) and 2 (20-60 min after injection) responses. Ventrobasal complex of thalamus (VBC) was studied for DPN using immunohistochemistry.

Results: For phase 1, both time spent licking the injected paw and pain scores showed significant increases (hyperalgesia) in REMsdf ($p<0.05$) compared to FMCf. For phase 2, all pain responses showed significant decreases (hyporalgesia) in both groups ($p<0.05$). DPN were significantly reduced in REMsd compared to FMC ($p< 0.001$), in FMCf compared to FMC ($p< 0.001$) and in REMsdf compared to FMC ($p<0.001$) bilaterally. Comparison between ipsilateral and contralateral showed that were no significant changes in all groups, except that there was significant increases in REMsdf ($p<0.001$) contralaterally.

Conclusion: DREAM is proposed to be regulated by REM sleep and/or formalin-induced pain. An existence of positive feedback on DREAM is suggested based on the dynamic changes of DPN and may acted as one of the mechanisms of REM sleep deprivation-induced analgesia.

REAL TIME PCR FOR ENTEROVIRUSES IN CEREBROSPINAL FLUID OF ASEPTIC MENINGITIS PATIENTS

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Introduction: Identifying the causative organisms in aseptic meningitis firstly provides the rationale basis for chemotherapy and prognosis; secondly limits unnecessary investigations; and lastly provides epidemiological information. Children, neonates and immunocompromised individuals are particularly susceptible to enterovirus infection of the central nervous system. In the present study, we wanted to detect enteroviruses by culture and RT-PCR in cases of aseptic meningitis patients reporting to the All India Institute of Medical Sciences.

Methods: We have taken 40 CSF specimens from cases who fulfilled the criteria of aseptic meningitis. In addition CSF from 30 negative controls were also collected. CSF specimens were inoculated in tissue culture for viral isolation. RT-PCR was carried out for the detection of enteroviruses on all the samples. Real-Time RT-PCR was standardized for enteroviruses and its sensitivity was compared with regular one step RT-PCR.

Results: Fever (97.5%) was the most common symptom in the patient group. Enterovirus RNA was detected in 2 of the 40 patients of aseptic meningitis by RT-PCR which were simultaneously negative by cell culture. It was found that one-step RT-PCR could detect 0.01 $TCID_{50}$/ml of the virus while Real-Time PCR could detect as low as 0.0001 $TCID_{50}$/ml. With the advent of Real-Time RT-PCR, the turnaround time is less than 6 hours and accuracy, sensitivity and specificity are unquestionable.

Conclusion: The automation and reduced turnover time of Real-Time RT-PCR needs more attention. This assay would improve patient management by appropriate therapy following rapid diagnosis.

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A TEN-YEAR (1995-2004) RETROSPECTIVE STUDY OF COMPLETE SUICIDES IN PENANG

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Introduction: The present study attempted to determine the trends of complete suicides amongst the population of Penang Island over a period of ten years from 1995 to 2004.

Methods: Timur Laut district in Penang Island has five major suicide points which included Air Itam, Jelutong, Dato Keramat, Jalan Patani and Sungai Nibong. Based on the police reports, the suicide data of these places were analyzed using the parameters of race, gender, age and suicide methods. Statistical analysis was done by the SPSS ver 12.0 and Microsoft Excel spreadsheet software.

Results: Total population of Timur Laut district in year 2004 was 476,300, which contributed 33% of the Penang population. The total number of suicide deaths between the years 1995 to 2004 was 635. During this period, the completed suicide deaths increased from 10.5% (1995) to 18.2%(2004) except for the year 1997 which only contributed 8.2%, the lowest during those ten years. A minimum of 6 persons committed suicide for every 100,000 person. In year 1997 (economic recession period), the most affected age group was 36-45 years (28.1% - highest in ten years). The rate of suicide among female was 57.1% compared to 34.4% in male. The most preferred method of suicide was hanging.

Conclusion: It has been estimated that for every completed suicides, there is 10-20 times higher attempted suicides. Therefore, based on the completed suicide death in year 2004, there were 780-1560 attempted suicide cases among the Penang population. The increasing trend of suicide is alarming and needs further study to determine the risk factors.

LACK OF ASSOCIATION BETWEEN ANGIOTENSIN CONVERTING ENZYME T3892C POLYMORPHISM AND ESSENTIAL HYPERTENSION AMONG MALAYSIAN POPULATION

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Introduction: Angiotensin Converting Enzyme (ACE) is a key component of Renin Angiotensin-Aldosterone System thought to be an important in the pathogenesis of hypertension where it catalyses the conversion of angiotensin I to angiotensin II, a potent vasoconstrictor. The aim of this study was to investigate whether an association exists between Angiotensin converting enzyme T3892C polymorphism and essential hypertension in Malaysian patients.

Methodology: We examined 79 patients of essential hypertension and 62 from controls. In order to determine the T3892C variant in angiotensin converting enzyme gene, genomic DNA was amplified by Hot-start PCR using a flanking primer and enzymatic digestion of PCR product was done by using *PstI* restriction endonuclease enzyme. The cleaved products 114 and 90bp represents wild type and mutant type respectively were separated by electrophoresis in 6% non-denaturing polyacrylamide gel and the image was captured under UV light by staining in ethidium bromide. Environmental factors such as smoking, dietary and drinking habits were also assessed using a pre-tested questionnaire.

Results: A total of 79 hypertensive subjects and were recruited in this study, consisting of 57 males (72.16%) and 22 females (27.84%), 41.78% of Malay race comprises more than Chinese (30.38%) and Indians (27.84%). The subjects were ranged from 34 to 83 years old with a mean age of 58.26 years. In hypertensive subjects the TT, TC, CC genotype frequency of T3892C polymorphism were 45.57%, 41.77% and 12.66% respectively as compared to 56.45%, 37.10% and 6.45% respectively in normotensive group ($c^2 = 2.3, p = 0.30$). The C3892 allele did not differ in hypertensive (33.55%) and normotensive (25.00%) patients.

Conclusion: Our study revealed that, there is no significant difference between the genotypic or allelic distribution in ACE T3892C polymorphism in essential hypertensive patients among Malaysian populations, suggesting that other genes may contribute to the pathogenesis of hypertension.

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LACK OF ASSOCIATION BETWEEN ENDOTHELIAL NITRIC OXIDE SYNTHASE (ENOS) GENE POLYMORPHISM (GLU298ASP) AND ESSENTIAL HYPERTENSION IN MALAY AND CHINESE POPULATION IN MALAYSIA- A PRELIMINARY STUDY

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Introduction: Nitric oxide, which is derived from nitric oxide synthase, is closely involved in pathogenesis of hypertension. Studies have suggested that Glu298Asp (G894T) gene polymorphism (the substitution of aspartic acid for glutamic acid at amino acid position 298) in the seventh exon of the eNOS gene is associated with essential hypertension. The objective of this study is to analyze the Glu298Asp polymorphism in eNOS gene in Malaysian patients with essential hypertension as well as controls.

Methodology: Genomic DNA was extracted from peripheral blood leukocytes. Samples from normotensive and hypertensive subjects were collected. The Glu298Asp variant in eNOS gene was amplified by Hot-start PCR followed by Restriction Fragment Length Polymorphism (RFLP) by using *BanII* Restriction Enzyme. The 248 bp PCR product was cleaved into two fragments with 163 and 85 bp in length respectively, and the glutamic acid at the amino acid position 298 appeared only in the presence of a guanine at the nucleotide position 894, unlike the guanine-free state. The fragments were separated by electrophoresis in 6% non-denaturing polyacrylmide gel and visualized in UV light after staining in ethidium bromide.

Results: The preliminary study included 52 normotensive (Malay- 57.70% & Chinese- 42.30%) and 58 hypertensive subjects (Malay - 55.17% and Chinese - 44.83%) with a mean age of 57.67 years. The frequency of GG, GT and TT genotypes for the Glu298Asp variant was 31.00%, 65.55% and 3.45 respectively for hypertensive patients as compared to 50.00%, 48.08 and 1.92% respectively for normotensive group ($c^2 = 4.1$, $p = 0.12$). The genotypic distribution did not differ between normotensive and hypertensive subjects in either Malay (frequency for the A allele 59.3% & 78.3%) or Chinese (69.2% & 68.18%) race.

Conclusion: Our data suggest that the Glu298Asp polymorphism of eNOS gene is unlikely to influence hypertension among Malay and Chinese race in Malaysian population.

PEROXISOME PROLIFERATORS-ACTIVATED RECEPTOR – _ CO-ACTIVATOR-1_ (PGC-1_) GENE POLYMORPHISM (THR394THR) IN TYPE 2 DIABETES MELLITUS PATIENTS IN MALAYSIA - A PRELIMINARY REPORT

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Introduction: Peroxisome proliferators activated receptor γ coactivator-1 (*PGC-1*α), a transcriptional co-activator of the nuclear receptor PPARγ, plays a role in adaptive thermo genesis and insulin sensitivity. G to A transition at position +1302 (Thr394Thr) at exon 8 in the *PGC-1*α gene might influence insulin resistance and susceptibility to Type II diabetes. The main objective of this study is to determine the relationship between *PGC-1*α gene polymorphism in Malaysian patients with type 2 diabetes mellitus as well as controls.

Methodology: This case-control study includes 42 patients of type 2 diabetes and 35 non-diabetic patients. In order to determine the Thr394Thr polymorphism of *PGC-1*α gene, we used the following methods: DNA extraction from peripheral blood, Gene amplification by Hot-start PCR followed by the enzymatic digestion of the PCR product using MspI. After digestion with 3 U *MSP1* restriction enzyme, DNA fragments of 203 bp (mutation), 203/182/21 bp (heterozygous), and 182/21 bp (wild type) were obtained by electrophoresis in 6% non-denaturing polyacrylmide gel and visualized in UV light after staining in ethidium bromide.

Results: The Thr394Thr (ACG → ACA) polymorphism of *PGC-1*α genotype frequencies were 2.86% (1), 40% (14) and 57.14% (20) among control subjects and 0.0% (0), 28.57% (12) and 71.43% (30) among incident cases ($c^2 = 2.91$, $p = 0.23$). The genotypic distribution of A allele did not differ between non diabetic (85.72%) and type 2 diabetic patients (*77.15* %).

Conclusion: There were no differences in genotype or allelic distribution between the Type 2 diabetic and non-diabetic subjects with respect to the Thr394Thr polymorphism of *PGC-1*α gene in Malaysian population.

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RT IN SITU PCR EXPRESSION PATTERNS OF p53 GENE IN DIFFERENT BREAST CANCER STAGES

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Introduction: An important step in breast cancer diagnosis and treatment is precise clinical staging of the disease in which lymph node involvement is a major determinant. So far, many studies have focused on determination of breast malignancy as well as its staging through specific molecular markers. In this regard, determining the activity of some important genes in cancer evolution and progression can be helpful. p53 as a gene mostly interactive in cell cycle regulation and division has been shown to have a great role in cancer development particularly in breast malignancies. Therefore, differences in p53 expressions in various stages of breast cancer can help into diagnosis between benign and malignant breast tissues, as well as different tumoral stages. This study focused on determining any possible differences in p53 gene expressions in various breast cancer stages.

Methodology: In the present study we have used Reversed Transcriptase in situ Polymerase Chain Reaction (RT *in situ* PCR) in order to determine p53 mRNA expressions in 17 human breast samples which were pathologically divided into four groups including benign breast lesions, lymph node negative, lymph node positive and metastatic breast cancers.
Results: Dominant presence of p53 mRNA expression was found in malignant tissues compared to benign lesions. Slight differences in p53 mRNA expressions were seen in various stages. Although, these differences may be meaningful but they may also be unreliable, because of nature of the study method which was not quantitative.

Conclusion: RT *in situ* PCR as a qualitative method is able to localize mRNA gene expression in human breast lesions. In addition, mRNA expression levels are obviously different in benign tissues compared to malignant ones. Further evaluation is necessary by quantitative methods like microarray analysis.

THE EFFECT OF LOW LEVEL HE-NE LASER RADIATION (4 J/CM² /632.8 NM) ON THE SECRETION OF EFFECTIVE CYTOKINE ON CHRONIC GRAFT REJECTION - AN IN VITRO STUDY

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Introduction: Chronic graft rejection is a type four hypersensitivity process, also known as delayed type hypersensitivity (DTH). The role of cytokines secreted from T cell lymphocytes is known in this process. Among these cytokines, the most important role is played by TGF_ and IL2. Many studies on the effect of low-level lasers on DTH have been published, but not many studies have focused on mechanism of low power laser's effect on chronic graft rejection. If low-level lasers are able to decrease the level of cytokines effective on this process, then it will be possible to use this device to prevent chronic graft rejection either alone or combination with routine treatment to reduce side effects of routine treatments. Therefore, this study was designed to evaluate the effect of low level laser on the amount of cytokines secreted by T cells after stimulation by foreign antigens *in vitro.*

Method and materials: Human peripheral blood mononuclear cells were cultured; the cells were divided into 4 groups: case-1, case-2, control-1 and control-2. Control-1 was the base group and the cells received neither stimulation nor irradiation. Control group-2 was stimulated by PHA. Case-1 received irradiation prior to stimulation and case-2 received irradiation after the stimulation. Cells of both case groups were irradiated by the same laser device and on day 3, 5 and 8 the level of the cytokines were checked in all the groups and was analyzed.

Results: Our results showed that low-level irradiation could decrease the level of cytokines, which were known to be stimulator of chronic graft rejection (IL2, IL12, and INF). The changes were significant but there was no significant difference between our two case groups.

Conclusion : This study highly suggests the successful role of low level lasers on preventing chronic graft rejection by affecting the cytokines known to have strong role on this process. However, before using these devices as a treatment modality, further studies are required.

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SCREENING FOR P16 GENE ALTERATIONS IN ORAL SQUAMOUS CELL CARCINOMA USING DENATURING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

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Introduction: Oral carcinogenesis is a multi-step process in which genetic events such as alteration of oncogenes and tumor suppressor genes occur and several genetic alterations have been reported to contribute to OSCC development. The P16 protein is encoded by the p16 gene, which has been mapped to chromosome 9p21, a region frequently affected by cytogenetic and molecular abnormalities in different forms of human malignancy, including lung cancer. Mutations in the p16 gene have been detected at relatively high rates in OSCCs. Earlier reports implying the overall contribution by p16/CDK-cyclin D/Rb pathway to progression of head and neck squamous cell carcinoma appears to be significant. Hence, the present study involves screening for p16 gene alterations in oral squamous cell carcinoma samples collected from Malaysian patients using Denaturing High Performance Liquid Chromatography (dHPLC).

Methodology: Tissue samples were collected from the oral cancer patients, who came to Hospital Universiti Sains Malaysia for treatment. The total DNA was extracted from the tumor samples and the three coding exons of p16 gene were amplified using polymerase chain reaction. dHPLC was performed for the exon 3 and direct sequencing for the exons 1 and 2.

Results: No mutations were detected in exons 2 and 3 whereas, heterozygous mutations were found in exon 1 in the OSCC samples in the present study. One sample had substitution mutations (G Æ A) and (C Æ A) in 2 sites and 2 other samples had an insertional mutation (A) in one site

Conclusion: This is probably, the first study conducted on p16 gene in OSCC in the Malaysian population, in which heterozygous (substitution and insertional mutations) have been found. However, further study in more number of samples is needed to throw more light on the involvement of this gene in the development of OSCC.

CYTOGENETIC AND GENOTOXICITY STUDY ON SPRAY PAINTERS IN SELANGOR, MALAYSIA- A PRELIMINARY REPORT

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Introduction: Spray painters are exposed to an extensive variety of hazardous substances such as solvents (gasoline and thinner), lead-containing pigments and residuals plastic monomers. These hazardous substances can cause genetic alterations in the chromosomes. In the present study, an analysis of basal frequencies of chromosomal aberrations and micronuclei cells have been carried out in spray painter workers in Selangor, Malaysia.

Methodology: Peripheral blood samples and buccal cells were collected from both exposed and non-exposed workers. Blood samples were immediately processed for isolation of leucocytes and culture. For blood micronuclei test, cytochalasin B was added at 44 hours of culture, while for karyotyping, colchicine was added at 72 hours of culture. After the recommended incubation period, cells were stained with Giemsa stain for both micronuclei and karyotyping tests. For the buccal cell micronuclei test, the slides were prepared directly with the samples and stained with special stains and counted under the light microscope Detailed information of the respondents was collected using a standard questionnaire.

Results: The preliminary results showed that spray painters had chromosome aberration and frequencies of micronuclei were significantly different from that of controls ($p<0.05$) in both blood and buccal samples.

Conclusion: Our preliminary results revealed that the frequency of chromosomal alteration and micronuclei were higher in spray painters compared to the non-exposed workers.

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EVALUATION OF GENOTOXICITY THROUGH MICRONUCLEI TEST AND COMET ASSAY IN CAR MECHANICS

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Introduction: Workers of car and battery repair garages exposed themselves to complex chemical mixtures that are potential hazardous and may cause mutations, cancer and congenital effect due to diesel exhaust fumes, certain heavy metals and their compounds, asbestos and benzene. The aim of this study is to evaluate the genotoxicity risk associated with occupational exposure in car mechanics by calculating the micronuclei frequencies by the Micronuclei Test and analyzing the DNA damage by Comet Assay method, in both exposed workers and non-exposed controls.

Methodology: The exfoliated cells of the buccal mucosa were collected from all subjects and the MN test was done. Prepared slides were then viewed under light microscope at low magnification in order to detect presence of micronuclei and confirmation was made at 40x magnification. Whole blood was collected in heparinized tubes and monitored for the level of DNA damage using the CA. Staining was done with SYBR Green and cells were scored under fluorescent microscope under 200x magnification.

Results: This preliminary study shows that there is a significant difference among the exposed workers and the controls were observed in both formation of micronuclei and degree of DNA damage. The mean of MN test results for workers was 9±3.97 (MN 2-20 per subject), compared to 1.25±1.04 (MN 0-3 per subject), in controls. Very significant results were seen in the DNA damage of workers (29.1µm±4.04, tail length 22.48µm-33.88µm) and the controls (1.43µm±0.14, tail length 1.20µm-1.60µm).

Conclusion: From the data provided by the MN test and the CA, we concluded that exposure of mechanics to various chemicals at their workplace contributed to the significant formation of micronuclei, as well as increase degree of DNA damage when compared to non-exposed workers.

IN VIVO STUDIES OF NEWCASTLE DISEASES VIRUS (NDV) STRAIN V4UPM AGAINST EXPERIMENTAL HUMAN MALIGNANT GLIOMAS

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Introduction: Resistance of the cancer to conventional treatment stimulates the search for novel approaches including application of virus for virotherapy. Newcastle disease virus (NDV) is an avian virus in the genus of *Avulavirus* seems effective since most of the study showed NDV directly cytotoxic and induced apoptosis in variety of cancer cells.
Here we report the antitumor effect of NDV strain V4UPM to caused complete tumor regression of experimental human glioblastoma astrocytoma xenografted in athymic nude mice.

Methodology: DBRTG.05MG, human glioblastoma multiform cell line and U-87MG glioblastoma astrocytoma grade III cell lines were injected to the flank of athymic nude mice at 10^7 densities. After the tumor grown at 30mm^3, single intratumor injection of live V4UPM at 670HAU was done for the DBTRG.05MG group (n=5). For the U-87MG group (n=5), 97HAU was injected using PBS as transporter. 72 hours post injection, xenografted tumor was harvest (n=3) and prepared as paraffin-embedded and further analyze with TUNEL assay and H&E stain.

Results: After the injection of V4UPM,tumors regressed completely in all U-87MG injected mice and remain tumor free until three months observation, whereas exacerbate growth occurred in all mice treated with PBS. However, single injection of V4UPM to DBTRG.05MG mice group did not show any sign of regression. No significant acute or chronic side effects of live V4UPM were noted in all athymic mice. From assay, characteristic of TUNEL-positive fragmented nuclei were observed and H&E stain showed sickle-shaped pycnotic and condensed chromatin.

Conclusion: NDV V4UPM appears to induced apoptosis in experimental human glioblastoma astrocytoma grade III leading directly to a potent antitumor effect as demonstrated by long-lasting, complete tumor regression occurring after a single local injection of virus.

This work was in collaboration with National Cancer Council (MAKNA).

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RUBBER EXTRACT, A POTENTIAL REMEDY TO CANCER

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Introduction: Cancer is one of the major human-killers at present time and this has caused concern for humans to race against time to discover a cure. Despite modern-day treatments, researchers have turn to plant resources for natural therapy that would reduce the effects of drug-resistant cancers. Plant extracts are thought to be less likely to trigger resistance in cancer cells as they are natural metabolites that are not easily rejected by the cells. Thus, the possibility of natural rubber tree *(Hevea brasiliensis)* extracts as a cancer remedy was explored. As an initial step, a study was conducted to investigate potential anticancer properties of the rubber extracts on HeLa and Vero cell lines.

Materials and Methods: The cells were treated with three rubber extracts namely: latex B-serum, latex C-serum, and inner bark extract supplied by the Rubber Research Institute of Malaysia (RRIM) at concentration range of 0 – 10 ng/ml. In order to study the effects on cell growth after each rubber extract treatment using MTT assay, a killing curve was first established via cell count after each treatment.

Results: The rubber extracts especially latex B- and C-sera significantly reduced the cell number of HeLa cells after 48 hours treatment at 8 -10 ng/ml of rubber extract. Vero cells were found to be less responsive to the treatment, showing that the rubber extracts successfully killed more “cancer-type” cells than “non-cancer-type” cells. The MTT assay results implied that the extract might be absorbed by HeLa cells before its killing effect takes place.

Conclusion: This preliminary result suggested that the killing effect took place at least 24 hours after administration of the extract to the culture. This time lag might be essential for metabolizing the extract. A time-course experiment on this is therefore recommended in future studies.

MOLECULAR GENETIC ANALYSIS OF A SUPRASELLAR IMMATURE TERATOMA : MUTATION OF EXON 4 p53 GENE

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Introduction: We described an intracranial immature teratoma in a 13 years old Malay boy who presented with history of chronic headache and blurring of vision.

Case Report: Physical findings revealed bilateral papilloedema but no other localizing sign. A Magnetic Resonance Imaging of the brain revealed a suprasellar well defined lobulated midline heterogeneous mass which was intraoperatively described as mainly solid tumour with multiple small cystic component filled with yellowish jelly like material. Histopathological finding confirmed the case as immature teratoma. Molecular genetic analysis of p53 and p27 genes revealed substitution of nucleotide G to C at location nucleotide 12139, exon 4 of gene p53. No alteration was detected at exon 5-6 and 8 of p53 gene and exon 1 and 2 of p27 gene.

Conclusion: This is the first case report of an intracranial immature teratoma with genetic mutation occurring in a Malay boy.

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DETECTION OF BCR/ABL FUSION TRANSCRIPTS IN ACUTE LYMPHOBLASTIC LEUKEMIA CASES – HUSM EXPERIENCE

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Introduction: BCR/ABL fusion transcript is a product derived from translocation of chromosome 22 to chromosome 9. Its presence confers prognostic value for acute lymphoblastic leukemia (ALL). The common breakpoint in BCR cluster regions in ALL is e1a2 junction. Our objective is to detect the presence of BCR/ABL fusion gene in ALL patients in HUSM.

Methodology: Seventy-eight Malay patients diagnosed with ALL between 2003 and 2007 were enrolled into the study. Thirty-two patients (41%) were from pediatric cases whereas 46 patients (59%) were adult cases. RNA was extracted from the blood or bone marrow samples and was subjected to one-step multiplex RT-PCR for detection of BCR/ABL fusion transcript. The PCR product was visualized directly in ethidium bromide stained gel and photographed. The PCR products were 481 bp, 310 bp and 385 bp respectively for various breakpoints in t(9;22): e1a2, b2a2 and b3a2. BCR gene was used as internal control, which showed a band at 808 bp.

Results: Only three (3.8%) out of 78 ALL patients had BCR/ABL fusion gene with a predilection for breakpoint at e1a2 junction. Out of these, two patients were pediatric cases and one was an adult case.

Conclusion: While multiplex RT-PCR has been successfully used in detecting BCR/ABL fusion transcripts in ALL patients, this only count for a small percentage of all reported ALL cases at our institution. It is important to detect these cases as they confer bad prognosis, i.e. very high risk of treatment failure.

CRYOPRESERVATION OF CAPRINE SPERMATOZOA USING A TRIS-CITRIC ACID YOLK EXTENDER: A COMPARATIVE STUDY OF TWO FREEZING TECHNIQUES

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Introduction: Over the years, egg yolk extenders have been a popular choice to cryopreserve livestock spermatozoa. However, despite using the same type of extender, differences in freezing techniques have produced varied results. In this study, the efficiency of a manual freezing technique and a programmable freezer were compared in terms of post-thaw caprine spermatozoa viability.

Methodology: Semen samples from Jermasia goats were diluted with tris-citric acid extender at a ratio of 1:9 and cryopreserved using either a manual freezing technique or a programmable freezer. Post-thaw semen parameters namely live sperm count, motility, abnormality and mass movement were determined. The results were then analyzed and compared.

Results: No significant differences were observed between the two freezing methods, in terms of post-thaw motility (52.37 ± 1.00 and 52.46 ± 0.65), live sperm count (56.33 ± 1.03 and 57.56 ± 0.62) and percentage of abnormal sperm (43.31 ± 0.65 and 42.79 ± 0.66).

Conclusion: Both the manual technique and the programmable freezer were found to be equally efficient. The manual technique may be used where elaborate and costly freezers are unavailable but the programmable freezer would be a more practical choice where the semen samples are high, such as in sperm banks.

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DETECTION OF AQUAPORIN 8 (AQP 8) FRAGMENT FROM RATTUS ARGENTIVENTER (PADDY RAT) TESTES

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Introduction: Multiple members of the aquaporin family of transmembrane water channels (AQPs) have been recognized in the male reproductive tract. Aquaporin is a membrane protein channels that allow rapid passage of water through epithelium containing tight junctions. AQPs are subdivided into aquaporins and aquaglyceroporins. AQP 0, 1, 2, 4, 5 and 8 are water-selective channels, while AQP 3, 7 and 9 are the aquaglyceroporins, which are channels with slightly less restrictive pores permeated by water, glycerol and other small non-electrolytes. Aquaporin 8 (AQP 8) mRNA was found in testis for mammalian cells and this aquaporin may involve in spermatogenesis and maturation and liberation of spermatogenic cells in the testis. AQP 8 is also found in hepatocytes, pancreatic acinar cells, colon and jejunum.

Methodology: This study was conducted to amplify the AQP 8 from the *Rattus argentiventer* using one common set of primer and the Reverse Transcriptase - Polymerase Chain Reaction (RT-PCR) technique. The amplified AQP 8 (732 bp) fragments were sequenced and compared to the various AQP sequence available from the NCBI database.

Results: AQP 8 from 3 different rat testes were successfully amplified using the RT-PCR technique in this study. High sensitivity and high specificity are the hallmarks of successful RT-PCR that can be obtained through optimization.

Conclusion: Discovery of highly conserved AQP 8 among paddy rat indirectly lead to the possibility to control the spread of its population as the paddy rat, *Rattus argentiventer*, is the major rodent pest in SE Asia that reduce crop production.

FREQUENCIES OF XENOBIOTIC METABOLIZING ENZYME POLYMORPHISM IN MALAY SCHOOL CHILDREN

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Introduction: Recent knowledge on the genetic basis of individual metabolic variation has opened new possibilities for studies focusing on increased susceptibility to environmental cancer. In this study we determined xenobiotic metabolizing enzymes polymorphism i.e phase I Cytochrome P450 1A1 (Msp1), 2E1 (Dra1) and phase II Glutathione-S-transferase (GSTM3) and (GSTT1) genes in a Malay school children.

Method: Genetic polymorphism of 119 Malay school children from two schools in Wilayah Persekutuan Kuala Lumpur was determined by using Polymerase Chain Reaction/ Restriction Fragment Length Polymorphism (PCR/RFLP).

Results: Frequencies of CYP1A1 (Msp1) were 0.32, 0.46 and 0.22 for homozygous wild type, heterozygous and homozygous variant, respectively. CYP2E1 (Dra1) frequencies were 0.52, 0.41 and 0.07 for homozygous wild type, heterozygous and homozygous variant, respectively. While Phase II GSTM3 frequencies were 0.90, 0.09 and 0.01 for GSTM3 wild type (GSTM3*A), heterozygous (GSTM3*AB) and mutant homozygous (GSTM3*B) respectively. GSTT1 positive subjects were 0.82 while deleted gene subjects frequency was 0.18.

Conclusion: This study has provided a basis for further screening of people who are exposed to carcinogen and at a risk to develope environmental cancer.

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CARTILAGE CULTURE: A NEW HOPE FOR DEGENERATED KNEE

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Introduction: Results of Autologous Chondrocyte Implantation (ACI) in treating focal cartilage defects depend on many factors like age of patient, size of defect, availability of donor cartilage, success of chondrocyte culture and method of cell delivery to recipient site. There is doubt whether elderly patients with early degenerative disease would benefit from this procedure. Thus, ability of culturing chondrocytes from degenerated knee in elderly patients was studied to explore the possibility of using this method on elderly patients.

Objective: We conducted a study to assess the culturing ability of chondrocyte cells from articular cartilage of degenerated knees in elderly patients.

Methodology: Slices of cartilage measuring 2x1cm were taken from the femoral cut surface of 10 patients' age ranging from 58 to 71 years old undergoing Total Knee Replacement surgery for severe osteoarthritis. The harvested cartilages were subsequently transported to the tissue lab and cultured using standard culture method for 21 days. Subsequently, cell numbers, viability and characteristics were studied.

Results: Initial numbers of cells obtained from the harvested cartilage were between 240,000 to 360,000 cells and we managed to multiply the cells at an average of 9.36 times to produce cells numbering between 1.40 million to 3.48 million after 2 passages. The H&E, Safranin O and Immunohistochemical stains showed that the cells were chondrocytes and able to produce matrix protein.

Conclusion: Cartilage from patients age ranging from 58 to 71 years old with degenerated knees can be grown to produce significant number of cells with quality almost similar to the young cartilage.

OPTIMISATION OF A NESTED PCR TEST FOR THE DETECTION OF HUMAN PAPILLOMAVIRUS (HPV) DNA IN CERVICAL SCRAPINGS

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Introduction: Human papillomavirus (HPV) is an etiologic agent of cervical cancer and is the most common sexually transmitted disease in women. The association of human papillomavirus (HPV) in the pathogenesis of cervical cancer is well established through epidemiological and experimental studies. PCR amplification of HPV genomes is the most sensitive method for the detection of cervicovaginal HPV. The MY09/MY11 primer set-mediated PCR (MY-PCR) and the GP51/GP61 primer set-mediated PCR (GP-PCR) are the most frequently used amplification systems for the detection of HPV DNA in clinical samples. This study is aimed to optimize a two-step nested PCR method for HPV DNA detection in liquid preservation solution (Thin Prep Cytic) of cervical scrapings.

Methodology: MY11, MY09 and GP5+, GP6+ primers set targeting the L1 region of the HPV genome were employed. Optimization of the PCR reaction was done on several parameters, using plasmid with HPV DNA insert as the DNA template.

Results: The MY and GP-PCR was achieved in 30 cycling reaction; under the following conditions: 200µM dNTP, 0.5U Taq polymerase, and 0.5 pmol MY/GP primers with annealing temperature 53°C and 42.3°C and 1.5mM and 3.0mM $MgCl_2$ respectively. The total time required for the PCR is only one and half hours. Ten microliters of each PCR product was run in a 2% agarose gel and stained with ethidium bromide. The image was recorded using an image analyzer (Syngene, USA). The MY-PCR and GP-PCR systems amplify approximately 450- and 140-bp fragments in the L1 region, respectively, allowing unequivocal determination of HPV DNA detection.

Conclusions: Two-step nested PCR for the detection of HPV DNA in clinical samples was optimized and can readily detect broad spectrum of HPV genotypes. The nested PCR will be used in clinical and epidemiological studies.

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PROTECTIVE EFFECT OF CENTELLA ASIATICA EXTRACT ON 1-METHYL-4-PHENYL 1,2,3,6 TETRAHYDROPYRIDINE (MPTP) INDUCED NEUROTOXICITY IN RATS

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Introduction: Reactive oxygen species (ROS) have been documented to play an important role in ageing process. Increase in ROS production and imbalanced antioxidant defense and repair-mechanisms may lead to membrane-molecular damages which may lead to cell death during ageing and age related neurological disorders such as Parkinsonism. The present study was designed to investigate whether the extract of *Centella asiatica* (CAE*)* enriched with antioxidants, when administered orally would prevent MPTP-induced-neurotoxicity in the discrete brain regions related to Parkinsonism.

Methodology: Young and aged male albino rats of the *Wister* strain were challenged with neurotoxin-MPTP (20 mg/kg body wt, i.p, twice at 20 min intervals) and simultaneously administered with CAE (300 mg/kg body-weight/day, orally) for 21 days. Estimation of the ameliorating efficacy of CAE on MPTP-induced-neurotoxicity itself as well as age-related alterations in antioxidant status, lipidperoxidation (LPO), protein-carbonyl-content (PCC) and xanthine-oxidase-activity (XO) in striatum and hippocampus were performed this sentence should be in the Intro.

Results: Aged and MPTP-challenged rats elicited a significant decline in the antioxidant status and increased lipidperoxidation (LPO), protein-carbonyl-content (PCC) and xanthine-oxidase-activity (XO) when compared with young rats, with enormous change in MPTP-treated-aged group. Supplementation of CAE was effective in reducing brain regional LPO, PCC and XO as well as a significant increase in the overall antioxidant status.

Conclusion: CAE by acting as a potent ROS scavenger exerts significant neuroprotective effect and proved efficacious in protecting the brain against neurotoxins and age-related neurodegeneration and may be relevant in disorders such as Parkinsonism.

CURATIVE AND PROPHYLACTIC ANTI-MALARIAL ACTIVITIES OF NIGELLA SATIVA *(BLACK SEED) IN MICE*

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Introduction: Although large numbers of pharmacological studies have been carried out world wide on *Nigella sativa* seeds, but their anti-parasitic activities have yet to be established. This study is therefore, aimed to find out if *N.sativa* seeds possess any anti-malarial activities in animal model.

Methodology: Male ICR mice were used to assess the *in vivo* anti-malarial activities of ethanol, chloroform, and aqueous extracts of *N.sativa* seeds (50, 100, 200 and 400 µl/kg) against rodent malaria (*Plasmodium berghei* PZZ1/00 strain) infection. Mice were inoculated with $1x10^6$ *P. berghei* parasitized red blood cells and subjected to treatments with the extracts given orally in the curative or prophylactic activities.

Results: In the established (curative) *P.berghei* infections, the 100 µl/kg of the ethanol and chloroform extracts and the 400 µl/kg of the aqueous extract exhibited significant anti-malarial activities with the respective percentages of suppression of: 69.52%, 69.28% and 66.83%. These treated mice also had longer survival time (ranged between 12.83 ± 2.48 days and 15.50 ± 3.51 days). However, the same doses of the ethanol, chloroform and aqueous extracts also showed significant suppression values in the prophylactic activity assays with promising values were noted by the 100 µl/kg ethanol extract (92.21 % suppression).

Conclusion: The anti-parasitic effects of the *N. sativa* seeds against malarial parasite infection open a new opportunity to further investigate the potentials of new plant-based anti-malarials in the future. Further studies are required to confirm these effects in other malarial models preferably in human malaria, as well as to define the bioactive ingredients involved.

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ANGIOGENESIS IN CERVICAL INTRAEPITHELIAL NEOPLASIA AND SQUAMOUS CELL CARCINOMA OF THE CERVIX COMPARED TO NORMAL CERVICES: AN IMMUNOHISTOCHEMISTRY STUDY

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Introduction: Angiogenesis is the development of new blood vessels from preexisting capillaries. It is essential in tissue development, reproduction and wound healing. Tumor angiogenesis is mainly evaluated on the basis of mean vessel density (MVD). This can be measured using factor VIII-related antigen (FVIIIRAg). The role of angiogenesis in the preinvasive lesions and development of invasive malignant tumors has not being fully investigated.

Objective: The objective of this study was to determine the relationship between the microvessel density in normal cervix, cervix with CIN and squamous
cell carcinoma of the cervix.

Material and methods: Archived tissue blocks of normal cervix (54), cervical intraepithelial neoplasia (CIN) (79) and squamous cell carcinoma (SCC) (56) of cervix histopathologically diagnosed from year 1998 to 2003 in Pathology Department of HUSM and HKB were included in this study. All samples were subjected to immunohistochemistry approach to determine the mean vessel density using FVIIIRA as a marker. The results were correlated with histological diagnosis, clinical and histopatologic data.

Results: There was a progressive increase in mean vessel density (MVD) from normal tissue to invasive SCC, with a range of vessel counts from a low value of 2.3 per 100x field in normal sample to 192 vessels per 100x field in sguamous cell carcinoma samples. There were significant differences ($P<0.05$) between MVD in normal samples and CIN II, III groups as well as in SCC samples. There were also significant differences between MVD in CIN I and SCC and MVD between groups CIN II, III and SCC.

Conclusion: Our result showed an association between tumor angiogenesis, expressed as mean vessel density and histological grade in patients with cervical cancer. Our data demonstrated that mean vessel density is significantly increased in CIN II, III and SCC compared with normal tissue, which suggest that angiogenesis occurs in higher dysplasia and continuously increased in neoplasia process.

Key Words: Squamous cell carcinoma, CIN, angiogenesis, factor VIII related antigen.

SOCIO-DEMOGRAPHIC CHARACTERISTICS AND SURVIVAL OF ORAL CANCER IN HUSM

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Introduction: Worldwide, cancer was estimated to account for about 12% of all death and almost 6% of global disease burden in 2000. Oral cancer accounts for approximately 4% of all cancers and 2% of all cancer deaths. Prevalence of oral cancer in Malaysia was 0.04%.

Objectives: The aim of this study was to determine the socio-demographic characteristics and their effect on survival among oral cancer patients in Hospital Universiti Sains Malaysia (HUSM).

Methodology: A retrospective record review was conducted from August 2006 till December 2006 in HUSM. All patient's records diagnosed as oral cancer from 1986 to 2005 were reviewed. The required information was retrieved from patient's records and the data was transferred to a proforma. Data on follow-up period was obtained to determine patient's status and their survival time. All data extraction procedure was done by the main researcher.

Results: A total of 133 patients were diagnosed as oral cancer in HUSM from 1986 to 2005. 72.9% were from Kelantan, where majority were from Kota Bharu (27.8%). There were increasing trends of oral cancer patients presented in HUSM over twenty years. Mean(sd) age was 58.5(16.05), with peak age between 61 to 70 years (27.1%). Male to female ratio was 1.8:1. Most of the patients were Malay (88.7%) and married. Majority the patients were manual workers (36.5%) or housewives (27.8%). Overall 5-year survival was 16.1%. Older age group had less survival time (HR=1.49, 95%CI= 1.01, 2.18, p = 0.042). No significant different in survival in years, sex ethnic groups and marital status.

Conclusions: There were increasing trends of oral cancer patients presented in HUSM over twenty years. Malay, males and older age groups were predominant. Older age groups were significantly had less survival time. The survival estimates were not affected by other socio-demographic characteristics.

Key word: Oral cancer, socio-demographic characteristics, trend, survival, HUSM.

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COLORECTAL CARCINOMA (CRC) AND ITS ASSOCIATION WITH METABOLIC DISEASES; A HUSM EXPERIENCE

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Background : Kelantan has a high prevalence of colorectal cancer. This cancer is often associated with affluence. Recently many new studies have shown that metabolic diseases as one of the possible cause of colorectal carcinoma (CRC). Metabolic diseases especially Type 2 Diabetes Mellitus (DM2) has a high incidence among the Kelantan population. We wanted to determine the association of metabolic diseases/syndrome (hypertension,Diabetes mellitus Type 2 and ischemic heart disease) with colorectal cancer patients.

Methods: This is a retrospective study on all colorectal carcinoma in HUSM between year 2001-2006. The data was retrieved from the Registry in Pathology laboratory and the clinical details from the patients clinical records. The data was analysed using SSPS Version 12.0.. Value $p<0.05$ was taken to be statistically significant.

Results: In the 5 years, a total of 138 CRC cases were diagnosed at HUSM. The patients age ranged between 16.0 to 88.0 years old, with mean age of 56.92 -/+ SD 15.35. The male 90(65%) to female 48(35%) ratio was 1.86:1.0. 85.0% of them had metabolic diseases. 18(13%) had Diabetes Mellitus Type 2(DM2), 48(34.8%) had hypertension(HPT) and 19 (13.8%) had ischemic heart disease(IHD). Statistically, the metabolic diseasaes had significant association with the stage of cancer; DM2;$p<0.043$, HPT and IHD;$p<0.001$ .The age of the patients was also a significant association with CRC [(SED 2.7,95% CI 4.84-15.65) , $p<0.001$]

Conclusion: Colorectal carcinoma seen in HUSM in this study showed a strong association with metabolic diseases. This is the first data on local study indicating such. Reduction in prevalence of diabetis in the state of Kelantan would reduce the incidence of CRC. Evidence is growing that metabolic diseases/syndrome may be a marker for a physiologic milieu of growth that encourages tumor initiation, promotion, and/or progression.

EFFECTS OF MALAYSIAN ENDOPHYTES ON HCT116 (TUMOUR TYPE) AND WRL68 (NON-TUMOUR TYPE) CELL LINES: A COMPARISON

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Introduction: Colon cancer is one of the leading causes of morbidity worldwide. Currently, chemotherapy has been adopted as one of the effective means in treating this cancer. Nevertheless, the non-selective cytotoxicity of current existing chemotherapeutic agents has been one of the limiting factors on the efficacy of chemotherapy, resulting in many undesirable adverse effects. Thus, the discovery and development of new drugs is vital in order to combat cancer cells, targeting them specifically. For this purpose, endophytes, which have recently emerged as potentially new natural sources of novel bioactive compounds for anticancer drug discovery, were investigated. Preliminary screening found our endophytic extracts to possess anticancer activity against P388, a murine leukaemic cell line.

Methodology: This study compared the effects of two endophytic extracts, HAB19R22 and HAB21F25, on HCT116 (human colon cancer) and WRL68 (human embryonic liver) cell lines. The endophytes grown on PDA agar at 29º C for 30 days underwent a semi-polar extraction with ethyl acetate. The crude extracts obtained, at different concentrations (ranging from 0.000005µg/ml to 100µg/ml) were then screened for cytotoxicity against the cell lines mentioned using the MTT assay.

Results: The results against HCT116 showed extract HAB21F25 (IC_{50} = 0.002 µg/ml) to be more potent when compared to extract HAB19R22 (IC_{50} = 83.3 µg/ml). Further comparison with WRL68 showed that the extracts were more cytotoxic against cancer cells. The IC_{50} of extract HAB21F25 against HCT116 was 17.5 times lower than that of the WRL68 (IC50 = 0.035 µg/ml). Similar trend was also observed in extract HAB19R22 against WRL68 (IC_{50} = > 100 µg/ml).

Conclusions: This study indicated that, HAB21F25 has great potential in emerging as new anticancer candidates, having far obvious selectivity in terms of cytotoxicity against cancer cells.

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EIGHT YEAR REVIEW OF THYROID CANCER IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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Introduction: The demographic distribution, presentation, treatment modalities, histopathological types including bilateral tumour involvement and postoperative complications were assessed in a region with predominant Malay population.

Methodology:A retrospective data analysis was done on histologically proven thyroid cancer patients operated in surgical department of Universiti Sains Malaysia during eight years period from 1996 to 2003.

Results: A total of 115 patients include 89 papillary, 19 follicular, three insular and two each of medullary and anaplastic carcinoma. Thyroid cancer constitutes 23% of all thyroid diseases operated in the surgical department. Median age at presentation for papillary and follicular carcinoma is 42 and 45 years. 26% of patients had advanced disease with lymph node and distant metastases at presentation. 106 patients underwent total thyroidectomies including 27 reoperative completion surgeries. 34% patients had bilateral involvement of the tumour in both thyroid lobes. High incidence of recurrent laryngeal nerve palsy and hypocalcaemia were noted in patients with reoperative completion thyroidectomy.

Conclusion: Among overall thyroid diseases, 23% had thyroid cancer as a high ratio to benign counterpart. It is 5.8 times more common in females than males. Patients present late with advanced disease at the median age in fifth decade of life. High incidence of bilateral involvement of the disease is seen. The incidences of operative complications are discussed.

KETAMINE REDUCED C-FOS BUT NOT DREAM PROTEIN EXPRESSION IN RAT'S SPINAL CORD AFTER FORMALIN INDUCED PAIN: PRELIMINARY DATA

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Introduction: Ketamine, a non-selective antagonist of N- methyl-D-aspartate (NMDA)-receptors has potential as an analgesic effect and shown to reduce c-fos expression in rat's spinal cord after noxious stimulation. Downstream Regulatory Element Antagonist Modulator (DREAM) protein acts as a transcription repressor for c-fos gene. Therefore, this study was conducted to investigate the effects of ketamine on DREAM like immunoreactivity (DI) and used Fos like immunoreactivity (FLI) as an internal control, in rat's spinal cord after formalin induced pain.

Methods: Male Sprague-Dawley rats weighing between 250-300g were divided into 4 groups consisting of rats given ketamine (K) (n = 3), formalin injection (F) (n = 3), ketamine plus formalin injection (K+F) (n = 3) and control group (C) (n = 3). Ketamine (5mg/kg) was given intraperitoneally 30 minutes prior to formalin injection. Formalin 5% (1.85% formaldehyde solution), 50_l was subcutaneously injected into the plantar surface of the right hind paw of the rats as pain stimulus. Two hours after formalin injection, the rats were then sacrificed and the lumbar L4/L5 segments of spinal cords were removed for DREAM and Fos immunohistochemistry. Data were analyzed using non-parametric Mann-Whitney test for each protein.

Results: There were no significant differences in DI among all groups in all laminae on both ipsilateral (injected) and contralateral (not-injected) sides. FLI was found to be significantly higher in F ($p<0.05$) and K + F groups ($p< 0.05$) if compared to C and K groups especially in laminae I/II and V/VI on ipsilateral side. However, preemptive administration of ketamine significantly reduced FLI ($p<0.05$) in laminae V/VI on ipsilateral in K+F group if compared to F group. There was no significant deference in FLI between all groups in all laminae on contralateral side. FLI also was significantly higher on ipsilateral if compared to contralateral side in F ($p<0.05$) and K + F ($p<0.05$) groups.

Conclusion: As a conclusion, pretreatment of ketamine does not affect DREAM protein expression after formalin induced pain, in contrast with c-fos protein expression. These effects may be due to the mechanisms that keeping DREAM protein express in constant level in rat's spinal cord, which it is NMDA receptor independent.

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ORBITAL RHABDOMYOSARCOMA IN A 10-YEAR OLD HIV POSITIVE CHILD

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Introduction: Human immunodeficiency virus (HIV) infected patients are at risk of developing cancer, particularly Kaposi's sarcoma and non-Hodgkin's lymphoma. In contrast, rhabdomyosarcoma is the commonest primary orbital tumour in premorbidly healthy children. This case illustrates an uncommon sarcoma in an immunocompromised child that creates diagnostic and therapeutic dilemma.

Case Report: A 10-year old boy who was diagnosed as HIV positive 5 years ago presented with a sudden onset of painless, progressive proptosis of his left eye for 5 days. His presenting visual acuity was 1/60 in his left eye and 6/6 in his right eye. Ocular examination revealed an 8-mm non-axial proptosis, a positive relative afferent pupillary reflex and restricted ocular motility in all directions of his left eye. An urgent CT-scan of the brain and orbit showed a well defined enhancing soft tissue mass arising from the left lateral rectus muscle causing globe indentation and displacement of the optic nerve to the medial side. Extension of the mass to the adjacent sinuses, nasal cavity, left infratemporal fossa, left pterygopalatine fossa, frontal lobe and anterior part of the left temporal lobe with extensive bony destructions. The left superior ophthalmic vein and left cavernous sinus were also involved. Left frontotemporal craniotomy and excision of the tumour was performed and histopathological examination revealed an embryonal type of rhabdomyosarcoma. He is recommenced on HAART regime and planned for chemotherapy in near future.

Conclusion: Orbital rhabdomysarcoma is rare disease occurring in a child with retroviral disease. It is a difficult situation not only to the patient but to the managing clinicians and surgeons.

CELL DEATH INDICES AND THEIR ASSOCIATION WITH ABNORMAL PROTO-ONCOGENE BCL-2 EXPRESSION IN NODULAR HYPERPLASIA OF PROSTATE (BPH)

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Introduction: The development of BPH is apparently due to a failure of cell death by apoptosis, and hence some of the drugs used to treat it may induce that process. The Bcl-2 protein suppresses apoptosis by preventing the activation of the enzymes that carry out the process. Disruption of apoptotic pathways has been suggested as an important regulatory mechanism in Benign prostatic hyperplasia (BPH). y.

Methodology : Prostatic tissue from 44 patients with BPH and no prior or subsequent prostatic carcinoma was obtained by transurethral prostatectomy (TURP) procedure. Apoptotoc Index and Mitotic Index were compared in the H&E sections. Apoptotic regulatory protein bcl-2 was analyzed by immunohistochemistry and evaluated for over expression in varied histologic patterns like hyperplastic epithelium, fibrotic nodules, cystically dilated dilated glands and atrophic glands.

Results : The apoptotic index in hyperplastic tissues was lower than that in the normal tissues. Apoptotic index in the normal tissues was two times higher than that in the hyperplastic tissues which was highly significant ($p < 0.01$). The mitotic index in the hyperplastic tissues was three times higher, indicating an increased activity of mitosis compared with the normal tissues (0.0066 vs. 0.0013, which was highly significant as well ($p < 0.01$)). In comparison between the apoptotic and mitotic indices in both hyperplastic tissues and the normal tissues, the results showed that there was a highly significant decrease in the apoptotic activity ($p < 0.01$) and increase in mitotic activity in hyperplastic tissues ($p < 0.01$). Whereas the apoptotic index in normal tissues was noted to be significantly higher than the mitotic index. This data supported our research hypothesis (apoptotic index is decreased in benign prostatic hyperplasia). Out of 44 cases of BPH tissue slides that we stained, 28 (64%) showed positivity for bcl-2 expression. Pearson's correlation test was applied to find any association between the intensity of bcl-2 expression with apoptosis and the result showed negative correlation. The comparisons between bcl-2 and apoptosis were found to correlate, but not very significant.

Conclusion : This proves our theory that bcl-2 regulates cell death up to certain extent. All the results of comparisons between Apoptotic indices and Mitotic indices between the normal and abnormal tissues showed significant correlation, hence strongly suggesting that apoptosis is comparatively decreased in the benign lesions, than normal.

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KNOWLEDGE, ATTITUDE, PRACTICE ON PAPANICOLAOU SMEAR AND CERVICAL CANCER AMONG WOMEN WHO SCREENED NORMAL

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Introduction: Despite the fact that cervical cancer is the second most common cancer among women in Malaysia, rate of cervical cancer screening is still low. The aim of this study is to explore the knowledge, attitude and practice on Papanicolaou smear and cervical cancer among women who screened normal.

Methodology: Sixteen women were interviewed in this qualitative study. They were women with at least one previous normal Papanicolaou smear result, selected by purposive sampling.

Results: Knowledge on Papanicolaou smear and cervical cancer are poor. The women were confused on the risk factors of cervical cancer and never heard on Human Papiloma Virus. The study found lack of knowledge on eligibility of women for Papanicolaou smear and the procedure itself. Women underwent the screening test through opportunities during health promotion program or child visit to health clinics with inappropriate interval. Cancer, as other form of cervical cancer is usually perceived as a disease that end with death, however, can be cured if treated at early stage. Thought of doing Papanicolaou smear only when presence of symptoms or when asked by the health personal.

Conclusion: Knowledge, attitude and practice on Papanicolaou smear and cervical cancer are still unsatisfactory among women who screened normal. Effective nursing interventions and community-based program are crucial in improving the practice of Papanicolaou smear.

Keywords: Knowledge, attitude, practice, Papanicolaou smear, cervical cancer

P27 MISLOCALIZATION IN MENINGIOMAS AND GLIOMAS

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Introduction: p27 is generally viewed as an integral component of the cell cycle machinery controlling the cell's proliferative capacity. p27 protein elevation has been found in small cell lung carcinoma, breast cancer, normal muscle fibers and abnormal muscle fibers, and in several cases of brain tumors. p27 dysfunction has been associated with the localization of the protein in the cancer cells.

Methodology: For determining the localization of p27 protein in our brain tumor samples, 5 meningiomas and 5 gliomas samples were assessed using immunostaining with anti-p27. Human prostate tissue was selected as the positive control for the p27 staining. Stained samples of brain tumor tissues and prostate tissue were observed via transmission electron microscopy.

Results: Our immungold staining results detected p27 protein localization in both nucleus and cytoplasm of the meningiomas and gliomas samples.

Conclusion: p27 nuclear localization is essential for growth inhibiting functions of the protein. Thus, the p27 protein mislocalization in cytoplasm is believed to produce inactivated cyclin dependent kinase inhibitor protein, which is no more functioning to restrain the proliferation of abnormal cells. We therefore suggested that brain tumor cells with high level of p27 protein were still able to survive and actively proliferate due to the protein mislocalization into cytoplasm.

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EFFECT OF MALAYSIAN ENDOPHYTES ON MCF7, A HUMAN BREAST CANCER CELL LINE

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Introduction: In spite of the advancement in medicinal chemistry and molecular modeling, drugs derived from natural products are still as important in their contributions towards cancer treatment. Nevertheless, recent emergence of novel bioactive metabolites produced by endophytes, has created an additional source in the discovery of anticancer agents apart from plants. Endophytes are microorganisms living within plant tissues that provide protection to its host by producing secondary metabolites. This study was carried to compare the effect of two Malaysian endophytes, HAB10R12 and HAB14R3, on MCF7, a hormone dependent human breast cancer cell line. Preliminary screening found these two out of 350 endophytes to possess anticancer activity against P388, a murine leukaemic cell line.

Methodology: The endophytes, HAB10R12 and HAB14R3, which were grown on PDA agar at 29º C for 30 days underwent a semi-polar extraction with ethyl acetate. The crude extracts obtained, at different concentrations (ranging from 0.000005 µg/ml to 100 µg/ml) were then screened for cytotoxicity against the cell lines mentioned using the MTT assay. Results obtained in the form of IC_{50} were compared to that of paclitaxel (an antimitotic agent) and tamoxifen (an antioestrogen).

Results: The results against MCF7 showed extract HAB14R3 (IC_{50} = 0.015 µg/ml) to be before potent when compared to extract HAB10R12 (IC_{50} = 0.037 µg/ml). Both these values are far lower than the cut off point (< 30 µg/ml) set by the National Cancer Institute (NCI) during screening of new anticancer agents. In fact, the IC_{50} of extract HAB14R3 is numerically lower than paclitaxel (IC_{50} = 0.017 µg/ml) and tamoxifen (IC_{50} = 0.024 µg/ml), which are both commonly used in breast cancer treatment.

Conclusions: The extracts, especially HAB14R3, have great potential as potent anticancer agents. Compounds purified from these extracts are expected to possess better anticancer effect than that of the existing anticancer agents.

CYTOKINE GENE POLYMORPHISMS IN MALAY BREAST CANCER PATIENTS

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Introduction & Objective : Cytokines are soluble proteins usually produced by leukocytes. Single nucleotide polymorphisms (SNPs) in the promoter regions of cytokine genes are associated with differential levels of the corresponding cytokine expression. We hypothesized that these SNPs might influence breast tumour development and progression by affecting the efficiency of the antitumour immune response.

Methodology : A total of 40 female Malays breast cancer patients and 40 cancer-free population controls were genotyped for polymorphisms of 13 different cytokine genes (IL1α, IL1β, IL1R, IL1RA, IL4Rα, IL12, γIFN, TGBβ, TNFα, IL2, IL4, IL6 and IL10), using PCR amplification with sequence specific primer (PCR-SSP) designed to detect polymorphisms of cytokine genes. It consists of various formulations of lyophilized primer mixes that were used to amplify genomic DNA using a 96 well thermal tray. After cycling was complete, the PCR products were loaded onto a 2% agarose gel for electrophoresis.

Results : No significant different were seen between breast cancer patients and cancer-free control ($P>0.05$). Stratification of the patient group according to their UICC/AJCC Grading revealed trends for association between advanced stage of disease and IL-4 -1098T/-590T, IL-4 -1098T/-590C, IL-6 -174G/nt565G, IL-10 -1082A/-819A and IL-10 -1082A/-592 A ($P<0.04$).

Conclusion : These results suggest that the role of cytokine promoter SNPs in susceptibility to breast cancer requires further investigation in a larger study.

Key Words: cytokine genes, polymorphism, breast cancer, Malay

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OSTEOMA OF THE BASE OF THE TONGUE: A CASE REPORT AND REVIEW OF LITERATURE

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Introduction: Osteoma of the base of the tongue is a rare clinical entity. It is also been called osseous choristoma. Till date only 61 cases have been reported in English literature. It is a benign tumor mostly affecting young women and is less frequent in men.

Case report: We report a case of 25-year-old female patient who developed swelling at the base of the tongue for 5 years. The lump was slow growing and painless. Three weeks before coming to the hospital the lump started increasing in size rapidly and causing discomfort. In the hospital the patient underwent uneventful excision of the tumor mass. Grossly, a gray-white mass measures 12x11x5 mm with smooth surface and hard in consistency is noted. Microscopically, well formed lamellar bones with benign looking osteocytes were seen.

Conclusion: The pathogenesis and aetiology of this rare tumor remain obscure. Discussion on the pathogenesis along with review of literature is included in this report.

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OBESITY AND SELECTED HEALTH CHARACTERISTICS AMONG A SAMPLE OF ELDERLY CHINESE IN A RURAL AREA

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Introduction: A cross-sectional study was carried to determine distribution of obesity and selected health characteristics among a sample of elderly Chinese in a rural area.

Methodology: A set of questionnaire was used to obtain information related to socio-demography, economic status and health-related variables. Anthropometric measurements including weight, height, arm span, waist (WC) and hip circumferences (HC), mid-upper arm circumference (MUAC), skin-fold thickness (SFT) of triceps, biceps, sub-scapular and supra-iliac and calf circumference (CC) were measured using appropriate equipments and standard procedures. Handgrip strength was measured using a hand dynamometer.

Results: Only about 25% of the respondents perceived their health as good to excellent. Based on self-reported health problems, about 17 to 23% indicated having arthritis, hypercholesterolemia, diabetes and hypertension, while about 54% complained of vision problem. About 35% and 10% of the respondents were classified as overweight and obese, respectively. Almost equal proportion of males and females were overweight and obese. According to age categories, 13.8% of the younger age group (60-69 years) were classified as obese compared to 4.8% of the older group (≥70 years) (p≥0.05). About 92% were classified with android obesity, comprising of 98% of the males and 86% of the females. The proportion with android obesity was higher among the younger age group (98.3%) (p£0.05). The independent t-test revealed significant differences in weight, WC, MUAC, subscapular and bicep SFT, CC and % body fat between the males and females. Most of the anthropometric measurements were negatively correlated with age, except for BMI and triceps SF.

Conclusion: There was a high prevalence of overweight and obesity among the elderly Chinese. Obesity is a modifiable risk factor. Therefore, targeted promotive and preventive interventions need to be formulated to reduce this risk factor in order to delay the onset and complication of chronic diseases and other health conditions.

RELATIONSHIP OF OVERWEIGHT AND DEPRESSION AMONG ADOLESCENTS

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Introduction: Obesity has become a major public health problem that resulted to poor physical and psychological health. The aim of the study is to determine the association between overweight and depression among adolescents in Kota Bharu, Kelantan

Methodology: A school-based cross-sectional study conducted among 977 form four students selected randomly from six secondary schools in Kota Bharu district. We used self-administered, validated, Malay version of Patient Health Questionnaire (PHQ-9) to diagnose depressive disorder with added information on socio-demographic characteristics. Anthropometric measurements of weight and height were measured to calculate the Body Mass Index (BMI). Overweight was defined as BMI of more than or equal to 85th percentile for age and sex.

Results: The prevalence of overweight was 12.8% (95%CI: 10.7, 14.9). The prevalence of depression was 12.7% (95% CI: 10.6, 14.8). Percentages of minimal, mild, moderate and severe depression were 38.7%, 37.1%, 18.5%, and 5.6% respectively. Overweight was not associated with depression after adjusted with sex, race, age, family history of overweight and knowing self weight (P> 0.05). However, increasing age was at higher risk of developing depression.

Conclusion: Overweight is not associated with depression among adolescents. The prevalence of depression, however, is worrisome among them. Further studies on the matter are to be explored to determine its risk factors followed by effective interventions.

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ADULT WILM'S TUMOUR: RARE ENTITY AGGRESSIVE BEHAVIOUR

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Introduction : Wilm's tumour accounts for 80% of renal tumours in childhood. It is very rare in adult. Review of literature reveals only 15 cases of adult Wilm's tumour reported in the last 10 years. The prognosis of this tumour depends on tumour stage and grade. In adults, this tumour usually has a very aggressive course.

Case Report : We are presenting a case of Wilm's tumour in a 19 year old female. She initially presented with acute abdomen, laparotomy reveals a ruptured left Wilm's tumour. Complete macroscopic resection of tumour achieved. Six weeks later, she presented again with left-sided abdominal pain which is associated with fever. Radiological investigation suggests the presence of a splenic abscess that has ruptured. Emergency laparotomy uncovers disseminated carcinomatosis peritoneii, thus we proceeded to remove as much tumour tissues as possible. Chemotherapy started at one week post-op. Regrettably she passed away one month later. This illustrates the aggressiveness of this tumour. The tumour advanced from stage III to Stage IV in just six weeks.

Conclusion : A slightly better prognosis can only be achieved if the condition is detected early and appropriate treatment commenced.

TREATMENT FOR INTRACRANIAL SUBDURAL EMPYEMA (ISDE): AN ANALYSIS OF TWO SURGICAL METHODS USED IN 90 CASES.

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Introduction & Objective: We studied the efficacy of two surgical methods used for ISDE treatment in our centre.

Methodology : A crossectional study of 90 non traumatic supratentorial ISDE cases (1999-2005) revealed two types of surgical method used for evacuation of empyema were burr hole (50 cases, 55.6%) and craniotomy (40 cases,44.4%).

Results : Patients underwent craniotomy had better results in terms of neurological improvement (chi square analysis, $p = 0.006$) and clearance of empyema on CT brain (chi square analysis, $p<0.001$). The only significant factor that affected the morbidity of the patient was level of consciousness at the time of surgery (multiple logistic regression, $p<0.001$). Re-surgery was more common in those underwent burr hole drainage (multiple logistic regression, $p<0.001$). Outcome and morbidity of ISDE survivors were not related to the surgical method used (both $p>0.05$).

Conclusion : We concluded that craniotomy and evacuation of empyema was the better surgical method as it has been shown to improve neurological status, better clearance of the empyema as well as reduce rate of re-surgery. Level of consciousness at the time of presentation was a predictor for the morbidity of ISDE patients. Thus, aggressive surgical treatment should be started as early as possible before patients neurological status deteriorate.

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AN UNUSUAL LOCALIZATION OF DERMOID CYST: A CASE REPORT AND REVIEW OF LITERATURE

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Introduction: Intraaxial dermoid cysts are rare intracranial space occupying lesions, more so in the pediatric age group. They account for 0.2% to 1.8% of all intracranial tumors and are commonly located in the cisternal spaces, mainly in the cerebellopontine angle and parasellar cisterns. A purely intraaxial position as reported here is quite exceptional and so far only scattered case reports have appeared in the literature.

Case Report: We report a case of intraaxial dermoid cyst located in the cerebellum that was surgically treated. Intra operative findings revealed an abnormal mass with a whitish appearance and solid cystic consistency. The cystic component was first aspirated. Subsequently the solid portion was removed. It consisted of white, soft, cheesy material intermingled with hair. Attempts at total removal of the cyst wall were unsuccessful and abandoned due to its adherence to the surrounding parenchyma. Per operatively a diagnosis of dermoid cyst was made. The postoperative course was uneventful and the patient was discharged after two weeks. The follow up period (12 months) showed no signs of recurrence.

Conclusion: Though simple to diagnose per operatively and on histopathology dermoid cysts at unusual sites can pose a pre operative radiologic dilemma even with the current technology available. The case is reported here to highlight the fact that, even though rare, the possibility of an intraaxial mass being a dermoid cyst does exist. Intensive literature search showed only five cases of intraaxial dermoid cyst reported so far. Report on our case is presented here along with review of literature.

A CASE REPORT: RECOMBINANT FACTOR VIIA FOR REFRACTORY BLEEDING PERFORATED DUODENAL AND PYLORIC ULCER

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Introduction: Recombinant Factor VIIa (RF VIIa) is commonly used to manage bleeding in hemophilia patients for whom standard therapy is inadequate because of presence of inhibitors to either factor VIII (hemophilia A) or factor IX(hemophilia B). Apart from that it is also an attractive agent to control refractory, coagulopathic bleeding in nonhemophilic patients following major surgery or trauma. However the uses of it are constrained by cost and limited clinical evidence and experience. It is normally chosen as the last line of management in refractory bleeding cases. We reported one of the cases that required the use of RF VIIa following massive blood transfusion due to persistent bleeding immediately post laparotomy for bleeding perforated duodenal and pyloric ulcer.

Case Report: A 55 year old man was diagnosed as hypovolemic shock secondary to upper gastrointestinal tract bleeding and required an emergency laparotomy. Surgical findings noted bleeding from duodenal and pylorus and subsequent pyloroplasty with omentum patch was done. The surgery lasted for 2 hours with estimated blood loss of about 3 liters. Perioperative resuscitation were done with total of 9 units of packed cell , 5 unit s cryoprecipitates, 6 units of fresh frozen plasma (FFP) and 1 unit platelets. IV (intravenous) transxenamic acid I gm and 1,000,000 KIU of Aprotinin were also given to control the bleeding. Immediately after surgery in intensive care unit (ICU), patient was hypotensive with more than 100 ml of fresh blood oozed from the abdominal surgical drainage. RF VIIa with initial dose of 4.5 KIU/kg was given and the subsequent bleeding was under controlled.

Conclusion: RF VIIa was effective in restoring hemostasis after refractory bleeding and coagulopathy following perforated duodenal ulcer. Its use can be considered after the bleeding is persistent in spite of all necessary optimum blood products transfusion has been done necessarily.

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INTERNAL MAMMARY ARTERY EMBOLIZATION OF THE HEMOPTYSIS

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Introduction: Hemoptysis is a common condition that is seen in cases of pulmonary disease. Arterial embolization is the preferred treatment for this disease entity. In cases of hemoptysis, the bronchial arteries from the systemic circulation are the primary cause of bleeding. There are also systemic nonbronchial arteries that contribute to hemoptysis.

Case report: 38 y old malay male with history of uncontrolled recurrent hemoptysis since 1990. Recently, had bouts of hemoptysis amounting to about 1/2 cup of fresh blood daily in the last two weeks before admission. No fever, LOA, LOW, or night sweating. No history of exposure to TB patients. Sputum culture: normal URT flora. Direct smear microscopy: Negative. ESR: 24.4 mm/hr. WBC: $8.1x10^3/mm^3$. Chest radiograph showed cavitating lesion in the left upper zone, which has thin, smooth wall. An intracavitory lesion, which is fairly homogenous and well defined.CT thorax showed multiple cavitating lesion with intracavitory lesion in left upper lobe of the lung. Medical treatment with fluconazole 200-400 mg daily for 3 months has failed to control the hemoptysis.Bronchial arteriography KIV embolization was decided. Arteriography was performed and Bronchial Arteries were not demonstrated suggesting the presence of a variant of origin of the bronchial artery or systemic non bronchial arteries. After a repeat arteriography was performed,the left internal mammary artery (LIMA)was enlarged and blush seen.Selective arteriography of the branches of the LIMA was carried out and embolization performed using Polyvinyl Alcohol PVA (150-250 µm). Subsequently coiling of branches from left internal mammary using fiber platinum coil-18 (2mm). Conclusion: Interventional radiologists should be aware of the possible presence of arterial variants during initial angiography.

Conclusion: Interventional radiologists should be aware of the possible presence of arterial variants during initial angiography.

GASTROINTESTINAL STROMAL TUMOURS OF TRANSVERSE COLON (GISTs)

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Introduction: GISTs are rare and account for 0.1–3.0% of all gastrointestinal neoplasms. GISTs occur predominantly in the middle age or older population, with a peek incidence in the fifth and sixth decades and uncommon below forty years.
They are rare in the oespohagus and colon < 5%.

Case report: 21 years malay female with history of epigastric mass for one month which gradually increase in size and associated with abdominal discomfort. No loss of weight or appetite was noted. No abdominal pain or GIT bleeding. US scan of the abdomen showed a large hypoechoeic mass in the splenorenal area displacing the left kidney inferoposteriorly. CT showed large heterogeneous hypodense enhancing mass between the greater curvature of the stomach and splenic hilum. No clear demarcation is seen between the mass and stomach, transverse colon or other bowel loops, body and tail of pancreas, left kidney and spleen. Liver is enlarged but no focal lesion within. The lesion diagnosed radiologicaly as exophytic leiomayosarcoma of stomach with differential diagnosis of macrocystadenocarcinoma body and tail of pancreas. Intraoperative finding was the mass arising from the wall of the transverse colon. However mucosa of transverse colon is free. The mass is extending to the body and tail of pancreas. Stomach was also free. The mass was very close to the splenic vessels.Transection of the transverse colon with re-anastomosis, splenectomy and excision of the body and tail of pancreas were done. Histopathology result was benign mesenchymal tumor (GIST).

Conclusion: No definitive radiological features for GIST. However the most important indicators to differentiate benign from malignant GIST are the size of the mass and number of mitosis.

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RARE CASE OF PRIMARY URETHRAL CALCULI

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Introduction : Urethral calculi represent less than 1% of all urinary stone disease. Most urethral calculi in men consist of stones expelled from the bladder into the urethra. Rarely, a calculus may form primarily in the urethra when a stricture is present or in a urethral diverticulum.

Case Report : We present a case of a 34 year old gentleman who had undergone Koyanagi repair of hypospadias in 1986 at age of 14 years old. Subsequently, 2 staged repairs were performed in 1992. However, post operatively he developed urethrocutaneous fistula and fistulectomy and repair was done the following year. Fourteen years later this patient presented with history of straining to pass urine, associated with pain, dysuria, dyspareunia and retrograde ejaculation. Physical examination revealed a palpable hard mass at the bulbar urethra suspected to be urethral calculi. A cystoscopic examination was performed which showed two urethral diverticuli with two calculi within the larger diverticulum. An endoscopic ureterolithotripsy was done via lithoclast and the stones were completely removed.

Conclusion : Due to its rarity, a urethral calculus forming in patients with high index of suspicion should be recognized early and referred appropriately to avoid distressing obstructive symptoms.

EXTRASKELETAL OSTEOSARCOMA OF THE SUBCUTANEUS ANTERIOR ABDOMINAL WALL: A CASE REPORT

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Introduction: Extraskeletal osteosarcoma is a rare malignant tumor of soft tissue and primary osteosarcoma of the subcutaneous tissue is a rarer one. So far only one such case has been reported.

Case report: We report a case of extraskeletal osteosarcoma arising in the subcutaneous tissue of anterior abdominal wall. A 36 year old man presented to Hospital University Science of Malaysia (HUSM) with recurrent epigastric pain and anterior abdominal lump for 2 weeks. Chest and abdominal X-ray were reported as normal. Ultrasound of the abdomen showed a small heterogenous hypodense lesion with wall of calcification in the subcutaneous tissue of epigastric region suggestive of a haematoma. Microscopically, the lesion showed a tumor composed of extensive osteoid formation and bone deposition. Many of the osteiod were rimmed by plump osteoblast with round nucleus, prominent nucleoli and moderate amount of cytoplasm. Some foci were highly cellular revealing round to spindle pleomorphic cells laying down osteoid in the form of interconnecting network.Mitoses were frequent with few osteoclast like giant cells.

Conclusion: In conclusion, this case demonstrates that, radiological imaging can help in the diagnosis of extraskeletal osteosarcoma. However, a biopsy is mandatory for a definitive diagnosis.

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INCIDENCE OF PROTEIN C AND PROTEIN S DEFICIENCY IN VENOUSTHROMBOEMBOLISM (VTE) PATIENTS IN HUSM

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Introduction: Although deficiency of Protein S and Protein C are known contributors to venous thrombosis, incidence data on this association are lacking in our population. The incidence data is very important as baseline information for future direction of thrombophilic work-out and management in our region. This study was designed to determine the incidence of Protein C and Protein S deficiency in VenousThromboembolism (VTE) patients in HUSM

Methodology: A retrospective study was conducted on 46 unrelated patients presented to HUSM with venous thrombosis from year 2004 through 2006. Clinical records and results of Protein S and Protein C were studied.

Result: About 17% revealed to have low Protein S, 13% had low Protein C and 6% had low level for both proteins. There was no significant association between level of protein deficiency and the severity and frequency of thrombotic event.

Conclusion: An association between the deficiency of the proteins and the incidence of thrombotic event is very difficult to be established since lifestyle and other physiological and pathological factors contribute to the variation on both sides. However, the relatively high incidence of Protein S and Protein C deficiency in VTE patients in HUSM, population based screening test for the protein deficiency may be worth.

ARTERIAL STIFFNESS IN YOUNG NORMOTENSIVES WITH AND WITHOUT PARENTAL HISTORY OF HYPERTENSION

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Introduction: Arterial stiffness may be an early marker for vascular changes associated with hypertension in young adults. Offspring of hypertensive parents had been reported to have higher blood pressure. This study aims to investigate whether arterial stiffness measured as augmentation index [AI] and carotid femoral pulse wave velocity [PWV] is increased among young normotensive with and without a history of parental hypertension.

Methodology: Measures of arterial stiffness as assessed by PWV and AI using the Sphygmocor device were performed in 166 healthy normotensive subjects between the ages of 18-40 years. These subjects were grouped into 2 groups, that were those with at least one parent having hypertension [n=63], and those where both parents did not have hypertension [n=103].

Results: Mean age and body mass index (± SEM) were 24.2±0.4 and 23.6±0.5 years; and 21.6±0.34 and 21.7±0.43 kg/m^2 respectively for groups with and without parental hypertension. Mean systolic blood pressure was the same for both groups at 114.1±0.8 and 114.2±0.7 mmHg. The value of AI for normotensives with and without parental hypertension were also similar, being 109.6±1.7% and 109.6±1.5% respectively. Mean PWV for both groups did not differ between the 2 groups, being 7.75±0.1 m/s and 7.94±0.1 m/s for the groups with and without hypertensive parents.

Conclusion: Young normotensive with parental history of hypertension, and those with no parental history of hypertension did not differ in their measures of arterial stiffness.

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INFLUENCE OF PLATELET RICH PLASMA ON OSSEOINTEGRATION IN CONTROLLED DIABETIC PATIENTS. PRELIMINARY RESULTS

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Introduction: Success rates of dental implants in controlled diabetics is less than normal patients and considering the large number of diabetic patients a solution and improvement is needed. Diabetic patients are known to have delayed bone and wound healing compared to normal patients. The objective of this study was to improve success rates by employing a minimally invasive implant and autogenous platelet rich plasma (PRP).

Methodology: This Non-randomized clinical trial employing a split-mouth design consists of patients selected from the diabetic clinic at the Hospital University Sains Malaysia. Using a one-stage surgical protocol, a total of 12 Mini Drive Lock implants (Intra-lock® USA) implants with a length of 10, 11.5, 13 and a diameter of 2.0 mm have been inserted in edentulous and partially edentulous patients. Patients included as controlled diabetic have HbA1c=7 or less, FBS=7mmol/L or less, RBS=10mmol/L or less. Total sample size is 16 patients, each receiving two implants (n=32 implants, 16=trial & 16=control), where one implant (without PRP) is placed, and another implant (with PRP) is placed on the contra lateral side of the same jaw. Preliminary results of 6 test and 6 control implants is reported. Radiographic evaluation was done at 3, 6 and 9weeks after placement. Measurements are done at five points around the implants using histogram and densitometry with the software VIXWIN 2000 Ver. 1.8.

Results: A total of 12 implants were placed, 1 implant did not attain primary stability at placement due to lack of bone width and was removed. At 9weeks all 11 mini implants placed showed osseointegration on radiographs (100%). Comparison between (PRP-coated) and (non-PRP) implants showed no significant difference.

Conclusion: The use of minimally invasive implants is recommended for diabetic patients as all 11 implants were successful at 9weeks. However platelet rich plasma coated and non-coated implants did not show statistically significant difference.

A CASE REPORT: GENERAL ANAESTHESIA FOR PATIENT WITH HOMOCYSTINURIA

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Introduction: Homocystinuria is a very rare autosomal recessive disorder of methionine metabolism, leading to an abnormal accumulation of homocysteine and its metabolites (homocystine, homocysteine-cysteine complex, and others) in blood and urine. This is caused by disruption of any of the 3 interrelated pathways of methionine metabolism-deficiency in the cystathionine B-synthase (CBS) enzyme, defective methylcobalamin synthesis, or abnormality in methylene tetrahydrofolate reductase (MTHFR). The major symptom of homocystinuria is caused by an elevated level of serum homocysteine, which is considered to adversely affect platelet function and the vascular system, leading to an increase risk of thromboembolic events particularly during anaesthesia and perioperative period. Because of the rarity of the case but potentially to be high risk of perioperative morbidity and mortality, we reported our experience in the undertaking of perioperative precautions and anaesthetic management of a patient with homocystinuria.

Case Report: A 7 year old Malay girl was diagnosed as a case of homocystinuria after family screening following her sister death at the age of 12 due to stroke which was related to newly diagnosed homocystinuria. She was planned for an elective right lens aspiration for bilateral ectopia lentis which was one of the common complications of homocystinuria. Proper precautions were taken to prevent perioperative thomboembolic complications by applying elastic stocking, intermittent pneumatic calf pump, heparin infusion at 4 unit/kg/h up to 24 hours postoperative and intravenous dextran 20 g (200 ml in total). Patient also was prone to develop hypoglycemia and nitrous oxide–induced neurological impairment. Therefore patient was infused with dextrose contained solution during preoperative fasting period and intraoperatively with regular blood glucose monitoring. Nitrous oxide was totally omitted as a maintenance anaesthetic gas.

Conclusion: Homocystinuria is very high risk for perioperative thromboembolic complications. However with proper precautions, we managed to provide safe and successful anaesthetic managements.

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A CASE REPORT: PANCYTOPENIA IN SYSTEMIC LUPUS ERYTHEMATOSUS.

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Introduction: Haematological complications are common in connective tissue diseases including systemic lupus erythematosus (SLE). These complications are due to various mechanisms. The complications include anaemia, thrombocytopenia, leucopenia and rarely pancytopenia. In the literature there have been different case reports of aplastic anaemia due to distruction of blood elements. Here we present a case which presented with pancytopenia and was found to be due to peripheral destruction of blood cells.

Case Report: A 50-years old female was presented with gum bleeding and epistaxis and was suspected to have acute promyelocytic leukaemia (APML). Her initial blood investigations showed pancytopenia with a prolonged activated partial thromboplastin time (APTT). However the bone marrow aspirate and trephine biopsy showed reactive changes and hypercellularity with no evidence of infiltration by abnormal mononuclear cells. Thus, APML diagnosis was excluded. During hospitalization, the patient developed malar rash. Other investigations showed a positive IgG anticardiolipin antibodies, direct Coombs' and antinuclear antibodies (ANA). Her blood counts showed very rapid improvement when she was started on prednisolone.

Conclusion: We want to highlight that 36% of SLE patients may present with haematologic complications. These include anaemia, thrombocytopenia, leucopenia and rarely pancytopenia. Therefore, screening for autoimmune diseases is suggested in patients presenting with pancytopenia. The disease course may differ significantly from other forms of pancytopenia and seems to carry a more favorable prognosis once effectively diagnosed and treated. In addition, hematological complications may precede other manifestations of SLE.

RETROSPECTIVE ANALYSIS OF HEART VALVE REPLACEMENT SURGERY IN HOSPITAL SAINS MALAYSIA: A DEMOGRAPHIC STUDY

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Introduction: Congenital valve disease remains a common indication for valve replacement in our region. Prosthetic heart valve replacement created potential problems for the patient postoperatively. Common complications include bleeding, thromboembolism, and reoperation.

Objectives: To analyze and study the demographic picture of patients having valvular heart surgery done in the Cardiothoracic unit, HUSM.

Methodology: This is cross sectional study of patients of all age group had undergone valves replacement and being follow up in HUSM. Patients underwent trans-thoracic Doppler echocardiography preoperatively and postoperatively. Information obtained by using secondary data recorded from January 2002 to May 2005 (3 _ years period).The study population consists a total of 58 patients. The inclusion criteria was all patients who had open heart surgery valve replacement with or without CABG and valve repair done in Cardiothoracic Unit, Hospital Universiti Sains Malaysia, from January 2002 to May 2005. Data for these patients was collected from the in patients' case files, out patient records, clinical interview or telephone calls. The demographic characteristics such as age, sex of patients who underwent valves replacement operation were determined. The distribution of NYHA classification, ejection fraction by echocardiography and co-morbid illnesses were recorded patient record.

Results: Gender distribution tends to be almost equal between both sexes with the mean age of 36.7 years old. The most common heart valve operation was Mitral Valve Replacement, whereby it included more then half of the total patients. This is followed by Double Valve Replacement which comprised one third of the population and Aortic Valve Replacement almost one fifth of the total. Almost half of all these patients needed concomitant procedure such as tricuspid valve repair (TAP), coronary bypass grafting, aortic root repair and excision subaortic membrane. Out of the 58 patients, two patients (3.4%) died within the first postoperative month and 4 (6.8%) died during follow up.

Conclusion: Most patients who were operated for valvular heart disease in the Cardiothoracic Unit, HUSM were in their 4th decade, with ejection fraction in grade I and NYHC class II with not much gender differences. Most of these patients do have some form of concurrent medical illness. The commonest valve disease causing valvular problem in this subset of patients was due to rheumatic valve disease and the most common valve replaced was the mitral valve.

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MULTIPLE SENSITIZATIONS TO AERO ALLERGENS AMONG PATIENTS WITH ALLERGIC DISEASES IN HUSM

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Background: House dust mites have been shown to play an important role in allergic diseases. However studies about predominant house dust mite species causing allergic reactions had been erratic. Studies prior to 1990 showed the predominance of Dermatophagoides *pteronyssinus*, however in 1996, Mariana & Ho reported that *Blomia tropicalis* was the most common house dust mite species. This study aimed to identify common aeroallergens among patients with allergic diseases by using allergen specific IgE test.

Methods: This study included 109 patients with allergic rhinis, atopic dermatitis and allergic asthma. They were tested for allergic reactivity to *Dermatophagoides farinae , D.pteronyssinus, and Bromia tropicalis* aeroallergens using allergen specific IgE test. The results were reviewed to determine the prevalence of the aeroallergens and further analyses were done to determine multiple sensitization.

Results: From 109 patients, the highest number of patients was positive to *D farinae (*78.9%), followed by *D.pteronyssinus* (*77.0%)* and then *B.tropicalis (*52.3%) aeroallergen. Further analyses revealed that 87.5% of the patients were positive to at least one aeroallergen, while 85.4% of patients were positive for both *D. farinae* and D.pteronyssinus and only 64.6% of patients were positive to all three aeroallergens.

Conclusion: This study showed that multiple sensitizations to *D. farinae*, *D.pteronyssinus* and *B.tropicalis was* common among patients with allergic diseases in HUSM

UNUSUAL CAUSE OF DYSPHAGIA: A CASE REPORT

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Case Report : A 22 year-old-male presented with complains of progressive, painless dysphagia to solid foods for a period of 3 months was referred to the Department of Radiology, TUTH for a barium swallow examination. He had past history of empirical anti-tubercular treatment twice, initially for pulmonary tuberculosis and later for tubercular cervical lymphadenitis. There is no history of caustic ingestion, operative intervention or any history suggestive of reflux oesophagitis. Sputum for AFB was negative. Detailed clinical history and examination revealed one of rare causes of dysphagia which was later confirmed on investigations. The case report discusses and highlights the importance of clinical history and examination even in the Department of radiodiagnosis for a proper reporting.

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ANTERIOR CRUCIATE LIGAMENT SURGERY AMONG ARMY PERSONNEL

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Introduction: Strenuous physical activity, such as military training, is known to demand a high degree of physical performance and to cause overuse injuries. The purpose of this study is to determine the occurrence of anterior cruciate ligament (ACL) reconstruction surgery among army personnel in Hospital Angkatan Tentera Lumut.

Methodology: We reviewed all sports related surgeries performed on army personnel in Lumut Military Hospital from December 2004 until November 2005. Demographic data of those underwent ACL reconstruction surgery were collected from surgical registry record and analyzed.

Result: There were 124 surgeries related to sport injury. Fifty seven percent were anterior cruciate ligament surgery. Only one patient was a female. The age ranged from 22 year old to 41 year old with majority from 31 to 35 year old.

Conclusion: Anterior cruciate ligament reconstruction surgery is the commonest sport related operation among army personnel in Hospital Angkatan Tentera Lumut.

TREATMENT OF NEGLECTED TRAUMATIC HIP DISLOCATION IN CHILDREN

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Introduction: Traumatic hip dislocation in children is as rare as three out of 1824 hip dislocations. Thus, report on neglected traumatic hip dislocation in children is scanty. Most surgeons do not have enough experience to make conclusion regarding its treatment. The natural history of avascular necrosis following this problem is also not well documented in literature.

Methodology: We retrospectively review 6 cases of Neglected Traumatic Hip Dislocation in children. The delay of 3 weeks or more is considered neglected. Patients age, period of neglect, method of reduction and stabilization, occurrence of avascular necrosis was assessed on plain radiograph, occurrence of recurrent dislocation and functional outcome were reviewed.

Results: Age of patients was between 3 to 8 years old (mean 4.5). The period of neglect was between 3 to 4 weeks. All patients had trivial injury. Four patients underwent closed reduction while 2 patients underwent open reduction through posterior approach after failing of closed reduction. All patients had painless stable hip at one to 3 years follow-up. Patient 4 had AVN at presentation showed a recovery at one year after open reduction. The other patients did not have radiological feature of AVN.

Conclusion: Traumatic hip dislocation can occur due to trivial injury. Those who were neglected for 4 weeks or less can be reduced by closed reduction. Posterior approach is a safe approach for posterior hip dislocation in children. Even though the neglected hip dislocation is associated with high risk of AVN, this short term study showed it produced a functional painless joint.

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ORBITAL ABSCESS – A RARE PRESENTATION OF MELIOIDOSIS

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Introduction: Melioidosis is caused by *Burkholderia peudomallei*, formerly known as *Pseudomonas pseudomallei*. It is endemic in Southeast Asia and Northern Australia. The commonest presentation is pneumonia with or without septicaemia but other presentation can involve soft tissue, bone, joint, genitourinary, CNS, facial or ocular infections, however melioidosis presented with orbital abscess was very rarely reported.

Case Report: A 55-year old Malay gentleman, who was newly diagnosed with diabetes mellitus, presented with prolonged low grade fever for three weeks and left eye swelling for five days. On examination there was no light perception in the left eye with positive relative afferent papillary defect. The left eye was severely chemotic and proptosed. There was pus discharged from fistula at the lateral part of upper eyelid. The eye movement was limited in the left eye. Optic disc was pale with presence of choroidal fold over the macula. Initial CT scan of the brain and orbit showed left periorbital celliulitis with an acute left sphenoidal sinusitis. Eye swab culture isolated *Pseudomonas* spp., whereas blood culture isolated *Pseudomonas cepacia*. He was treated with intravenous ceftazidime, cloxacillin and intravenous metronidazole for 2 weeks. His condition improved initially. However, upon completion of the antibiotics the proptosis worsens. A repeat CT scan brain and orbit showed left orbital abscess with extension to the left temporal lobe. Swab culture from a fistula at the lateral part of his upper eyelid grew *Burkholderia peudomallei*. He was the treated with high dose parenteral intravenous ceftazidime 2 gm tds with oral co-trimazole 650 mg bd for two months. The proptosis subsided and patient able to move the eye. The vision remained no perception of light.

Conclusion: This case illustrates a potentially fatal infection caused by melioidosis. It has been shown to manifest clinically in various conditions although occurrence in the eye is rare.

BILATERAL CRYSTALLINE LENS IN THE ANTERIOR CHAMBER IN AN 8-YEAR OLD HOMOCYSTINURIA GIRL

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Introduction: Homocystinuria is a rare autosomal recessive disease due to cystathionine-β-synthetase deficiency. Lens subluxation is a common ocular manifestation, in which more than 90% of these patients present with dislocated lenses in the third decade of life. This case illustrates a rare incidence of bilateral lens dislocation that occurs in an extremely young patient with homocystinuria.

Case Report: An 8-year old girl who was diagnosed as homocystinuria since the age of 4-years old presented with recurrent attack of spontaneous anterior lens dislocation in the right eye. A successful plain lens removal with anterior vitrectomy was performed in her right eye under general anaesthesia. She presented with almost similar problem in her left eye two weeks later. However, this was made worse by corneal endothelial decompensation owing to massive corneal-lenticular touch. She was managed similarly as in her right eye with good outcomes. Thorough investigations were done preoperatively. The general anesthesia was successful in both surgeries. There was no sign of systemic or ocular thromboembolism during the post operative period. She obtained a good visual outcome after the surgery.

Conclusion: Managing bilateral lens dislocations in homocystinuria patient especially in this age group is a great challenge. Multidisplinary team approach consists of ophthalmologist, anaesthetist and paediatrician is the key of success in the treatment mainly during and after the surgery.

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A DELAYED DISCOVERY OF INTRALENTICULAR METAL FOREIGN BODY: CASE REPORT

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Introduction: Intralenticular foreign body comprise of 5% to 10% of all intraocular foreign bodies. It can lead to serious ocular complications especially the development of siderosis bulbi which is a sight threatening condition. This case illustrates a late discovery of a rare presentation of intraocular foreign body, but fortunate to gain good visual outcome following a prompt treatment.

Case Report: A 25-year old healthy man presented with progressive visual loss in the right eye, after hammering iron-containing metal on metal two months prior to consultation. His right visual acuity was 1/60 with a self-sealed corneal laceration wound with an iris hole noted coincide with the location of the corneal wound. There were signs of siderosis bulbi presence with moderate anterior chamber cells, numerous iris pigments on the anterior lens capsule and heterochromic iris. A metal intralenticular foreign body was noted with localised lenticular damage. The electrooculogram supported the siderosis bulbi findings. The intralenticular foreign body was removed surgically, followed by lens aspiration and intraocular lens implantation. He gained good visual acuity post operatively with cessation of the signs of ocular siderosis.

Conclusion: Intralenticular foreign body is a rare presentation. Presence of siderosis bulbi should alarm the possibility of intraocular foreign body. Early surgical removal enables good visual result and prevents irreversible siderosis.

LACRIMAL BONE CYST – A CASE REPORT

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Introduction: Bone cyst is a rare benign bone tumour which normally affects the vertebral region or long bones. Despite its benign in nature, this lesion is expansile and may cause local compression and destruction of bone and soft tissues. Involvement of facial bones is very uncommon, and the lacrimal bone is very rare. Diagnosis usually achieved by radiological investigations, operative findings, and confirmed by histopathological findings. In achieving the diagnosis, it is very important to correlate the clinical, radiological and histological features of the entity to avoid confusion with other possibly neoplasms. Excision of the cyst provides complete cure for the patient.

Case report: A 15 year-old Malay girl who presented with progressive right eye proptosis for 4 years duration. However, the vision was good and no opthalmoplegia or diplopia. She had recurrent history of sneezing, but no nasal blockage, epistaxis or nasal pain. The nasal symptom was controlled by nasal spray. She had 1 episode of eye infection in October 2005 and was treated as out-patient. CT scan paranasal sinus done in June 2006 suggests the presence of a large right lacrimal bone cyst. Removal of bone cyst, right uncinectomy, maxillary antrostomy, bulla ethmoidectomy and removal of small part of right frontal process of maxilla was done in December 2006. Following operation, she was well and free from symptoms.

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CLINICAL PRESENTATIONS AND RADIOLOGICAL FEATURES OF OPTIC PERINEURITIS – CASE SERIES

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Introduction: Optic perineuritis, also termed perioptic neuritis, is an uncommon idiopathic inflammatory disorder involving the optic nerve sheath. The purpose of this case series is to describe the clinical and radiological features of idiopathic optic perineuritis, with particular emphasis on those features that help to distinguish this condition from optic neuritis.

Methodology: We reviewed the medical records of 3 patients with optic perineuritis who were seen in the neuro-ophthalmology clinics at Tan Tock Seng Hospital, Singapore.

Results: The age of the patients was 38, 42 and 65 years. Two were female patients and one was male. All had unilateral involvement with visual loss and pain associated with eye movement. Two experienced progressive visual loss over two weeks. One patient had history of Tolosa-Hunt syndrome nine years ago, another with a history of myelitis 12 years prior to this episode of visual loss. Both these prior episodes resolved. Visual acuity was counting finger or worse in two patients and 6/24 in the last, dyschromatopsia was present in all patients. All three patients had swelling optic disc. Visual field test showed superior field defect in two patients and inferior field loss in one. Magnetic resonance imaging demonstrated circumferential enhancement around the optic nerve in all cases with one further demonstrating intraorbital extension. All serological tests for autoimmune diseases and Veneral Disease Laboratory Test were negative. The cerebrospinal fluid analyses in all patients were normal. Response to corticosteroids was dramatic; however, one patient remains corticosteroid dependent.

Conclusion: In contrast to those with optic neuritis, patients with optic perineuritis present with visual loss progressing for more than 2 weeks. Magnetic resonance imaging demonstrates enhancement around, rather than within, the optic nerve. These patients are more steroids dependent and required prolong treatment. Despite this, the risk of recurrence after cessation of corticosteroid is greater.

A STUDY ON LONG TERM OUTCOME OF EYES WITH ACUTE ANGLE CLOSURE AND IN PROPHYLACTIC LASER PERIPHERAL IRIDOTOMY

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Introduction: To study the long term outcome of laser peripheral iridotomy (LPI) post acute angle closure and prophylactic eyes.

Methodology: A retrospective study was based on 52 eyes (27 patients; 17 Malays, 10 Chinese). All patients underwent either for emergency treatment or prophylactic LPI. Twenty three eyes had acute angle closure and 29 eyes had narrow angle prior to LPI. Intraocular pressure (IOP), gonioscopy and slit lamp examination was conducted before and after LPI for at least 5 years. After 5 years of follow up, those who demonstrated significant glaucomatous visual field defect and changes in cup disc ratio is considered to be primary angle closure glaucoma (PACG).

Results: The mean IOP at presentation for eyes with acute attack was 49.3 ± 16.1mmHg. The mean duration of symptom prior to presentation was 29.6 ± 43.8 days. There was significant association with those patients acute attack presented 7 or more days from the initial symptom with development of PACG (p=0.025). Sixty five percent of eyes had IOP 50 mmHg or less and 34.8% of eyes presented with IOP more than 50 mmHg. However there was no difference between patients who presented with IOP of more than 50 mmHg and less than 50 mmHg in development of PACG (p=0.28). Ninety one point three percent of eyes with acute attack developed glaucomatous changes after 5 years and the remaining 8.7% remained as narrow angle. Interestingly, all the eyes with prophylactic LPI developed PACG after 5 years. The mean IOP for post LPI for eyes with acute attack was 25.9 ± 11.5 mmHg.

Conclusion: Duration of symptoms prior to presentation is an important factor to determine the progression of glaucomatous damage of nerve fibers in acute angle closure glaucoma. More than 91 % of post acute angle closure eyes and all the prophylactic eyes underwent LPI developed PACG after 5 years.

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HISTOLOGICAL FEATURES OF LATE AND CHRONIC EXPOSURE OF HIGH DENSITY POROUS POLYETHYLENE ORBITAL IMPLANT (MEDFOR) FOLLOWING SECONDARY IMPLANTATION IN 6 YEARS OLD MALAY GIRL

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Introduction: Histological features of the explanted orbital implant are rarely described. Understanding of the factors that lead to late and chronic exposure of the implant is very important to reduce the allograft failure of these expensive implantations. Microscopically focusing at the vascular ingrowths, capsule formations and infection foci at the anterior surface of the exposed implant will provide vital information in the rectification of surgical management.

Case report: A 6 year-old Malay girl who was referred for further management of chronic implant exposure of 3 months duration. It was a secondary implantation whereby the Medfor alloplastic was implanted sometimes after primary enucleation done back in 2002. She was diagnosed to have right eye retinoblastoma without extraocular involvement. No chemotherapy or external beam radiation was given. An attempt to cover the exposed implant with autologous fascia lata was carried out at the referring institution. However the implant was exposed and was complicated with infection. Clinically, after the infection set in, the exposure defect size was increase from 1x1mm to 12x10mm. There were blood stained serous discharges and mucoid secretions noted coming out from the surrounding soft tissue edges of the exposed implant. Conjunctivae were minimally injected. Patient was noted to have mild grade fever however there was no secondary systemic infection detected. Swab culture isolated *Haemophilus sp.* Histologically, revealed significant clumps of inflammatory polymorphic cells presence extending from the exposed anterior surface to deep middle half of the implant. Fibrovascular layers were noted encapsulating the rest of the embedded implant surfaces. Vascular ingrowths of the implant were abundant except at the anterior zone.

Conclusion: Late and chronic exposures of the implant were histologically related to the presence of infective foci and compromised anterior vascularity.

SURGICAL MANAGEMENT OF SEVERE OOCLUSION AMBLYOPIA SECONDARY TO PALPABRAL CAPILLARY HEMANGIOMA IN 6 MONTH OLD GIRL

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Introduction: Capillary haemangioma is the most common orbital and eyelid tumour of infanthood. The haemangioma growth rapidly and causes severe amblyopia secondary to anisometropia, induced astigmatism and occlusion of the visual axis. Medical treatments either oral or intralesional steroids injections though considered to be the most acceptable form of primary treatment, are often debatable. In this case, surgical management of the lesion was chosen as definitive treatment.

Case report: A 6 month-old Malay girl who developed rapid and progressive swelling of the left upper lid since birth. Clinically the lesion occupied the whole length of the left upper lid causing complete mechanical ptosis. However, the overlying skin was normal in complexion. Minimal cutaneous component was noted at the temporal site near the lid margin. Other ocular examinations were unremarkable and refraction was not able to perform. CT scan showed a well circumscribed lesion of capillary hemangioma with multiple small vascular feeders. There was no Intraorbital extension. Intralesional steroid injection was attempted once. However the lesion continued to increase in size. Surgical excision was performed under operating microscope. The lesion was completely removed with special care of recognizing the feeding vessels. Freezing cryoprobe was used to mobilised and held the lesion. Residual cutaneous involvement of the lesion was injected with triamcinolone acetate. The cosmesis appearance was improved and good lid function was achieved after the operation. Histological examination confirmed the diagnosis of capillary haemangioma.

Conclusion: Surgical excision of the upper lid capillary hemangioma in this patient resulted in immediate resolution of occlusion amblyopia and esthetic disfigurement.

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EXCELLENT VISUAL RECOVERY IN CAROTID CAVERNOUS FISTULA PATIENT POST EMBOLISATION

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Introduction: About 76% of carotid cavernous fistula (CCF) cases are due to trauma. The common ocular complications of CCF include visual loss due to multiple insults to the visual system, cranial nerves paralysis and cosmetic concerns of proptosis. Late and untreated CCF may lead to irreversible blindness in which 89% of patients eventually experienced loss of vision. Early and prompt treatment had preserved vision in 94% of cases. We like to report a patient who experienced recovery of vision after successful occlusion of the fistula.

Case report: A 25-year old army presented with left eye proptosis associated with redness, diplopia, reduced vision and tinnitus. He had involved in motor vehicle accident four months prior to the onset of symptoms. On examination, vision was 6/60 OS. There were pulsatile proptosis, ptosis, congested conjunctiva, cork-screw episcleral vessels, ophthalmoplegia and orbital bruit. Intra ocular pressure (IOP) was slightly elevated with fundus showed hyperaemic disc, dilated and tortuous retinal vessels and generalised retinal haemorrhages. The right eye was normal. Angiography confirmed the diagnosis of direct type of carotid cavernous fistula. Coil embolisation was performed under Digital Subtraction Angiogaphy guidance. Post procedure the vision was improved to 6/6. The extraocular muscle movement and IOP were normal. The optic disc and retinal vessels were normal.

Conclusion: Carotid cavernous fistula should be diagnosed and treated early to prevent serious ocular complication of vision loss. Endovascular embolisation is the current treatment of choice.

SALIVARY PARAMETERS AS CARIES RISK FACTORS

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Introduction: The etiology and pathogenesis of dental caries are multifactorial, and there are marked variations in individual susceptibility to the disease. Studies has shown, saliva, as an intrinsic host factor, play a key role in modulating the initiation and progression of caries. A lot of studies were done and resulted in non-conclusive association between salivary parameters and caries.
This study was conducted to determine the association of salivary properties and dental caries status among patient attending government dental clinics in Kota Bharu, Kelantan.

Methodology: This is a cross sectional study of patient attending government dental clinics in Kota Bharu. 170 patients who fulfill inclusion and exclusion criteria were selected at every 10th interval. Based on DMFT score, they were grouped as active caries (at least one untreated D) and no caries (D=0). Saliva parameters were assessed using BUFFER$^{@}$ TEST KIT- by GIC Co. Data was analyzed using SPSS version 13.

Results: Non-caries group were found to have higher pH and stimulated flow rate ($p < 0.05$).

Conclusion: It is concluded that those with low pH and low salivary flow rate will at higher risk to develop caries.

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FACTORS INFLUENCING SALIVA PARAMETERS AMONG PATIENT ATTENDING GOVERNMENT DENTAL CLINICS IN KOTA BHARU DISTRICT

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Introduction: Saliva is a complex body fluid that plays a critical role in maintenance of oral health. Individuals with lower value of salivary parameters are deemed to have diminished buffer capacity, and they seem to be at increased risk for caries. The aim of this study was to determine age, sex, smoking status, type of work, level of education, frequency of dental attendance and causes of dental attendance and their influence on saliva parameters among patient attending government dental clinics in Kota Bharu district.

Methodology: This is a cross sectional study of patient attending government dental clinics in Kota Bharu. 161 patients who fulfill inclusion and exclusion criteria were selected at every 10th interval. Saliva parameters were assessed using BUFFER$^{@}$ TEST KIT- by GIC Co. Data was analyzed using SPSS version 13.

Results: PH in smokers and male subjects are lower ($p < 0.05$). Male stimulated salivary flow rate are higher compare to females ($p= 0.003$). Smokers also have low buffer capacity ($p= 0.038$). Other factors (age, type of work, level of education, frequency of dental attendance and causes of dental attendance) are statistically not significant.

Conclusion: Sex and smoking status have association with saliva parameters. Male are found to have low in pH but stimulated saliva flow rate are higher then female. Smokers have low in pH and buffer capacity compare to non smokers group.

PREVALENCE AND FACTORS ASSOCIATED WITH EDENTULISM AMONG ELDERLY IN KOTA BHARU, KELANTAN

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Introduction: Edentulism or the complete absence of teeth is a poor public health outcome. It substantially affects oral and general health status of elderly people. The aim of this study is to determine the prevalence of edentulism and the factors associated among elderly people.

Methodology: A cross-sectional study was conducted in the district of Badang, Kota Bharu, Kelantan from September 2006 to February 2007. A total of 506 community dwelling elderly aged 60 years and over were randomly selected. Respondents were interviewed for socio-demographic information at their homes. Oral examination was carried out to record edentulism.

Results: The prevalence of edentulism was 56% (95%CI= 52, 60). Sixty two percent (62%) are women. In bivariate analyses, it was observed that age and gender were positively associated with edentulism, whereas education and employment were negatively associated with edentulism. In multiple logistic regression model adjusted for activities of daily living, employment and education, showed that being in the age group of 70-79 years old is 1.6 (95%CI=1.20,2.89) times as likely to be edentulous than those in the age group of 60-69 years old. Being women is 2.0(95%CI=1.18, 3.45) times as likely to be edentulous than men.

Conclusion: The prevalence of edentulism among elderly aged 60 years and over in Kota Bharu is higher compared to findings of the National Oral Health Survey for Adults (NOSHA) 2000, which is 39%. Being female and age 70 years old and over is more likely to be edentulous. Therefore, efforts in reducing edentulism should begin by enhancing the oral health promotion strategies to young people especially women to retain teeth for life.

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A PRELIMINARY STUDY ON PATIENT AWARENESS OF SMOKING AND PERIODONTAL DISEASE AT UNIVERSITI KEBANGSAAN MALAYSIA DENTAL FACULTY

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Introduction: Established research confirmed the association on cigarette smoking and periodontal disease; however no data has been obtained on patients awareness in relation to smoking and periodontal disease in Malaysia. The objectives of this study were to evaluate patient's knowledge on periodontal disease as an oral effect of smoking and identify the source of information on the effect of smoking.

Methodology: A cross sectional study was carried out on newly registered adult patients attended Klinik Rawatan Utama, Dental Faculty Universiti Kebangsaan Malaysia between September to December 2006. They were required to answer closed ended questionnaires on oral effects of smoking.

Results: A total of 259 patients participated in the study with 207 (74.9%) patients were non smokers, 15 (5.8%) were ex-smokers and 37 (14.3%) were current smokers. Only 36.7% of the patients were aware of periodontal disease as an oral impact to smoking. Dentist advice accounted 14% of the overall sources of information on effects of smoking which the patients obtained. Few smokers (35.1%) acquired the knowledge regarding impact of smoking from dentist.

Conclusion: There is still low level of patients' awareness on periodontal disease and smoking. Dentist should play a role in providing information on impact of smoking to oral health especially to smokers.

THE RELATIONSHIP BETWEEN THE STAGES OF CERVICAL VERTEBRAL MATURATION AND DENTAL CALCIFICATION AMONG MALAY : A PRELIMINARY STUDY

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Objective: The aim of this study was to investigate the relationship between stages of cervical vertebral maturation and calcification stages of various teeth among Malay.

Method: The study samples consisted 6 males and 4 females Malay age ranged from 8 to 17 years. Samples had no history of orthodontic treatment, any permanent teeth extraction or impacted teeth. A total of 10 orthopantomogram and 10 lateral cephalogram radiographs were analyzed. The calcification stages of the left mandibular canines, first and second premolars, and second molars were assessed according to the Demirjian's system (1973). The stages of cervical vertebral maturation were determined from lateral cephalogram according to Baccetti et al (2002).

Results: The age for males was from 8-13 years and females from 9-17 years old. The assessment of cervical vertebral maturity (CVM) found CVM stages I and II for males, and I and IV for females. CVM stage I for males was found to be coincide with canine stage F (100%), first premolar stage F (75%) and second premolar stage E (50%). CVM stage II in males coincides with canine, first premolar and second molar stage G (100%). CVM stage I for females showed no consistent pattern with dental calcification stages. CVM stage IV for females coincide with canine stage H (100%), however, were coincide with different dental maturity stages for first and second premolars, and second molar.

Conclusion: This suggests that there is a relationship between cervical vertebral maturation and dental calcification stages in Malay sample. However, further study is recommended in a larger sample size.

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IN VITRO *DETECTION OF MOLARS' FURCATION CANALS OF MALAYSIAN POPULATIONS*

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Background: Accessory canals are secondary canals that emanate from the main canal and travel at an angle alongside it before exiting into the periodontal ligament space. Under the molar root furcation region, the accessory canal known as furcation canal. The accessory canals in the molar furcation region could represent a connection, well separated from the apical region, between dental pulp and periodontal tissues. The involvement of this area due to the periodontal and/or pulpal diseases could complicate dental therapies or affects the overall dental treatment plan of the patient. However, there appears to be controversy in the literatures with respect to the prevalence of furcation canals in permanent molars for different population. The knowledge regarding the prevalence of this canal amongst Malaysian population would assist in decision making in the diagnosis of periodontal and pulpal diseases.

Methods: The extracted upper and lower first and second molar teeth were collected from various government and private dental clinics in Malaysia. After cleaning of external tooth surfaces and preparation of access cavities, the teeth were immersed in sodium hypochlorite bath of 5.25% for 1 hour and were agitated every 5 minutes. Following rinsing and drying the teeth at room temperature for 24 hour, the teeth were labeled, the access cavities were closed and all the external root surfaces except the furcation were coated with three layers of nail varnish. The teeth were stored in 0.5% basic fushcin for at least one week. After rinsing and sectioning the tooth at the cemento – enamel junction, the pulp chamber was examined for the presence of canals using a stereomicroscope.

Results: A total of 137 extracted teeth consisting of 26 maxillary first molars, 24 maxillary second molars, 45 mandibular first molars, 42 mandibular second molars were used as samples. The furcation accessory canals were detected in 35 % of maxillary first molars, 17% of maxillary second molars, 20% of mandibular first molars, and 17% of mandibular second molars. However, the results were not statistically significant.

Conclusions: While data such as ethnicity of each extracted tooth not available and assumption made that the teeth belong to Malaysians, the incidence of furcation canals of these samples similar to other population described in the literatures although different techniques used to reveal the canals.

NONSURGICAL MANAGEMENT OF AMLODEPINE-INDUCED GINGIVAL ENLARGEMENT: A CASE REPORT

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Background: Medications to control systemic diseases may give unwanted adverse effects to patient's oral condition. For example, calcium channel blockers may be used to control patient's hypertension. However, only calcium channel blockers are the antihypertensive groups that known to cause gingival enlargement. Subclasses drugs such as nifedipine, diltezam, verapamil, felodepine and amlodepine are amongst which have been identified to cause some degree of gingival changes. The risk factors and the severity of gingival enlargement will depends upon the age, sex, drug dosages and regimes, concomitant medications, patient's periodontal condition and genetic factors. This paragraph described the presentation of amlodepine-induced gingival enlargement combined with chronic periodontitis and the non-surgical management of the enlargement.

Case Report: A 53 year-old diabetic and hypertensive Malay male was referred to Periodontology Department, UKM Dental Faculty for management of mobile teeth and his swollen gingiva. Medically, his hypertension is control by amlodepine and diabetic controlled by oral hypoglycemic agents. An oral examination revealed increased plaque and gingival scores, generalized periodontal probing pocket depth around 7-12mm and the gingival enlarged especially around the interdental areas. Diagnoses of amlodepine-induced gingival enlargement and generalized severe chronic periodontitis were made. The initial therapy consist instructions of effective plaque control measures and root surfaces instrumentation over four visits. No surgery for removal of the excess gingival recommended over these period. The edematous gingival, plaque and bleeding scores have reduced over the series of treatment sessions.

Conclusion: Non-surgical management of drug-induced enlargement can include meticulous plaque and plaque retentive factors removal and/or changing the medications. While the alternative medications can only be started after a close liaison between the patient's physicians, the commencement of plaque control measures should be the first step in the treatment of drug-induced gingival enlargement. Moreover, there is evidence that good oral hygiene and frequent professional removal of plaque decreases the degree of the gingival enlargement present and improves overall gingival health.

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UTILIZATION OF ROTHERMAN ATTACHMENT IN OVERDENTURE CONSTRUCTION.

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Introduction: Overdentures are complete or partial dentures which utilizes one or more tooth roots for their support. The concept of overdenture came about in the late 1960's when dentists became more concerned with conservation of teeth. In addition to supporting the prosthesis, the abutment tooth will preserve the residual alveolar bone in that area. This in turn will prevent dislodgement of the denture. Some of the disadvantages of overdentures are: fracture of the acrylic in the abutment tooth area, wear of the precision attachments, continual maintenance of the underlying abutment tooth and technical difficulty in its construction. This case reports on the use of a precision attachment in the construction of an upper denture.

Case report: A 67 year old lady presented to the Prosthodontic Clinic at the Queen Mary Dental Hospital complaining of difficulty in eating due to the loss of several teeth in both jaws. An upper denture was made, however it was not successfully worn because the patient found it to be too bulky. Upon examination, the patient had a Kennedy Class II pattern of tooth lost in the maxilla and a Kennedy Class III pattern in the mandible. The pattern of tooth loss combined with the morphology of the remaining alveolar bone in the maxilla posed a problem of retention of the upper dentures. To overcome this setback, a Rotherman attachment was used in the upper partial overdenture construction; utilizing the palatally erupted canine as the abutment.

Conclusion: In cases with reduced retentive features, overdentures are still a viable and effective option in replacing teeth.

TREATMENT OUTCOME IN NONSYNDROMIC MALAY CHILDREN WITH UNILATERAL CLEFT LIP AND PALATE EVALUATED WITH GOSLON YARDSTICK

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Purpose of the study: The purpose of this study was to assess the treatment outcome in term of dental arch relationships according to the Great Ormond Street London and Oslo (GOSLON) Yardstick among Nonsyndromic Malay children born with unilateral cleft lip and palate (UCLP) in Kelantan

Materials and Methods: Dental study models of eighty-two non-syndromic Malay children with UCLP from archives of Orthodontic Clinics, School of Dental Science, Hospital Universiti Sains Malaysia (HUSM) before orthodontic treatment and alveolar bone grafting were applicable for ranking on the Yardstick. The subjects aged 8-12 years. Oral Maxillofacial and Plastic Surgeons from Kota Bharu Hospital and HUSM performed the primary surgeries. The strength of agreement of rating was assessed with weighted kappa statistics showing good reproducibility.

Results: 50% of UCLP cases were males and 50% were females, 62% of cases were left-sided while 38% were right-sided. Goslon scoring showed that 2.4% of the sample were in grade 1, grade 2: 24.4%, grade 3: 35.4%, grade 4: 31.7%, grade 5: 6.1%. The mean Goslon index score was 3.15. Females and left-sided UCLP cases scored better outcomes than males and right-sided cases but these differences were statistically not significant.

Conclusion: Dento-alveolar relationship outcomes of UCLP Malay children are considered to be satisfactory according to Goslon Yardstick. Further orthodontic treatment will be required for most of UCLP patients to achieve good dento-alveolar relationships.

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A COMPARISON OF ARTERIAL STIFFNESS BETWEEN SUBJECTS WITH LOCALISED AND GENERALISED SEVERE CHRONIC PERIODONTITIS: A PILOT STUDY

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Introduction: Recent studies showed that elevation of C-reactive protein and endothelial dysfunction is associated with Chronic Periodontitis (CP). Studies have proved that periodontal disease can induce atherosclerosis and it has strong relationship with arterial stiffness as determined by pulse wave velocity (PWV). The aim is to compare aortic stiffness as carotid-femoral PWV between subjects with localised and generalised severe CP.

Methodology: Five subjects with localised severe CP and 12 subjects with generalised severe CP were recruited in a cross sectional study. Subjects were excluded if they had systemic diseases other than CP. Periodontal examination was done and carotid femoral PWV was measured using the Complior® machine in both groups. Diagnosis of localised and generalised severe CP was made based on clinical attachment loss and radiographic bone loss. Data was analyzed using SPSS.

Results: Carotid femoral PWV was higher among subjects with generalised severe CP as compared to those with localised severe CP although the difference did not reach significant level. Median (interquartile range) PWV was 7.5 (1.50) and 7.0 (1.03) m/sec respectively in subjects with generalized and localized CP ($p = 0.224$). There was no correlation of PWV with plaque index and bleeding point index.

Conclusion: Among subjects with CP, aorta is stiffer in generalised than in localised CP. This difference however did not reach significant level probably due to inadequate sample size. Further studies with larger sample size are required to reveal the statistical significance.

THE CRANIOFACIAL MORPHOLOGY OF A THALASSAEMIA INTERMEDIA PATIENT

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Introduction: Thalassaemia is one of the inherited haemoglobin disorders which is known to cause skeletal changes and growth retardation. The most prominent and well known orofacial features of thalassaemia are prominent cheekbones and a prominent premaxilla with depression of the bridge of the nose often referred to as "rodent" or "chipmunk" faces. These features together with other skeletal features were mainly described in β-thalassaemia patients. Indeed, other forms of thalassaemia can cause distinctive craniofacial features but little is known about it.

Case report: A fourteen years old Malay girl diagnosed with Hb-H Constant Spring at the age of seven months and started transfusion since that time present with a moderate craniofacial deformity with mild maxillary overgrowth, protrusion of the upper and lower anterior teeth, bulging of the frontal and cheek bones and slight depression of the nose. The cephalometric findings show Class II skeletal pattern. The maxillary mandibular plane angle and Articulare angle are increased (MMA=31°; SArGo= 15°) which suggest vertical growth direction of the mandible. The upper and lower incisors are proclined (UInc to MxPl= 123°; Linc to MnPl=98°). Soft tissue analysis revealed acute nasolabial angle (NLA=86°) and upper and lower lips are everted about 6-7mm from E line. The patient´s height and weight are below the normal range (H=131.5 cm; w=26 kg) and assessment of cervical vertebrae show cervical vertebral maturation stage II(CVMS II) which suggest delayed skeletal maturation of the patient.

Conclusion: Although Hb-H Constant Spring is an α-thalassaemia and falls into thalassaemia intermedia phenotype but these features are similar to the typical features of β-thalassemia major which have been described in many reports. These findings suggest that more detailed studies for investigation of the craniofacial features and underlying factors which contribute to these features are needed to be conducted in Malaysia.

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ORAL HEALTH IMPACT ON NUTRITIONAL HEALTH AND QUALITY OF LIFE AMONG AN ADULT POPULATION

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Introduction: Deteriorating oral health can be a cause for altered eating habits, which can further affect the nutritional status of an individual. The objective of this study was to explore the association between loss of tooth, denture wearing and nutritional health status among a group of adults attending a government dental clinic in a semi-urban settlement.

Methodology: This cross-sectional study comprised 307 patients attending a government dental clinic, who were 45 years and older. Data was collected using a pre-coded questionnaire to assess nutritional health, socio economic and demographic background and a clinical oral examination. The nutritional health instrument (NHI) consisting of eight questions measured subject perceived changes in diet and nutrition related habits.

Results: The mean age of subjects was 61.73 years (range – 45 to 88 years) and the majority had one or more chronic oral health problem or disabilities. Among the subject group who came for treatment, females (60.4%) outnumbered males (39.6%). Although 67.5% of the subjects had perceived good medical health, only 12.3% indicated good perceived oral health and from the questionnaire it was noted that one-fifth (20.2%) of the subjects were with high nutrition risk. The NHI detected highest impact on change in eating habit (21%) and loss of body weight (21%) items due to oral health problems. 53.5% of female subjects compared to only 42.6% male were adequately nourished whereas 22.1% males compared to 18.9% females were high nutrition risk subjects. There was a significant difference ($p > 0.01$) in nutritional health among those aged above and below 65 years.

Conclusions: Oral impacts especially due to tooth loss that affected the quality of life were relatively common in this sample. Removing teeth with poor prognosis and replacing it early with dentures can help improve nutritional health and quality of life.

CONGENITAL NASAL PYRIFORM APERTURE STENOSIS

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Introduction : Congenital nasal pyriform aperture stenosis is rare cause of airway obstruction in the newborn. Immediate recognition and appropriate therapy are required for management of these infants.

Case Report : We report a case of a female infant that was referred to us six hours of delivery which was noted to have noisy breathing and subcostal recession. Our initial examination showed obvious stertor only on crying and mild subcostal recession. Cold spatula test indicated a patent nasal airway and we were able to pass the smallest suction tube through both nostril. Initially a conservative treatment with nasal drops was advocated however patient condition deteriorated the next day and required an orotracheal intubation. Our subsequent examinations and assessments post extubation were suggestive stenosis of the pyriform aperture. A CT paranasal sinuses showed overgrowth nasal processes of maxilla causing obstruction of the pyriform apertures with megaincisors. The CT brain also revealed semilobar holoprosencephaly and Dandy-Walker malformation/variant. Therefore the diagnosis congenital pyriform aperture was made based on clinical and radiological findings. Subsequently she underwent dilatation using endotracheal tube up to the size 3.0 mm for both nostril and was stented for 2 weeks.

Conclusion : In general a conservative management is recommended, but in severe cases or those in which conservative management fails surgical management should be considered.

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JOB CONTENT IN RELATION TO SELF-PERCEIVED OF STRESS, ANXIETY AND DEPRESSION IN MALE AUTOMOTIVE ASSEMBLY WORKERS: A STRUCTURAL EQUATION MODELING APPROACH

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Introduction: The relationships between job content (job demand, job control and social support) and stress, anxiety and depression in male automotive assembly workers were assessed among 628 male automotive assembly workers in Malaysia

Methodology: The validated Malay version of the Job Content Questionnaire (JCQ) and Depression Anxiety Stress Scale (DASS) were used to measure job content, stress, anxiety and depression. A structural equation modeling (SEM) was applied to test the theoretical model using AMOS 6.0. A Chi Square (X^2), Degree of Freedom (*df*) and *p* value (*p*) of greater than 0.05 was considered indicative of exact model fit; and fit indices included the Goodness-of-Index (GFI), Adjusted Goodness-of-Index (AGFI), Comparative-of-Fit-Index (CFI) and Root Mean Square Error of Approximation (RMSEA) as measure of approximate fit.

Results: It revealed that the job demand was directly and positively related to stress, and indirectly related to anxiety and depression through stress. Social support was directly and negatively related to stress and depression; and indirectly and positively related to anxiety through stress. Stress was directly and positively related to anxiety and depression. Anxiety was directly and positively related to depression. This model fits the data reasonably well and goodness of fit indices (_^{2} = 6.41, *df* = 6, *p* = 0.378; GFI = 0.10, AGFI = 0.99, CFI = 1.00, RMSEA = 0.01).

Conclusion: The findings suggest that the deleterious effects of job demand and poor social support on stress and depression; and a mediating role of stress on the relationship between job demand, social support and anxiety and depression in male automotive workers should be given due recognition.

ASSOCIATIONS BETWEEN JOB STRAIN, ISO-STRAIN AND SELF-PERCEIVED QUALITY OF LIFE IN AUTOMOTIVE ASSEMBLY WORKERS: A STRUCTURAL EQUATION MODELING APPROACH

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Introduction: Over past two decades, research on the association between job stress and health has been greatly influenced by the Karasek's job strain and iso-strain models. This study aims to test two hypotheses on association of job strain and iso-strain models to self-perceived quality of life (QOL) in male automotive assembly workers in Malaysia.

Methodology: In a cross-sectional study, 628 male automotive assembly workers were self-administrated the validated Malay version of the Job Content Questionnaire (JCQ) and World Health Organization Quality of Life Brief (WHOQOL-BREF). The job strain model was conceptualized as interaction between job demand and job control; whilst iso-strain model was characterized as interaction between job demand, job control and social support. Self-perceived QOL was assessed with the following factors: environment, social relationships, psychological and physical. A structural equation modeling (SEM) was applied to test two hypotheses models using AMOS 6.0.

Results: The SEM analysis revealed that the association between job strain model and self-perceived QOL was fits the data well (Chi Square (χ^2) = 14.66, Degree Freedom (*df*) = 8, p = 0.066; Goodness-of-Fit Index (GFI) = 0.99, Adjusted Goodness of Fit Index (AGFI) = 0.98, Comparative of Fit Index (CFI) = 0.99, Root Mean Square Error of Approximation (RMSEA) = 0.04) and explained 4% of the variance in the self-perceived QOL. The second association showed that the iso-strain model was increased the variance in explaining the self-perceived QOL (12%); demonstrated fits the data well (χ^2 = 16.75, *df* = 11, p = 0.116; GFI = 0.99, AGFI = 0.98, CFI = 1.00, RMSEA = 0.03).

Conclusion: The SEM analyses supported that the Karasek's job strain and iso-strain models are important determinants of self-perceived QOL among male automotive workers in Malaysia.

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PREVALENCE OF THALASSAEMIA IN HOSPITAL UNIVERSITI SAINS MALAYSIA AND STRATEGY FOR PREVENTION

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Introduction: Thalassaemia and related disorders are the most common genetic disorder seen in Malaysia. A well–planned programme to establish the epidemiology of the disorders is required as part of strategy for prevention. The objectives of this study were to determine the prevalence and type of haemoglobinopathy in these hospitals, and to find a strategy for its prevention.

Methodology: A 6 months retrospective study was conducted from July to December 2006 at Haematology laboratory, Hospital Universiti Sains Malaysia. Haemoglobin electrophoresis results and haematological data were analyzed from 56 patients.

Results: In this study 44.7% patients had haemoglobin E trait, 33.9% patients had haemoglobin B trait, 12.5% patients had haemoglobin E/B thalasaemia and 8.9% patients had haemoglobin E disease. Majority of the patients in this study were females (29).

Conclusions: Thalassaemia still remains as a major public health problem in Malaysia and can be confusing for the patients and the doctors as the phenotypes vary from one patient to another. It is important to formulate a strategy for the detection and prevention of these disorders, which include the setting up the population screening and genetic councelling service for the affected individuals. Control strategies include prevention of new births of thalassaemias and proper treatment of existing disease.

COMMUNITY ACQUIRED PNEUMONIA COMPLICTED WITH SEPTICEMIA IN A CASE PRESENTATION

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Introduction: Sepsis is a clinical term used to describe a patient who has symptomatic bacteremia, with or without organ dysfunction. Septicemia refers to the active multiplication of bacteria in the bloodstream that result in an overwhelming infection. Incidence projected to rise to 1.0 million cases annually in US during the next decade and reason for that as result of aging population, increased awareness and diagnosis, immunocompromised patients, invasive procedures, resistant pathogens. Septicemia is considered as the fourth leading cause of death in the Malaysia (Ahmad f, 2005). Aim of the study uses to evaluate drug options in septicemia of immunocompromised patient.

Case presentation: An 82 years old Chinese woman presented with fever, cough with whitish sputum, nausea, weakness over entire body unable to walk, condition deteriorated and reduced level of consciousness was noticed. Her medical history, included diabetes mellitus, stroke &treated breast cancer. She was diagnosed initially as *kelebsellia pneumonia*& urinary tract infection (*psedomonaous aeruginosa) &* she also has recurrent breast cancer. She was given combinations of IV Augmentin 1.2 g tds with IV Gentamicin and was onT.Tamoxifen 20 mg of. The condition does not show many improvements, after 3days; she was then given. Imipenem were some improvement was noted.

Discussion: Appropriate antimicrobial therapy depends on adequate coverage of the resident flora of the organ system presumed to be the source of the septic process. Selection of Gentamicin is unacceptable as case is chronic diabetic and possibility of diabetic nephropathy is there, at same time; Inappropriate dosage of imipenem with present of nephropathy with some medical problems.

Conclusion: Patient was inappropriately managed. Early initiation of appropriate antibiotic therapy is the cornerstone in the infectious disease as septicemia.

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FEAR AND SHY: THE TWO COMMON OBSTACLES OF KELANTANESE WOMEN FROM BEING SCREENED ON PAP SMEAR: HOW FAR IT IS TRUE?

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Aims: To explore the attitude and belief of Kelantanese women towards Pap smear screening regarding the barriers they faced.

Methodology: Forty-four women were recruited in this qualitative study. They were women with either normal screened, never had Pap smear, diagnosed of precursor lesion and cancer of cervix. They were selected by purposive sampling using the snowballing techniques.

Result/Findings: The women claimed fear and shy as the major and common barriers for them from being screened. They expressed the varieties of fear and shy inclusive of fear of procedure, pain, cost, results and also the embarrassment of exposing their private part as well as being treated by male healthcare providers. The women, even lacking of knowledge, however are aware of the importance of pap smear but due to the obstacles, they just kept silent and develop denial symptoms such as 'not me' as well as 'feeling healthy' until they had sign and symptom of cervical cancer. Therefore, it is disheartening to note, they came with the late stages and could not be cured.

Conclusion: As recent statistic points out, Kelantanese women are the least among population that received Pap smear screening in Malaysia. Aggressive campaign and emotional support from the women's surrounding as well as the correct information given to the community on Pap smear will help women to come forward and conquer their fear and embarrassment.

SOCIAL AND LIFESTYLE FACTORS IN CHILDHOOD OBESITY – A MALAYSIAN PERSPECTIVE

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Introduction: Obesity in children is a global pandemic which leads to serious health and social consequences in adulthood. While genetic contributions are considered partly responsible, changing social and lifestyle habits are viewed as the main causes for the alarming increase in its incidence. This study aimed at examining associations between lifestyle factors and childhood obesity in a sample population of Malaysian school children.

Methodology: A cross sectional survey design was used. Children (n=309) of ages ranging from 7-10 years were picked from three different schools in Selangor by random stratified sampling. Percentage levels of body fat and BMI were estimated using anthropometric measurements (skin fold thickness, height and weight) and calculations. Questionnaires for parents were distributed to the students inquiring of socio-demographic background (daily allowance, parental education & income), nutritional history and lifestyle practices (physical activity, snacking habits, television viewing time, food and beverage preferences). SPSS v. 10.01 was used to analyse the data collected.

Results: Results showed that 22.4% of the children were above optimal weight of which 11.7% were overweight and the other 10.7% obese. Only 25% of the boys exercised daily compared to 11.5% of the girls. About 44.9% of the subjects snacked more than thrice a week, with fried food being the most favourite type of food (93.7%) and sugary drinks the favourite beverage (37%). About 36.2% of the subjects had physical inactivity in the form of television viewing ranging from 1-3 hours a day. Family income was seen to have a positive correlation with BMI levels, with children from more affluent families having higher BMI levels.

Conclusion: Factors that influence overweight and obesity are multiple and varied, but could be partly due to the unhealthy eating habits and modern sedentary lifestyle practices. Objective measurement of such factors on a larger, nationwide scale is warranted.

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PREVALENCE OF RISK FACTORS FOR CORONARY HEART DISEASE IN HEALTHY MEDICALSTAFF AFTER LIFESTYLE MODIFICATION: A BEFORE–AFTER STUDY

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Introduction: The total number of deaths in the world per year is about 51,100,000, of which 12,775,000 are a result of cardiovascular disease. The aims of this study were to determine the prevalence of risk factors for coronary heart disease and the risk of coronary heart disease events before and after the intervention of healthy lifestyle changes among a group of medical university staff.

Methods: A total of 98 medical university staff participated in this before–after study. Their height, weight, blood pressure, waist–hip circumference, level of physical activity, smoking/non-smoking status, fasting blood sugar, total cholesterol, and levels of triglycerides, low-density lipoprotein and high-density lipoprotein were ascertained before the study. The distribution of risk factors and the atherogenic index were determined, as well. Three months after the intervention, all these factors were determined again in 86 of the subjects.

Results: The mean differences in the systolic, diastolic blood pressure, waist circumference, waist circumference/hip circumference ratio, fasting blood sugar, total cholesterol and low-density lipoprotein before and after the intervention were statistically significant ($p > 0.05$). The mean differences in weight, body mass index, hip circumference, triglycerides, high-density lipoprotein and risk of coronary heart disease events five and ten years after the intervention were not statistically significant ($p < 0.05$). The atherogenic index of the participants showed that 43.3% of the subjects were in a low-risk situation. Only 29.6% of participants had no risk of coronary heart disease.

Conclusion: This study recommends regular screening of people for risk factors for CHD events. Understanding of self indicators of CHD may reduce CHD events.

THE IMPACT OF DIABETES EDUCATIONAL PROGRAM ON DIABETIC PATIENTS AT UNIVERSITY SAINS MALAYSIA (USM) HEALTH CENTER

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Objective: the main objective of this study is to measure the impact of diabetes educational program on diabetic patients at USM health center.

Methodology: Diabetic patients at USM main campus were invited to attend monthly diabetes education session for a period of 4 months. Patients' Body Mass Index (BMI) and Blood Pressure (BP) results were taken before they inter the program and each session for the whole program period and one last measurement was taken after 4 months of the end of the program. While patients' HbA1c results were taken before they inter the program, at the end of the program and 4 months after the end of the program. All results were analyzed at 95% confidence interval using SPSS package program version 11.5.

Results: HbA1c level was significantly reduced from base line 7.87 to 7.41 (p=0.004) while no significant change from the end of the program and 4 months follow up (p=0.49). No significant changes were found in patients' BMI when compare with baseline with the end of the program and baseline with follow up p=0.095 and p=0.766 respectively. Systolic BP showed no significant difference from baseline and the end of the program125.0 mmHg to 122.4 mmHg (p=0.069) while diastolic BP reduced significantly from 82.08 mmHg to 78.86 mmHg (p=0.017). Neither systolic nor diastolic BP showed any significant difference after 4 months follow up p=0.49 and p=.0.95 respectively.

Conclusion: Diabetes Educational Program was found to be effective. Patients' HbA1c level was reduced significantly during the program and continued to be lower than the baseline even after 4 months. Also patients' blood pressure was reduced at a significant level during and after the program. While no improvements in patients' BMI which requires more efforts in educating patients in controlling their weight to avoid diabetes complications.

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Th 1 *AND* Th 2 *CYTOKINE PROFILE IN A CASE OF UNEXPLAINED INFERTILITY IN KOTA BHARU, KELANTAN*

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Background: Infertility is a worldwide problem. Many factors may contribute to this, including the unexplained infertility. Several studies have shown increased levels of certain cytokine parameters in serum of unexplained infertility. This study aiming to compare Th 1 (Interleukin 12 and Interferon γ) and Th 2 (Interleukin 4, Interleukin 13) cytokine profile in the serum of unexplained infertile subjects and those who are fertile.

Methodology: In this study, blood was taken from a hundred subjects (fifty subjects from each group) and serum was separated. The following parameters were determined in the immunology laboratory: Interleukin 4, Interleukin 13, Interleukin 12, and Interferon _. Results were compared using univariate analysis.

Results: Overall the unexplained infertility subjects had significantly increased serum cytokine levels of interleukin 12 and Interferon γ and no significant difference in serum levels of Interleukin 4 and Interleukin 13. (*p value: 0.003; p value 0.015*)**.**

Conclusion: Th 1 cytokine profile, consist of Interleukin 12 and Interferon γ were significantly associated with the occurrence of unexplained infertility.

HEALTH-RELATED QUALITY OF LIFE IN EPILEPSY: THE INFLUENCE OF DURATION OF MEDICATION, DURATION OF DIAGNOSIS AND FREQUENCY OF ATTACK

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Introduction: Health-related quality of life (HRQoL) issues are importantly emphasised in holistic medicine, particularly for chronic conditions like epilepsy. Being a multifactorial construct, HRQoL could be maximised if its contributors are correctly identified. This study was embarked to compare HRQoL profile among epilepsy patients with different duration of diagnosis, duration of anti-epileptic medication and the frequency of seizure.

Methodology: This prospective, cross-sectional study was conducted in 3 government hospitals in Selangor. Eligible adult out-patients (>18 years) capable of reading and/or writing in Malay/English were identified and invited to participate. Upon written consents, participants completed the 30-item modified Quality of Life In Epilepsy Inventory (QOLIE-30) which evaluates *Seizure Worry, Overall QoL, Emotional Well-Being, Energy/Fatigue, Cognitive Functioning, Medication Effects* and *Social Functioning.* Scores were compared using non-parametric Kruskall-Wallis test in SPSS 14.

Results: A total of 29 patients participated (mean age = 28 years; range= 18-64 years). Majority were male (n=17), unmarried (n=23), Malay (n=12), unemployed (n=7) and live with their spouse/ family (n=25). Most patients had been diagnosed for 1-5 years (n=7) or >15 years (n=7). Many were on medications for 6-12 months (n=11) and had experienced ≥ 1 attack in the past 4 weeks (n=19). Highest HRQoL score was reported for *Overall QoL* (median= 67.5) while *Seizure Worry* (median =42.3) was scored lowest. Those diagnosed between 5-10 years, were taking medications for < 1 month and experienced no attack consistently reported more favourable scores in most subscales (no significant difference).

Conclusions: Findings indicate that the HRQoL level of this sample was generally above average although patients' worry about seizure attack seemed unsettled and this requires careful attention from healthcare professionals. Despite the absence of any statistical significance (due to small sample size), it could be concluded that longer duration of diagnosis, shorter period of medication and minimal attack could contribute to better HRQoL.

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A COMMUNITY HEALTH SURVEY OF RESIDENTS LIVING NEAR SOLID WASTE LANDFILL IN SABAK, KELANTAN

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Introduction: The management of waste materials is a problem worldwide, especially in the urbanizing countries like Malaysia. Sabak landfill is an open dumping solid waste landfill that is environmentally hazardous to human health in term of gases, particulate, laechate, dust, insects and rodents originated direct and indirectly from the waste. This cross-sectional study compared the health symptoms 3 months prior the interview and the ever experience of diseases diagnosed by a doctor among residents exposed to the landfill to non-exposed community.

Methodology: The exposed group was those who resided within 1 km radius and non-exposed was those who resided between 2.5-4.0 km radius from landfill. Both groups were residents from the same sub-district and not separated by any geographical boundaries. A systematic random sampling was used to select the households in each group. The inclusion criteria were adults aged 20 years or above, head of the family or the next kin and permanent resident in the areas at least a year. The selected residents were interviewed at home using structured questionnaires. The diseases should occur after the subject had resided permanently in the zone for at least a year and after the opening of the landfill in September 1987. The information was reconfirmed by checking the respondent's admission or medical card.

Results: We recruited 170 exposed and 119 non-exposed residents. The mean (SD) distance from landfill of the exposed group was 0.45 (0.24) km compared to 3.1 (0.38) km in the non-exposed group. The mean (SD) duration of residence in the exposed group was 22.6 (18.9) compared to 15.0 (12.0) years in non-exposed group. The exposed group was significantly older, less educated, had more males, water supply from Kelantan Water Company, less working in factory and less growing own vegetables than the non-exposed group. There were no significant differences between groups in the health symptoms and diseases' prevalence except in sore throat, pneumonia, hepatitis A, diabetes mellitus, hypertension, ischemic heart disease and enuresis. In multiple logistic regression, the only significant outcome of the landfill exposure were sore throat [OR 1.881, 95%CI: 1.048, 3.375], diabetes mellitus [OR 2.837, 95%CI: 1.103, 7.301] and hypertension [OR 2.555, 95%CI: 1.273, 5.130].

Conclusions: This study provided evidence that unsanitary waste disposal was hazardous to the surrounding 1 km residents and effort is needed to minimize the hazards.

PREVENTIVE HEALTH PRACTICES AMONG WOMEN AT RURAL VILLAGES OF KOTA BHARU

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Introduction: Screening is a secondary prevention that aims to detect disease earlier so that patients have better treatment and prognosis and prevent complications. This community survey was conducted to identify the screening practices among women in a rural sub-district of Kelantan.

Methodology: We randomly selected 200 from 285 houses in the villages. Pre-tested questionnaires were used to interview 136 women aged 35 years and above in the selected houses. The response rate was 81.0%.

Results: The mean age of women was 49.4 (SD 9.8) years with 93.4% Malays, 83.1% married, 77.9% housewives and 71.3% had primary school or less education level. The mean family income was RM 555 (SD 662). The rates of preventive health practices were as the following: blood pressure reading 80.1%, random blood sugar check-up 49.3%, blood cholesterol level 33.1%, Pap smear 31.6% and breast self examination (BSE) 22.1%. The means (SDs) time of the last examination were as the following: blood pressure 9.0 (15.2), random blood sugar 13.8 (24.5), cholesterol 9.7 (16.9), Pap smear 35.1 (44.2) and BSE 3.5 (3.7) months ago. The means (SDs) frequency of Pap smear and BSE were 1.8 (1.1) and 9.2 (11.9) times per year respectively.

Conclusions: Women in these villages had low prevalence of screening practices and those who practiced did not follow the recommended frequency and interval. Screening practices among women should be promoted in health campaigns and its services should be accessible at rural villages.

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THE POTENTIAL DEVELOPMENT OF SELF RELIANCE SCHOOL BESIDE HIGHWAY LOCATION FOR TRAFFIC ACCIDENT PREVENTION

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Introduction: In Thailand, traffic accident is very serious problem which damage people especially adolescents that necessary to build safety awareness and behavior.

Method and Material: This participatory action research aimed to enhance the potential of the students in primary school and stakeholders in order to prevent traffic accidents and solve problems. The study setting was the school beside highway in a rural area of Northeast Thailand. Data were collected using questionnaire regarding knowledge and practice for traffic accident prevention, and guideline for in-depth interview and observation. Also, the topic guide for Appreciation Influence Control (AIC) technique was prepared for situation analysis. Descriptive statistics and content analysis were employed. Moreover, the reflection along public dialogue of AIC also encouraged mutual relationships between stakeholders, students, teachers, sub-district administrative committees, community leaders, parents, policemen, and health workers.

Results: Stakeholders worked together as a net-working and turn to be the innovators for local development. Therefore, they initiated several methods to prevent the traffic accidents: 1) broadcasting via local news tower, 2) distributing handbooks to the students and their parents; 3) providing poster showing many kinds of traffic accidents; 4) continuing advertised “no drink and no drive” for raising awareness, 5) developing surveillance and referral systems. After all activities were run for six months, we found that the students have respected the traffic regulation, used helmet increasingly, and limited driving speed. Moreover, the students established the slogan contest and exhibited several slogans. In addition, first aids activities were provided by students, and teachers. Medicine and equipment were provided by local health center. These embody movements were increasing self belonging of the school and community as well as their synergistic responsibility. There was community project in traffic accident prevention, and then bottom-up policy was replaced top-down policy. Finally, the incident of traffic injury was decreased dramatically.

SOLUBLE TRANSFERRIN RECEPTOR STATUS IN ANAEMIA OF CHRONIC DISEASE PATIENTS

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Introduction: Detecting iron deficiency anaemia (IDA) in anaemia of chronic disease patients (ACD) is not easy as the conventional laboratory indices are often influenced by acute phase responses. The aim of the study is to assess the iron status and the clinical significance of soluble transferrin receptor (sTfR) in anaemia of chronic disease patients (ACD). STfR is not known to be influenced by the acute phase responses.

Methodology: 60 selected patients 28 females and 32 males diagnosed as having anaemia of chronic disease were recruited prospectively. The patients had to fulfill the inclusion and exclusion criteria. Investigations for iron status consisted of full blood picture with other haematological indices including mean corpuscular volume (MCV), and mean cell haemoglobin concentration (MCHC), serum ferritin and sTfR.

Results: None of the patients were diagnosed as having iron deficiency anaemia (IDA) by using serum ferritin. Coexisting IDA was detected in 12 patients (20%) when using sTfR. Comparing IDA cases and the non-IDA cases based on sTfR results, there was significantly lower MCV, MCHC and serum ferritin but higher for red cell distribution (RDW) in the IDA cases than in non-IDA cases ($P<0.001$).

Conclusion: The findings above pointed towards "IDA-like" profile and support the possibility of coexisting IDA in ACD patients. Investigation with sTfR could help detecting this coexistence and trial of iron therapy would be beneficial.

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PLASMA CELL LEUKAEMIA: A RARE CONDITION

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Introduction: Plasma cell leukaemia (PCL) is the least common type of plasma cell dyscrasia. It is defined as a level of plasma cells in the peripheral blood that exceeds 2 x 10^9/L or more than 20% of the white cells. It may occur at the time of diagnosis (primary PCL) or evolve as a terminal complication during the course of plasma cell myeloma (secondary PCL).

Case report: We report a patient who is a 42 year old man with background history of Diabetis Mellitus on Metformin presented with acute bilateral lower limb paraplegia. It was associated with numbness of the lower limbs up till the umbilical and chest area, urinary retention, back pain and constipation. There was no hepatosplenomegaly and lymphadenopathy. He also developed complications of acute renal failure and pleural effusion. The clinical diagnosis was multiple myeloma. Full blood picture revealed 26% plasma cells and bone marrow aspirate revealed 71% abnormal looking plasma cells. Other investigations include hypercalcaemia, high serum LDH and multiple lytic lesions in the spine and skull. Urine electrophoresis demonstrated Bence Jones protein. A final diagnosis of PCL was given. He was treated with Dexamethasone and other supportive care. He deteriorated rapidly and died after ten days of hospital admission.

Conclusion: This patient might have the primary form of PCL which normally presents de no vo with no history of multiple myeloma. Some of the clinical features of PCL and multiple myeloma are similar. Unlike multiple myeloma, cases with PCL have abrupt onset of disease, poor response to therapy and short survival time.

IMMUNOPHENOTYPE AND CLINICAL CHARACTERISTICS OF CD45- NEGATIVE ACUTE LYMPHOBLASTIC LEUKEMIA

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Introduction: The leukocyte common antigen or CD45 is found on all haematopoietic cells except erythrocytes and platelets. Despite extensive study of CD45 glycoprotein, the frequency of their expression and potential clinical significance in leukemia and lymphoma remain poorly defined. The aim of this study was to evaluate the clinical implication of CD45 expression in acute lymphoblastic leukemia (ALL).

Methodology: A retrospective study was conducted involving 81 patients of ALL diagnosed in HUSM in 2004 till 2006. Diagnosis was based on peripheral blood and bone marrow examination for morphology, cytochemistry and immunophenotypic studies. Complete immunophenotyping by three-color flow cytometry and molecular analysis were performed on leukemic blast cells.

Results: CD45 was detected on the surface of ALL cells (cut-off > or = 20% positive cells) in only 85.2% (n=69) of all cases, whereas 14.8% (n=12) were CD45 negative. All CD45- cases were B-ALL. 58.3% of CD45- ALL was male and 41.7% were female. 50% were childhood ALL. 6 cases of CD45- cells were also express one or two myeloid antigen. Majority of the cases were low white cell count at presentation with CD10 positive. Molecular test were done in 7 cases of CD45- ALL revealed negative for BCR-ABL gene.

Conclusion: CD45- negative ALL accounted of 14.8% of all ALL in HUSM. All were B-ALL with 50% expressed myeloid antigen and none of the cases were positive for BCR-ABL gene.

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FACTORS ASSOCIATED WITH IRON DEFICIENCY ANAEMIA IN RURAL MALAYSIAN COMMUNITIES

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Introduction: Iron deficiency anaemia (IDA) is the most common nutritional deficiency affecting more than two billion of the world's population especially among school-age children. In Malaysia, IDA was reported as the dominant cause of anaemia among rural population. Objectives of this study were to determine the prevalence of IDA and to investigate its possible risk factors in Orang Asli children.

Methodology: This cross-sectional study was carried out on schoolchildren living in remote areas in Pos Betau, Kuala Lipis, Pahang. Venous blood samples were collected from 241 children (120 males and 121 females) aged 7-12 years. Iron status was assessed by haemoglobin (Hb), serum iron (SI), total iron binding capacity (TIBC) and transferrin saturation (TS). Socioeconomic data were collected using pre-tested questionnaires. All children were screened for *Ascaris lumbricoides*, *Trichuris trichiuara,* and hookworm.

Results: Overall, 48.5% of the children were anaemic (Hb <12 g/dL). The prevalence of IDA (Hb<12 g/dL, SI<10.74 µmol/L, TIBC>73.39 µmol/L and/or TS<16%) was 34%, which accounted for 70.1% of the anaemic cases. The prevalence of IDA was significantly higher in females than males (P=0.033). Low levels of mothers' education (P=0.001) and low household income (P=0.016) were also identified as risk factors of IDA. Logistic regression confirmed low levels of mothers' education (OR=3.9, 95% CI=1.7-9.3) and gender (OR=1.9, 95% CI=1.1-3.3) as significant risk factors of IDA. Using multiple regression analysis, the factors found to be associated with low SI and TS and high TIBC levels were gender, females, and heavy trichuriasis.

Conclusion: The high prevalence of anaemia and IDA among Orang Asli schoolchildren speaks for implementing early interventions. Improvement of socioeconomic status, health education together with periodic mass deworming should be included in public health strategies for the control and prevention of anaemia and IDA in this population.

ACUTE MYELOMONOCYTIC LEUKEMIA WITH EOSINOPHILIA – CASE REPORT

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Introduction: Distinct subset of patients with acute myelomonocytic leukemia associated with abnormal bone marrow eosinophilic precursors has been identified as AML M4 with eosinophilia (AML M4(eo)). This category includes 6% of patients with AML and around 20% of AML M4. It is defined by the presence of morphologic, cytochemical, and ultrastructural abnormalities in the eosinophil lineage, which usually amounts to 5% or more of non-erythroid cells. Inv(16)(p13;q22) or t(16;16)(p13;q22) is one of the most frequent recurring chromosomal rearrangements detected in AML M4(eo) which results in the disruption of the myosin heavy chain (*MYH*) gene at 16p13 and the core binding factor β (*CBF*β) gene at 16q22. Ten different CBFβ/MYH11 transcripts have been reported (A to J), but the frequency of each transcript is variable: 85% for the type A, 5% for each of the D and E types, other rearrangements being rare. Identification of AML M4(eo) is important because it is associated with a relatively favorable prognosis, both with regard to the complete remission rate and the duration of remission and survival when compared with other AML M4 treated similarly.

Case Report: Herein we report the only two cases that were positive for CBFβ/MYH11 fusion transcript reported in the year 2006. Both cases had type A fusion transcript. Patients were adults presented with high white blood cell count (36.65 ¥ 10^9/L to 120.3 ¥ 10^9/L) and high peripheral eosinophil differential count (>50%) at diagnosis. Both cases were classified as AML M4(eo) under FAB classification.

Conclusion: AML M4(eo) is a rare occurrence in AML and molecular diagnosis of this particular subtype is useful for risk stratification of these patients.

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EVALUATION OF COPING STRATEGIES AMONG SEXUALLY ABUSED CHILDREN IN KELANTAN

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Background: Child sexual abused victims experienced psychological distress after the incidence of the abuse. They cope with the experience differently. There is no previous study evaluating the coping strategies used by child sexual abuse victims in Malaysia.

Objective: This study aimed to evaluate the coping strategies used by sexually abused children attending OSCC services at Hospital Universiti Sains Malaysia.

Methods: Sixty five sexually abuse children and adolescent were interviewed to assess their coping strategies. A general demographic questionnaire and a semi-structured questionnaire of coping strategies were used by the researcher to obtain the data. The data were analyzed using SPSS version 12.0.1.

Results: Among the sexually abused children 59 (90.8%) used emotion-focused strategies and 6 (9.2%) used problem or task–focused strategies. Among emotion-focused coping strategies, participants used firstly, deciding than nothing can be done to change things, secondly denial and thirdly suppression.

Conclusion: Most of the participant used emotion-focused strategies. By recognizing the coping strategies used in sexually abused children, it can be helpful for clinician and counselor in their management of the victims psychological distress.

VALIDATION OF MALAY VERSION OF CHILDREN DEPRESSION INVENTORY (CDI) AMONG CHILDREN AND ADOLESCENTS OUTPATIENTS

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Objective: This study aimed to validate the Malay version of CDI among children and adolescents outpatients.

Material and Methods: Sixty children and adolescents outpatients were interviewed using Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV,) and then completed the Malay version of CDI. Reliability and validity of the Malay version CDI were analyzed.

Results: The validation study showed that the Malay version CDI had a satisfactory reliability (Cronbach's alpha 0.83). At the cut-off score of 18, the Malay version CDI had 90% sensitivity and 98% specificity in detecting depression.

Conclusion: The Malay version CDI has satisfactory reliability and validity.

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REACTIVE THROMBOCYTOSIS IN TUBERCULOUS SPONDYLITIS IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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Introduction: Tuberculosis is a major public health problem in Malaysia. It is a serious global infection that is spread exclusively from person to person. Haematological changes associated with tuberculosis are common and have been incompletely investigated. It may be valuable in the diagnosis of tuberculosis. In the present study, we compared the platelet count and ESR in patients with tuberculous spondylitis.

Methodology: This retrospective study evaluates the changes in platelet count and ESR in 17 patients with tuberculous spondylitis treated in Hospital Universiti Sains Malaysia. All patients were subjected to peripheral blood count and Erythrocyte Sedimentation Rate (ESR) test at the diagnosis.

Result: The age of the patients ranged from 20 year old to 70 year old. Female to male ratio was 1:3.2. Majority of patients were anemic (88.2%) and 52.9% patients have thrombocytosis with the highest platelet count was 665.x 10^9/l. All patients demonstrated normal in lymphocytes count and high in Erythrocyte Sedimentation Rate (ESR) at the diagnosis.

Conclusion: The degree of thrombocytosis seems to be related with the degree of inflammation measured by the erythrocyte sedimentation rate. Reactive thrombocytosis is found in a number of clinical situations including infectious diseases such as tuberculosis. We suggest that evaluating results of haematological values in suspected cases of tuberculosis should be considered. The unexplained presence of haematological changes should raise suspicion of the disease.

THE STATUS OF THE KIDNEYS BELONGING TO SMALL FOR GESTATIONAL AGE (SGA) TERM INFANTS : DO THEY GROW NORMALLY WHEN COMPARED TO THEIR APPROPRIATE FOR GESTATIONAL AGE COUNTERPARTS?

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Introduction: The aim of this prospective study was to estimate comparatively the renal growth in SGA infants and in infants born appropriate for gestational age (AGA).

Materials & Methods: Data were collected on longitudinal renal length in small for gestational age (SGA) infants born at term and had been brought up in different environment. The renal length was obtained cross sectionally. The study comprised groups of SGA and AGA infants now at 7, 8, 9, 10, 11 and 12 years of age. Renal ultrasonography (US) was performed and was matched with the standard renal normograms. Correlations to other anthropometric indices were performed.

Results: A total of 494 infants participated in the study out of which 246 were SGA and 243 were AGA, and a total number of 988 measurements were performed. At age 7 years, it is observed that in the right kidney 54.6% < 5th centile when compared to the AGA 45.4%. as for the left kidney, the SGA 52.8% while AGA 47.2%. At 8 years of age, that in the right kidney 53% < 5th centile when compared to the AGA 47%. as for the left kidney, the SGA 53.5% while AGA 46.5%. At 9 years, in the right kidney 52.2% < 5th centile when compared to the AGA 47.8%. as for the left kidney, the SGA 48.9% while AGA 51.1%. at 12 years old, in the right and left kidney 48.6% < 5th centile when compared to the AGA 51.4%. Majority of the renal length is less 5th centile this indicates that the SGA children had smaller kidneys when compared with the AGA infants.

Conclusion: SGA term infants had smaller kidneys compared with AGA infants.

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BARRIERS TOWARDS ACHIEVING WELLNESS: A QUALITATIVE STUDY

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Introduction: Wellness involves the integration and balance of physical, intellectual, emotional, occupational, social and spiritual dimensions. The wellness concept has been incorporated in public health programs and activities to ensure sustenance of healthy lifestyle throughout life. This paper reports perceived barriers towards achieving wellness by respondents who resided or worked in Kuala Lumpur.

Methodology: Five focus group discussions (FGD) were conducted among 43 purposively selected respondents from different ethnic groups and educational levels, regardless of gender, marital status or religion. They were older and younger professionals and non-professionals, in the age groups 18-39 years and 40-59 years, as well as retirees less than 70 years of age. The FGD sessions were video-taped, tape-recorded, transcribed verbatim and analyzed.

Results: Compared to other groups, the older professionals identified more internal factors as barriers towards achieving wellness. These include individuals' misplaced priority, personal attitude, lack of knowledge and self-worth, and unemployment. The younger professionals, both younger and older non professionals, and retirees identified more external factors as barriers to wellness. They were concerned about unhealthy living environment, uncontrolled development, political instability and social factors that affect them either directly or indirectly.

Conclusion: Perceived barriers towards wellness differed by station in life particularly professional development and status. The more career-stable, older professionals identified the individuals themselves as barriers; while others blamed the external environment either physical or social as barriers. The understanding of perceived barriers in different groups need to be used in designing better and more effective health promotion programs for the target population.

A RESPIRATORY HEALTH SURVEY AMONG MALE WORKERS IN AN AUTOMOTIVE MANUFACTURING PLANT IN PERAK

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Introduction: Exposure to isocyanates and metal fumes in automotive manufacturing industries are known to produce a specific occupational lung disease known as Occupational Asthma (OA). Stamping and painting processes are major sources of solvents and isocyanates that lead to variety health problems.

Objective: To determine the prevalence of respiratory symptoms and to compare the mean differences of lung function parameter ($FEV_{1,}$ FVC, FEV_1/FVC) between two groups of workers such as smoking status, screening group and working section.

Methodology: A total of 221 male workers were investigated for the presence of symptoms compatible with early detection of Work-Related Occupational Asthma Like Symptoms (WROALS). The study included self-administrative structured questionnaire adapted from The European Community Health Survey (ECRHS) screening questionnaire on respiratory symptoms and spirometric testing.

Results: Respiratory symptoms commonly reported by the workers were wheezing (16.5%), shortness of breath (12.7 %), chest tightness (7.1 %), woken up by an attack of coughing (20.2 %), attack of asthma (4.2 %), currently taking any medicine for asthma (4.2 %) and nasal allergies (40.1 %). Independent t-test showed no significant difference between two groups. ANOVA showed significant differences of FEV_1 (p=0.017, F=3.079) and FVC (p=0.04, F=3.998) with working sections. Bonferroni Test also revealed that painting section has significant differences with trim final section for parameter FEV_1 (p=0.039) and FVC (p=0.007).

Conclusions: The prevalence of respiratory symptoms was common among automotive manufacturing workers with significant difference of lung function in painting and trim final section.

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EARLY OUTCOME OF BILATERAL TIBIA HAEMIMELIA RECONSTRUCTION

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Introduction: The recommended treatment for unilateral tibia haemimelia is amputation and prosthetic fitting because of severe leg length dicrepancy. However limb length discrepancy is not an issue in a case of bilateral tibia haemimelia. Instead, the present of knee extensor mechanism is the critical factor for leg function. We present an early successful outcome of limb salvage surgery in bilateral asymmetrical tibia haemimelia.

Case Report: A 4 year old child had asymmetrical Bilateral Tibia Haemimelia. His right leg with type I (Kalamchi and Darwe) deformity underwent fusion of the fibula to the distal femur . The distal femoral epiphysis was excised until secondary ossification centre, preserving the growth plate. This was done under image intensifier guidance. Proximal fibula including its physis was excised to allow the reduction. Bone to bone contact between the two ends was hold by ilizarov fixator. His left leg with tibia haemimelia type II had undergone a successful synostosis creation of fibula to remnant tibia. This surgery had successfully created a mobile functional knee. His bilateral club feet deformity underwent reconstruction and ankle fusion.
This patient gained a stable and mobile left knee with plantegrade foot. His left leg had a successfully knee fusion resulting a fixed stable knee with plantegrade foot. The x-ray showed preservation of distal right femoral growth plate. Long term result is required to determine the status of the growth plate.

Discussion and Conclusion: The aim of reconstruction in this child was to provide a mobile left knee and fused right knee. With that, he will be able to walk and sit even with a fused left knee. Since the left leg has undisturbed distal femoral growth plate, preservation of growth plate of contralateral leg is critical to avoid a significant limb length discrepancy in this child.

A CASE REPORT: SEVERE THROMBOCYTOPENIA WITH HIGH GRADE FEVER; SHOULD WE STILL THINK OF MALARIA?

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Introduction: Malaria remains the most common vector-borne parasitic disease in Malaysia despite a decline in annual number of cases. The number of microscopy confirmed cases decreased from 243,870 in 1961 to 11,106 cases in 1999 (*Department of Public Health, Ministry of Health Malaysia Annual Report 1999*. Ministry of Health Malaysia: Kuala Lumpur). *Plasmodium falciparum* is the most predominant species in Malaysia with *Plasmodium vivax* and *malariae* being the next prevalent species. Misdiagnosis of malaria is not uncommon and even abnormal routine laboratory tests may not trigger malaria smears. In Malaysia where dengue is number one causes of high grade fever with thrombocytopenia there are even more chances to miss the diagnosis. However, blind screening of all thrombocytopenic samples might be a possible way to detect clinically unsuspected malaria cases in the accident and emergency department.

Case Report: Severe thrombocytopenia is common in *isolatedfalciparum*, mixed *falciparum* and *vivax* infection. However it is not reported in the case of *falciparum malariae*. We hereby report a case of severe thrombocytopenia (platelet count < 20 x 10^9/L) with *plasmodium malariae* infection. This patient's working diagnosis was dengue fever as there was history of dengue in the neighborhood. Dengue serology was repeatedly negative for IgM and IgG. Suspicion of malaria infection only arose while examination of full blood picture showing schizont stage of *plasmodium malariae*. Later it was confirmed by thin and thick smears of the blood by microbiology. This patient responded well to anti-malarial therapy and his platelet count recovered completely (330 x 10^9/L) with in one week. Our aim is to highlight an important message; that is one must not ignore malaria as one of the causes of thrombocytopenia presuming it is now not common in Malaysia.

Conclusions: The problem of clinically unsuspected malaria seems to be more common than generally expected and is dependent on the local incidence of malaria as well as clinical and laboratory expertise. The blind screening of all thrombocytopenic samples with <100 x 10^9/L may be a cost-effective way to reduce the misdiagnosis of malaria. This is a rare case of thrombocytopenia due to *plasmodium malariae* infection.

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DEMOGRAPHIC AND RISK FACTOR ANALYSIS OF OVERWEIGHT VERSUS NON OVERWEIGHT PATIENTS WHO UNDERWENT ISOLATED CORONARY ARTERY BYPASS GRAFTING AT HOSPITAL UNIVERSITI SAINS MALAYSIA

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Introduction: Coronary artery disease is the most important cause of morbidity and mortality in the industrialized world. It is also true in Malaysian population as heart disease is the number one cause of death. Each year over 1 million people around the world die from coronary atherosclerosis. Is there any difference in terms of demographic picture between patient who are over weight and non overweight? Can obesity be considered as an independent risk factor for patients to develop atherosclerosis? Various published articles examining obesity and CABG surgery contain conflicting results about the role of body mass index (BMI) as a risk factor for in-hospital mortality.

Methodology: This study was conducted on 141 patients who underwent isolated CABG in Cardiothoracic Unit, Hospital Universiti Sains Malaysia, Kubang Kerian Kelantan from November 2001 to October 2004. The demographic picture of patients who had underwent CABG in HUSM were assessed by dividing patients into Group 1 which is non overweight (BMI = or < 25 kg/m^2) and Group 2 which is overweight (BMI > 25 kg/m^2) group.

Results*:* In Group 1; there were 80 patients; 70(87.5%) were Malays, 9(11.4%) were Chinese and 1(1.3%) was Indian; 64 patients were male and 16 were female, the mean age was 58.6+ 8.2. In Group 2; there were 61 patients; 50(82.0%) were Malays, 10(16.4%) were Chinese and 1(1.25%) was Siamese; 53 patients were male and 8 were female, the mean age was 55.6+ 8.7. Risk factors (NYHA Class, preoperative cardiac ejection fraction, presence of diabetes mellitus, hypertension and hyperlipidamaemia alone or in combination) were similar in both groups.

Conclusion: There are no significant differences in terms of demographic data between there two groups of patients who underwent CABG in HUSM.

INTRA OPERATIVE OUTCOME COMPARISON BETWEEN OVERWEIGHT AND NON OVERWEIGHT PATIENTS WHO UNDERWENT ISOLATED CORONARY ARTERY BYPASS GRAFTING AT HUSM

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Introduction: Coronary artery disease is the most important cause of morbidity and mortality in the industrialized world. It is also true in Malaysian population as heart disease is the number one cause of death. Each year over 1 million people around the world die from coronary atherosclerosis. Although there is little evidence in the literature, obesity is often thought to be a risk factor for perioperative morbidity and mortality with cardiac surgery and other major surgical procedures. Many of the prior attempts to study the association between obesity and intraoperative outcomes of cardiac surgery have suffered from limitations caused by sample size and a lack of data about potentially confounding factors.

Objective: To assess the following intra-operative outcome parameters in patient underwent CABG in Cardiothoracic Unit, Hospital Universiti Sains Malaysia (HUSM), Kubang Kerian and compare between the two study groups: overweight (BMI>25) and non over weight (BMI= and <25) in terms of amount of cardioplegia used, duration of cardiopulmonary bypass, duration of aortic cross-clamping and number of vessels graft performed

Methodology: This is a cross sectional study. The study period started from November 2001 to October 2004 at Cardiothoracic Unit, HUSM. All patients who underwent isolated CABG during the study period were included in the study. Patients who underwent concomitant valve surgery were excluded. Secondary data were obtained from the medical records of all patients who underwent coronary artery bypass graft (CABG) at HUSM. Patients were divided into two groups; Group 1 consists of patients with BMI = and < 25 kg/m^2 and Group 2 consists of patients with BMI>25 kg/m^2.

Results : Overweight and obese patients has significant increased requirement of cardioplegia solution to arrest the myocardium. This has also influenced other operative factors which are bypass and aortic cross clamping time.

Conclusion: There is significant statistical differences in terms of intra operative outcome between over weight and non over weight patients who underwent isolated coronary artery bypass grafting in HUSM , whereby overweight patients tend to have longer bypass and aortic cross clamping time as well as more cardioplegic solution needed to arrest the heart.

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KNOWLEDGE AND PRACTICE OF BREAST SELF EXAMINATION AMONG WOMEN IN MUKIM BUJANG, YAN, KEDAH

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Purpose: To determine knowledge and practice of breast self examination among women in Mukin Bujang, Yan, Kedah.

Methodology: A cross sectional study was carried out in November and December 2006, among women age 18 and above in Mukim Bujang, Yan, Kedah. A total of 283 respondents were selected using multistage cluster sampling, who had completed a validated, interviewer guided questionnaires assessing their knowledge and practice of breast self examination. The questionnaire consisted of 3 domains namely the socio demographic and economic status, their knowledge on breast self examination and breast cancer and their practice of proper techniques to perform breast self examination. True and false options were given for knowledge questions. Yes and no options were given for practice questions. In order to ensure good reliability, only one dedicated interviewer was involved.

Results: Majority of the respondents' age were between 36-55 year old (60%), had secondary education level (63%), housewife (56%), married (86%) and taking oral contraceptive pills (61%). In general, all respondents have heard about breast self examination but only 73.9% have ever practice it. Out of this only 1.8% had satisfactory knowledge about proper breast self examination technique. Chi square statistical tests showed significant association between those who practice breast self examination with higher education level, married status, higher knowledge score on breast self examination technique and higher socio economic group. The same independent variables were found to be predictors for performing breast self examination when analyzed using univariate logistic regression. However, only two factors which, age and knowledge on proper technique remained significantly influenced through multiple logistic regressions.

Conclusion: Having knowledge on proper technique is crucial for women in order to ensure the breast self examinations they perform are effective in detecting abnormality if any during the examinations.

A STUDY ON KNOWLEDGE, ATTITUDE AND PRACTICE OF PAP SMEAR SCREENING AMONG WOMEN IN PASIR MAS DISTRICT

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Introduction: Pap smear is a very cost-effective screening to detect cervical abnormalities especially for high-risk target populations but many women are still lacking the appropriate understanding of the test. The objectives of this paper were to examine the level of knowledge, attitude and practice on Pap smear among women in reproductive age group in a district of mixed rural and urban Malay population in Malaysia.

Methodology: This was a cross-sectional survey of women attending antenatal clinic and outpatient clinic in Pasir Mas District of Kelantan done in December 2006. A total of 100 respondents were interviewed and data was collected through questionnaires form.

Results: Only seventy eight percent of the respondents have ever heard about the Pap smear, out of which slightly less than 50% of them have good knowledge scores while another 52% have good attitude. The most popular source of Pap smear information was through health staff (84.6%) followed by electronic media (53.8%) and friends (47.4%). Sixty four percent of the respondents have undergone Pap smear test and majority of them (92.2%) cited the advice from medical staff as the reasons for undergoing the test. Women of higher educational level and household income were significantly having higher knowledge scores on Pap smear. The respondents' attitude on Pap smear was also significantly associated with their educational level. There was a positive correlation between knowledge and attitude ($r = 0.25$, $P = 0.013$) but both knowledge and attitude on Pap smear were not significantly correlated with their practice.

Conclusion: The findings of the study indicate the need for strengthened patient education programs and public health strategies on Pap smear practice especially among women of lower educational level and household income.

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THE APPROPRIATENESS MANAGING CASES VISITING EMERGENCY DEPARTMENT AT HOSPITAL BESUT, TERENGGANU

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Introduction: The important of triage system in selecting the appropriate cases at Emergency Department (ED) of hospitals is well known. However, the relationship between the appropriateness of managing the cases and the system is not well explained especially when it occurred at district hospital setting.

Methodology and objective: This cross sectional study was carried out to determine the characteristic of the cases and their appropriate management based on the standard tagging system at ED of Hospital Besut (HB) within a period of one month (January 2006) by using secondary data obtained from registration book. The data were analyzed by using SPSS software version 12.0

Result: Two thousand and three hundred one cases had been reviewed at ED in January 2006. Fifty-six percent of them were male and majority were adult cases (50.13%). Approximately seventy percent of cases were triaged yellow followed by green (22.2%), red (5.60%) and black (0.05%). Most of the cases were seen during office hour (78.09%). Half of the cases were only reviewed by paramedic (54.72%). According to the classification of diseases based on the triage system, the higher number of inappropriate cases presented in ED was in the green zone and the most number of appropriate cases presented in ED was in red zone ($p<0.001$) but 90.2% of the cases were inappropriately management in the red zone.

Conclusion: Tagging system is a very useful tool in grouping the cases. However, the high number of inappropriate cases disturbs the management of appropriate cases in term of the work load and distribution of the resources.

PREVALENCE OF MOST COMMON ALLEGEN IN ALLERGIC DISEASES PATIENTS IN HUSM

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Background: Allergy refers to an inherited immunological respond to many common naturally occurring allergens, which associated with continual production of IgE antibodies. Several studies have been done to determine the most common allergen in patients with allergic diseases by using skin prick test and enzyme immunoassay. This study used allergen specific IgE assay to determine common allergens in patients attending skin, respiratory and ENT clinics in HUSM.

Methods: In this retrospective study, patients with allergic rhinitis, atopic dermatitis and allergic asthma were included. Results of 109 patients tested for allergen specific IgE were reviewed. Descriptive analysis was done for all 28 allergens to find out the most common allergen causing allergic in patients in HUSM

Results: From the total of 109 patients, 96 subjects (88.1%) were positive to at least one allergen tested. In the aero allergen group, the most common was *Dermatophagoides farinae* which account for 78.9% of allergic patients. Among the food allergen group, clam (56.0%) was the most commonly implicated food, and then followed by shrimp (52.3%). While for fungal allergen group, aspergillus was found to be the most common allergen (58.7%).

Conclusion: This study revealed that the most common allergen in allergic patients was *Dermatophagoides farinae*

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EFFECT OF MALATHION INHALATION ON LUNG SURFACTANT PHOSPHATIDYLCHOLINE (PC) & PHOSPHATIDYLGLYCEROL (PG)

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Introduction : The effect of inhalation of common pesticides, including malathion, a well known organophosphate pesticide, on the lung surfactant system has not been well examined.

Objektif : This study therefore examines the effect of malathion inhalation on phosphatidylcholine (PC) and phosphatidylglycerol (PG) in the rat.

Methodology : Ninety-six Sprague Dawley rats, weighing approximately 200 grams, were divided equally into 12 groups to examine the effect on PC and PG following malathion inhalation, for 1 hour at a dose of 21.67µl in 13 ml of deionised water. Control animals were given deionised water inhalation over the same duration. Malathion was administered via a nebulizer attached to a perspex box, measuring 26 x 24 x 30.5 cm in height, width and breath respectively. One hour after treatment, and over various periods ranging between 2 hours and 14 days post inhalation, groups of rats were anesthetized with thiopental sodium, and the lungs and the trachea were removed. Broncho-alveolar Lavage (BAL) was performed with normal saline. PC and PG in the BAL were identified using Thin Layer Chromatography (TLC) and their concentration was estimated using Malachite Green Assay.

Results : Compared to the controls, PC and PG concentrations decreased significantly following malathion inhalation. The decrease was evident 1 hour after malathion inhalation and reached the lowest point 24 hours afterwards (15.9% and 19.9% of the control values for PC and PG respectively). Concentration of both PC and PG began to rise to the normal levels from 48 hours onwards, reaching the control levels by day fourteen.

Conclusion : In conclusion, it appears that malathion reversibly affects the presence of PG and PC in the lung surfactant. This decrease in PC and PG levels could have significant consequences on the respiratory function of the lungs.

ANOMALOUS STYLOID PROCESS AND ITS CLINICAL IMPLICATIONS

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Introduction: There is paucity of literature on the different shapes of the styloid processes of the temporal bone of the skull. Textbooks of anatomy describe the styloid process to be slender, approximately 2.5 cm in length and concave on the anterior aspect only. In the present case, we observed the styloid process to be much longer than the usual, bearing a concavity on the anterior, as well as the posterior aspects. The mastoid process which is usually conical was found to be rounded in this case. The anatomico-radiological features and clinical implications of anomalous styloid and mastoid processes are being discussed in the present study.

Case Report: The styloid process was elongated, angulated and displayed concavity on its anterior, as well as on its posterior aspects. As a consequence, the bone was constricted in the proximal part. The length of the styloid process measured 2.8 and 2.7 cm on left and right sides, respectively. The mastoid process exhibited a rounded and enlarged appearance. The skiagram (lateral view of the skull) also displayed the biconcave profile of the styloid process and the rounded appearance of the mastoid process, thus substantiated the findings on gross examination of the skull.

Conclusion: The anatomical knowledge of the mastoid process is important for surgeons assessing the mastoid air cells. The elongated styloid process is often a feature of Eagle's Syndrome. An enlarged and calcified styloid process is often asymptomatic, unless detected radiologically. An abnormally elongated styloid process or its calcification may cause recurrent throat pain, foreign body sensation, dysphagia, or facial pain. An enlarged styloid process may also compress upon the internal carotid artery, leading to transient ischemic attack and may pose a threat to anesthetists performing intubation procedures. Awareness of such variations may be of clinical importance to radiologists and surgeons.

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SURVEY OF WELLNESS PERCEPTION AND HEALTH RELATED QUALITY OF LIFE AMONG ADULTS IN KUALA LUMPUR

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Introduction: Wellness and health-related quality of life perceptions differ by sex and morbidity status. Understanding these differences can lead to the development of more appropriate and effective health intervention programs. The objectives of this study were to measure perception of wellness and perceived health related quality of life using the SF36 Questionnaire among adults in Kuala Lumpur. We would also like to assess the correlation between perception of wellness and SF36, and to determine the association between wellness and health-related quality of life with sex and current morbidity status.

Methodology: A total of 398 adults, 18 years and above, participated in a cross-sectional survey of households randomly selected with the help the Statistics Department. Among others, the respondents completed a battery of questions that include their perception of their wellness level and the SF36. Wellness was measured through a 5-point Likert scale where 1 is very low and 5 is very high. The SF36 measures 8 domains, which cover different aspects of health-related quality of life. These domains are Role-Emotional (RE), Role-Physical (RP), Bodily pain (BP), Vitality (V), General health (GH), Social functional (SF), Physical functional (PF) and Mental health (MH).

Results: The 398 respondents were mostly males (61.1%), Malays (65.6%), ever married (57.6%), and had secondary or higher education (88.7%) and mean age of 35.4 $\pm$ 13.9 years. Sixty-two (15.3%) respondents reported morbidity within 1 month of the study. Among the 243 male respondents, 4.1% perceived their state of wellness as low or very low and 20.2% perceived it as high or very high. In contrast, 1.9% of the 155 female respondents perceived low or very low, and 26.4% perceived high or very high level of wellness. Similarly, among those who reported morbidity, 14.5% and 9.9% perceived their state of wellness as low and high respectively, compared to 1.2% perceiving low and 24.4% perceiving high level of wellness among those who did not report morbidity. Use of t-test to compare difference in means showed male and female respondents significantly differed in their level of perceived wellness (3.18 $\pm$ 0.54 in males versus 3.29 $\pm$ 0.58 in females). This was also true for reported morbidity, where mean wellness was 3.26 $\pm$ 0.53 among those who did not report morbidity compared to 3.00 $\pm$ 0.65 among those with morbidity (p-value<0.05). Wellness and the 8 domains in SF36 were positive correlated, with the lowest correlation coefficient, r=0.183 for Physical Function, and highest coefficient correlation of r=0.584 for General Health. Analysis by sex showed the mean score for BP, GH, V, SF, and MH were higher among females compared to males. However, none of these differences was significant except for BP, which was 57.77 $\pm$ 18.13 among females compared to 53.45 $\pm$ 17.24 among males; and for SF which was 68.15 $\pm$ 20.31 in females compared to 61.88 $\pm$ 19.51 in males. For morbidity status in general, those with morbidity had lower mean scores for all domains and the mean scores for PF, RP, and GH were significant higher among those who reported morbidity compared to those who did not report morbidity.

Conclusion: Wellness and health-related quality of life differed by sex and morbidity status. Development of health intervention programs should consider these differences in order to provide effective and relevant health programs.

DOWN SYNDROME, MATERNAL AGE AND CONGENITAL HEART DISEASE: IS THERE ANY ASSOCIATION?

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Introduction: This study was performed to evaluate the distribution of congenital heart disease among Down syndrome patients and its association with maternal age in Northeast Malaysia.

Methodology: Retrospective analysis was conducted on the case records of 71 patients screened for heart anomalies and confirmed as Down syndrome by cytogenetic analysis at Human Genome Centre, Universiti Sains Malaysia.

Results: Among 71 cases of Down syndrome screened for cardiac anomalies (47 cases born to mothers more than 35 years and 24 cases born to mothers less than 35 yeas old), 35 cases (26 cases born to mothers more than 35 years and 8 cases born to mothers less than 35 years old) were diagnosed to have congenital heart disease. The cardiac anomalies observed were patent foramen ovale (22.8 percent), ventricular septal defect (20 percent), atrioventricular septal defect (20 percent), atrial septal defect (17.1 percent), patent ductus atriosus (11.4 percent) and tetralogy of Fallot (8.5 percent). The distribution of heart defect was encountered in 49 percent of our study subjects. Although congenital heart diseases seemed to be predominant among Down syndrome children born to mothers aged more than 35 years, statistical analysis showed no significant difference between the two groups. ($p = 0.285$).

Conclusions: A high association of cardiac anomalies (49 percent) with Down syndrome in this population necessitate a precise screening for an early intervention. The current analysis showed no significant association between the maternal age and the distribution of congenital heart disease among Down syndrome patients.

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FACTORS ASSOCIATED WITH BREAST CANCER SCREENING BEHAVIORS AMONG MALAYSIAN WOMEN TEACHERS

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Introduction : Breast cancer is the leading cancer among Malaysian women. Early detection of breast cancer can play an important role in reducing cancer morbidity and mortality. Contrasting results have been published regarding the risk of breast cancer among women teachers. In addition teachers in a position to effectively educate adolescents and young women about breast cancer risk and influence behavior that will in the long term improve breast cancer awareness among female population. The purpose of this study was to determine factors related to breast cancer screening behaviors among female secondary teachers in Selangor, Malaysia.

Methods: Data were collected from a random sample of 425 Malaysian women teachers aged 23 to 56 years. A self-administered, validated questionnaire that includes questions on socioeconomic and demographic background and an adapted version of Champion's revised Health Belief Model Scale was used. The student unpaired t-test, chi square test, factor analysis and logistic regression analysis were used to analyze the data using SPSS version 13. Validity and reliability of questionnaire were tested.

Results: The mean age of respondents was 37.17± 7.16 and most of them (88%) were married and Malay (83%). Results showed that only 19% of the women have ever performed breast self examination (BSE) on a regular basis. In women over the age of 40, 15% reported having at least one mammography. Higher confidence in BSE, higher health motivation, higher perception of benefits and lower barriers to BSE, and having heard/read about breast cancer were significantly associated with performing BSE ($P<0.05$). Higher benefits of having mammography, lower barriers to mammography, and having heard/read about mammography, and regular physical checkup with a physician were significantly associated with having mammography ($P<0.05$). No relationship was found between socio-demographic factors such as age, marital status, education, income, ethnicity and religious with screening behaviors among subjects of this study.

Conclusion: Low rates of breast cancer screening behaviors are of concern which suggests a need for increased awareness of screening methods, their importance and how they should be carried out.

RELIABILITY AND VALIDITY OF CHAMPION'S HEALTH BELIEF MODEL SCALE FOR BREAST CANCER SCREENING AMONG MALAYSIAN WOMEN

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Introduction: Breast cancer is the first leading cause of cancer deaths in Malaysian women, and the use of breast self-examination (BSE) and mammography remains low in Malaysia. Therefore, there is a need to develop a valid and reliable tool to measure the beliefs that influencing BSE and mammography. The Champion's Health Belief Model Scale (CHBMS) is a valid and reliable tool to measure beliefs about breast cancer, BSE, and mammography in a Western culture. The purpose of this study was to assess the psychometric characteristics of a Malaysian version of the CHBMS related to breast cancer, BSE, and mammography.

Methodology: A random sample of 425 women teachers was recruited from 24 secondary schools in Selangor state, Malaysia. The CHBMS was translated to Malay language, validated by experts panel, back translated, and pretested. Analyses included descriptive statistics of all the study variables, internal consistency, reliability estimates, and construct validity using factor analysis.

Results: The mean age of respondents was 37.2 (SD=7.1) years. Factor analysis yielded ten factors for BSE with Eigen value >1 (four factors more than original scale): confidence 1(ability to differentiate normal and abnormal changes in the breasts), barriers to BSE, susceptibility for breast cancer, benefits of BSE, health motivation 1(general health), seriousness 1 (fear of breast cancer), confidence 2 (ability to detect size of lumps), seriousness 2 (fear of long term effects of breast cancer), health motivation 2 (preventive health practice), confidence3 (ability to perform BSE correctly). For mammography scale seven factors were identified, one more than original one: benefits of mammography, susceptibility, health motivation 1, seriousness 1, barriers to mammography, seriousness 2 and health motivation 2. Cronbach's alpha reliability coefficients ranged from 0.774 to 0.939 for the subscales.

Conclusions: The translated version of Champion's scales was found to be a valid and reliable tool for use with Malaysian women. It could easily be used to evaluate the health beliefs about breast cancer, BSE and mammography. For greater applicability on Malaysian women's health beliefs and breast cancer screening behaviors, it is necessary that this tool be used in various setting.

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PARAPHARYNENGIAL MENINGIOMA – A CASE REPORT

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Introduction: Extracranial meningiomas are rare presentations. Parapharyngeal tumours encountered in clinical practice and are often difficult to diagnose upon clinical examination due to the anatomic complexity of the region. Here we present a case of Parapharyngeal meningioma.

Case Report: A 19 year old female presented to the ORL clinic with chief complaints of left parotid swelling of 3-4 years duration. There was history of pain which presented occasionally and no other associated complaints. The patient was investigated at the ORL clinic and found to have left parapharyngeal meningioma. Patient was referred to oncology clinic for further management as the ORL surgeon thought it was inoperable. Patient underwent all the investigations FBC, RFT, LFT, CT Scan of the part for the assessment of the disease status. The case was discussed with the neurosurgeon along with the treating ORL specialist. MRI Scan performed to assess the disease status. Patient underwent surgery followed by post-operative radiotherapy to the local site. Patient was on close followup.

Discussion: Parapharyngeal meningiomas constitute about 1% of all meningiomas. Initial diagnosis is difficult due to its rarity and also anatomical situation. Parapharyngeal meningiomas are classified into 4 groups. Here we discuss about the diagnosis challenges and treatment options for the parapharyngeal meningiomas.