7th Malaysia Indonesia Brunei Medical Science Conference
'TOWARDS A HOLISTIC AND INTEGRATIVE APPROACH IN HEALTHCARE'
Equatorial Hotel, Bangi

Day 1: 22nd July 2011 (Friday)

07:30	Registration		
08:45	**Opening Ceremony** Speech by Vice-Chancellor UKM Speech by Guest of Honour: Deputy Minister of Health		
10:05	Morning Tea/Poster exhibition		
10:30	**Keynote Lecture** Medical Education in Malaysia Professor Tan Sri Dato Wira Dr Sharifah Hapsah Syed Shahabudin Vice-Chancellor UKM		
11:00	**Plenary 1 (Brunei)** National Cervical Cancer Prevention and Control Programme in Brunei Darussalam Dr Hjh Maslina Haji Mohsin (Brunei)		
11:45	Lunch Symposium 1		
12:30	Friday Prayer/Poster exhibition		
14:45	***Symposium 1*** **Cancer: Prevention & Risk Factors**	***Symposium 2*** **Medical Education**	***Symposium 3*** **Special Research Collaboration Presentation: ASEAN Doctors' stress**
14:45 - 15:05	Cervical cancer prevention in low resource setting Jakarta – Indonesian perspective *Dr Laila Nuranna* *(Indonesia)*	PPD in the Medical Curriculum: Needs & Challenges *Associate Professor Dr Harlina Siraj* *(Malaysia)*	*Dr Mohd Ayub Sadiq @ Lin Naing* *(Brunei)*
15:05 - 15:25	HPV vaccination for the prevention of cervical cancer *Dr Paul Ng* *(Malaysia)*	The role of spirituality in Holistic Healthcare *Dr Tayyab Hassan* *(Brunei)*	Several coping strategies may protect medical doctors to be distress *Dr Irawati Ismail* *(Indonesia)* Stress and its influence factors among doctors in Central Java Indonesia *Dr Zahroh Shaluhiyah* *(Indonesia)*
15:25 - 15:45	Perceptions, attitudes & knowledge on Pap smear Test amongst Bruneian – An interim analysis *Dk Dr Nurol Aini Pg Hj Muhd Kifli* *(Brunei)*	Tracer Study: Capturing the soft skills competency of FMUI's medical graduates *Dr Estivana Felaza* *(Indonesia)*	*Dr Halim Ismail* *(Malaysia)*

15:45	Tea/ poster exhibition		
16:00	Future Research Collaboration Meeting		
17:00	**Free paper 1 (Cancer)**	**Free paper 2 (Medical Education/Medical Ethics)**	**Free paper 3 (Current Health Issues/Medical Disasters)**
18:00	Free & easy		

Day 2: 23rd July 2011 (Saturday)

08:30	**Plenary 2 (Malaysia)** Metabolic Syndrome: Where It All Begins Professor Emeritus Dato Dr Khalid Kadir		
09:15	**Symposium 4** **Current Health Issues**	**Symposium 5** **Immunology/Infection**	**Symposium 6** **Emerging technologies**
09:15 - 09:35	Quality of healthcare professionals: "Too many doctors?" *Professor Dato Dr Kandasamy (Malaysia)*	Profile of pollen grain among allergic patients in Indonesia: *Dr Iris Rengganis (Indonesia)*	Correlation between cardiovascular T2* magnetic resonance with left ventricular function and mass in thalassemia patient with iron overload *Dr Mulyadi M Djer (Indonesia)*
09:35 - 09:55	Chromosome breakage among the workers in the low exposure benzene *Dr Dewi S. Soemarko (Indonesia)*	Salinity-tolerant mosquitoes increase transmission risk of mosquito-borne diseases in a warming world *Professor Dr Ranjan Ramasamy (Brunei)*	Latest Technology In Endovascular Treatment Of Stroke *Associate Professor Dr Sobri Muda (Malaysia)*
09:55 - 10:15	Tobacco Control Initiatives in Brunei *Dr Hjh Anie Haryany Hj Abdul Rahman (Brunei)*	Phylodynamics of Dengue virus in Malaysia *Professor Dr Sazaly Abu Bakar (Malaysia)*	Telemedicine *Dr Sylvester Shim (Brunei)*
10:15	Morning Tea/Poster Exhibition		
10:45 - 12:00	**Free paper 4 (Pharmacotherapeutics/ Traditional & Complementary Medicine)**	**Free paper 5 (Immunology/infection; Emerging technologies)**	**Free paper 6 (Preventive Medicine/Rehabilitation)**
12:00	Lunch		
13:00	Poster exhibition		
14:15	**Symposium 7** **Pharmacotherapeutics**	**Symposium 8** **Medical Ethics**	**Symposium 9** **Rehabilitation Medicine**
14:15 - 14:35	Tocotrienols as an anti-osteoporotic agent *Professor Dr Ima Nirwana Soelaiman (Malaysia)*	Silent mentor as a model in medical education and its ethical and medicolegal aspects *Dr Djaja Surya Atmadja (Indonesia)*	Performance of Optimization Centre *Lt. Col Dr Bahrain Hj Bintang (Brunei)*
14:35 -	A study on the adherence to the national guideline on antimicrobial	Litigation in clinical practice	Assessment of dysphagia in the field of physical medicine and

14:55	use, in the empirical treatment of CAPD peritonitis and dialysis line related infections in female haemodialysis patients at RIPAS Hospital *Ms Chua Lah Keng* *(Brunei)*	*Professor Dr Kulenthran* *(Malaysia)*	rehabilitation *Dr Wanarani Aries* *(Indonesia)*
14:55 - 15:15	Primaquine decreases plasma concentration of ritonavir: single and multiple dose study in rats *Dr Nafrialdi* *(Indonesia)*	Responsible conduct of research *Professor Dr Mohammad Moshadeqque Hossain* *(Brunei)*	Rehabilitation towards integrative and holistic approach – A PPUKM experience *Ms Katijjahbe bte Md Ali* *(Malaysia)*
15:15	Tea/ poster exhibition		
15:45 - 16:45	**Free paper 7 (students)**	**Free paper 8 (students)**	**Free paper 9 (students)**
20:00	**Conference dinner** (Speeches by 3 Deans)		

Day 3: 24th July 2011(Sunday)

08:30	**Plenary 3 (Indonesia)** Primary Healthy Service-Based First Level Individual Health Service Professor Dr Nila F Moeloek		
09:15	**Symposium 10** **Traditional & Complementary Medicine**	**Symposium 11** **Preventive Medicine**	**Symposium 12** **Medical Disasters**
09:15 - 09:35	Traditional & complementary medicine in Malaysia: Roles & future development *Dr Ramli Abd Ghani* *(Malaysia)*	Health profile among children aged 3-6 years old and its related factors in Jakarta 2011 *Dr Rini Sekartini* *(Indonesia)*	Development and Introduction of a Major Medical Emergency template for public hospitals in Brunei Darussalam *Dr Ang Swee Hui* *(Brunei)*
09:35 - 09:55	Chi Kung and Health *Chan Ee Suen* *(Brunei)*	Abandoned babies *Mr Sopian Ibrahim* *(Malaysia)*	The Tsunami experience: understanding health problem *Dr Ari Fahrial Syam* *(Indonesia)*
09:55 - 10:15	Effect of emergency herbal biscuits on the immune-response of starving Balb-C mice *Professor Dr Purwantyastuti* *(Indonesia)*	Non-adherence to medications, diet and physical activity among patients with type 2 Diabetes Mellitus attending a health clinic in Brunei Darussalam *Dayangku Dr Hajah Roserahaini Pengiran Haji Idros* *(Brunei)*	The Contribution of Sleep Apnoea Syndrome to Bus Accidents: Truth or Myth *Professor Dr Abdullah Sani* *(Malaysia)*
10:15	Morning Tea		
10:45 - 11:45	Prize giving/Closing Ceremony By Professor Dato' Dr Raymond Azman Ali Dean & Director, PPUKM		

FREE PAPERS: ORAL PRESENTATION

FREE PAPER SYMPOSIUM 1 (CANCER)		
F1S1	NUR SYAHRINA RAHIM	CD10 STROMAL EXPRESSIONS IN PHYLLODES TUMORS
F2S1	NORAIDAH MASIR	FOLLICULAR LYMPHOMAS WITHOUT t(14;18) CHROMOSOMAL TRANSLOCATIONS EXHIBIT VARIATION IN BCL2 PROTEIN EXPRESSION.
F3S1	ZAKIAH JUBRI	ANTIPROLIFERATIVE EFFECT OF GELAM HONEY ON LIVER CANCER CELL LINE
F4S1	AZIM MATNOOR	SURVIVAL OF CERVICAL CANCER PATIENTS IN BRUNEI DARUSSALAM: INTERIM RESULTS
F5S1	NOVI SILVIA HARDIANY	GENE EXPRESSION OF MANGANESE SUPEROXIDE DISMUTASE IN HUMAN GLIOMA CELLS: CORRELATION WITH OXIDATIVE STRESS AND TUMOUR GRADE
F6S1	MOHAMAD FAHMI ALATAS	THE EFFECT OF PARTIAL DEBULKING SURGERY ON TUMOR GROWTH, SURVIVAL AND TUMOR SPECIFIC IMMUNE REPONSES

FREE PAPER SYMPOSIUM 2 (MEDICAL EDUCATION/MEDICAL ETHICS)		
F1S2	DAYANG A AZIZ	PARENTS' SATISFACTION TO PAEDIATRIC LAPAROSCOPIC SURGERY: A VALUABLE INSIGHT
F2S2	WAN NORAINI WAN SULAIMAN	DOES THE ACADEMIC PERFORMANCE IN *TAMHIDI* COURSE PREDICT THE PERFORMANCE IN PRE-CLINICAL COURSE? - A PRELIMINARY CORRELATION STUDY OF UNDERGRADUATE MEDICAL TRAINING IN UNIVERSITI SAINS ISLAM MALAYSIA
F3S2	JURIZA ISMAIL	SELF-PERCEPTION ON ACHIEVEMENT OF UKM MEDICAL DOCTOR (MD) PROGRAMME OUTCOMES
F4S2	INDAH SUCI WIDYAHENING	TEACHING EVIDENCE BASED MEDICINE TO MEDICAL STUDENTS: COMPARATIVE STUDY IN 3 MEDICAL SCHOOLS
F5S2	GALIANTI PRIHANDAYANI	MOTHERS PSYCHOPATHOLOGY AND FAMILY RELATIONSHIP TYPE IN SUBSTANCE ABUSE RELAPSE
F6S2	FAZEAN IRDAYATI IDRIS	EVOLVING FACE OF POSTGRADUATE MEDICAL EDUCATION IN BRUNEI PRIMARY CARE

FREE PAPER SYMPOSIUM 3 (CURRENT HEALTH ISSUES/MEDICAL DISASTERS)		
F1S3	AIDALINA MAHMUD	WHAT INFLUENCED THE EMIGRATION OF PUBLIC DOCTORS TO THE PRIVATE SECTOR: A CROSS-SECTIONAL STUDY AMONG PRIVATE DOCTORS IN KUALA LUMPUR AND SELANGOR

F2S3	ROZITA HOD	PREVALENCE AND FACTORS ASSOCIATED WITH JOB STRESS AMONG EMPLOYEES OF A STATE HEALTH DEPARTMENT
F3S3	HO SIEW ENG	PERCEPTION OF QUALITY OF LIFE AMONGST HAEMODIALYSIS PATIENT IN A DIALYSIS CENTRE
F4S3	LAURENTIUS ASWIN PRAMONO	EPIDEMIOLOGICAL MODEL AND SCORING SYSTEM FOR PREDICTING RABIES AFTER DOG'S BITE IN THE TIME OF RABIES OUTBREAK: A STUDY FROM LARAT RABIES OUTBREAK
F5S3	BUDI WIWEKO	CHRONOLOGICAL AGING VS BIOLOGICAL AGING: AN AGE RELATED NORMOGRAM FOR ANTRAL FOLLICLE COUNT, FSH AND ANTI MULLERIAN HORMONE
F6S3	ODUOLA ABIOLA	LEARNING TO LIVE AND LIVING TO LEARN TOGETHER: A NOVEL AND RESOURCEFUL MODEL OF INTERPROFESSIONAL UNDERGRADUATE EDUCATION

FREE PAPER SYMPOSIUM 4 (PHARMACOTHERAPEUTICS/TRADITIONAL & COMPLEMENTARY MEDICINE)		
F1S4	KHAMSIAH NAWAWI	EFFECT OF DIFFERENT VITAMIN E ISOMER CREAMS AGAINST ULTRAVIOLET B INDUCED PHOTODAMAGED HUMAN SKIN
F2S4	NG CHUN YI	CONSUMPTION OF REPEATEDLY HEATED PALM AND SOY OILS CAUSES SIMILAR EFFECT ON BLOOD PRESSURE AND AORTIC MORPHOMETRY IN RATS
F3S4	AHMAD NAZRUN SHUID	EFFECTS OF LABISIA PUMILA ON BONE HISTOMORPHOMETRIC PARAMETERS IN POSTMENOPAUSAL OSTEOPOROSIS RATS MODEL
F4S4	NURSIATI MOHD TARIDI	TOCOTRIENOL RICH FRACTION SUPPLEMENTATION REVERSES AGE-RELATED COGNITIVE DECLINE IN AGED RATS
F5S4	AMPUAN DR HJ ASRIN AMPUAN HJ TENGAH	THE CONTRIBUTION OF PROTEIN KINASE C IN P2Y RECEPTOR-EVOKED VASOCONSTRICTION OF RAT PULMONARY ARTERY
F6S4	MELVA LOUISA	CO-ADMINISTRATION OF RITONAVIR AND PRIMAQUINE DECREASES PLASMA CONCENTRATION OF PRIMAQUINE: SINGLE- AND MULTIPLE-DOSE STUDY IN RATS
F7S4	ARI FAHRIAL SYAM	CLINICAL EFFECTS OF AN INTRAVENOUS AMINO ACID AND GLUCOSE SOLUTION WITH ELECTROLYTES IN NON SURGICAL GASTROINTESTINAL PATIENTS IN INTERNAL MEDICINE

FREE PAPER SYMPOSIUM 5 (IMMUNOLOGY & INFECTION/EMERGING TECHNOLOGIES)		
F1S5	NURUL AZIRAH MOHD SANI	HIGH PREVALENCE OF *ccrC* AND *ccrA2* TYPE CASSETTE CHROMOSOME RECOMBINASE (*ccr*) FOUND IN THE STAPHYLOCOCCAL CASSETTE CHROMOSOME (SCC) ELEMENTS OF COAGULASE NEGATIVE STAPHYLOCOCCUS (CoNS) SPECIES ISOLATED FROM UKMMC.
F2S5	SALASAWATI HUSSIN	HETEROGENOUS VANCOMYCIN INTERMEDIATE *STAPHYLOCOCCUS AUREUS* (HVISA) IN TERTIARY HOSPITAL
F3S5	SHAH FAREZ OTHMAN	PERIPAPILLARY RETINAL NERVE FIBRE LAYER THICKNESS MEASURED BY *IN VIVO* IMAGING IN RELATION TO DEGREE OF MYOPIA AND AXIAL EYEBALL LENGTH IN MALAY SUBJECTS

F4S5	YULIANTY ARIFUDDIN	COMPARISON OF CLINICAL EFFICACY BETWEEN GYNOFORT AND CANESTAN IN THE TREATMENT OF VULVOVAGINAL CANDIDIASIS
F5S5	RAHYUSSALIM	EFFECT OF *STAPHYLOCOCCUS AUREUS* AND *STAPHYLOCOCCUS EPIDERMIDIS* EXOTOXIN AND ENDOTOXIN ON BMSC GROWTH
F6S5	PHEDY	ROLE OF ALLOGENEIC MESENCHYMAL STEM CELLS IN RECONSTRUCTION OF BONE DEFECT IN RABBITS

FREE PAPER SYMPOSIUM 6 (PREVENTIVE MEDICINE/REHABILITATION)		
F1S6	NORIZAM SALAMT	FACTORS RELATED TO ARTERIAL STIFFNESS AND HIGH SENSITIVITY C REACTIVE PROTEIN: A COMPARISON BETWEEN HYPERTENSIVE AND NORMOTENSIVE URBAN MALAYSIAN MEN
F3S6	FOONG YK	EFFECT OF LIMB DOMINANCE ON SHOULDER MUSCLE STRENGTH – A RECOMMENDATION FOR CLINICAL PRACTICE
F4S6	NORFAZILAH AHMAD	HEALTHY LIFESTYLE SATISFACTION AMONG ADULTS IN SABAK BERNAM, SELANGOR
F5S6	SELLY C ANGGORO	VALIDITY AND RELIABILITY OF GROSS MOTOR FUNCTION MEASURE TO MEASURE GROSS MOTOR FUNCTION IN CHILDREN WITH CEREBRAL PALSY
F6S6	DITHA DIANA	LOW PHYSICAL ACTIVITY WORK-RELATED AND OTHER RISK FACTORS INCREASED RISK POOR PHYSICAL FITNESS AMONG CEMENT WORKERS
F7S6	HENDRO YULIENTO	GOOD MUSCLE FITNESS INCREASES HIGH SUSTAINED G-ENDURANCE AMONG INDONESIAN MILITARY FIGHTER PILOTS

FREE PAPER SYMPOSIUM 7		
F1S7	TEOH CS	INGESTION OF HERBS DURING PREGNANCY AND CONFINEMENT PERIOD AMONG MOTHERS WHO DELIVERED AT UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE (UKMMC)
F2S7	CHU CHUN HONG	SEVERITY OF RETINOPATHY AND ERECTILE DYSFUNCTION AMONGST DIABETICS: REALITY AND ASSOCIATION
F3S7	DEWI HAYATI SUHENDRO	INFECTIONS AND CULTURAL ASPECTS IN RELATION WITH NUTRITIONAL STATUS AMONG CHILDREN UNDER-FIVE IN TIMOR ISLAND, INDONESIA
F4S7	ALDO FERLY	EPIDEMIOLOGICAL STUDY OF DENGUE VIRUS INFECTION IN JAKARTA, INDONESIA
F5S7	NURUL ADHWA HAJI ABDUL RAHMAN	ANTI-BACTERIAL PROPERTY OF NESCAFE COFFEE AGAINST *STREPTOCOCCUS* SPECIES.
F6S7	SITI NUR BAZILAH GHAZALI	ASYMPTOMATIC BACTERIURIA IN PREGNANCY AT RIPAS HOSPITAL, BRUNEI DARUSSALAM

FREE PAPER SYMPOSIUM 8		
F1S8	HJ MUHAMMAD AINUDDIN HJ MAHLI	PREVALENCE AND ANTIBIOTIC SUSCEPTIBILITY OF *STAPHYLOCOCCUS AUREUS* ORGANISM IN NASAL SWABS AMONGST MEDICAL AND BIOMEDICAL STUDENTS IN PENGIRAN ANAK PUTERI RASHIDAH SAADATUL BOLKIAH, INSTITUTE OF HEALTH SCIENCES, UBD
F2S8	LEOW KS	MODULATION OF BRAIN ANTIOXIDANT ENZYME ACTIVITY AND PROTEIN PEROXIDATION BY TOCOTRIENOL RICH FRACTION (TRF) SUPPLEMENTATION IN AN ANIMAL MODEL
F3S8	RADZLI RM	THE QUALITY OF LIFE AMONG SPINAL CORD INJURED POPULATION: DOES IT IMPROVE WITH TIME?
F4S8	RISKA WAHYUNINGTYAS	AN EX VIVO CHELATING EFFECT OF 0,75 MG AND 1,125 MG MANGIFERA FOETIDA L. LEAVES WATER EXTRACT ON SERUM OF THALASSEMIA PATIENTS
F5S8	WILLIAM JAYADI ISKANDAR	THE ASSOCIATION BETWEEN SEASON AND HEALTH SERVICE UNIT AVAILABILITY WITH MALARIA INCIDENCE IN BAYAH SUB-DISTRICT, LEBAK DISTRICT, BANTEN PROVINCE DURING 2006-2009
F6S8	HILMAN ZULKIFLI AMIN	THE KNOWLEDGE OF PEOPLE IN BAYAH DISTRICT BANTEN PROVINCE ABOUT DENGUE HEMORRHAGIC FEVER VECTOR AND THE PEOPLE CHARACTERISTIC

FREE PAPER SYMPOSIUM 9		
F1S9	FELIX CHAN	THE EFFECT OF ACUTE INTERMITTENT HYPOBARIC HYPOXIA EXPOSURE ON THE CARBONYL CONCENTRATION AS OXIDATIVE STRESS MARKER IN THE VITAL ORGANS OF RATS
F2S9	TEUKU MUHAMMAD HAYKAL PUTRA	PREVALENCE OF *TRICHOMONAS VAGINALIS* INFECTION AMONG COMMERCIAL SEX WORKERS IN SOME REGIONS IN JAKARTA AND TANGERANG 2008: RELATIONSHIP BETWEEN *TRICHOMONAS VAGINALIS* INFECTION WITH TYPES OF CONTRACEPTION USED
F3S9	ZAHARUDDIN HAJI ABDUL RAHMAN	CURRENT STATUS OF DENGUE INFECTION IN BRUNEI DARUSSALAM
F4S9	FAKHRIEDZWAN FITRI HAJI IDRIS	SALINITY TOLERANCE OF MOSQUITO VECTORS OF HUMAN DISEASE IN BRUNEI DARUSSALAM
F5S9	LIM DW	OSTEOCALCIN IS RELATED TO HYPERGLYCAEMIA AND INSULIN RESISTANCE BUT NOT LIPIDS IN METABOLIC SYNDROME PATIENTS
F6S9	NABILLAH MJ	PEROXIDE VALUE IN REPEATEDLY HEATED VEGETABLE OILS USING DIFFERENT TYPES OF FOOD IN THE FRYING PROCESS

FREE PAPERS: POSTER PRESENTATION

GROUP 1: CANCER		
F1G1	NOOR HAMIDAH HUSSIN	SHORT TANDEM REPEAT (STR) ANALYSIS OF CHIMERISM IN ALLOGENEIC PERIPHERAL BLOOD STEM CELL TRANSPLANT IN UKMMC KUALA LUMPUR.
F2G1	NORWAHIDAH ABDUL KARIM	PALM OIL VITAMIN E (γ-TOCOTRIENOL) AND HYDROGEN PEROXIDE TRIGGER APOPTOSIS ON HEPG2 LIVER CANCER CELLS BY ACTIVATING THE SAME SIGNALING TRANSDUCTION CASCADE
F3G1	MOHD NASIR SHAFIEE	THE INFLUENCE OF SURGICAL-CHEMOTHERAPY INTERVAL ON THE CLINICAL OUTCOME OF PATIENTS WITH OVARIAN CARCINOMA: THE SHORT-TERM MORBIDITY AND CA 125 LEVEL
F4G1	NORAIDAH MASIR	NODULAR LYMPHOCYTE-PREDOMINANT HODGKIN LYMPHOMA: A RARE INDOLENT TUMOUR WITH RECURRENCE AT EXTRANODAL SITES
F5G1	SRIGANESH KALIMUTHU	ASSESSMENT OF OSTEOARTICULAR TUMOURS IN A GENERAL PATHOLOGY LABORATORY: THE UKM EXPERIENCE
F6G1	SRIGANESH KALIMUTHU	RHABDOID MENINGIOMA: A RARE MALIGNANT SUBTYPE
F7G1	SRIGANESH KALIMUTHU	LYMPHOEPITHELIAL CARCINOMA OF THE PAROTID GLAND: A RARE TUMOUR
F8G1	NORLIA ABDULLAH	DO CALCIFIED FIBROADENOMATA OF THE BREAST REQUIRE ROUTINE SONOGRAPHY?
F9G1	AZMAWATI MN	PREDICTIVE FACTORS OF INTRAHEPATIC RECURRENCE AMONG HEPATOCELULLAR CARCINOMA (HCC) PATIENTS IN LIVER CENTRE, MALAYSIA.
F10G1	ZARINA A LATIFF	PARENTING STRESS IN CHILDHOOD LEUKAEMIA
F11G1	RAJA LEXSHIMI RG	DEVELOPMENT OF A PATIENT EDUCATION AID FOR WOMEN NEWLY DIAGNOSED WITH BREAST CANCER
F12G1	EMILY WONG YIN PING	A CASE OF T(14;18) NEGATIVE FOLLICULAR LYMPHOMA WITH UNSUAL IMMUNOPHENOTYPE: A DIAGNOSTIC DILEMMA
F13G1	SEPTELIA INAWATI WANANDI	CHARACTERIZATION OF MANGANESE SUPEROXIDE DISMUTASE EXPRESSION (MNSOD) IN HUMAN BREAST CANCER STEMCELLS AND ITS CORRELATION WITH CELL PLURIPOTENCY
F14G1	ASMARINAH	GENE EXPRESSION OF BCL-2 FAMILY AND PROTEINS INVOLVED IN THE MITOCHONDRIAL TRANSPORT SYSTEMS (VDAC AND TOMM) AS POSSIBLE MARKER FOR PROSTATE CANCER
F15G1	FADLINA AZMI	THE EFFICACY OF RADIOTHERAPY CITO IN THORACIC MALIGNANCY WITH VENA CAVA SUPERIOR SYNDROME
F16G1	DAYANG A AZIZ	TOTAL PLEURECTOMY: THE MECHANICAL PLEURODESIS OF CHOICE FOR RECURRENT SECONDARY SPONTANEOUS PNEUMOTHORAX IN A CHILD WITH PULMONARY LANGERHANS CELL HISTIOCYTOSIS; A CASE REPORT
GROUP 2: MEDICAL EDUCATION/MEDICAL ETHICS		
F1G2	HO SIEW ENG	NURSES COMPLIANCE WITH HAND HYGIENE PRACTICE AND KNOWLEDGE IN A HOSPITAL
F2G2	MOHD NASIR SHAFIEE	PERCEPTION, KNOWLEDGE AND ATTITUDE TOWARDS HUMAN PAPILLOMAVIRUS (HPV) AND HPV

		VACCINATION FOR CERVICAL CANCER PREVENTION AMONG UNIVERSITY STUDENTS
F3G2	AZMAWATI MN	KNOWLEDGE, ATTITUDE AND PRACTICE OF INFLUENZA A (H1N1) AMONG RURAL COMMUNITY IN MALAYSIA.
F4G2	MOHD ROHAIZAT HASSAN	ERECTILE DYSFUNCTION AMONGST MEN WITH DIABETES MELLITUS IN A PRIMARY HEALTHCARE SETTING, MALAYSIA
F5G2	ASMA HUSNA	A CROSS SECTIONAL STUDY ON MATERNAL KNOWLEDGE LEVEL RELATED TO HEALTH CARE OF THE NEONATES AT UKM MEDICAL CENTRE
GROUP 3: CURRENT HEALTH ISSUES/MEDICAL DISASTERS		
F1G3	ZULKERNAIN AHMAD	THE EMOTIONAL WELLBEING OF RESUSCITATION TEAM MEMBERS: THE FORGOTTEN REALM
F2G3	NORALIZA M ARIFFIN	HOLISTIC APPROACH TO RESUSCITATION: THE IMPORTANCE OF FAMILY PRESENCE
F3G3	RIZAL ABD MANAF	COST ANALYSIS OF OPEN APPENDICECTOMY COMPARED TO LAPAROSCOPIC APPENDICECTOMY IN UNIVERSITY KEBANGSAAN MALAYSIA MEDICAL CENTRE (UKMMC) 2011
F4G3	LUCAS LOW	ENTOMOFAUNA OBTAINED FROM FORENSIC ENTOMOLOGICAL STUDIES CONDUCTED IN A SECONDARY FOREST IN ULU GOMBAK, SELANGOR
F5G3	SYAMSA RIZAL ABDULLAH	DISTRIBUTION OF FORENSICALLY-IMPORTANT ENTOMOFAUNA ON CARCASS AT HIGH RISE BUILDING IN KUALA LUMPUR, MALAYSIA
F6G3	KHADIJAH SHAMSUDIN	ANXIETY AND STRESS AND THEIR CORRELATES AMONG A GROUP OF MALAYSIAN UNIVERSITY STUDENTS
F7G3	ROSNAH SUTAN	UNIVERSAL ACCESS TO REPRODUCTIVE HEALTH: OPINIONS OF URBAN YOUNG ADULTS
F8G3	NUR AISHAH ABDUL LATIFF	THE PREVALENCE OF CAROTID ARTERY STENOSIS IN PATIENTS WITH CORONARY ARTERY DISEASE IN OUR LOCAL SETTING – UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE
GROUP 4: PHARMACOTHERAPEUTICS/TRADITIONAL & COMPLEMENTARY MEDICINE		
F1G4	KAMSIAH JAARIN	EFFECT OF CONSUMPTION OF REPEATEDLY HEATED PALM AND SOY OILS ON BLOOD PRESSURE AND AORTIC MORPHOMETRIC ALTERATIONS IN RATS
F2G4	MOHAMED R ABDALLA ESTAI	THE EFFECTS OF *PIPER SARMENTOSUM* ON BONE FRACTURE HEALING: A BIOMECHANICAL STUDY IN OVARIECTOMISED RATS
F3G4	ABDUL KADIR AK	INTRAUMBILICAL VEIN INJECTION OF OXYTOCIN FOR RETAINED PLACENTA IN HTAR HIGH DOSE VERSUS LOW DOSE REGIME
F5G4	NURLAILY ABDULLAH	TOCOTRIENOL-RICH FRACTION FORMULATION ENHANCES WOUND HEALING IN STREPTOZOTOCIN-INDUCED DIABETIC RATS
F6G4	NORMALIZA OMAR	EFFECTS OF *MOMORDICA CHARANTIA* AQUEOUS EXTRACT ON CUTANEOUS WOUND HEALING IN DIABETIC RATS
F7G4	AZIZAH UGUSMAN	FLAVONOID CONTENT OF PIPER SARMENTOSUM
F8G4	NORHAZILAH MUHAMAD	EVALUATION OF THE WOUND-HEALING PROPERTY OF *MOMORDICA CHARANTIA* (MC) IN DIABETIC RATS
F9G4	SITI RAUDZAH MOHD KAMAL	EFFECT OF TOPICAL FORMULATION OF *CENTELLA ASIATICA* EXTRACT AND TOCOTRIENOL RICH

		FRACTION (TRF) ON WOUND HEALING IN DIABETIC INDUCED RATS
F10G4	SITI BALKIS BUDIN	EFFECT OF PALM VITAMIN E ON THE OXIDATIVE STRESS IN THE PANCREAS OF STREPTOZOTOCIN-INDUCED DIABETIC RATS
F11G4	NURUL UYUN AZIZ	ATHEROSCLEROSIS: CURCUMIN AGAINST HEATED PALM OIL DIET IN OVARIECTOMISED RATS
F12G4	NORHAZIRA A RAHIM	γ-TOCOTRIENOL PROTECTS AGAINST HYDROGEN PEROXIDE-INDUCED REPLICATIVE SENESCENCE BY REGULATING APOPTOTIC PATHWAY AND MODULATING TELOMERASE ACTIVITY
F13G4	TG AHBRIZAL TG AHMAD	GELAM HONEY PROTECTS AGAINST RADIATION DAMAGE IN HUMAN DIPLOID FIBROBLASTS
F14G4	SUZANA MAKPOL	MODULATION OF SENESCENCE ASSOCIATED GENES EXPRESSION IN HUMAN DIPLOID FIBROBLASTS BY TOCOTRIENOL-RICH FRACTION PREVENTS CELLULAR SENESCENCE
F15G4	RASHID JUSOH	EFFECT OF CURCUMIN ON THE AORTA OF EXPERIMENTAL OVARIECTOMIZED RATS FED WITH 2% CHOLESTEROL DIET: AN ELECTRON MICROSCOPIC STUDY
F16G4	NURAZLINA MOHD FAHAMI	EFFECT OF *PIPER SARMENTUSUM* ON PARACETAMOL INDUCED OXIDATIVE INJURY IN RATS LIVER
F17G4	NOR FAIZATUL SHALIDA OMAR	NEUROPROTECTIVE POTENTIAL OF *PIPER BETLE* AGAINST BSO-INDUCED NEURONAL CELL DEATH
GROUP 5: IMMUNOLOGY & INFECTION/EMERGING TECHNOLOGIES		
F1G5	NIRMALA CHANDRALEGA	EVALUATION OF BV®BLUE TEST KIT FOR THE DIAGNOSIS BACTERIAL VAGINOSIS
F2G5	HASSRIANA FAZILLA SAPRI	STAPHYLOCOCCAL VIRULENCE GENES AND INFECTION: THE METHICILLIN-SUSCEPTIBLE *STAPHYLOCOCCUS AUREUS* (MSSA) EXPERIENCE IN AN ORTHOPAEDIC WARD
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Special Lectures

NATIONAL CERVICAL CANCER PREVENTION AND CONTROL PROGRAMME IN BRUNEI DARUSSALAM

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Background:
Cervical cancer is the second biggest cause of female cancer mortality worldwide with around 300,000 deaths yearly. About 500,000 cases of cervical cancer are reported each year with nearly 80% in developing countries; Asia accounts for almost half of the total cases.

In Brunei Darussalam, the incidence of cervical cancer has been rising since cancer registration was started in 2002. It has now become the *second commonest female cancer* in the country and is the *third commonest cause of all cancer deaths* in 2008. Brunei Darussalam age-standardised incidence rate of cervical cancer per 100,000 populations is amongst the highest in the Asia-pacific region. The incidence of cervical cancer in Brunei Darussalam shows two peak age groups at 45-49 years and 65-75 years respectively. The youngest cervical cancer victim was 25 years of age.

Cervical cancer is preventable and Pap smear screening for cervical cancer reduces incidence and mortality from the disease in developed countries. Well-organised programmes have the greatest impact (high coverage of target population to be screened 80% or more). In Brunei Darussalam, only < 12,000 pap smears are taken annually, of which a majority are taken from MCH clinics.

In 2009, Ministry of Health, Brunei Darussalam started the National Cervical Cancer Prevention and Control Programme.

Activities in 2009 includes:

- CME to all primary health care doctors on standardising pap smear technique
- Include pap smear due date as a reminder in patients' case notes (new patient summary sheet)
- Identify patients from existing screening programmes eg. Occupational health unit and Integrated health screening
- Health education talks to public at health centre level
- 1st cohort of nurses for Pap smear training
- Pap smear training included in community nursing training curriculum – UBD
- Pathology laboratory – standardisation of pap smear reporting format
- Published National Cervical Cancer Prevention & Control Guideline
- Cervical cancer awareness month (road shows in all 4 districts and public forum)
- Health education through media and newspapers

Activities in 2010 includes:

- 2nd cohort of nurses for Pap smear training
- Finalising working paper for HPV vaccination plan
- Pathology laboratory - liquid based cytology plan for cervical cancer screening, manpower issue and training of cytotechnologists
- Preparations for setting up Pap smear Registry eg. obtain database - female IC holders from Immigration Department

Activities in 2011 includes:

- Setting up National Pap Smear Registry
- Cervical cancer awareness month (road shows in all 4 districts and public forum)
- Television promotions on cervical cancer and Pap smear
- 3rd cohort of nurses for Pap smear training
- Health education through media and newspapers
- Preparations for HPV vaccination implementation (starting in January 2012)

The presentation will cover the progress so far from 2009, the future plan of this programme and its challenges. Brunei Darussalam has taken remarkable initiatives to reduce the incidence and mortality rate of cervical cancer in this country.

METABOLIC SYNDROME: WHERE IT ALL BEGINS

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The title begets the issue: Is there such an entity as metabolic syndrome, how did the syndrome generate so much interest and is it really useful clinically to predict the absolute risk of Diabetes and cardiovascular disease?

The concept of Metabolic Syndrome first took the attention of the scientific medical community when Reaven published in 1988 the concept that insulin resistance is the common physiological abnormality linking the abnormal glucose tolerance, central obesity, hypertension, and dyslipidemia, calling it a metabolic syndrome of physiological interest. The subsequent onslaught of publications however treated it as a clinical or epidemiological entity with various definitions over the next two decades and linking it to the relative risk of developing diabetes or cardiovascular event. This was not what it was meant to be, as the subsequent data generated showed that each entity of the syndrome e.g. hypertension, central obesity, confers a certain risk and the sum of the entities do not confer any greater risk of CVD. The Metabolic Syndrome also did not cater for more important risk factors found in the Framingham Risk calculation such as age, gender, LDL cholesterol, etc. Because of differing definitions of the Metabolic Syndrome by WHO, IDF, ADA, NCEP ATP 111 etc, comparisons for epidemiological significance was not always possible. Thus the Metabolic Syndrome has now lost its luster!

But “where it all begins” is really what Reaven wanted to stimulate research interest in: Is insulin resistance the common denominator that links all the 4 features of the syndrome. If so, what causes this insulin resistance? How do we link insulin resistance to central obesity? Which comes first? Central obesity causing insulin resistance or vice versa? Similarly how is it linked to hyperinsulinemia and subsequent development of diabetes? How is it linked to dyslipidemia? And hypertension? And also in women, with polycystic ovaries?

Our interest has always been in this fascinating physiological misnomer. One possible common pathway could be a genetically determined abnormality in handling the endogenous glucocorticoid steroid cortisol by the abdominal fat tissue, resulting in a dysfunction of the hypothalamo-pituitary-adrenal axis at the tissue level. Glucocorticoid steroids in excess will cause dyslipidemia similar to that seen in Metabolic Syndrome. Similarly excess steroids cause central obesity, insulin resistance and diabetes, hypertension and polycystic ovaries…a clinical entity called Cushing’s disease. Metabolic Syndrome however does not have the other features of Cushing’s syndrome of proximal myopathy, osteoporosis, protein catabolism resulting in thin skin with easy bruising, and suppression of the lymphoid system involved with humoral and cellular immunity. Clearly thus it is a “limited form” of Cushing’s syndrome!

Our ideas that this could be a variety of steroid hormone dysfunction at the abdominal fat level stems from the discovery of the enzyme 11 beta hydroxysteroid dehydrogenase which reversibly converts active hormone cortisol to inactive cortisone. This enzyme is particularly important in the kidneys where it exists as the 11 HSD type 2 enzyme and is dependent on the co-factor NADPH. It "protects" the kidneys from the excess cortisol found in the circulation, from acting on the mineralocorticoid receptor, competing with aldosterone in regulating salt balance by the kidney tubules. In individuals of families that lack this type 2 form of 11 HSD, the excess cortisol causes hypertension, so called pseudohyperaldosteronism or Cushing's disease of the kidneys. Only the kidney function was disturbed. Similarly, the testes and ovaries are protected against excess steroids during stress which could inhibit the function of Luteinizing hormone receptors and causing anovulation by the ovaries or lower testosterone levels during stress. Similarly during stress, ACH is stimulated with increase cortisols throughout the 24 hour period with loss of the circadian rhythm, and causing increase blood pressure even during sleep…an early feature of hypertension in "Metabolic Syndrome". Similarly, excess steroids during stress causes increase insulin resistance, and at times frank hyperglycemia called "Stress Hyperglycemia" not amounting to diabetes. Clearly if an abnormal 11HSD enzyme is found at the abdominal fat tissue and/or ovaries and/or the hypothalamus, then this could cause a predisposition to abnormally over production of active cortisols in these tissues leading to the features seen in metabolic syndrome. The hypothesis is not confined to 11 HSD alone…there are many examples in physiology, such as Vitamin D Resistant Rickets, in pseudohypoparathyroidism, familial Conns Syndrome, etc. It is also exemplified by the fact that enzymes in the body have many isotypes such as found for Phosphodiesterase Enzymes that break down cyclic AMP/GMP. The type 5 PDE is found only in the penis erectile tissue…a fact made use of in Viagra etc.

The enzyme can be inhibited by ligands such as glycirrhizic acid or GCA derived from the Glycirrhia Species plants used in traditional medicines and preservatives such as Assam Boi. Using this ligand, we could show that many of the effects of excess cortisol in abdominal fat and liver etc in animals with induced obesity can be reversed and insulin sensitivity is increased. In genetically engineered rats with deficiency of 11 HSD, the insulin resistance and dyslipidemias were absent even when the animals were stressed and overfed.

Clearly the environment must play a role in the development of diabetes, hypertension and obesity. The metabolic genetic marker may be present even before the onset of the frank diabetes…by insulin resistance even with normal sugars, and the dyslipidemia of high triglyceride and low HDL cholesterol. But when the environment provides for extra calories and at the same time increase stress levels such that the circadian rhythm of cortisol is lost, then the effect of the abnormal 11 HSD would manifest. Thus the increase in hypertension and obesity and diabetes in westernized rapidly developing countries like Malaysia and China and India. The beginning, could just be abnormal 11HSD in fat tissues…

PRIMARY HEALTHY SERVICE-BASED FIRST LEVEL INDIVIDUAL HEALTH SERVICE

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Over the last four decades, science and technology, including medicine, have developed very rapidly. Organ transplantation, in vitro fertilization, genetic engineering, and stem cell therapy have now become part of our daily lives.

Implications of such developments are that medical services have become fragmented and this has prompted specialist-oriented health services, with the consequence that healthcare has developed into an expensive industry.

In countries in which the regulations are still weak, the advances of medicine have not yielded sufficient benefits for the development of health for all communities. If anything, they tend to be harmful because they create dislocation of health resources. Primary services which become the need of communites are frequently neglected.

It is necesary to develop Primary Medical Service System because basically a mental model reflects a philosophy. In addition, physicians can practice appropriately within an equally good system. Such system includes medical education system, medical service system, and medical financing system which should be integrated into ethics, moral principles, and regulations, such that physicians are enabled to practice appropriately for the benefit of all communities.

CERVICAL CANCER PREVENTION IN LOW RESOURCE SETTING JAKARTA-INDONESIAN PERSPECTIVE

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Cervical cancer ranked the second most frequent cancer worldwide among women, next to breast cancer. According to histopathology data (2006) at multicenter throughout Indonesia, cervical cancer shows the first-ranked among cancer in women. It continues to be a worldwide public health burden, especially in low resource setting like Indonesia. There are about 15.000 new cases yearly and 8.000 deaths. Therefore, the estimation of new cases per day is 40 – 45 cases and 20 – 25 deaths/day; meaning 1 woman dies per hour. For this matter, cervical cancer prevention effort needs to be immediately implemented.

To address this burden, it is important to act proactively in preventing the disease. Therefore, 'See and Treat' programme was implemented at the community in several Jakarta areas with a comprehensive approach. We created five pillars of foundation 1) Area preparation that was coordinated with local government 2) Training course involving VIA and cryotherapy 3) Promotion to the society especially women to increase the awareness of the disease, 4) Screening and treatment by VIA and cryotherapy, and 5) Referral system. From December 2007 to December 2010, from 22.989 clients that had been screened, there were 970 cases (4.2%) of VIA test positive. Nineteen cases (0.1%) of invasive cervical cancer was found and surprisingly cervicitis incidence rate is also quite high (19,05%).

Pap smear has been proven to reduce the incidence and mortality rates of cervical cancer by 90% and 70-80% respectively, but it has many obstacles to be implemented in low resource setting. Indonesia has a very low screening coverage i.e. less than 5-8 % which ideally should be 80%. Therefore, it is necessary to have an alternative method. Visual inspection with acetic acid (VIA) is the most suitable alternative screening method to be used in a low resource setting.

VIA was chosen because it is cheap, non-invasive and a simple procedure which can be conducted by the general practitioners, midwives or trained nurses and supported by health cadres for awareness to recruit the clients. Besides identifying the lesion, cervical cancer can also be prevented provided the precancerous lesion is followed by an effective treatment. In this case, cryotherapy was selected as the immediate treatment because it has a cure rate comparable to other common outpatient procedures. In conclusion, "See and treat programme" is recommended for cervical cancer in a low resource setting like Jakarta, Indonesia.

HPV VACCINATION FOR THE PREVENTION OF CERVICAL CANCER

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Human Papilloma Virus (HPV) infection is a recognised cause of cervical cancer and HPV vaccination has been shown to prevent infection of high risk types 16, 18 that could lead to cervical cancer. The lecture summarises the data on the HPV vaccines available in the market and the challenges involved with the use of these vaccines.

There is no doubt that HPV infection plays a central role in the development of precancerous changes that can lead to cervical cancer. High risk HPV types 16, 18 form up to 70% of all cervical cancer. Vaccination with the bivalent vaccine and the quadrivalent vaccine has shown good efficacy for prevention of infection with these types. Broader protection for non-type 16, 18 high risk HPV types has also been demonstrated in both vaccines. Although the vaccine is targeted for young girls, efficacy is also seen in patients up to the age of 45 years. Data is also available to demonstrate protection against precancerous lesions of the vagina, vulva and the anus.

Cost effectiveness data for its use in Malaysia has indicated health care savings as a result of a reduction in the number of patients who will require treatment for cervical cancer. Both vaccines have been safely given to women with few side effects.

The challenges faced by doctors involved with HPV vaccination include providing an appropriate amount of information to allow consent for the vaccination. Since the introduction of the vaccination, there has been a gradual acceptance of the vaccination with increasing numbers of women opting for vaccination in both the government and private sectors.

HPV vaccination has been effective at preventing high risk HPV infection that could lead to the development of cervical cancer.

Keywords:
Human Papilloma Virus, cervical cancer, Malaysia

PERSONAL AND PROFESSIONAL DEVELOPMENT (PPD) IN THE MEDICAL CURRICULUM: NEEDS AND CHALLENGES

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Professional development is one of the important core competencies of medical graduates. Professionalism at all level of medical training is emphasized in guidelines for medical schools all over the world. Many reports indicate a direct correlation between physicians with disciplinary issues and presence of unprofessional behaviours during medical school. Formalization of a personal and professional development module for medical students could be regarded as a strategic step towards addressing the concern. The main challenge is to make the implicit explicit and to bring the `hidden curriculum' out to be assessed objectively. Such efforts could be daunting and require great leadership commitment and consistency. PPD is best delivered through role-modeling, hence the other challenge is to train medical educators to inculcate high standard of professionalism within them. Assessment of professionalism is another important issue to consider. Finding the right measurement tools that could gauge the level of PPD of the medical students is another challenge. Continuous feedback and mentoring is essential and critical in supporting the development of professionalism, which is a life-long commitment.

THE ROLE OF SPIRITUALITY IN HOLISTIC HEALTHCARE

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The current healthcare delivery system has undergone a paradigm shift from `biomedical` to `biopsychosocial` model in an attempt to provide `Holistic` approach to patient care. The concept of `integrative medicine ` as a biopsychosocial healthcare approach has already been accepted in various countries around the world.

Medical and scientific research has demonstrated that religious belief and practices also have a significant impact on physical and emotional health; and affect the speed of recovery. The terms 'religion` and `spirituality` are often used interchangeably though many researchers recommend clarifying the difference between the terms "spirituality" and "religion." They advocate a universal, broad-based definition of spirituality that encompasses religious and nonreligious perspectives. This encouraged researchers to study the relationship between spirituality or religion and healing and medicine and has become an important area for clinical research.

Spirituality has been recognized around the world as an important factor that contributes to health. Various medical institutions all over the Europe, America and Canada have developed centres of spirituality and health to study and deal with this aspect of health in more detail and scientific manner.

The purpose of this presentation is to explore the concepts of 'Holistic' healthcare and 'spirituality'; to highlight the role of spirituality in promoting holistic healthcare; and to identify the ways to incorporate spirituality in our healthcare and medical education system.

TRACER STUDY: CAPTURING THE SOFT SKILLS COMPETENCY OF FMUI'S MEDICAL GRADUATES

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Background:
The aim of educational process in medical institutions is to produce competent doctors that are able to perform well in their profession. To accomplish that goal, synchronization needs to be established between the demand of the workplace and the learning process occurring in medical schools. Tracer study acts as a mean of bridging the two aspects by providing feedback for medical institutions on the performance of their graduates in the workplace.

Competency-based curriculum has placed an emphasis on the achievement of competency of its graduates. While specific competencies have been evaluated in previous study, this phase of study aimed at obtaining information on the achievement of generic competencies (such as communication, information technology, and teamwork) based on the performance of FMUI's graduates and providing insights for the institution for further improvement if needed.

Method:
This is a cross sectional study conducted in February 2011. Samples are randomly selected from FMUI's graduates of year 2000-2008 (n=30). We collected data from stakeholders of our sample group using questionnaire. Certain issues arising from the questionnaire are further explored using interviews.

Result:
Using the 4-Likert scale, the achievement of generic competencies in FMUI's graduates is considered 'excellent' in 19.5% of stakeholders, 'good' in 60% of stakeholders, and the rest is graded as 'fair'. Of all the 7 aspects of generic competencies explored, 90% of stakeholders deemed the integrity of graduates as 'excellent' and 'good'; placing integrity as the competency with the highest rating. Meanwhile, personal growth has the lowest rating, with 30% of graduates' competency is graded as 'fair'. Certain issues surfacing from the interview are suggestions to further enhance the moral and ethical competency of graduates, improvements in teaching communication and teamwork especially in the context of workplace, and the need for IT training directed at new students upon entering medical school.

Conclusion:
Overall, the achievement of generic competencies in FMUI's graduates is satisfying. Plans to further improve the quality of our graduates will be conducted in our institution based on the feedback obtained.

SEVERAL COPING STRATEGIES MAY PROTECT MEDICAL DOCTORS TO BE DISTRESS

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Background:
High level coping strategies could help protect doctors from distress condition. This study aimed to identify coping strategies to minimize distress.

Materials & Methods:
A cross sectional purposive method sampling study was undertaken at a teaching hospital between April-May 2011 among postgraduate medical students using a special form which consisted of several demography, job status, and active coping strategies (active strategies planning stressor; denial and behavioural disengagement; seeking social support for instrumental and emotional reasons; turning to religion). The score for each coping items ranged from 0 to 10 (0=lowest and 10=highest). This study used the WHO self reporting questionnaire (SRQ-20) to measure distress, and linear regression analysis.

Results:
A number of 135 subjects participated this study which consisted of 62% female and 38% male, aged between 23-47 years. The distress score ranged from 0-17, 7% of subjects experienced distress. The final model showed that distress negatively correlated with: trying to see problem in different sight, to make it seem more positive [coefficient regression (β)=-0.531; p=0.000]; think the best to handle problem (β=-0.365; p=0.044); did not to believe the problem has happened (β=-0.639; p=0.002); talk to someone about the problem (β=-0.382; p=0.025); and trying to find comfort in religion (β=-0.222; p=0.115). On the other hand, distress positively correlated with coping: do what has to be done one step at a time (β)=0.410; p=0.088); learnt from experience (β)=0.332; p=0.159); quit trying solving the problem (β=0.217; p=0.036); getting upset and aware of the problem (β=0.169; p=0.149); pretending the problem did not happened (β=0.359; p=0.109); accepting the problem (β)=0.233; p=0.177); trying getting support from friends through information technology (β)=0.277; p=0.020).

Conclusion:
Only a few medical doctors experience distress, Distress may be minimized by good attitude, more relax, and positive thinking.

Key words:
distress, coping strategies, self reporting questionnaire-20

STRESS AND ITS INFLUENCE FACTORS AMONG DOCTORS IN CENTRAL JAVA INDONESIA

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Background:
Doctor's stress is interrelated with the quality of care, patient satisfaction, patient compliance and continuity of care. This study identified coping mechanism related to stress level among doctors in an area of Indonesia.

Materials and Methods:
A purposive sampling method among medical doctors (MDs) was carried out in Central Java between March till May 2011. Personal stress inventory was employed to assess stress scale, coping orientation and problem experienced (COPE) using ASEAN doctor stress survey questionnaire. Linear regressions were used to identify the relationship between the stressors, coping mechanism and stress level.

Results:
A total number of 218 MDs participated this study. Mean score of stress level for female was 6.6 (SE 5.8) and male 7.8 (SE 4.7). The higher mean score was managerial duties 11.8 (SE 4.9) for female and 12.6 for male, and job dissatisfaction 8.6 (SE 4.6) for female and 9.3 (SE 4.7) for male. Active coping and planning was the highest score of coping mechanism, for both gender. All stressor variables had significant correlation to stress level, denial and behavioural disengagement for both gender. Males showed that conflict with work and home life had a direct effect on stress level (t value 2.06), however indirect effects on stress level suggested that work environment affects coping mechanism (t value -2.09). Managerial duties also affected the coping strategy (t value 3.36) which in turn affects stress level. In addition females revealed that only conflict at work and home life has a direct effect on stress level.

Conclusion:
The majority of doctors had relatively low score of stress level. Male doctors had slightly higher level of stress compared with female doctors. Managerial duties and job dissatisfaction were salient stressors. In order to reduce the problems, most doctors used an active coping and planning strategy. Further research is needed to explore and implement intervention strategies.

Key words:
stress, coping mechanism, medical doctor, central java

QUALITY OF HEALTHCARE PROFESSIONALS: "TOO MANY DOCTORS"

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Sustained economic growth in the last few decades has resulted in the demand for better medical services in Malaysia, thereby creating a 'shortage of doctors'. In responding to the 'shortage', the government approved the rapid expansion of medical schools; furthermore the Medical Council recognized several medical schools in foreign countries to facilitate aspiring doctors. As a consequence, the number of new medical graduates increased exponentially and today Malaysia with a population of 27 million produces more than 4,000 medical graduates annually. The high increase in medical graduates resulted in inadequate training opportunities for house officers. The medical profession has expressed serious concerns over the situation. The questions being posed include: Have we produced too many doctors? Have we sacrificed standards and quality for quantity? Should the authorities introduce an appraisal system to assess the quality of doctors before they are admitted into the Malaysian Medical Register? This paper will address some of these complex issues facing medical education and medical graduates.

CHROMOSOME BREAKAGE AMONG THE WORKERS IN THE LOW EXPOSURE BENZENE

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Background:
Many oil and gas Industries are producing benzene, even though exposures to the workers are limited to low levels compared to other industries. It is well known that benzene is a carcinogen. This study's objective is to evaluate the prevalence and risk factors of lymphocyte chromosome breakage among workers who are exposed to low levels of benzene at the workplace.

Materials & Method:
The design of this study was cross sectional. The study was conducted in a Gas and Oil Company from September 2007 to April 2010. The population of this study was all permanent workers from the production department and the head office. The sample size was 115. Data collection was conducted by interview, physical examination, laboratory examination and observation of work practices. Variables included in this study were level of benzene exposure from the workplace, age, and work period, type of work, history of work, increasing risk factors, anti-oxidant consumption, behavior and management, health status, levels of urine s-PMA, passive sampler, CYP4502E1, and other exposures.

Results:
The prevalence of lymphocyte chromosome breakage was 62.61%, almost in number 3 and 6. Type of work (p=0.010; Crude OR=3.32; 95% C.I.=1.33-8.30), low antioxidant consumption (p=0.033; Adjusted OR=3.07; 95% C.I.=1.10-8.56), work practices and management ((p=0.008; Crude OR=0.33; 95% C.I.= 0.16-0.76) and benzene exposure at the workplace (p=0.018; Crude OR=2.53; 95% C.I.=1.16-5.49) had significant relationships with lymphocyte chromosome breakage. Whereas age, work history, lifestyle, CYP4502E1 polymorphism, s-PMA urine levels, other benzene exposure and other exposures, showed no significant relationship. The CYP4502E1 enzyme expressions are 87.8% homozygote wild type, 11.3% heterozygote and 0.9% homozygote mutant.

Conclusion:
The prevalence of lymphocyte chromosome breakage was 62.61%. Benzene exposure in the workplace, occupation, and antioxidant intake resources were related to lymphocyte chromosome breakage. Low antioxidant consumption is an increasing risk factor. It is recommended that benzene exposure should be further controlled to minimal levels and consumption of antioxidants should be encouraged.

Keywords:
lymphocyte chromosome breakage, low exposure benzene, antioxidant sources

TOBACCO CONTROL INITIATIVES IN BRUNEI DARUSSALAM

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Background:
Tobacco control initiatives started in the 1970s in Brunei Darussalam with the voluntary prohibition of cigarette advertising in television, radio and cinema. Since then, various administrative, legislative and financial measures have been initiated to reduce the demand and supply of tobacco products in the country.

In 2001, it was estimated that 17.4% of the population, aged 15 years and above, were smokers; 31.8% of them were male.

Brunei Darussalam ratified the WHO Framework Convention on Tobacco Control on 3 June 2004. To fulfill its obligations to the international treaty, the Tobacco Order was enforced in 2005. The new law contains provisions for the control of tobacco products (including importation, sale, licensing and labeling); smoking in specified places and specified vehicles; and the control of advertisements.

Keywords:
Tobacco control, Brunei Darussalam

PROFILE OF POLLEN GRAIN AMONG ALLERGIC PATIENTS IN INDONESIA

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Allergy is a human immediate hypersensitive reaction to allergens. It occurs when the body produces an excess of IgE antibody as response to allergen. Pollens are important environmental allergens in subtropical countries which contribute to significant morbidity especially during the pollenation period. Despite the all year long of plants flowering in Indonesia, pollen allergy has not been well studied. The objectives of this study were to identify pollen from plants in a given area in Indonesia which may cause allergy in human. A Burkard spore trap was set for seven days sampling in Lebak Bulus, district in South Jakarta, while passive collectors with adhesive object glass were placed in Darmaga Bogor, Pasar Minggu and Jagakarsa in South Jakarta. Using light and scanning electron microscopes (SEM), pollens that were trapped and identified were acacia (*Acacia auriculiformis*), cogon grass (*Imperata cylindrica*), coconut (*Cocos nucifera*), palm trees (*Elaeis guineensis*), maize (*Zea mays*), rice (*Oryza sativa*), and pine (*Pinus merkusii*). Molecular weight of protein profiles from those pollen extract using sodium dodecyl sulfate-polyacrylamide gel electrophoresis analysis (SDS-PAGE) were dominated by 10-70 kD bands. Allergenicity in human to those pollen commercial Grasses mix extract was also included in the test to people with and without history of allergy, 69 people each, using the skin prick test method. The seven pollen of plants trapped in Indonesia are allergenic. Human sensitivity to Cogon grass and acacia pollen are more severe than to the rest of other pollen; however, the sensitivity was found most to commercial allergens of Grasses mix. People with respiratory allergy was more sensitive than people without history of allergy. Meanwhile, human sensitivity to acacia was the same in those two groups of people. Pollen of Cogon grass and acacia are potential allergens to be used for skin prick test in Indonesia. Acacia trees are not recommended to be utilized as a shading tree since their pollen showed sensitivity reaction in human.

Keywords: pollen, allergen, sensitivity, skin prick test.

SALINITY-TOLERANT MOSQUITOS INCREASE TRANSMISSION RISK OF MOSQUITO-BORNE DISEASES IN A WARMING WORLD

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Background:
Global warming, by altering temperature, rainfall and humidity, can increase transmission of mosquito-borne diseases in many countries due in part to enhanced vector breeding and survival. Global warming will also raise sea levels, leading to an increase in brackish/saline water bodies in coastal areas. Vector mosquitoes possessing salinity-tolerant larvae and pupae include *Anopheles subpictus, Anopheles sundaicus, Aedes vigilax* and *Culex sitiens* in Southeast Asia. Larvae of salinity-tolerant mosquitoes have specific physiological mechanisms to survive salinity changes. Tropical Asian countries possess many lagoons, coastal marshes, mangroves and estuaries, and a high coastline to land area ratio. An expansion of brackish/saline water bodies in coastal areas will increase densities of salinity-tolerant vectors, and lead to the adaptation of freshwater vectors to breed in brackish (0.5-30 ppt salt) and saline (>30 ppt salt) waters. This perspective on vector-borne diseases has not previously been appreciated.

Methods:
The salinity tolerance of the larvae of selected anopheline and culicine mosquito vectors were determined under laboratory and field conditions in Sri Lanka and Brunei Darussalam.

Results:
Anopheles culicifacies a major vector of malaria that typically breeds in freshwater is also able to breed in brackish waters in eastern Sri Lanka. Observations on other freshwater mosquito vectors of human disease suggest that many are able to adapt to breed in brackish or even saline water.

Conclusions:
Over half the world's population presently lives within 60 km of the coast and coastal urbanization is expected to increase markedly in tropical Asia. Greater host density, by increasing vector-host contact, will also increase transmission rates. However mosquito-borne disease control programs addressing larval breeding largely focus on freshwater breeding habitats. Hence there is a need to more closely monitor breeding of brackish/saline water-tolerant mosquito vectors and attendant disease incidence rates, and take steps to reduce vector breeding in coastal areas.

Keywords:
Anopheles culicifacies, malaria, mosquito-borne diseases, salinity tolerant mosquitoes, tropical Asia

PHYLODYNAMICS OF DENGUE VIRUS IN MALAYSIA

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Background:
Dengue is a serious public health threat in Malaysia. The disease is caused by a mosquito-borne flavivirus, dengue virus (DENV). All four DENV genotypes (formerly referred to as serotypes) are endemic in Malaysia. These viruses have circulated in Malaysia for more than 50 years. We undertook a study to examine the phylodynamics of dengue and DENV in Malaysia and established an Integrated Dengue Virus Genome Sequence Information Database (I-DenSeID). We have completed full-genome sequencing of over one thousand DENV isolated over the last 30 years at the University of Malaya Medical Center. The DENV genome database together with the built-in integrated Global Information System (GIS) data will serve as an essential platform for scientists to design mathematical models for the prediction of future dengue outbreaks and the development of candidate dengue vaccines.

CORRELATION BETWEEN CARDIOVASCULAR T2* MAGNETIC RESONANCE WITH LEFT VENTRICULAR FUNCTION AND MASS IN THALASSAEMIA PATIENT WITH IRON OVERLOAD

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Background:
Thalassemia is the most common haemolytic anemia in Indonesia. Haemolytic and ineffective erythropoiesis in thalassemia both cause the anemia, thus patients need regular transfusion which consequently cause haemosiderosis. Heart failure due to iron overload may cause 60-71% deaths in patients with thalassaemia major. Cardiovascular T2*MR is a non-invasive technique and gold standard to measure myocardial iron deposition. This research was aimed to determine correlation between cardiovascular T2* MR with left ventricular function and mass in thalassaemia cases with iron overload.

Materials & Methods:
A cross-sectional study was conducted from March to May 2010 at Cipto Mangunkusumo Hospital and Mitra International Hospital, Jakarta. Physical examination, electrocardiography, echocardiography and cardiovascular T2* MR were performed in all thalassaemia patients with iron overload.

Results:
A total of 30 regularly transfused patients, aged 13-41 years old were examined. Two third of patients with thalassemia β major and one third with β HbE. Mean (SD) pulse rate was 88,3 (9,4) bpm, systolic blood pressure was 90-130 mmHg and diastolic blood pressure was 50-90 mmHg, and haemoglobin 6,3-11,5 g/dl. Serum ferritin 732.3-17912 ng/ml, mean (SD) serum ferritin from 12 months prior to study were 6405,5 (3984,9) ng/ml. Hypertrophy of the left ventricle was noted in 4 patients and PVC in 1 patient. Diastolic dysfunction occurred in 8 patients with normal systolic function in all patients. Increase in left ventricular mass index was found in 3 patients. Cardiovascular T2*MR ranged between 8.98-55.04 ms, with mean (SD) 24.26 (11.24) ms. T2*MR value below 20 ms were seen in 14 patients. There was a significant moderate correlation between E/A ratio and T2*MR (r=0.471; p=0.009). There was significant mild correlation between serum ferritin and T2*MR (r= -0.386; p=0.035) and moderate correlation between serum ferritin and E/A ratio (r= -0.425; p=0.019).

Conclusion:
There was significant correlation between E/A ratio with T2*MR and between serum ferritin and T2*MR, E/A ratio. No other correlation could be demonstrated.

Keywords:
cardiovascular T2*MR, diastolic dysfunction, iron overload

LATEST TECHNOLOGY IN ENDOVASCULAR TREATMENT OF STROKE

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Stroke affects a lot of people and is among the main healthcare problems of ASEAN Countries. New technology helps stroke patients to have improved outcome and higher chance of successful treatment. Endovascular treatment (EVT) of stroke is a new development where treatment for revascularization and stroke prevention done via endovascular techniques. It is a minimally invasive procedure using various endovascular devices via lumen of blood vessels. The technique also requires good understanding of the images, which is used to guide the procedures.

Endovascular treatment (EVT) of stroke includes treatment of acute stroke and stroke prevention; in acute stroke, mechanical devices are used to perform endoluminal thrombectomy using fluoroscopy angiography (x-ray images) to guide the mechanical removal of the clots that occlude the cerebral blood vessels. There are various latest and new approved devices used in EVT for acute stroke which will be described.

For stroke prevention, EVT used mechanical devices, like stent, acts like a scaffolding to open up and maintain the narrow cerebral or carotid vessel to improve circulation and revascularize the brain. Various latest devices and techniques will be illustrated. Imaging for stroke is also very important to ensure good understanding, proper patient selection and plan treatment strategies.

Keywords:
Endovascular treatment, stroke

TELEMEDICINE

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Background:
The Neuroscience, Stroke and Rehabilitation Centre was unveiled in July 2010, and is operated by Jerudong Park Medical Centre (JPMC) in conjunction with stroke specialists from Krankenhaus Nordwest Hospital in Germany. It is the first such facility in South-east Asia to have telemedicine facilities, in this case giving patients remote access to stroke specialists in Germany.

Telemedicine is the use of high-definition video and three-dimensional computer graphics for teleconsultations and remote patient monitoring. The technology enables JPMC to give patients diagnoses from experts. Further adding to its capacity, in 2009 JPMC launched a teleradiology department, which enables JPMC to send scans and images for consultations to doctors abroad in Germany.

TOCOTRIENOLS AS AN ANTI-OSTEOPOROTIC AGENT

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Osteoporosis is a metabolic disorder affecting both men and women, especially post-menopausal women due to estrogen deficiency. Other risk factors of osteoporosis are testosterone deficiency, excess glucocorticoids, parathyroid and thyroid hormones as well as calcium and vitamin D deficiency. Currently the treatment modalities for osteoporosis are calcium and vitamin D supplementation, estrogen-replacement therapy and the bisphosphonates. It is thus important to look for other forms of treatment.

Previous studies have shown that oxidative stress play a role in the pathogenesis and progression of osteoporosis. Tocotrienols are a form of vitamin E which are powerful antioxidants. In our animal studies, we have shown that vitamin E, especially the palm-oil derived tocotrienols, are effective in prevention and treatment of osteoporosis induced by various stressors. We have also proven that the tocotrienols are able to improve bone density and bone strength in the bones of normal, non-osteoporotic rats. Therefore, the tocotrienols have the potential to be developed as an anti-osteoporotic agent, to be used both in the prevention and treatment of osteoporosis due to various stressors. Clinical trials are needed to further elucidate its effects in humans.

A STUDY ON THE ADHERENCE TO THE NATIONAL GUIDELINE ON ANTIMICROBIAL USE, IN THE EMPIRICAL TREATMENT OF CAPD PERITONITIS AND DIALYSIS LINE RELATED INFECTIONS IN FEMALE HAEMODIALYSIS PATIENTS AT RIPAS HOSPITAL

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Background:
Infection associated with haemodialysis catheters has emerged as one of the serious complications and is commonly encountered in dialysis patients. It remains a significant cause of morbidity and mortality. Patients with history of bacteraemia and those who are immunocompromised are particularly at high risk of getting catheter-related bacteraemia. This is a baseline study on the use of antimicrobial in the empirical treatment of CAPD peritonitis and dialysis line related infections in haemodialysis patients using the local published guidelines developed by the antibiotic committee as the standard measure.

Materials and Methods:
Female patients who undergoing renal replacement therapies who were admitted for CAPD peritonitis and dialysis line related infections in ward 20 at RIPAS Hospital between 15th March 2010 and 15th September 2010 were the subjects of this study. Data collection was performed in a prospective manner for six months. The patients were monitor continuously until discharged from the ward. The standard used for this study was based on the national hospital antibiotic guidelines published in 2008 by the Ministry of Health, Brunei Darussalam.

Results:
A total of 40 patients were included in the study. 95% (n=38) of the patients were started with either co-amoxiclav (55%, n=22) or ampicillin/sulbactam (40%, n=16). 70% (n=28) of these patients were also initiated with a second antimicrobial, a third generation cephalosporin, IV ceftazidime. 67.5% (n=27) of the patients were initiated with two antimicrobials whilst 30% (n=12) were on one antimicrobial. Of the 29 cases reviewed (72.5%), all the patients were on at least two weeks of antibiotic inclusive of oral antimicrobial given on discharge, the remaining of the 11 of the cases (27.5%) were unknown due to the loss of follow up.

Conclusions:
The adherence rate to the guideline was poor and there is a need for review of the current published guidelines on the choice of antimicrobial for treatment of CAPD peritonitis, CAPD Tenckhoff catheter exit site infections, haemodialysis venous catheter related infections and haemodialysis AV fistula related infections.

Keywords:
Adherence to the national guideline on antimicrobial use, dialysis line related infections, CAPD peritonitis, empirical treatment

PRIMAQUINE DECREASES PLASMA CONCENTRATION OF RITONAVIR: SINGLE AND MULTIPLE DOSE STUDY IN RATS

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Background:
The present study was aimed to explore the effects of ritonavir and primaquine combination given as a single-dose or multiple-dose compared to ritonavir alone on ritonavir plasma concentration in rats.

Materials & Methods:
In single-dose study, 30 male Spraque Dawley rats were randomly allocated to receive ritonavir 20 mg/kgBW or ritonavir 20 mg/kgBW + primaquine 1.2 mg/kgBW or ritonavir 20 mg/kgBW + ketoconazole 10 mg/kgBW. Ketoconazole was used as a positive control for inhibitor of ritonavir metabolism.

In multiple-dose study, thirty male Spraque Dawley rats were randomly allocated to receive ritonavir 20 mg/kgBW/day or ritonavir 20 mg/kgBW/day + primaquine 1.2 mg/kgBW/day or ritonavir 20 mg/kgBW/day + rifampicin 100 mg/kgBW/day. Rifampicin was used as a positive control for inducer of ritonavir metabolism.

Results:
In the single-dose study, ketoconazole increased the area under the plasma concentration (AUC) of ritonavir (↑114,8%, $p<0.05$), while primaquine tends to decrease the AUC of ritonavir (↓ 32.6%, $p>0.05$). Multiple-dose study showed that rifampicin decreased the AUC of ritonavir (↓ 42,8%, $p<0.001$), while primaquine decreased the AUC of ritonavir plasma concentration (↓ 46,6%, $p<0.001$).

Conclusion:
Concomitant administration of primaquine and ritonavir decreases the AUC of ritonavir. This effect could result in the insufficient concentration of ritonavir as anti-HIV, which might lead to treatment failure with ritonavir.

Keywords:
primaquine, ritonavir, drug interaction, metabolism

SILENT MENTOR AS A MODEL IN MEDICAL EDUCATION AND ITS ETHICAL AND MEDICOLEGAL ASPECTS

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Background:
For many decades, the students of various disciplines in postgraduate medical education in Indonesia were studying the operation procedures by using animals, mannequins or even patients in their education. In the last few years, the operation trainings have also used the cadavers of unknown persons, found dead and sent to the hospitals by the police. However, over time, the unknown bodies are decreasing in number. The Silent Mentor concept was then introduced as a solution, by using experience of the Silent Mentor in the Republic of China. In this concept, a mentally capable volunteer makes a Will, with or without the witness of lawyer, stating that he/she will give his/her body for medical education purposes after his/her death.

Results and discussion
In the human right there is the right to self determination, that means that every individual has the right to decide whatever should be done to his/her own body, however there is still controversy whether this right includes also the right to give his/her own body for the Silent Mentor after his/her death. Legally, usually every person has a right to give his/her inheritances to the joint heirs, but it is limited only to the goods, not the body. In some cultures and religions, the body is the object for religious and cultural ceremonies, and at the end the body must be buried or cremated. It still debatable whether the will of a person to become a Silent Mentor can be rejected or denied by others. It still cannot be predicted whether this can be executed when the time comes, except this right is regulated in an Act or any kind of Law.

Key words:
Silent Mentor; education; medical ethic; medico-legal aspect

LITIGATION IN CLINICAL PRACTICE

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Litigation in medical malpractice is on the rise. Insurance premims are also on the rise. The highest are the obstetricians followed by the neurosurgeons and plastic surgeons. It is important therefore that doctors have an idea of how the law looks at medical malpractice. Its essence is whether the doctor has fallen below the standards expected of him and secondly, did that fall in standards result in harm to the patient. And thirdly was that harm sustained not too remote. The lecture will illustrate these principles with case law. The second part of the lecture will concentrate on what we can do to mitigate or minimize the chance of a litigation when something goes wrong. Again this will be backed by research studies.

RESPONSIBLE CONDUCT OF RESEARCH

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Background:
All stakeholders in health research expect that every research project undertaken is scientifically and ethically sound and aimed at advancing knowledge. They also expect researchers to demonstrate the highest levels of honesty, integrity, objectivity, accuracy, and efficacy in their work. To promote responsible conduct of research (RCR) by researchers, governments, professional bodies, and institutions have published regulations, codes, and guidelines. Traditionally, training in the principles and practice of RCR has been conducted informally in the mentor-mentee setting. However, given the expanding scope and increasing complexity of research and the large and growing number of researchers, the need of formal training of researchers in RCR is now widely recognized. Indeed, formal RCR training programs have already been implemented in some institutions.

Methods:
Information for this presentation will be obtained through reviewing selected published RCR regulations, codes, and guidelines and selected published reports on the design, implementation, and evaluation of formal RCR training programs.

Results:
In this presentation, the importance and implications of developing and implementing formal, comprehensive RCR training programs will be highlighted.

Keywords:
Research, ethics, misconduct, responsible conduct of research

ASSESSMENT OF DYSPHAGIA IN THE FIELD OF PHYSICAL MEDICINE AND REHABILITATION

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Dysphagia is difficulty, or partial inability to swallow as a result of injury to parts of the brain that control the muscles involved in swallowing, or the muscles or nerves that control swallowing. Dysphagia is common following stroke and is associated with the development of pneumonia. Paciaroni et al (2004) reported that 34.7% of 406 patients with stroke present with dysphagia. Five years mortality rates of approximately 20 % have been reported to be related to aspiration pneumonia (Iwamoto et al 2005). Prevalence of neurogenic dysphagia in patients with stroke worldwide is around 22-65%, and Wahyuni (2005) reported that the incidence of neurogenic dysphagia related to stroke at Cipto Mangunkusomo is 23.3%. The incidence of aspiration pneumonia that occurs in stroke is 34 %.

Many dysphagia treatment options are available, the main purpose is to maintain functional oral feeding and prevent aspiration. For re-attaining the function, we need well-established evidence to support the use of any of the available treatments and multidisciplinary approach such as a neurologist, otolaryngologist and physiotherapist. Thorough history taking and careful physical examination and functional swallowing ability are important in the diagnosis and treatment of dysphagia. At Cipto Mangunkusumo Hospital, we established the treatment for dysphagia which includes behavioral interventions, postural intervention, swallowing maneuver, and using TES (Transcutanoeus Electrical Stimulator) for nerve and muscle stimulation, modified food consistencies, NMES, home care rehabilitation to increase biosocial function and conduct some research to improve our treatment.

Our latest research about The Effect of Neuromuscular Therapy Electrical Stimulation (NMES) to Functional Swallow Ability in Patient with Stroke, which used experimental study gave a result that NMES therapy may increase the pharyngeal phase of swallowing stroke patients with neurogenic dysphagia, it can be seen in an increase in scores from all test items and examination fees MASA which include increased gag reflex score, elevation of the vellum, reflex cough, cough voluntarily, the sound quality, response of the pharynx, pharyngeal constrictor contraction and adduction plika vocalist. NMES therapy may decrease the incidence of standing secretion, residue and penetration in stroke patients with neurogenic dysphagia.

REHABILITATION TOWARDS INTEGRATIVE AND HOLISTIC APPROACH - A PPUKM EXPERIENCE

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The role of rehabilitation is to enable a person to access life in the mainstream of society in a way that is congruent with aspiration and ability. A critical characteristic of effective rehabilitation is that it creates a continuum of provision that is aimed at meeting the evolving needs of an individual. Rehabilitation intervention based on holistic approach that engages multi-disciplinary inputs in a coordinated way to meet the client's identified needs is paramount to ensure facilitation of seamless transition in a person from one level of rehabilitation to the next level based on forward planning and regular reviews.

It is unlikely that one profession would suffice and in position to offer inputs required by an individual. Thus an integrative co-operation from other rehabilitation science disciplines is an essential element of effective rehabilitation service provision that ultimately improves in reducing the level of disability which the client may experience.

At PPUKM, we adopt a comprehensive, multi-disciplinary and integrated approach for developing intervention plan for our clients. The client (patient) is the centre of the process and the provided plan solutions identify the needs in building based on what a person can achieve. A patient with complex needs, inter/intra referral for multidisciplinary assessment will be conducted. The therapists will liaise with other health professionals in ensuring clients are given optimal intervention in the hospital setting, long term rehabilitation and transition period of patients' daily activities such as in back to school, home or other social circumstances.

By adopting such a comprehensive approach in developing a rehabilitation plan, we have taken cognizance of all elements of the International Classification of Functioning, Disability and Health (ICF) framework in enhancing the client's quality life. The ICF offers not only a model to evaluate the success of rehabilitation in understanding and describing the degree to which a client's function could be restored but also to the extent that any activity limitations are minimised and community participation would be maximised which will likely contribute in positive outcomes for the clients.

TRADITIONAL & COMPLEMENTARY MEDICINE IN MALAYSIA: ROLES & FUTURE DEVELOPMENTS

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Malaysia has a rich heritage of various traditional medicine practices, each according to the ethnic origins of its population. There has been a growing interest in complementary medicine as well to wider mix of population. Recognizing the importance and widespread use of Traditional and Complementary Medicine (T&CM), the Ministry of Health (MOH) launched the National T&CM Policy in 2001 with a vision to eventually integrate evidence-based T&CM into the Malaysian healthcare system. Ensuring public safety through safe and effective T&CM practice in accordance to standard ethics, adherence to acceptable standard of safety practice, enhance research and training facilities in the country as well as strengthening collaboration with other countries are the prime roles of the MOH. MOH as custodian for delivery of healthcare system, established focal research center on herbal medicine to ensure acceptable standards of safety and quality for traditional products and practice, several guidelines available to facilitate the integration process for the benefits of mankind. The diversity of T&CM practices and requirement of standardization of T&CM training and education leads to initiation of Traditional and Complementary Medicine Bill. The primary aim of the legislation is to ensure consumer safety through quality education and training. Further roles and future developments of T&CM in Malaysia will be deliberated in the talk.

CHI KUNG AND HEALTH

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Chi Kung is a set of Chinese traditional exercises which work with the *Chi* or energy which is very different to the allopathic methods of managing health. A balanced and harmonious mind and body indicates that the flow of *Chi* in the meridians or energy pathways is good. The four major styles of *Chi Kung* are supported by three techniques, namely, specific body movement, breathing and mind concentration. The major benefits of *Chi Kung* are promotion of health, reduction of health problems and management of stress more effectively. *Chi Kung* can contribute to nursing and nursing education in health promotion, stress management, cardiac rehabilitation, counselling and in establishing a therapeutic relationship between patients and nurses.

Key words: Traditional Medicines, Malay Local herbs, Traditional Chinese Medicines, perceptions, Brunei Darussalam, *chi*, *chi kung*, *energy, health, Yin, Yang.*

EFFECT OF EMERGENCY HERBAL BISCUITS ON THE IMMUNE-RESPONSE OF STARVING Balb-C MICE

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In emergency situation due to natural disaster, victims are living in starvation and have to stay in facilities which are far from healthy. This condition makes the victims more prone to infectious diseases, probably in part due to the decrease in their immunity response.

Nutrition densed foods are needed to accelerate improvement in their nutritional status, especially in prolonged starvation. The availability of supplement that can overcome the defect in body resistance toward infection will be very useful. BPPT is developing nutrition-densed food product containing herbal with in-vitro immuno-stimulant effects that is aimed to support the condition of natural disaster victims during the first few weeks in the emergency settings.

This study is an animal experimental study, comparing the new product named EHB (emergency herbal biscuits) with control that is regular mice food and a positive control, phyllanthus niruri extract, known as an immunostimulant. Animal used were male mice Balb-C, an animal model for immune-response testing, each group consists of six 8 weeks old mice with body weight around 25 gr, in starvation. The dosage of EHB was 1 gr/mouse/day, calculated in accordance with the amount used in human. Phyllantus nirurias control was given 10 mg/mouse/day, human dose is 4gr/day.

The study showed that EHB increased the body weight better than the other groups until the 8^{th} week. Leucocyte count showed an increase in all groups, within 2 weeks it reached the normal level. At the 8^{th} week segmented neutrofil was highest in the EHB group, even compared to Phyllanthus group. The lymphocytes count after 8 weeks is similar with normal. The IgG non specific level is maintained at high level in both EHB and Phyllanthus groups, while the starving control group has a low IgG level after starving for 8 weeks.

EHB and Phyllanthus niruri increased the specific immune response measured as IgG against Tetanus Toxoid compared to control group after a long time of starvation. There was no difference in body weight and leucocytes or lymphocytes count between the EHB and control in the non-starving group.

Further studies in human is needed, since the product was proven to be non-toxic it can be used and studied in emergency due to disaster in operational studies.

HEALTH PROFILE AMONG CHILDREN AGED 3-6 YEARS OLD AND ITS RELATED FACTORS IN JAKARTA 2011

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Background:
Many factors contribute towards health status among children aged 3-6 years old. Nutrition and stimulation are amongst the most important factors for their growth and development. A healthy status child will also have normal developmental without behavioral and emotional problems. This study aims to evaluate the nutritional status, developmental and behavioral problems, and cognitive function.

Materials & Methods:
We conducted a cross sectional study at community play-group and several kindergarten schools in Jakarta from March until April 2011. We examined 100 children aged 3-6 years old for anthropometric status, dietary assessment, developmental status, behavioral and emotional status, and cognitive functions.

Results:
The median age of the subjects was approximately five years. By gender, slightly more girls were found. Both parental education and socio-economic level were higher among the kindergarten subjects. Seventy six subjects had tooth decay or losing teeth. There was 7.7% overweight and 20% obese children in kindergarten as compared to 17.1% of obese children in the playgroup. In this study, the median intake was within the range of 1000 – 1550 kcal, and in particular, the median of daily sugar intake contributing more than 10% to total daily calorie intake. All of the subjects had normal developmental status, most of them had average cognitive function, and 13 subjects had behavioral problem. There were no correlation between nutritional status and behavioral problems, but there was a statistically significant correlation between cognitive function (full scale IQ) and nutritional status.

Conclusion:
Most of the subjects had average cognitive function, had normal nutritional, developmental and behavioral status. However, the high prevalence of overweight and obesity among pre-school children should raise more attention in relation to the high daily sugar intake in contributing to total daily calorie intake in which the type of sugar intake was mostly from sucrose and mostly from dairy source.

ABANDONED BABIES

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As Malaysia gears for many unprecedented challenges working towards achieving her develop nation status, it also faces an increase in the complexity of social problems. Baby Abandonment isn't a new dilemma but frequently grab the headlines in recent years. The official statistics indicate that annually about 100 babies are dumped or an incident of about 2 case per 10,000 live births. Mothers who commit act of public abandonment which in some leads to neonaticide are predominantly young single student/factory worker/salesgirl, could also be a married woman with little support, who is left in the lurch with an unplanned pregnancy.

Some resourceful women find an early solution to their predicament. The unfortunate ones may just discard the newborn child. The worrying issue has surfaced in the form of a changing demographic where bright, young, educated undergraduates at the brink of a promising life and career are arrested for this despicable act. Circumstances leading to unwanted babies include extramarital paternity, rape, illegitimacy, incestuous relationship, child born with abnormalities and also in few cases mothers perceived the baby as an obstacle to personal achievement.

A decade ago, the Malaysian government has considered a 'baby bank' as a means of ameliorating the problem and to save the abandoned babies, the initiative received a mixed response with many opposing the idea. A revised perspective is required considering the persistence of the issue. The Social Welfare Department since its set up has been responsible for the protection, care, rehabilitation, development and reintegration of her target groups especially community in such unfortunate circumstances. The Department also provide care and protection for abandoned babies and those who were born to unwed mothers to be cared for at the children's home or foster out and to be adopted with suitable families. On the other hand, non government organization (NGO's), registered under the Social Welfare Department urged to function as refuge centres providing appropriate support services for the mother and child. As a preventive measure, there should be more awareness and counselling programmes, reproductive health and sexual education and broader family development programmes to be carried out especially for the high risk target groups within the community.

NON-ADHERENCE TO MEDICATIONS, DIET AND PHYSICAL ACTIVITY AMONG PATIENTS WITH TYPE 2 DIABETES MELLITUS ATTENDING A HEALTH CLINIC IN BRUNEI DARUSSALAM

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Background:
Diabetes Mellitus (DM) is one of the leading causes of death in Brunei Darussalam and the prevalence of DM, including Type 2 Diabetes Mellitus (DM2), is about 11%. Non-adherence to medications, diet and physical activity is a common issue in DM2 patients.

Methods:
A quantitative study was carried out using a self-reported questionnaire. HbA1c levels were taken from the most recent measurement preceding the questionnaire. Data were analysed from 129 completed questionnaires.

Results:
Prevalence of non-adherence to medications, diet and physical activity in the study sample was found to be 14%, 45% and 76% respectively. The number of years for which patients have been diagnosed with DM2 was associated with non-adherence to medications. Age and income level was found to be associated with non-adherence to diet. Reasons identified for non-adherence to medications include forgetfulness, difficulty remembering to take medication and discontinuing their medications due to feeling better or worse than they had been. As expected, patients who were non-adherent to medications and diet have a higher median HbA1c level compared to those who were.

Conclusion:
Clinicians faced with DM2 patients with high HbA1c values should consider counselling their patients on adherence, not just to medications, but also diet.

Keywords:
Non-adherence, Type 2 Diabetes Mellitus, HbA1c, counselling, diet

DEVELOPMENT AND INTRODUCTION OF A MAJOR MEDICAL EMERGENCY TEMPLATE FOR PUBLIC HOSPITALS IN BRUNEI DARUSSALAM

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Background:
Major Medical Emergencies or Major Incidents often occur without warning and initial rescue efforts to such events may be chaotic in the absence of a response plan. In Brunei, where the healthcare manpower is relatively small, it is imperative for healthcare workers throughout the country to be familiar with the Major Medical Emergency Plan and be able to contribute to the rescue efforts. The development and introduction of a Major Medical Emergency template is to allow hospitals adopt a standardized general approach to a major medical emergency. The template includes the core structures for pre-hospital and in-hospital responses. It is hoped that the standardized template will assist healthcare administrators and professionals to contribute within their own hospitals as well as in other public hospitals.

THE TSUNAMI EXPERIENCE: UNDERSTANDING HEALTH PROBLEM

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Indonesia is a country in the path of Ring of Fire, an area along the Pacific Ocean basin prone to volcanic eruptions and earthquakes. Indonesia has recently been struck by a series of major disasters that have largely affected cities: the 2004 tsunami and earthquakes (devastating the cities of Banda Aceh and Meulaboh) and the 2006 central Java earthquake (impacting the city and suburbs of Yogyakarta) with an ensuing tsunami (hitting the southwest Java resort town of Pangandaran), West Sumatera eathquake (2009), a magnitude of 7.7 earthquake struck Kepulauan Mentawai region of Sumatra (2010) and Merapi volcano eruption 2010 (Jogjakarta and central Java). In addition to this, a variety of natural disasters one after another has attacked Indonesia from Sumatra, Java, Nusa Tenggara, Sulawesi and Papua. The disaster that has happened includes floods, earthquakes with and without the tsunami and the eruption of volcanoes. Two big disasters with a wide amount of damage and huge losses are the earthquake and Tsunami in Aceh and earthquake in West Sumatra.

The 2004 Tsunami in Aceh was the worst natural disaster in decades. Hundred thousands of people died and building damages and losses were equivalent to 80% of the region's economic activity. The disasters left over 500,000 people homeless, with more than 100,000 homes in need of rebuilding. Damages and losses were calculated at US$4.5 billion, with the most affected sectors being housing, agriculture and fisheries, infrastructure, and the environment. Much of the impact was in the cities of Banda Aceh (one-quarter of the city's 400,000 people were killed) and Meulaboh (30,000 of the population of 120,000 were lost). Approximately 75% of health workers in Banda Aceh either died or were displaced from their homes. The international community responded to this disaster with the largest relief measures ever undertaken for a natural disaster.

The disaster occurred on the morning when the community was doing the morning activities. A terrible disaster that occurred just within a moment resulted in the death hundreds of thousands of residents. In the first hours and days after Tsunami, there was the breakdown of information from the city of Banda Aceh to the outside world. Electricity and telephone network were cut. This was why the help came too late. The problems that first arose was evacuating either the dead and life victims.

Various issues appear in the field are the lack of infrastructure and facilities for medical treatment, although gradually medical help arrived. The cases often found in hospitals were fractures, open wounds and also aspiration pneumonia. Various other diseases were encountered metabolic diseases arising from bad circumstances and limitations of medicines such as hypertension, diabetes mellitus, asthma, diarrhea and respiratory tract infections.

The tsunami and earth destroyed water and sanitation infrastructure through physical disruption of municipal water systems and contamination of wells with debris and salt water. As a result, large displaced populations may have been subject to an increased risk of waterborne disease. Health facility-based disease surveillance established by the government of Indonesia in collaboration with the World Health Organization showed that acute watery diarrhoea was the second leading cause of morbidity, accounting for 23% of 40,706 consultations. At that time, recognizing the importance of early access to safe water, some relief organizations immediately supplied water in tanker trucks and procured bottled water, while others promoted boiling. The chlorination of stored water either in tankers or at the household level was the only practice that was associated with a reduced risk of *E. coli* in drinking water. On the other hand a variety of health problems arising from lack of clean water and also health facilities were minimal. Therefore it needs to do a mobile clinic at the refugee sites to evaluate this programme.

Lessons learned from the disaster that happened were that public health is the main aspect to consider. Four aspects to consider in case of disaster: assessing damage and needs of the health sector; distinguishing the role of public health in humanitarian and recovery phases; incorporating disaster prevention and preparedness in the recovery; and address the needs of vulnerable groups. This is important in order to: establish a health priority, properly assessing the impact of a disaster on human health and the health care system is fundamental to: establish health care priorities, follow trends and reassess priorities, detect and respond to epidemics, evaluate programme effectiveness, ensure targeting of resources, assess the quality of health care.

During the relief phase, there is a need to collect data about huge losses (number of fatalities and injuries), assess the threat of outbreaks (especially epidemics), to determine what steps and investments need to be taken to respond to threats immediately and provide emergency assistance. At the stage of recovery, damage assessment needs to be changed into an integrated programme to revive the health sector and systems so that they are increasingly able to provide the necessary services to reduce morbidity and mortality. There is also a need for post-disaster epidemiological studies to understand and cope with changes in disease transmission, and post traumatic stress disorder / mental health to anticipate the unexpected problem in the future.

THE CONTRIBUTION OF OBSTRUCTIVE SLEEP APNOEA TO BUS ACCIDENTS: TRUTH OR MYTH?

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Obstructive sleep apnoea syndrome (OSA) is a disease which is characterized by snoring and daytime sleepiness. It is primarily caused by upper airway obstruction which occurs during sleep. Since daytime somnolence is a major characteristic feature, it is only logical that OSA causes accidents, not the least bus accidents. Although there are many studies to show that OSA contributes to accidents, there are also studies that show otherwise. Somnolence or sleepiness is subjective and is measured on a subjective Epworth sleepiness scale. The more severe the disease, the worse is the sleepiness. Patients with milder disease have learnt to disguise or overcome their sleepiness by taking stimulants such as coffee or even illegal drugs to ensure they can continue driving. Those with severe disease will have enough sense not to embark on driving a public vehicle.

A landmark study on the incidence of OSA amongst bus drivers was jointly undertaken by UKM and the Malaysian Institute of Road Safety Research (MIROS) amongst commercial bus drivers in Malaysia. This cross sectional study was undertaken over 6 months in 2008 - 2009. There were 292 subjects, 289 of whom were eligible for analysis. 128 subjects (44.3%) had OSA. Out of this, the majority (65%) were mild, followed by 20% with moderate and 15% had mild OSA.

In this study, we were unable to demonstrate any relationship between OSA and motor vehicle accidents (MVA). This can be explained by the fact that the majority were indeed mild cases which the subjects had managed to “mask” their sleepiness so as to avoid any tragedy.

We conclude that the causes of MVA amongst bus drivers are multi factorial. They may be due to driver factors (fatigue, loss of concentration, drowsiness), vehicle factors (the roadworthiness), road condition and environmental factors. We also have no doubts that the sleepiness associated with OSA play a role in accidents although this is not easy to prove statistically, nor easy to demonstrate in a randomized clinical trial.

Oral Free Papers

CD10 STROMAL EXPRESSIONS IN PHYLLODES TUMOURS

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Background:
Phyllodes tumour and fibroadenoma are a group of biphasic breast lesions combining epithelial and stromal components. CD10 expression has long been recognized in haematological malignancies and is useful as a myoepithelial cell marker. Earlier studies suggested that CD10 expression in tumour stroma was associated with biological aggressiveness of a tumour. The study was done to assess stromal CD10 expression within the different grades of Phyllodes tumour and to evaluate whether stromal CD10 expression is associated with higher tumour grades.

Materials and Methods:
Seventy Phyllodes tumours and 71 fibroadenoma tissue were assembled in tissue microarray. Relevant clinicopathological data were retrieved and CD10 expressions in the stromal cells were assessed by immunohistochemistry.

Results:
Twenty one cases of Phyllodes tumours showed positivity with increase in stromal cells expression as the lesion progress from benign Phyllodes tumours (15.8%, 6/38) to borderline (17.6%, 3/17) and to frankly malignant Phyllodes tumours (80%, 12/15). Borderline and malignant Phyllodes tumours were significantly associated with stromal CD10 expression ($p<0.001$). The stromal CD10 positivity for borderline and malignant Phyllodes tumours gave a specificity of 94.5%, positive predictive value of 71.4%, sensitivity of 46.9% and a negative predictive value of 85.8%. None of the fibroadenoma cases showed positive staining within the stromal cells.

Conclusion:
These findings showed that stromal CD10 expression may be useful in differentiating the diagnosis of borderline and malignant phyllodes tumours.

Keywords:
Phyllodes tumors, CD10 expression

FOLLICULAR LYMPHOMAS WITHOUT t(14;18) CHROMOSOMAL TRANSLOCATIONS EXHIBIT VARIATION IN *BCL2* PROTEIN EXPRESSION

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Background:
The hallmark of follicular lymphoma is the t(14;18)(q32;q21) chromosomal translocation that leads to deregulation of *BCL2* expression in tumour cells. However, not all cases of follicular lymphoma express *BCL2*, nor is the t(14;18) translocation always present. Follicular lymphomas lacking the *BCL2* rearrangement are less well studied with regards to their immunohistochemical and molecular features. This study aims to investigate the *BCL2* protein expression pattern in t(14;18)-negative follicular lymphomas.

Materials and methods:
BCL2 protein expression pattern was analysed in 26 cases of t(14;18)-negative follicular lymphomas (determined by FISH), using antibodies against two-different epitopes i.e., the widely-used antibody *BCL2/124* and an alternative antibody E17.

Results:
Two of the t(14;18)-negative cases showed evidence of *BCL2* amplification and trisomy 18. A total of 13 (50%) cases lacked *BCL2* expression. In 10 (38%) cases, the expression was heterogeneous and in only three cases (12%) the *BCL2* expression was strongly positive. These cases could thus be subdivided into three subgroups i.e., Group I: normal *BCL2* genes (i.e., no evidence of translocation or amplification), and *BCL2* protein was negative, Group II: normal *BCL2* genes but *BCL2* protein was positive and, Group III: presence of other genetic alterations i.e. *BCL2* amplification and trisomy 18, and positive for *BCL2* protein.

Conclusion:
This study suggest that it may be possible on the basis of staining to predict that the t(14;18) translocation is absent if a case is either negative for *BCL2* protein with different antibodies or has heterogeneous *BCL2* expression, possibly acquired through a physiological process of differentiation.

Key words:
follicular lymphoma, t(14;18)-negative, *BCL2* expression

ANTIPROLIFERATIVE EFFECT OF GELAM HONEY ON LIVER CANCER CELL LINE

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Background:
Gelam honey is a local monofloral honey produced by *Apis mellifera* from *Melaluca spp.* Its content is high in polyphenols and nonphenol antioxidant. Both possess antioxidant activity and free radical scavenging properties that play a role in preventing cancer and chronic disease. The purpose of this study was to determine the effect of Gelam honey on the proliferation of HepG2 cancer cell line.

Materials and Methods:
MTS assay was carried out to obtain IC_{50} value of Gelam honey towards HepG2 and WRL-68 by treatment with different concentration of Gelam honey from 1 to 70%. The antiproliferative activity of Gelam honey was determined by BrdU assay. Morphological analysis for apoptosis detection was done using fluorescent microscope under 400X magnification by propidium iodide staining.

Results:
The IC_{50} values of Gelam honey towards HepG2 and WRL-68 was 25% and 70% respectively. BrdU assay showed that Gelam honey reduces the proliferation of HepG2 cell line. Morphological observation showed that Gelam honey has the ability to induce apoptosis in HepG2 cell line and WRL-68 by producing typical apoptotic characteristic.

Conclusion:
The antiproliferative effect of Gelam honey seems to be more selective on cancer cells and its therapeutic potential against liver cancer cell might be through apoptosis induction.

Keywords:
antiproliferative, honey, liver cancer

GENE EXPRESSION OF MANGANESE SUPEROXIDE DISMUTASE IN HUMAN GLIOMA CELLS: CORRELATION WITH OXIDATIVE STRESS AND TUMOR GRADE

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Background:
To analysis the correlation of MnSOD expression in human glioma cells with tumor grade and oxidative stress, hence would explore the role of MnSOD as a tumor suppressor in human glioma.

Method:
Samples were 21 brain tumors and 5 normal brain tissues from glioma patients. The relative expression of MnSOD mRNA was quantitatively determined using Real Time RT-PCR. The enzyme activity of MnSOD was analyzed using xantin oxidase inhibition assay (RanSOD kit). Oxidative stress was analyzed by measuring Malondialdehyde (MDA) for lipid damage and carbonyl substances for protein damage, as well as 8-hydroxy-2'-deoxyguanosine/8-OHdG for DNA damage. Tumor grade was determined by histopathologic examination. Data was statistically analyzed using t-test and Pearson correlation.

Result:
Relative expression of MnSOD mRNA and specific activity in human glioma cells were significantly higher than in normal brain cells. The relative expression of MnSOD mRNA significantly increased in accordance with the tumor grade. Surprisingly, specific activity of MnSOD enzyme in high grade glioma was significantly lower than in low grade glioma, therefore there might be a discrepancy between mRNA synthesis and its enzyme specific activity. MDA, carbonyl and 8-OHdG level reflected oxidative stress in glioma cells were significantly higher than in normal brain cells. The MDA and carbonyl level were significantly correlated with tumor grade. Furthermore, there were positive correlation between MnSOD mRNA and MDA level.

Conclusion:
The high level of MnSOD mRNA and spesific activity in human glioma cells were correlated with the high level of oxidative damage. We found a strong correlation of human glioma tumor grade with MnSOD mRNA expression, but not with its enzyme spesific activity.

Keywords:
Glioma, MnSOD expression, oxidative stress, tumor grade

THE EFFECT OF PARTIAL DEBULKING SURGERY ON TUMOR GROWTH, SURVIVAL AND TUMOR SPECIFIC IMMUNE RESPONSES

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Background:
Large tumors are immunosuppressive and can escape from tumor killing mechanism of immune system. Removing part of tumor mass would correct the immunosuppression effect of the tumor. The aims of this study were to determine the effects of partial debulking surgery on tumor growth, survival and specific immune responses and to find whether the different proportion of tumor mass taken out or size of the tumor at the time of surgery has an impact on immune response.

Methods:
An experimental study was used Balb/c mice as samples and mesothelioma cell line. Samples consist five groups of three Balb/c mice received AB1HA mesothelioma cell lines and have had partial debulking surgery with different proportion of tumor mass taken out where other groups have different tumor size at the time of surgery were debulked and leaved minimum tumor mass. Mice were then monitored for tumor growth after surgery, survival and organs were analyzed to find the percentage of effectors immune cells, their activation and function.

Results:
Mice with 75% and 100% of tumor debulked showed inhibition in tumor growth and greater survival compared to sham, 25% and 50% debulking mice. Smaller tumor size at the time of surgery showed a better survival and slow tumor growth compared to large tumor size ($p=0.008$). There are trend of decreasing CD8+ lymphocytes in draining lymph nodes and non-draining lymph nodes within time after surgery but increasing the expression of interferon gamma of the cells with no different between both groups.

Conclusion:
Tumor mass debulking would give a better immunologic response in smaller tumor size at the time of surgery and greater proportion of tumor mass taken out.

Keywords:
Partial debulking, mesothelioma, immune responses

PARENTS' SATISFACTION TO PAEDIATRIC LAPAROSCOPIC SURGERY: A VALUABLE INSIGHT

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Background:
Paediatric laparoscopic or minimally invasive surgery is a specialised area within paediatric surgery. A general paediatric surgeon will have to undergo specialised training programme to enable him to be skilled at performing safe laparoscopic surgery. It is only recent that developing nation like Malaysia seriously moves towards advanced paediatric laparoscopic surgery; performing more complex and advanced procedures especially in neonates. The efficacy, safety and other benefits of laparoscopic surgeries have long been proven; however, studies on parent's satisfaction to paediatric laparoscopic surgery are scarce. Our institution embarks in a new era of paediatric laparoscopic services for the country in 2008. We evaluated parents' satisfaction in order to have insight to what matters most to them. Such information is vital to improve the quality of laparoscopic services in the future.

Material and Methods:
A cross-sectional observation study was carried out over 27 months at the institution to determine parents' satisfaction level to paediatric laparoscopic surgeries. These were both retrospective and prospective study. Simple validated questionnaire was used and 110 parents were interviewed. 100 parents eventually completed the study.

Results:
There were significant satisfaction of parents towards less experience of pain after surgery ($p<0.05$); good immediate wound appearance ($p<0.05$); good scar appearance ($p<0.05$); and less wound complication ($p<0.05$) and doctors' explanation before surgery ($p<0.05$). The Coefficient Correlation, r value was evaluated; less pain after surgery ($r=0.535$), good immediate wound appearance ($r=0.415$) and good surgical scar appearance ($r=0.403$) had strong correlation to parents' satisfaction. However, doctor's explanation ($r=0.267$) and wound complication ($r=-0.201$) had low correlation to parents' satisfaction. Ninety nine percent of parents were satisfied with the overall paediatric laparoscopic experience.

Conclusion:
Aesthetic value of the wound and minimal pain after surgery are found to be the most important parameters to parents' satisfaction to paediatric laparoscopic surgery at our institution. This result is comparable to other established centres in the world.

Key words:
paediatric, laparoscopic surgery, parents' satisfaction

DOES THE ACADEMIC PERFORMANCE IN *TAMHIDI* COURSE PREDICT THE PERFORMANCE IN PRE-CLINICAL COURSE? - A PRELIMINARY CORRELATION STUDY OF UNDERGRADUATE MEDICAL TRAINING IN UNIVERSITI SAINS ISLAM MALAYSIA

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Background:
The academic scores of foundation year(s) are commonly used to select eligible undergraduate students to enter medical school. The medical curriculum assumes successful completion of foundation courses will have a positive impact on students' performance during medical programme. The aim of this study is to examine the relationship between *Tamhidi* (foundation) subjects and End of Semester 1 pre-clinical subjects during Year 1 medical programme in Universiti Sains Islam Malaysia.

Materials and Methods:
All students who have completed *Tamhidi* programme and entered Year 1 medical programme for the session 2010/2011 were included (n=52). Marks from Semester 1 and 2 for Chemistry and Biology (*Tamhidi)*, as well as marks from Year 1 End of Semester 1 for Biochemistry, Anatomy and Physiology (pre-clinical) were retrieved. The semester marks for each *Tamhidi* subject comprised the marks for continuous assessment (40%) and final semester examination (60%). The final marks for each *Tamhidi* subject were taken as an average from both semesters. For pre-clinical subjects, the final marks of each subject were calculated by adding continuous assessment (30%) and End of Semester 1 examination (70%). The correlation between Chemistry & Biochemistry, Biology & Anatomy, Biology & Biochemistry and, Biology & Physiology were analysed.

Results:
The study population comprised 21 male and 31 female students. The Pearson correlation was highest between Physiology & Biology (r=0.665; good correlation). This was followed by Anatomy & Biology (r=0.590; moderate correlation), and Biochemistry & Biology (r=0.581; moderate correlation). The lowest correlation was between Biochemistry & Chemistry (r=0.504; moderate correlation).

Conclusion:
The study suggests a positive relationship between *Tamhidi* scores and students' performance in the first year of medical school. Performance in foundation studies may be useful in predicting the performance of medical students during pre-clinical years.

Keywords:
medical education, *Tamhidi* (foundation), pre-clinical

SELF-PERCEPTION ON ACHIEVEMENT OF UKM MEDICAL DOCTOR (MD) PROGRAMME OUTCOMES

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Background:
Outcome-based education (OBE) emphasizes the importance of measurable end products of the educational process. Medical curricula are now designed to be more student-centred and community-based. In the year 2005, UKM Faculty of Medicine, in its integrated curricula, has outlined eleven outcomes to be achieved at the end of the five-year course.

Materials and Methods:
A self-assessment survey was conducted in June 2009 among the final year medical students (n=222), to determine their perception of the achievement of the programme outcomes in the beginning of the academic year (batch 2009/2010). The students were given a questionnaire with a Likert rating scale of 1 (strongly disagree), 2 (disagree), 3 (unsure), 4 (agree) and 5 (strongly agree), to indicate their own perception on the level of achievement of each of the programme outcomes. A similar survey was again conducted in January 2010, on the same cohort (n=177), to document any changes to the students' perception six months later.

Results:
During the first survey, programme outcomes related to caring attitudes (PO5) and communication skills (PO7) were perceived as most highly achievable. More than 30% of students indicated that they were unsure about the achievement of programme outcomes related to scientific approach and critical-thinking skills (PO2), leading collaboration with other health professionals (PO4) and competency in ICT (PO9). In the second survey six months later, there was a significant increase in positive responses in all eleven programme outcomes. As expected, programme outcome related to leading other health professionals (PO4) has the highest negative and `unsure' responses (35%), since this outcome could only be realistically evaluated after the students have graduated and started working.

Conclusion:
This survey is instrumental to assist the faculty in improving the curriculum, as well as facilitating students to regularly referring to the programme outcomes to guide their learning process.

Keywords:
Outcome-based education, medical curriculum, medical students, self-perception

TEACHING EVIDENCE-BASED MEDICINE TO MEDICAL STUDENTS: COMPARATIVE STUDY ON THREE MEDICAL SCHOOLS IN ASIA AND EUROPE

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Background:
Clinical epidemiology (CE) and Evidence-based Medicine (EBM) have become pivotal in production and application of evidence in contemporary health care. CE and EBM therefore are an important part of medical school curricula. This report describes the implemention of an integrated CE and EBM module in the Faculty of Medicine Universitas Indonesia (UI) and in the University of Malaya (UM).

Methods:
A CE and EBM module, entailing knowledge and skills on the approach to production and use of medical knowledge was originally developed at University Medical Center Utrecht (UMCU). It was adapted by a collaborative team from the University Medical Centre Utrecht, University of Indonesia (UI) and University of Malaya (UM). Before the start of the module, UI and UM staff involved in the module followed a training of teachers (TOT) course led by two experienced lecturers from UMCU. Student competences were assessed through pre and post multiple-choice knowledge tests, an oral and written structured evidence summary (evidence-based case report - EBCR) as well as a written exam. After completion all students also filled in a module evaluation questionnaire.

Results:
The mean pre-test result of UI (54.69; range 31.58-92.11) and UM (46.23; range 28.12 – 68.75) were significantly lower than that of UMCU students (62.20; range 9.38-87.50), ($p<0.001$). The means of post-test results of UMCU students (74.90; range 31.25-100) were comparable ($p=0.48$) with UI students (73.54; range 34.21-89.48), but significantly different ($p<0.001$) with UM students (61.39; range 18.75-81.25). Only 49% of UM students agreed that this module has achieved its' objectives as compare to 89% in UI. Essential problems for the modules in both UI and UM were the limited access to literature and the variability of the tutors' skills.

Conclusions:
Adoption of an existing western CE-EBM teaching module into Asian medical curricula is feasible while comparable learning outcomes are obtained.

Keywords:
Evidence based medicine, medical education, medical students

MOTHERS' PSYCHOPATHOLOGY AND FAMILY RELATIONSHIP TYPE IN SUBSTANCE ABUSE RELAPSE

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Background:
Substance abuse is a chronic problem that has a serious impact for the entire family member. Psychologically, it could cause the feeling of guilt, sad, shame, anxious and lose. Substance abuse has multifactorial causes. Parent's or mother's psychopathology is one of many factors related to substance abuse. Psychopathology and inharmonious family relationship have a role in substance abuse relapse. The aim of this study is to get a picture about mother's psychopathology, family relationship type and to identify the association of mother's psychopathology and family relationship type in substance abuse relapse.

Method:
Cross-sectional study, subjects was recruited from ongoing outpatient treatment in addiction service of Puskesmas Kecamatan Cengkareng and Grogol Petamburan (120 persons 18-29 years old) taken consecutively from November 2010 until February 2011. The instruments used were DSM IV, *Symptom Check List (SCL)*-90, *Family Adaptability and Cohesion Evaluation Scale* (FACES) IV and subject demographic questionnaire. All questionnaires were self-report questionnaires.

Results:
Data analysis showed that mother's psychopathology (p=0,020; OR 2,389; 95%CI 1,137-5,021) and mother's depression symptoms (p=0,038; OR 2,52; 95%CI 1,051-6,061) had a significant relationship with substance abuse relapse, while the family relationship type did not. Substance abuser, whose mother had depression symptoms, had 2.5 times chance of relapse compared to substance abuser whose mother didn't have any depression symtoms.

Conclusion:
This study showed that there was a significant relationship between mother psychopathology, particularly depression symptom with substance abuse relapse.

Keywords:
Mother's psychopathology, family relationship type, substance abuse relapse.

EVOLVING FACE OF POSTGRADUATE MEDICAL EDUCATION IN BRUNEI PRIMARY CARE

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Background:
The MScPHC Programme at Universiti Brunei Darussalam (UBD) was initiated by the joint collaboration of (i) the Department of Community Health Sciences (General Practice), St. George's Hospital Medical School (SGHMS now SGUL), London, (ii) Ministry of Health, Brunei Darussalam and (iii) UBD in an Agreement signed on 21st September 1999. The programme aims were to monitor the participants' progress through the course by competence and performance assessments and to award a Master's of Science in Primary Health Care (MscPHC) to successful participants.

Material & Methods:
The 3 year MScPHC programme is highly academic and is delivered in a modular format. It is now well balanced with supervised clinical training in the hospitals because it runs concurrently with the Vocational Training Scheme (VTS) which is compulsory rotations of two years in the hospital and one year in general practice setting for local general practitioners (GP).

Results:
The teaching responsibilities were handed over to a group of selected GP registrars who had passed the PG Dip PHC with merit and were identified by the UK team. These tutors were trained closely with regular feedback and supervision till finally in 2008 the course was handed over completely to the local staff at the UBD. Currently the course which was mostly based on National Health Systems UK and delivery has now rounded of intricately into a more holistic course in educating the local GP on medical, social and cultural issues that are relevant to the local setting.

Conclusion:
The MScPHC also has incorporated the UBD vision and mission in enhancing the culture of research in general practitioners in Brunei Darussalam. Brunei has thus shown giant strides in providing evidence based care and training of their GP faculty to match global standards.

Keywords:
Masters of Science Primary Health Care programme (MScPHC); Primary Health Care Services; General Practitioners; training

WHAT INFLUENCED THE EMIGRATION OF PUBLIC DOCTORS TO THE PRIVATE SECTOR: A CROSS-SECTIONAL STUDY AMONG PRIVATE DOCTORS IN KUALA LUMPUR AND SELANGOR

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Background:
Malaysia continues to endure the emigration of public service doctors to the private sector despite various efforts in curbing this situation. This phenomenon result in higher workload for the remaining doctors and inequitable health care for the public especially those of the rural and lower socioeconomic groups.

Materials and Methods:
To determine the factors which influenced the migration of public doctors in Malaysia, a cross-sectional study was conducted between January and June 2009. The subjects of this study were 380 doctors in the private sector in Kuala Lumpur and Selangor who were randomly sampled from the Medical Registry of the Malaysian Medical Council. The study instrument was a self-administered postal questionnaire.

Results:
Response rate was 90.0% of which about 85.0% were from private clinics. There were almost equal number of subjects with regards to groups of sex, race and place of graduation (local vs. overseas universities). Majority of the respondents served in the public sector for less than seven years (70%) and were non specialists when they left the service (80%). The doctors who served in the government service for less than seven years were four times more likely to leave the service ($p<0.05$). Respondents were dissatisfied with work benefits, pay, rewards, promotion and work operations while in the public service, and hence left the service.

Conclusion:
To curb the migration of doctors from the government service, it is recommended that pay and allowance schemes be regularly reviewed, opportunities for postgraduate studies increased, promotional exercises strengthened, workload reduced by reducing work hours such as shift duties and more flexible working hours and non-monetary incentives encouraged. Scheduled job satisfaction surveys for in-service doctors, and exit interviews or surveys for doctors prior to their leaving the government service should also be done to determine job dissatisfaction factors and to plan for timely remedial actions.

Keywords:
Private doctor, government service, Ministry of Health, dissatisfaction

PREVALENCE AND FACTORS ASSOCIATED WITH JOB STRESS AMONG EMPLOYEES OF A STATE HEALTH DEPARTMENT

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Background:
Several sources of job stress exist. Some of these stressors are intrinsic to the job, while some are related to psychosocial and other factors. A cross sectional study was conducted to determine the prevalence and factors associated with job stress among employees of a state health department.

Materials and Methods:
A Malay version of the validated Karasek's Job Content Questionnaire was distributed among staffs of a state health department and the response rate was 97.2 percent. There were five scales in the questionnaire. Two scales were used to define job strain, namely: decision latitude and psychological demands.

Results:
The prevalence of high job stress in was 24.0 percent. There is significant association between supervisor's support and level of stress among staff in State Health Department (p=0.04). There were no associations between job insecurity, co-worker support, social support and physical exertion with stress level.

Conclusion:
The prevalence of stress among the health staff in State Health Department is high. Low supervisor support and female gender showed significant differences in the level of stress between "high strain" group and "non-high strain" group.

Keywords:
Job Content Questionnaire, job stress, risk factors, State Health Department staff, psychosocial factors

PERCEPTION OF QUALITY OF LIFE AMONGST HAEMODIALYSIS PATIENTS IN A DIALYSIS CENTRE

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Background:
End Stage Renal Disease (ESRD) is one of the leading causes of morbidity and mortality that impinge on quality of life in haemodialysis patients. The aim of this study was to determine the quality of life in haemodialysis patients in a dialysis centre.

Materials and Method:
A descriptive cross-sectional study was conducted at Cheras Dialysis Centre. A convenience sampling of 72 respondents were recruited for this study. The KDQOL-SF™ comprised a 79 item questionnaire to measure the quality of life of ESRD haemodialysis patients.

Results:
The results depict that haemodialysis patients' possessed good quality of life (KDQOL-SF™) with total mean and standard deviation of pretest score (61±13). There were no significant differences between the domains of work status with gender with $p>0.05$. There were significant differences between the domains of physical role with age groups with ($F=4.741$, $p<0.012$). Furthermore the age group of more than 65 years, revealed the highest mean and standard deviation with (86±22); followed by age group of less 50 years (81±19) and the lowest score was the age group between 50 to 65 years (71±24).

Conclusion:
The study indicated that haemodialysis patients in Cheras Dialysis Centre possess good quality of life. Most importantly, patient education by health care providers had great implications towards their lifestyle modification, disease process, dietary and fluid management.

Keywords:
quality of life, end stage renal disease, haemodialysis, KDQOL-SF™ items, patient.

EPIDEMIOLOGICAL MODEL AND SCORING SYSTEM FOR PREDICTING RABIES AFTER DOG'S BITE IN THE TIME OF RABIES OUTBREAK: A STUDY FROM LARAT RABIES OUTBREAK

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Background:
Rabies outbreak in specific area prosecute post-exposure vaccination to reduce the risk of having rabies in patients. In most outbreak, the number of rabies vaccine not much enough to cover total demand which is all of dog's bite patients. Hence, we need objective method to prioritize patients who get vaccination first. The aim of this study is to formulate epidemiological model and scoring system for predicting rabies after dog's bite in the time of rabies outbreak.

Methods:
A cross-sectional study was conducted in Larat, North Tanimbar, West Southeast Moluccas District in the time of rabies outbreak in June-August 2010. We re-analyzed data from outbreak investigation report to get epidemiological model and scoring system. Rabies was diagnosed by clinical features, medical record in Larat Public Health Center, outbreak investigation, and histopathologic figure of dog's brain. We used total sampling method to all cases of dog's bite and rabies.

Results:
We analyzed 355 dog's bite patients, 20 of them were diagnosed rabies. Predictors of rabies in dog's bite patients are time-period from dog's bite till now less than two months (OR 4,809; 95% CI 1,527-15,142), location of the bite wound on head, face, neck, chest, and back (OR 3,579; 95% CI 1,123-11,411), dog's characteristics show predominantly rabies (OR 7,842; 95% CI 2,554-24,084), and dog died solely (by themselves) or dog was killed but there is an information that before biting patient, they were bite by other dog which died solely (by themselves) (OR 7,745; 95% CI 2,555-23,478).

Conclusion:
Based on the study, epidemiological model and scoring system for predicting rabies after dog's bite in the time of rabies outbreak included four variabels; time-period from dog's bite, location of bite wound, dog's characteristics, and the way the dog died.

Keywords:
Epidemiological model, scoring system, rabies, prediction, dogs bite, outbreak, vaccination

CHRONOLOGICAL AGING VS BIOLOGICAL AGING: AN AGE RELATED NORMOGRAM FOR ANTRAL FOLLICLE COUNT, FSH AND ANTI MULLERIAN HORMONE

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Background:
As a woman aged, her ability to produce ovum with good quality and quantity will be decreased. This has been related to chronological age of the ovaries calculated since intra uterine life, with the ovarian biological age, representing the ovarian reserve and its response to ovarian stimulation.

Objective:
To evaluate the correlation between the chronological age and ovarian biological age with a graph model and normogram of AFC, AMH, and FSH as well as to see the decreasing pattern of each variable based on women's age.

Method:
A retrospective cohort study with AFC, FSH, and AMH serum level data taken from medical records of IVF patients at Yasmin Clinic, dr.Cipto Mangunkusumo Hospital between January 2008 to December 2010.

Results:
Correlation between 3 variables, AFC, AMH, and FSH, related to the age is statistically significant. AFC numbers and AMH serum level as observed in graph with percentile 3, 10, 25, 50, 75, 90, and 97 has decreased following age, whereas FSH increased following age. There is relatively lower sloping degree of FSH showed that it is increased in older age when compared with AFC and AMH, therefore FSH is observed to be a later predictor for evaluating ovarian reserve, whilst AMH is an earlier predictor. AFC showed a biphasic pattern describing a different follicle loss rate after the switching age, whereas AMH and FSH level change with a linear fashion.

Conclusion:
Age-related normograms in infertile women demonstrate a biphasic pattern of decreased antral follicles while AMH and FSH transformed with a linear pattern. AMH found to be an earlier predictor for ovarian biological age assessment. These curve models and normograms could provide a reference guide for physicists to counsel women with infertility. However, future validation with longitudinal data is still needed.

Keywords:
Normogram, Anti Mullerian Hormone, Antral Follicle Count, Follicle-Stimulating Hormone

LEARNING TO LIVE AND LIVING TO LEARN TOGETHER: A NOVEL AND RESOURCEFUL MODEL OF INTERPROFESSIONAL UNDERGRADUTE EDUCATION

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Background:
Historically interprofessional education (IPE) developed in the nineteen sixties due to events which include primary care teams' formation, introduction of care in the community, investigations into child abuse and, later, strategies to effect change and quality improvement in the services being provided by the professionals engaged in health and social care delivery. Thus IPE was conceived as a reactionary means to overcome ignorance and prejudice amongst health and social care professionals.

Material & Methods:
It was thought that by learning from and about each other to improve collaboration (i.e., *interprofessional education*) as opposed to learning side by side together for whatever reason (i.e., *multiprofessional education*) which had characterised medical and health education, members of the healthcare professions would understand each other better, valuing what each professional group brought to collaborative practice whilst setting aside negative stereotypes, work more effectively together and thereby improve the quality of care for their clients. The evolutionary trend in healthcare delivery occasioned by the phenomenal technological advancement, advent of the knowledge economy which is characterised by the 'demand' for transparency and accountability and structural changes that are continuously brought about by governments has exacerbated the need for IPE. Initial approaches to providing IPE include introducing confidence building measures at both pre and post registration levels, and, in secondary, primary and community care.

Results:
These measures at best have produced limited successes and in some cases the level of 'mistrust' between certain professions has increased, hence the need for further efforts at achieving the set goals.

Conclusion:
I will be drawing on the theories relating to the principles and practices in academic governance to present a novel model of IPE for healthcare workers at undergraduate level that will unequivocally achieve the aims of IPE.

Keywords:
Interprofessional undergraduate education, medical and health education, novel model

EFFECT OF DIFFERENT VITAMIN E ISOMER CREAMS AGAINST ULTRAVIOLET B INDUCED PHOTODAMAGED HUMAN SKIN

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Background:
Exposure to ultraviolet B (UVB) accelerates skin aging by causing photodamage. This has been associated with the presence of free radicals causing oxidative stress in skin cells. Antioxidants present in abundance in the outermost layer of the skin, stratum corneum, are used as a first line defence of the skin to damage caused by sunlight and provide possible intervention measures to reduce the rate of skin aging.

Materials and Methods:
The aim of this study was to examine the effects of different isomers of vitamin E creams in two age groups of human skin that has been exposed to UVB. Parameters measured include melanin content, erythema level, Individual Typology Angle (ITA), pH, sebum content, hydration, skin elasticity and Transepidermal Water Loss (TEWL). UVB were simulated by UV Solar Simulator® with Dose Control System® PMA2100 and the skin profiling was examined using Cutometer® MPA 580.

Results:
Repeated UVB irradiation for four days resulted in darkening of the skin shown by increased melanin ($p<0.05$) and erythema level ($p<0.05$) and decreased ITA ($p<0.05$) in both age groups ($n=12$ per group). In addition, the older age group showed a decrease in skin elasticity ($p<0.05$). Tocotrienol based cream at the lower dose prevented darkening of the skin in the younger age group. However, the older group responded better to tocopherol creams in protecting their skin from losing elasticity and reducing erythema.

Conclusion:
Vitamin E creams have a great potential to be protective from UVB induced photodamage and age dependent response to different types of vitamin E creams was observed.

Keywords:
Photoaging, photodamaged, UVB, Vitamin E creams, human skin.

CONSUMPTION OF REPEATEDLY HEATED PALM AND SOY OILS CAUSES SIMILAR EFFECT ON BLOOD PRESSURE AND AORTIC MORPHOMETRY IN RATS

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Background:
Oil thermoxidation during the process of deep frying generates harmful oxidative oxygen radicals that increase the risk of hypertension. The purpose of this study was to investigate and compare the effect of repeatedly heated palm and soy oils on blood pressure and aortic wall remodelling in rats.

Materials and Methods:
Male Sprague-Dawley rats were divided into seven groups and fed as follows: (i) basal diet (control); basal diet fortified with 15% weight/weight (w/w) (ii) fresh palm oil (FPO) or (iii) fresh soy oil (FSO); (iv) five-time-heated palm oil (5HPO) or (v) five-time-heated soy oil (5HSO); (vi) ten-time-heated palm oil (10HPO) or (vii) ten-time-heated soy oil (10HSO). Feeding duration was 24 weeks. Blood pressure was measured at baseline and at intervals of four weeks using tail-cuff method. After 24 weeks the rats were sacrificed and the aortic arches were taken out for histological and morphometric measurements which including intima-media thickness (IMT), intima-media area (IMA), lumen diameter, elastic fibre lamellar number and circumferential wall tension (CWT).

Results:
Both FPO and FSO groups did not show any significant changes in blood pressure and morphometric measurements. There were significant increases in blood pressure, IMT, IMA and CWT in the five-time and ten-time-heated oils treated groups compared to control and fresh oils groups. However, there were no significant differences in lumen diameter and lamellar number among the groups. Histomorphology showed increased interlamellar space in aortas of five-time and ten-time-heated oils treated rats, indicating aortic hypertrophy. No significant differences in the effects of palm and soy oils on blood pressure and aorta morphometry were observed.

Conclusion:
Prolonged consumption of repeatedly heated palm and soy oils similarly causes blood pressure elevation and hypertrophy of aortic wall.

Keywords:
hypertension, blood pressure, aorta, palm oil, soy oil.

EFFECTS OF LABISIA PUMILA ON BONE HISTOMORPHOMETRIC PARAMETERS IN POSTMENOPAUSAL OSTEOPOROSIS RATS MODEL

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Background:
Estrogen Replacement Therapy (ERT) is the main treatment of postmenopausal osteoporosis. However, ERT may cause serious side-effects, such as cancers and thromboembolic problems. Kacip Fatimah or *Labisia pumila var. alata* (LP), a herb has the potential to be used as an alternative to ERT due to its phytoestrogenic activity. This study was conducted to determine the anti-osteoporotic effects of LP by measuring the bone histomorphometric changes in post menopausal osteoporosis rat model.

Materials and Methods:
Thirty two Wistar rats were equally divided into four groups, with eight rats in each group. The first group was sham operated (Sham), the second group acted as ovariectomized control (OVXC), the third group was ovariectomized and treated with 17.5 mg/kg of *Labisia pumila* (LP) and the fourth group was ovariectomized and treated with 64.5 µg/kg Premarin® (ERT). After two months of treatment, the left femurs were dissected out and the cellular and dynamic changes were analysed using bone histomorphometry.

Results:
OVXC rats were found to demonstrate osteoporotic changes. Supplementation of LP to ovariectomized rats for two months was able to prevent the osteoporotic changes in the static and dynamic bone histomorphometric parameters. LP was as effective as ERT in preventing these osteoporotic changes.

Conclusion:
LP is a good candidate for further studies on its potential as an alternative to ERT for prevention of postmenopausal osteoporosis.

Keywords:
Histomorphometry; *labisia pumila*; osteoporosis; estrogen; ovariectomy

TOCOTRIENOL-RICH FRACTION SUPPLEMENTATION REVERSES AGE-RELATED COGNITIVE DECLINE IN AGED RATS

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Background:
Brain aging is associated with a decline in motor performance and cognitive function. The decline may be due to neurodegeneration caused by increased oxidative stress. Thus the use of antioxidant as supplements to preserve brain functions has gained popularity. Vitamin E, in the form of either tocopherol or tocotrienol, or in combination, has been shown to exert neuroprotective effects in vitro. However whether this could be translated into better preservation of brain integrity is not known. Therefore, this study aims to evaluate the effect of tocotrienol-rich fraction (TRF) supplementation on the cognitive function in aged rats.

Materials and Methods:
Thirty-six male Wistar rats were divided into two groups: young (aged 3 months) and old (aged 21 months). Each group was further subdivided into control and supplemented groups. The supplemented groups receive 200mg/kg TRF via oral gavage continuously for three months. At the end of the three months period, cognitive functions test were carried out using the Morris water maze to evaluate spatial learning and memory functions. Two versions of the test were carried out i.e. the reference memory (requiring rats to learn one target location) and working memory version (requires the rats to learn many different target locations).

Results:
In the reference memory version test, data showed that control aged rats displayed slower spatial learning compared to supplemented aged rats and young rats. When the platform was removed (probe test), control aged rats spent less time in the target quadrant after 180s delay in the final training. This result indicated that aged rats have poorer spatial memory as compared to supplemented aged rats and young rats. In addition, the unsupplemented aged made fewer platforms crossing during probe test showing that they could not locate the platform as accurately as the supplemented aged rats or the young rats. Result also indicated that the working memory of the aged rats was markedly impaired as compared to young but this was not reversed with the TRF supplementation.

Conclusion:
In conclusion, aging resulted in decline in the reference as well as working memory affecting spatial learning abilities. TRF supplementation was able to prevent decline in spatial learning and reference memory in aged rats.

Keywords:
Tocotrienol-rich fraction, brain aging, cognitive function

THE CONTRIBUTION OF PROTEIN KINASE C IN P2Y RECEPTOR-EVOKED VASOCONSTRICTION OF RAT PULMONARY ARTERY

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Background:
P2Y receptors are a family of G protein-coupled receptors that are activated by endogenous nucleotides, such as UTP and UDP. In the vascular system these agonists induce vasodilation via endothelial P2Y receptors and vasoconstriction via P2Y receptors located on arterial smooth muscle cells. The intracellular signalling mechanisms by which vasoconstriction is induced are poorly characterised, so the aim of this study was to determine the role of protein kinase C (PKC) in nucleotide-evoked vasoconstriction of rat small intrapulmonary artery (SPA) and whether this kinase mediates via Ca^{2+}-sensitisation of the contractile proteins.

Materials and Methods:
Both intact and membrane-permeabilised SPAs were used in this study. Membrane-permeabilisation was achieved by incubating the arteries with 50μg/mL α-toxin. The endothelium of the arteries were removed by rubbing the vessel lumen gently with a thread, and were mounted under isometric conditions in 1ml baths at 37°C and a resting tension of 0.5g. Tension was recorded by Grass FT 03 transducers connected to a Powerlab/4e system (AD Instruments). Contractions were elicited by addition of agonists to the bath.

Results:
In intact arteries, UTP and UDP (both 300 □M) evoked slowly developing contractions, which reached a peak within 5 minutes and decayed slowly in the continued presence of agonist until the tension reached a plateau. PKC have been implicated in Ca^{2+}-sensitisation of smooth muscle, therefore we investigated the effects of its selective inhibitor, GF109203X. Pre-incubation for 15 minutes or post-addition (after contractions reached its peak) with GF109203X (10 □M) had caused moderate inhibition of UTP- and UDP-evoked contractions. In membrane-permeabilised preparations, UTP and UDP also induced vasoconstriction, but were unaffected by GF109203X.

Conclusion:
These results indicate that PKC is involved in P2Y receptor-mediated contraction of rat pulmonary artery, via non-Ca^{2+} sensitisation and how it contributes to UTP- and UDP-induced contractions remains to be determined.

Keywords:
P2Y receptors, vasoconstriction, arterial smooth muscle

CO-ADMINISTRATION OF RITONAVIR AND PRIMAQUINE DECREASES PLASMA CONCENTRATION OF PRIMAQUINE: SINGLE- AND MULTIPLE-DOSE STUDY IN THE RATS

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Background:
The present study was aimed to explore the effects of ritonavir and primaquine combination given as a single-dose or multiple-dose compared to ritonavir alone on ritonavir plasma concentration in the rats.

Methods:
In single-dose study, 30 male Spraque Dawley rats were randomly allocated to receive primaquine 12.5 mg/kgBW or primaquine 12.5 mg/kgBW + ritonavir 10 mg/kgBW or primaquine 12.5 mg/kgBW + ketokonazole 10 mg/kgBW. Ketokonazole was used as positive control for inhibitor of primaquine metabolism. In the multiple-dose study, thirty Spraque Dawley male rats were randomly allocated to receive primaquine 12.5 mg/kgBW/day or primaquine 12.5 mg/kgBW/day + ritonavir 10 mg/kgBW/day or primaquine 12.5 mg/kgBW/day + rifampicin 100 mg/kgBW/day. Rifampicin was used as a positive control for inducer of primaquine metabolism.

Results:
In the single-dose study, ketokonazole increases the area under the plasma concentration (AUC) of primaquine (↑45.8%, $p<0.000$), while the ritonavir decreases the AUC of primaquine (↓ 64.6 %, $p<0.000$). Multiple-dose study shows that both rifampicin and ritonavir decreases the AUC of primaquine by 60.2 % ($p<0.000$) and 67.7 % ($p<0.000$), respectively.

Conclusion:
Concomitant administration of primaquine and ritonavir decreases the AUC of ritonavir. This effect could result in the insufficient concentration of primaquine as anti-relapse therapy in malaria caused by *Plasmodium vivax*, which might lead to treatment failure with primaquine.

Keywords:
Primaquine, ritonavir, drug interaction, metabolism.

CLINICAL EFFECTS OF AN INTRAVENOUS AMINO ACID AND GLUCOSE SOLUTION WITH ELECTROLYTES IN NON SURGICAL GASTROINTESTINAL PATIENTS IN INTERNAL MEDICINE

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Introduction:
The aim of this study was to assess the efficacy intravenous amino acid and glucose solution with electrolytes in non surgical gastrointestinal patients in the internal medicine ward.

Materials and methods:
The upper chamber contains amino acid solution and the lower chamber contains glucose and electrolytes administered via peripheral vein at a dosage of 1000 ml/day for a period of 1 week (7 days). Non operative gastroenterology patients with age between 16 to 65 years were eligible in this study if signed informed consent was obtained; patients who were excluded: diabetes mellitus, had severe hepatic or renal dysfunction, had hyperkalemia, hypercalcemia, hypermagnesemia, or hyperphosphataemia, and had body weight greater than 130% of ideal body weight (obesity). The data were analyzed by paired T-test and Mc Nemar test using SPSS ver.16.

Results:
Fifteen patients were recruited; they consisted of 7 (46.7%) male and 8 (53.3%) female, mean+SD age was 38.47+14.73 years (17-61 years). The mean+SD of Body Mass Index (BMI) at screening was 14.50+2.11 Kg/m2 (11.41-18.22 Kg/m2). The increase in BMI in day -1, day-3, day-7 were 14,5; 14,58; 14,80 kg/M2, respectively ($p<0.05$). The increment (pre vs post) of prealbumin, albumin, 2 transferin, and total protein were 7.293 vs 11.160; p=0.018; 2.713 g/dL vs 3.120 g/dL; p=0.024; 102.373 vs 141.951; p=0.016; 6.240 g/dL vs 6.853 g/dL; p=0.019, respectively. The decrease in clinical symptoms (pre vs post) i.e. nausea and weakness were 53.3% vs. 6.7%, p=0.016 and 66.7% vs. 6.7% p=0.004.

Conclusion:
Total parenteral nutrition solution was effective to improve the clinical nutrition parameters.

Keywords:
intravenous amino acid, glucose solution, non surgical gastrointestinal

HIGH PREVALENCE OF *ccrC* AND *ccrA2* TYPE CASSETTE CHROMOSOME RECOMBINASE (*ccr*) FOUND IN THE STAPHYLOCOCCAL CASSETTE CHROMOSOME (SCC) ELEMENTS OF COAGULASE NEGATIVE STAPHYLOCOCCUS (CoNS) SPECIES ISOLATED FROM UKMMC

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Background:
CoNS are an important cause of nosocomial infection and are medically important as most CoNS are inherently resistant to methicillin (methicillin-resistant CoNS, MRCoNS). Methicillin resistance is conferred by the *mecA* gene which is carried on a mobile genetic element inserted into the staphylococcal chromosome, designated as staphylococcal cassette chromosome *mec* (SCC*mec*). As the incidence of CoNS infection is on the rise in our medical centre, we determined the prevalence and species diversity of CoNS isolated in 2009 and typed the SCC*mec* elements of each MRCoNS.

Materials and Methods:
Staphylococcal isolates from 2386 patients were collected in UKMMC in 2009. Coagulase and DNase tests were performed to identify CoNS strains. For 1181 CoNS index strains, methicillin susceptibility was determined via disc diffusion. Species identification and SCC*mec* typing were done using a multiplex PCR protocol with specific primers.

Results:
In 2009, the prevalence of CoNS among staphylococcus genus in our hospital was 49.5%. *S.epidermidis* was the most prevalent species among CoNS (69.1%) and MRCoNS (67.2%). Majority (44.7%) of the MRCoNS isolates were SCC*mec*-untypeable strains using the presently available protocol. Interestingly, 55.5% of MRCoNS in our institution harboured the cassette chromosome recombinase C (*ccrC*) gene, while 40.3% carried the *ccrA2* gene alone or in 10 combination patterns. Only 1%, 1%, 0.2%, 8.4%, 7.9% and 0.4% were typeable as SCC*mec* types 1, 2, 3, 4, 5 and 6, respectively.

Conclusion:
The high prevalence of MRCoNS in our medical centre is worrying as they can assemble and disseminate SCC*mec* elements amongst Staphylococci, leading to methicillin resistance. Furthermore, we are also concerned about the high abundance of *ccrC* and *ccrA2* located in the SCC*mec* elements, which may respectively mobilize and facilitate the spread of heavy metal and antimicrobial resistant genes. Vigilant infection control will be important in keeping CoNS infections minimal and to prevent it from conferring methicillin resistance to Staphylococcal isolates.

Keyword:
Coagulase negative staphylococcus (CoNS), methicillin resistant CoNS (MRCoNS), SCC*mec* typing

HETEROGENOUS VANCOMYCIN INTERMEDIATE *STAPHYLOCOCCUS AUREUS* (HVISA) IN TERTIARY HOSPITAL

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Background:
Heterogenous vancomycin intermediate *Staphylococcus aureus* (hVISA) strains are isolated from patients undergoing prolonged vancomycin treatment and it has been suggested to be one of the causes of vancomycin treatment failure. As there were increased number of vancomycin treatment failure cases in Universiti Kebangsaan Malaysia Medical centre (UKMMC}, we determined the prevalence of hVISA among MRSA strains isolated in this hospital.

Materials and Methods:
A total of 88 MRSA clinical isolates collected from November to Dicember 2009 were screened for vancomycin hetero-resistance using Glycopeptide Resistance Detection (GRD) Etest and Vancomycin Etest antibiotic strips (AB BIODISK). Positive isolates were then confirmed using population analysis profile-area under the curve (PAP-AUC) method.

Results:
Two isolates were confirmed as hVISA after PAP-AUC analysis, giving a prevalence rate of 2.3%. These isolates were also tested positive as hVISA using the GRD Etest.

Conclusion:
This is the first report of hVISA in UKMMC. As the isolates used in this study were collected only for two months, and that vancomycin is the current standard therapy for MRSA infections, we suspect that the actual prevalence of hVISA might be even higher. We found the GRD test useful for hVISA screening, nevertheless PAP-AUC analysis still remains the gold standard for hVISA confirmation.

Keywords:
heterogenous vancomycin intermediate *staphylococcus aureus* (hvisa), tertiary hospital

PERIPAPILLARY RETINAL NERVE FIBRE LAYER THICKNESS MEASURED BY IN VIVO IMAGING IN RELATION TO DEGREE OF MYOPIA AND AXIAL EYEBALL LENGTH IN MALAY SUBJECTS

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Background:
The study aimed to determine the relationships between peripapillary retinal nerve fibre layer (RNFL) thickness and first, spherical equivalent refraction (SER) and secondly, axial length of the eyeball (AL) in young Malay subjects.

Materials and Methods:
Sixty three Malay subjects (age range: 19 to 24 years old) with mean SER of -1.79 ±2.24 D (range: +0.50D to -8.00D) and mean AL of 24.26±1.35mm (range: 21.88mm to 30.14mm) were included in this clinical cross-sectional study. In vivo imaging technique by Stratus optical coherence tomography was used to determine the average thickness of the RNFL at the peripapillary optic nerve head (ONH) area, and also to record RNFL thickness at 4 specific locations of the peripapillary ONH area i.e. temporal, superior, nasal and inferior quadrants.

Results:
Positive correlation was found between the average RNFL thickness and SER ($R=0.28$, $p<0.05$). RNFL thickness was also positively correlated with SER at the nasal ($R=0.29$, $p<0.05$) and inferior ($R=0.25$, $p<0.05$) quadrants. Negative correlation was found between RNFL thickness and AL at the nasal ($R=-0.26$, $p<0.05$) quadrant. No significant correlations were found between RNFL thickness and SER at the temporal and superior quadrants. There was also no significant correlation between average RNFL thickness and AL, neither were there any correlations between RNFL thickness and AL at all quadrants, except at the nasal quadrant.

Conclusion:
This study shows that the degree of myopia, as well as elongation of the globe, is associated with thinning of RNFL at the peripapillary ONH area in certain locations. Because of these anatomical changes, as found by in vivo imaging in the present study, any interpretation of thinning of the nerve fibre layer around the ONH will require the consideration of refractive status before any decisions could be made in regard to the presence of ocular pathology, such as glaucoma.

Keywords:
retinal nerve fibre layer, spherical equivalent refraction, axial length, myopia

COMPARISON OF CLINICAL EFFICACY BETWEEN GYNOFORT AND CANESTAN IN THE TREATMENT OF VULVOVAGINAL CANDIDIASIS

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Background:
The objective of the study is to compare the efficacy of single dose Gynofort versus single dose Canestan in the treatment of Vulvovaginal candidiasis in nonpregnant patients.

Material and Methods:
One hundred and twelve patients, with clinically confirmed Vulvovaginal candidiasis, were randomized into two treatment groups; Canestan group received treatment with a single dose of clotrimazole 500 mg vaginal pessary and the Gynofort group was treated with single dose butoconazole nitrate 2% Site Release vaginal cream. Symptom relief was assessed at six and 24 hours and on days 3,7,14, 21 and 28 after treatment and included recurrence of symptoms. Student's t-test was used with significance level set at $p<0.05$.

Results:
The main presenting complaints were vaginal discharge (78.6%), vulvovaginal itchiness (58.1%) and dysuria (42.0%). Overall, more patients in the Gynofort group achieved complete relief of each main symptom at each time period. Significantly, more patients in the Gynofort group had complete relief of vaginal discharge compared to the Canestan group at days 7, 14, 21 and 28 ($p<0.05$). More patients in the Gynofort group were relieved of vulvovaginal itchiness compared to the Canestan group at days 14, 21 and 28 ($p<0.05$). Also more patients in the Gynofort group were relieved of dysuria at 24 hours ($p=0.007$) and day 3 ($p=0.02$) comparatively. Seventeen patients (30.3%) in the Canestan group had symptom recurrence compared to only 5 (8.9%) in the Gynofort group ($p=0.004$).

Conclusion:
Gynofort has greater efficacy compared to Canestan in the treatment of Vulvovaginal candidiasis.

Keywords :
Vulvovaginal candidiasis, vaginal discharge, vulvovaginal itchiness, dysuria.

EFFECT OF *STAPHYLOCOCCUS AUREUS* AND *STAPHYLOCOCCUS EPIDERMIDIS* EXOTOXIN AND ENDOTOXIN ON BMSC GROWTH

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Background:
The use of stem cells in cases of spinal cord defects caused by the infection becomes a challenge. Stem cells and bacteria are expected to respond to each other. There are many possibilities that can happen. Interactions that occur will greatly influence the decision whether the use of stem cells to overcome a wide defect of the spine due to the infection process is reasonably acceptable.

Methods:
Cryopreserved BMSCs were thawed and washed in PBS before seeding into Ø10 cm plate with seeding density 10,000 cells/cm^2. Culture was maintained for 11 days followed by subculturing on day 11. Cells were trypsinized and counted before they were seeded into 12-well plate (seeding density 7,000 cells/cm^2). Eight hours after seeding, 0.1 mg/ml *Staphylococcus aureus* (SA) and *Staphylococcus epidermidis* (SE) toxin supernatant were added into the culture media. Cell counting was performed 2, 5, 7, and 9 days after toxin addition to get the growth profile

Results:
From the graph it can also be seen that endotoxin (of debris) influences more strongly mesenchymal stem cell growth inhibition compared to exotoxin (supernatant). These results have implications that mesenchymal stem cell applications in case of infection should consider the presence of this debris. Conducting adequate debridement thus minimizing the amount of bacterial debris should be a major prerequisite in addressing the use of stem cells in cases of infection.

Conclusion:
Recognizing the exact type of bacteria infecting the spine is a must. Both exotoxin and endotoxin from Staphylococcus aureus and Staphylococcus epidermidis have the effects inhibiting the growth of mesenchymal stem cell. Mesenchymal stem cells seem as if they were attempting to provide resistance to survive from exotoxin and endotoxin environment of the two bacteria.

Keywords:
Staphylococcus aureus, *Staphylococcus epidermidis*, exotoxin, endotoxin, bone marrow mesenchymal stem cells.

ROLE OF ALLOGENEIC MESENCHYMAL STEM CELLS IN RECONSTRUCTION OF BONE DEFECT IN RABBITS

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Background:
Management of bone defect remains unsatisfactory and need better approach. Mesenchymal stem cells, being able to differentiate into osteoblasts cells needed in fracture healing, may possess the ability to manage bone defect. We question whether transplantation of mesenchymal stem cells, particularly in combination with hydroxyapatite-calcium sulphate pellets in bone defect will result in better callus thickness and osteocyte index.

Methods:
Twenty eight giant flamish rabbits weighted 2.70 kg were used as the experimental animals. They were randomly allocated into four groups of intervention, each receiving autograft, hydroxyapatite-calcium sulphate, hydroxyapatite-calcium sulphate combined with marrow aspirate, or hydroxyapatite-calcium sulphate combined with 2x106 MSCs. Defect of one centimeter long was created and fixated with mini plate-screw and two circlage wires despite the treatment groups. The defects were then transplanted with graft according to the allocation group. Callus thickness was measured blindly by two authors working independently from radiographs taken at 4, 8, 12 weeks after transplantation. At the end of the study, the rabbits were sacrificed for histological staining and osteocyte index was obtained. Data were analyzed by one-way ANOVA test.

Results:
The callus thickness differed significantly at the fourth week (p=0.018) but not after that. Osteocyte index also tended to be higher in mesenchymal stem cells group.

Conclusion:
MSC transplantation in bone defect results in significant faster callus formation. It also shows tendency to generate thicker callus.

Keywords:
Mesenchymal stem cells, bone defect, hydroxyapatite-calcium sulphate, callus thickness, osteocyte index

FACTORS RELATED TO ARTERIAL STIFFNESS AND HIGH SENSITIVITY C REACTIVE PROTEIN: A COMPARISON BETWEEN HYPERTENSIVE AND NORMOTENSIVE URBAN MALAYSIAN MEN

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Background:
The prevalence of hypertension, which is a major risk factor of cardiovascular disease (CVD) is increasing in Malaysia. Arterial stiffness and high sensitivity C reactive protein (hs-CRP) are also known predictors of CVD morbidity and mortality. The aims of this study were to compare these two parameters between hypertensive and normotensives urban Malaysian men and to investigate their associations with other cardiovascular risk factors.

Materials and Methods:
Hundred and seventy six normotensive and 208 hypertensive men aged 40 to 80 years old resided around Kuala Lumpur were recruited. Measurements included heart rate (HR), pulse wave velocity (PWV), body mass index (BMI), high sensitivity C-reactive protein (hs-CRP), total cholesterol (TC), triglyceride (TG), high density lipoprotein (HDL), low density lipoprotein (LDL), total cholesterol/HDL ratio (TC/HDL), peripheral and central blood pressure (BP). Data were analyzed using SPSS version 16 and significance level was set at $p<0.05$.

Results:
HR, PWV, BMI, hs-CRP, peripheral and central BP were significantly higher in hypertensives compared to the normotensives. Other variables such as TC, TG, HDL, LDL and TC/HDL were comparable among the two groups. In hypertensive group, there were significant positive correlation between PWV and age, HR, peripheral systolic BP and central systolic BP, and between hs-CRP and HR, BMI, TC, TG, LDL and TC/HDL. In normotensive group, significant positive correlation was observed between PWV and age and central systolic BP, while hs-CRP positively correlated with HR, BMI, TG, and TC/HDL. In both groups, there were negative correlation between HDL and PWV and hs-CRP.

Conclusion:
Arterial stiffness and hs-CRP are significantly higher in hypertensive group. In both groups, these parameters have significant positive correlation with other major cardiovascular risk factors.

Keywords:
Arterial stiffness, hs-CRP, cardiovascular risk.

EFFECT OF LIMB DOMINANCE ON SHOULDER MUSCLE STRENGTH – A RECOMMENDATION FOR CLINICAL PRACTICE

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Background:
Strength examination of the shoulder muscles was an essential clinical assessment in management of shoulder disorders. In clinical practice, the strength of the injured shoulder muscles was always compared to the opposite healthy shoulder in order to make a clinical judgment. The prescription of exercises to strengthen shoulder muscles were thus based on identified strength deficits between involved and uninvolved shoulder. However, clinicians always had differences of opinion with regard to the influence of limb dominance on shoulder muscle strength. Some clinicians always believe that the dominant arm might have more strength due to overuse and dominancy of central motor cortex. Therefore, this study was carried out to investigate the influence of limb dominancy on functional strength of the shoulder muscles during shoulder internal rotation task.

Materials and methods:
A total of 15 right-handed subjects participated in this study. The subjects were positioned in prone lying. Tested shoulder was positioned in 90º abduction with elbow flexed into 90º. Subject performed isometric contraction of shoulder internal rotation and maintained it for five seconds. The strength of shoulder internal rotation strength was measured using a force transducer attached with Tracker software system. The average of three strength measurements was taken. The data was analyzed using SPSS version 16.0.

Results:
The mean functional strength of dominant shoulder was 3.78±1.16lbs and 3.51±1.35lbs for non dominant shoulder. The dominant shoulder had 7.69% more strength than non dominant shoulder. However, Wilcoxon signed rank test showed no significant difference in strength of shoulder muscles between dominant and non-dominant side, T=17.50, z=-1.02 (corrected for ties), N-Ties=10, p=0.305, two tailed.

Conclusion:
This study showed that the limb dominance did not influence the strength of the shoulder muscles between the dominant and non dominant side.

Keywords:
dominant limb, strength, shoulder, muscles

HEALTHY LIFESTYLE SATISFACTION AMONG ADULTS IN SABAK BERNAM, SELANGOR

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Background:
Lifestyle is one of the most significant factors influencing one's health and wellness. Various studies had shown that life satisfaction is associated with favourable health outcomes and positive well-being. Life satisfaction also has positive association with healthy lifestyle and prudent health behaviour. But there is very limited study on healthy lifestyle satisfaction (a domain-specific perspective of life satisfaction) in relation to health behaviour.

Materials and Methods:
A cross sectional study using structured questionnaires was conducted from 21 August to 27 August 2010 among adult aged 18 years old and above in two villages in Sabak Bernam, Selangor, Malaysia. This aim was to assess the prevalence of healthy lifestyle satisfaction and its association with sociodemographic characteristics, body mass index and health behaviors.

Results:
The prevalence of healthy lifestyle satisfaction among adult in was 72.4%. Backward Stepwise (LR) multiple logistic regression analysis indicated that not having stressed significantly associated with satisfied healthy lifestyle (aOR 3.38, 95%CI 1.48-7.72). Having education level of secondary (aOR 0.24, 95%CI 0.08-0.73) and tertiary level (aOR 0.20, 95%CI 0.05-7.72) are significantly associated with dissatisfied healthy lifestyle.

Conclusion:
Healthy lifestyle satisfaction has some similar associated factors as life satisfaction. Health intervention should be designed to focus on reducing stress and catered for various level of education.

Keywords:
healthy lifestyle, satisfaction, cross sectional, health behaviour

VALIDITY AND RELIABILITY OF GROSS MOTOR FUNCTION MEASURE TO MEASURE GROSS MOTOR FUNCTION IN CHILDREN WITH CEREBRAL PALSY

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Background:
Cerebral palsy (CP) is the most physical disabling disease in children. Gross motor capacity in CP usually measured and evaluated by Gross Motor Function Measure (GMFM), a standardized observational instrument to evaluate gross motor function. Validity and reliability studies have shown GMFM reliable, valid, and responsive to change of gross motor function in CP children. This research aims to examine validity and reliability of GMFM translated into Indonesian.

Methods:
Cross sectional study with consecutive sampling of CP children aged 2 to 15 years who came to pediatric rehabilitation clinic at RSCM Medical Rehabilitation Department or to Yayasan Pembinaan Anak Cacat Jakarta. Subjects were classified by age, type, anatomical distribution, and severity of CP. Gross motor function was evaluated with 88 GMFM items translated into Indonesian. Interrater evaluated gross motor function through video records. Criterion validity tested by correlation coefficient, construct validity tested by comparing GMFM item with dimension total scores and GMFM total score with corrected Spearman correlation. Interrater reliability tested by unpaired T-test, internal consistency by alpha Cronbach.

Results:
Thirty one CP children were included. Mean age was 7 years 11 months, mean GMFM score was 58.40 (SD=49.09). No significant difference of all GMFM dimensions and almost all GMFM items obtained from interrater evaluation. Internal consistency was good (alpha Cronbach 0.884). Criterion validity of all dimensions was good; with inter-item and total correlations good to strong (r=0.523-0.859).

Conclusion:
Criterion validity of GMFM Indonesian was good to strong. Construct validity of all GMFM dimensions was quite good. Internal consistency was good, while interrater reliability GMFM was good enough.

Keywords:
Cerebral palsy, gross motor function, gross motor function measure, validity, reliability.

LOW PHYSICAL ACTIVITY WORK-RELATED AND OTHER RISK FACTORS INCREASED RISK POOR PHYSICAL FITNESS AMONG CEMENT WORKERS

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Background:
Low physical activity related to poor physical fitness, which leads to low productivity. The objective of this study was to determine the effect of low work-related physical activity and several other risk factors on physical fitness.

Methods:
This study was carried out in February 2008. Subjects were workers of 15 departments in PT Semen Padang, West Sumatera (Indonesia). Data on physical activities were collected using the special questionnaire based on Student Field Work I Guidebook and Hypertension– Geriatric Integrated Program of Faculty of Medicine, Universitas Indonesia 2003. Physical fitness was measured using Harvard Step Test.

Results:
A number of 937 male workers aged 18–56 years participated in this study. Poor physical fitness was 15.9% of the subjects. Low work-related physical activity, smoking, lack of exercise, hypertension, diabetes mellitus, and asthma were dominant risk factors related to poor physical fitness. Subject with low compared to high work-related activity had a ten-fold risk of poor physical fitness [adjusted odds ratio (ORa)=10.71; 95% confidence interval (CI)=4.71–24.33]. In term of physical exercise, subjects who had did not have compared to who had physical exercise had a six-fold risk of poor physical fitness (ORa=6.30; 95% CI=3.69-10.75).

Conclusion:
Low work-related physical activities, smoking, lack of exercise, hypertension, diabetes mellitus and asthma were correlated to poor physical fitness. It is, among others, therefore necessary to implement exercises for workers with poor physical fitness.

Keywords:
Exercise test, occupational health, physical fitness

GOOD MUSCLE FITNESS INCREASES HIGH SUSTAINED G-ENDURANCE AMONG INDONESIAN MILITARY FIGHTER PILOTS

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Background:
Good muscle fitness will improve the capability of pilots to cope with High Sustained G (HSG). Fighter pilots who handle sophisticated aircrafts have increased chances of being exposed to HSG. To minimize the danger of this force, fighter pilots should repeatedly practice high intensity Anti G Straining Maneuvers (AGSM) to the point of fatigue. The aim of this study is to determine how muscle fitness can affect HSG.

Methods:
The subjects consisted of voluntary military fighter pilots who agreed to join this study. They were all exposed to Simulated Air Combat Maneuver (SACM) human centrifuge protocols at the Saryanto Aerospace Medicine Institution (Lakespra Saryanto) in Jakarta. The endurance of each pilot was measured by the duration of time they could withstand HSG. Muscle fitness was evaluated by the score of routine military fitness test procedures.

Results:
Of the 25 subjects who participated in this study, two pilots dropped out because they experienced severe motion sickness. The mean age and flying hours of the subjects were 28.0 (SD 3.4) years and 501.4 (SD 232.3) hours, respectively. Those who had higher muscle fitness scores had increased HSG duration [Pearson's correlation (r)=0.76; p=0.001].

Conclusion:
Greater muscle fitness increases HSG endurance among Indonesian military fighter pilots. Effective muscle fitness training may increase a fighter pilot's ability to perform aircraft tactical maneuvers for a longer period of time.

Keywords:
High sustained G, muscle fitness, military fighter pilots

INGESTION OF HERBS DURING PREGNANCY AND CONFINEMENT PERIOD AMONG MOTHERS WHO DELIVERED AT UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE (UKMMC)

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Background:
The potential harm of herbs to the pregnant mothers and their foetuses as well as the effect of herbs taken by nursing mothers on their babies remains largely unknown. It is perceived that herbal medicines ingestion during pregnancy and confinement period is a common practice among Malaysian mothers. The objective of this study was to explore the usage of herbal medicines during pregnancy and confinement period among mothers who delivered at UKMMC.

Materials and Methods:
This cross sectional study was conducted between October and December 2010. The subjects were interviewed using a structured questionnaire. They were interviewed twice, post delivery and six to eight weeks later.

Results:
A total of 323 mothers were recruited into this study. The prevalence of herbal ingestion during pregnancy and confinement period were 13.9% and 52.9%, respectively. The commonly used herb during pregnancy was Chinese traditional herbs whilst during confinement period were ubat periuk, akar kayu and matured ginger. Significantly more Chinese (p=0.01) and Malay (p=0.04) mothers ingested herbs during pregnancy and confinement period, respectively. Significantly more non-primigravida mothers took herbs during pregnancy (p=0.01) and confinement period (p=0.01). Herbal ingestion by mothers during the confinement period was associated with higher occurrence of neonatal jaundice (p=0.01).

Conclusion:
Herbal ingestion either during pregnancy or confinement period was common among mothers who delivered at UKMMC. It was associated with a higher rate of neonatal jaundice when taken during the confinement period.

Key words:
herbal medicine, pregnancy, confinement period, neonatal jaundice.

SEVERITY OF RETINOPATHY AND ERECTILE DYSFUNCTION AMONGST DIABETICS: REALITY AND ASSOCIATION

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Background:
Diabetic retinopathy (DR) and erectile dysfunction (ED) share common risk factors including mediator changes. Previous studies showed significant association between these two however they were not specific enough in view of the wide range of severity of DR. Thus, this study was designed to evaluate the prevalence and association of ED in patients with different severity of DR and maculopathy

Materials and Methods:
A cross sectional study was conducted in UKM Medical Centre involving 124 male with type II diabetes mellitus (DM). Demographic and medical information data were taken from medical records. The 5-Item Version of the International Index of Erectile Function (IIEF-5) was used to diagnose ED. Severity of DR and maculopathy were determined according to Early Treatment Diabetic Retinopathy Study (ETDRS).

Results:
This study revealed that the prevalence of ED was 67.7% (n=84). The percentage of ED among Non Proliferative DR (NPDR) and Proliferative DR (PDR) patients were 95.0 and 93.8 respectively, which was higher than 56.8 among patients with no DR. There was significant association between ED and severity of DR ($p<0.001$). All patients (n=23) with maculopathy had ED ($p<0.001$). Multivariate analysis showed that ED is independently associated with NPDR (OR 32.421, 95% CI,2.612-402.473), PDR (OR 22.106, 95% CI 1.128-433.297), duration of having DM of 5 to 10 years and more than 10 years (OR 12.148, 95% CI 2.909-50.738 and OR 5.277, 95% CI 1.380-20.188), Chinese and Indian ethnicity (OR 3.394, 95% C 1.016-11.333 and OR 11.630, 95% CI 1.584-85.36) as well as age (OR 1.145, 95% CI 1.065-1.231).

Conclusion:
The findings from this study verified that the prevalence of diabetes-related ED amongst DR and maculopathy was high. As these factors were significantly linked, hence all patients with DR and maculopathy should be screened for ED.

Keywords:
diabetic retinopathy, erectile dysfunction, maculopathy, IIEF-5, diabetes mellitus

INFECTIONS AND CULTURAL ASPECTS IN RELATION WITH NUTRITIONAL STATUS AMONG CHILDREN UNDER-FIVE IN TIMOR ISLAND, INDONESIA

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Background:
In the Millennium Development Goals, to eradicate extreme poverty and hunger is one of the goals. In view of that, we studied a community in Timor Island to identify factors related to nutritional status among children under-five, focusing on socio-cultural aspects of the Timorese.

Materials & Method:
A qualitative study was done in Nifuleo and To'i Village, as study sites to represent the population in South Central Timor District. We obtained data through in-depth interview, focused group discussion and observation on individuals who complained symptoms as well as on the community through *posyandu* and health cadres.

Results:
Stunting was the main nutritional problem in both villages. This was related to various infection factors in which upper respiratory tract infection (URTI) was the most prevalent, followed by fever and diarrhoea. Typical local culture of "*panggangan*" in the traditional house (*rumah bulat*) might contribute to URTI. The habit to chew *sirih pinang* (beetle-nut), the suboptimal implementation of five-tables system in every *posyandu* especially for immunization and education on nutrition, and limited access to the primary health centre contributed to the main problems.

Conclusion:
Stunting is the major problem found in Nifuleo and To'i village. Factors that may contribute to this problem include socio-economy, demography and culture. Health care service and providers in sub district Amanatun Selatan still need to be improved. More training with adequate materials for cadres and community are needed. Cooperation with traditional birth attendant (*dukun beranak*) and Non-Governmental Organization in the sub district Amanatun Selatan is encouraged. Road condition and transportation should also be improved.

Keywords:
stunting, nutritional status, children under-five, socio-culture factors

EPIDEMIOLOGICAL STUDY OF DENGUE VIRUS INFECTION IN JAKARTA, INDONESIA

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Background:
Dengue fever is a common infectious disease problem in Indonesia. Dengue fever is caused by a virus which is known as dengue virus (DENV). There are four serotypes of the virus which are DENV-1, DENV-2, DENV-3, and DENV-4. Previous study showed that morbidity rate and also incidence of dengue fever correlated directly with strains of dengue found within an area. This study aims to evaluate the dengue virus serotypes which is most common in Jakarta.

Materials & Methods:
A prospective study was done on a total of 67 patients from community and primary health care centre in Jakarta who had fever for less than 48 hours and had a clinical diagnosis of dengue infection according to WHO standards. RT-PCR was done in order to identify the serotype of DENV in the patients.

Results:
From this study, the DENV serotype which is most often found in patients in Indonesia is DENV-2 with 35.82%. DENV-3 is the next most common serotype with 20.89% of total patients infected. From all the patients, 17.91% have DENV-1 and 8.95% have DENV-4. Despite the clinical symptoms, 13.43% of the patients are considered dengue negative after the confirmation test. Combined infection of DENV-4 and DENV-1 is detected in 1.49% of the patients and combined infection of DENV-3 and DENV-2 is also detected in 1.49% of the patients.

Conclusion:
The result of this study shows that the most common DENV serotype in Jakarta is DENV-2. This result is different from previous which showed that DENV-3 is the most common serotype in Indonesian patients. This difference is mainly due to the location of the study which is the community and primary health care centre in Jakarta.

Keywords:
Dengue virus, Epidemiology, Serotype

ANTI-BACTERIAL ACTION OF NESCAFÉ COFFEE AGAINST STREPTOCOCCUS SPECIES

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Background:
Extracts from coffee beans have been shown to exhibit antibacterial action and it is widely believed that the caffeine content is responsible for this property.

Material & Methods:
This study investigated the antibacterial activity of decaffeinated and non-decaffeinated NESCAFÉ 'classic' coffee preparations at varying concentrations against some pharyngitis-causing streptococcus species: group A streptococcus, group B streptococcus, group D streptococcus and *Streptococcus pneumoniae.* The bacterial sensitivity to the coffee preparations was carried out using disc diffusion, well diffusion and coffee agar plate sensitivity testing. Zones of inhibition and growth on the plates were observed at 24 hours and 48 hours.

Results:
There is no agreement between the disc and well diffusion methods; both show inconsistent zones of inhibition on repeat experiments. However, growth inhibition of streptococcus species relative to coffee concentrations was consistently observed on coffee agar plate. At a coffee concentration of 8g/100ml the highest used in this study, the growths of all the four streptococcus species were inhibited, with the non-decaffeinated coffee acting much more strongly than the decaffeinated. Both coffee preparation types show antibacterial activity.

Conclusion:
Antibacterial activity in the coffee used for this study may not be due to caffeine alone as decaffeinated coffee also shows comparable antibacterial activity with the non-decaffeinated coffee; it may also be that the decaffeinated coffee still has enough caffeine to exert its antibacterial effect. The caffeine content at the concentration of coffee which showed complete inhibition of the streptococcus species is rather high and may be detrimental to human health. However, it is possible that at much lower concentrations it may work synergistically with as yet to be identified substances to protect against pharyngitis causing streptococcus. Thus further research is needed to determine the possible use of coffee as an antibacterial agent in the treatment and/or prevention against pharyngitis in humans.

Keywords:
Streptococcus species, coffee, decaffeinated, non-decaffeinated, antibacterial activity

ASYMPTOMATIC BACTERIURIA OF PREGNANCY IN RIPAS HOSPITAL, BRUNEI DARUSSALAM

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Background:
Asymptomatic bacteriuria is a condition in which urine culture reveals a significant growth of pathogenic bacteria that is greater than 10^5 of colony-forming units per millilitre (cfu/mL) of urine without the patients having any clinical symptoms of urinary tract infections (UTI). Studies have shown that asymptomatic bacteriuria in pregnancy has a direct bearing not only on the health of the pregnant woman, but also on that of the foetus. Thus, this study aimed to determine the prevalence of asymptomatic bacteriuria of pregnancy at the RIPAS Hospital, Brunei Darussalam's premier hospital.

Material & Methods:
A total of 170 pregnant women attending for antenatal clinic at the Department of Obstetrics and Gynaecology at the RIPAS Hospital who did not have signs and symptoms of UTI volunteered to take part in this study. After the procedure of the study was explained to them they were asked to produce clean-catch midstream urine specimens in chemically clean sterile universal bottles. The specimens were processed for microscopy, culture and sensitivity (*mcs*) following standard laboratory diagnostic procedures.

Results:
Of the 170 pregnant women participants in the study, urine specimens from seven of them met the criteria for the diagnosis of asymptomatic bacteriuria, suggesting a prevalence of 4.1% in the sampled population. The organisms isolated were Klebsiella species (71.4%) and *Escherichia coli* (29.6%) both of which were sensitive to amoxicillin, vancomycin, tetracycline and erythromycin..

Conclusion:
The prevalence of asymptomatic bacteriuria in our study population compares with those reported in neighbouring ASEAN countries but further studies involving more pregnant women across the four Health Districts in Brunei Darussalam are needed. In the meantime, the findings of this study strongly suggest that routine screening for asymptomatic bacteriuria in pregnancy be considered an essential part of antenatal care in Brunei Darussalam.

Keywords:
Asymptomatic bacteriuria, antenatal care, pregnancy, routine screening, Klebsiella species, *Escherichia coli*

PREVALENCE AND ANTIBIOTIC SUSCEPTIBILITY OF *STAPHYLOCOCCUS AUREUS* ORGANISM IN NASAL SWABS AMONGST MEDICAL AND BIOMEDICAL STUDENTS IN PENGIRAN ANAK PUTERI RASHIDAH SA'ADATUL BOLKIAH INSTITUTE OF HEALTH SCIENCES, UNIVERSITI BRUNEI DARUSSALAM (UBD)

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Background:
Staphylococcus aureus (*S. aureus*) may cause a variety of pus-forming infections, minor skin infections and also life-threatening diseases. It is also one of the common causes of nosocomial infections. Medical and biomedical students in Brunei Darussalam are exposed to hospital environments by having hospital/laboratory attachments and clinical placements as part of their degree programme. Hence they are at greater risk in contracting hospital-acquired infections. This study aims to compare the prevalence of the bacteria amongst medical and biomedical students and to see the susceptibility of the bacteria against commonly tested antibiotics.

Material & Methods:
A cross sectional study was carried out in Pengiran Anak Puteri Rashidah Sa'adatul Bolkiah Institute of Health Sciences, UBD. Only medical and biomedical students in UBD were included in the research. Nasal swabs were taken from participants. The sample was inoculated, cultured and tested for *S. aureus* before introduced to commonly tested antibiotics (Tetracycline, Gentamicin, Chloramphenicol, Amoxicillin/Clavulanic acid, Trimethoprim/Sulphamethoxazole, Oxacillin and Vancomycin).

Results:
The response rate was 54.7%. 43.9% students (*n*= 18) were found to carry *S. aureus* from their nasal swab. There were no association found between positive *S. aureus* with gender (*P*=0.051), academic year (*P*=0.192), course (*P*=0.786), patient contact (*P*=0.530), illness (*P*=0.613), non-academic hospital visits (*P*=0.489), medication (*P*=0.706), cigarette smoking (*P*=0.439), family member ill (*P*=0.059) and travel out of country (*P*=1.000). 5.6% (*n*=1) were found to be resistant to Tetracycline and Gentamicin; and 5.6% (*n*=1) intermediate resistance to Tetracycline.

Conclusion:
Although there were a number of limitations, we can fairly conclude that almost 50% students were found to have *S. aureus* from their nasal swab. Only 5.6% (*n*=1) were found to have resistant to Tetracycline and Gentamicin, and 5.6% (*n*=1) had intermediate resistance to Tetracycline. All *S. aureus* samples were found to be susceptible to the rest of the antibiotics.

Keywords:
Staphylococcus aureus, nasal swabs, antibiotic susceptibility, medical and biomedical students, Brunei Darussalam.

MODULATION OF BRAIN ANTIOXIDANT ENZYME ACTIVITY AND PROTEIN PEROXIDATION BY TOCOTRIENOL RICH FRACTION (TRF) SUPPLEMENTATION IN AN ANIMAL MODEL

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Background:
Increased oxidative stress during ageing may result in damages to the brain, leading to debilitating motor and cognitive dysfunctions especially in the advanced stage. Tocotrienol rich fraction (TRF), an antioxidant, was shown to exert neuroprotective effects in *in vitro* studies and improved circulating oxidative status in rats. However, there is no study reported on the effects of long-term TRF supplementation on oxidative status in the brain. Therefore, the present study aimed to determine the effects of short (three months) and long-term (eight months) TRF supplementation on antioxidant enzyme activity and protein peroxidation (an indicator of oxidative damages) in rat brains.

Materials and Methods:
Twenty four male *Wistar* rats aged three months were divided into supplemented and non-supplemented groups of three or eight months. Rats were sacrificed and brains harvested, weighed and homogenized. Supernatants were analyzed for vitamin E using High Performance Liquid Chromatography (HPLC), catalase (CAT), superoxide dismutase (SOD) and glutathione peroxidase (GSH-Px) activities using spectrophotometric technique and lastly protein carbonyl by ELISA kit.

Results:
Results showed α-tocotrienol (ATT) was the major vitamin E isomer in the brain. With increasing age, there was significant decline ($p<0.05$) of total vitamin E and its isomers: α-tocotrienol (ATT), γ-tocotrienol (GTT) and γ-tocopherol (GTF). Long-term TRF resulted in significantly higher ($p<0.05$) level of total vitamin E and isomer ATT and GTT compared to short-term supplementation. GSH-Px activity was also significantly increased ($p<0.05$) in long-term compared to short-term supplemented group. A significant increase ($p<0.05$) of GSH-Px activity was observed in ageing as well. Data also showed significantly higher SOD activity ($p<0.001$), lower protein carbonyl contents ($p<0.05$) and heavier brain weights ($p<0.05$) in both supplemented groups but CAT activity remained unchanged with both ageing and TRF supplementation.

Conclusion:
In conclusion, the study showed continuous long-term TRF supplementation prevented oxidative damages to the brain probably by modulating the antioxidant enzymes activities.

Keywords:
aging, antioxidant, brain, oxidative stress, tocotrienol rich fraction (TRF)

THE QUALITY OF LIFE AMONG SPINAL CORD INJURED POPULATION: DOES IT IMPROVE WITH TIME?

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Background:
Today, the spinal cord injured (SCI) population can live as long as the normal population can. However survival prediction is a curse if health, or more importantly the state of mind is severely compromised. This study aimed to evaluate if quality of life (QoL) among SCI population improves with time and if it is related to age or the level of injury.

Materials and Methods:
Sixty four respondents from Klang Valley (Malay 28.1%, Chinese 53.1%, and Indian 17.2%, and others 1.6%) participated in this cross-sectional study from December 2010 to May 2011. Assessment tools used were a proforma for basic data, the World Health Organization Quality of Life Measure Abbreviated version (WHOQOL-BREF) and the Standard Neurological Classification of Spinal Cord Injury charts by the American Spinal Injury Association (ASIA). This study further divided the injury level into complete paraplegia (CP), incomplete paraplegia (IP), complete quadriplegia (CQ) and incomplete quadriplegia (IQ).

Results:
This study showed that the QoL had significant relationship with post-injury duration ($p<0.05$). Respondents with longer post-injury duration were doing better than those recently injured. However, QoL was not significantly affected by age difference or injury level ($p>0.05$). Quadriplegias fared worse in the beginning but caught up with the paraplegias later on. Other factors that positively influenced the QoL were female gender, being employed, monthly income of more than RM500.00, and participation in sexual activity after injury ($p<0.05$).

Conclusion:
This study concluded that QoL among SCI population does improve with time. This is possibly due to sample being taken from urban settings where healthcare and peer support group is accessible and available. This study also strongly recommends that the monthly disabled stipend be increased at least to RM500.00 per month instead of the current RM300.00.

Keywords:
spinal cord injuries, quality of life, Malaysia, aging

AN EX VIVO CHELATING EFFECT OF 0.75 mg AND 1.125 mg *MANGIFERA FOETIDA* L. LEAVES WATER EXTRACT ON SERUM OF THALASSAEMIA PATIENTS

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Background:
Desferioxamine is an iron-chelating agent that supports thalassaemia patients with regular blood transfusion to prevent iron overload complication, but it is expensive and has harmful side effects. Therefore, it needs naturally alternative medicine that is safer and more affordable, namely mangiferin, a *C-Glucosylxanthone* contained in *Mangifera indica* L. stem. We used *Mangifera foetida* L.(bacang mango) leaves which is rarely used and contains highest mangiferin among other cultivars. The purpose of this study is to examine the effectiveness of *Mangifera foetida* L. leaves water extract as a chelator agent to serum of thalassaemia patients by ex vivo.

Materials & Methods:
This is an experimental study using 7 serum (each ferritin equals to 200μM iron) of thalassaemia patients from the Department of Child Health, Cipto Mangunkusumo Hospital in 2009-2010. The experiments which were carried out in standard medium and citrate consist of placebo (serum only), mangiferin 100μg, *deferoxamine* 200μg, and *Mangifera foetida* L. leaves water extract at the dose of 0.75mg and 1.125mg. There were two control groups which consist of mangiferin and *deferoxamine* without serum. Reaction of serum and intervention groups were measured by spectrophotometer at λ=190nm-400nm. Data was analyzed using One-Way Anova, p=0.05.

Results:
Data were taken from a spectrophotometer graph which showed that the free extract of 0.75mg, 1.125mg and mangiferin were 2.16, 1.52 and 0.86 respectively. The absorbance peak of most interventions was 280nm. ANOVA analysis showed that data of serum, extract 0.75mg, extract 1.125mg, and mangiferin had significant difference, p=0.022.

Conclusion:
It is concluded that *Mangifera foetida* L.leaves water extract at the dose 1.125mg (p=0.498) has greater chelating effect to serum ferritin of thalassaemia patients than the dose 0.75mg (p=0.044). Mangiferin however, still has the best effectiveness in binding iron among others.

Keywords:
thalassaemia, *Mangifera foetida* L., chelating effect

THE ASSOCIATION BETWEEN SEASON AND HEALTH SERVICE UNIT AVAILABILITY WITH MALARIA INCIDENCE IN BAYAH SUBDISTRICT, LEBAK DISTRICT, BANTEN PROVINCE DURING 2006-2009

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Background:
Bayah subdistrict has the highest malaria incidence in Lebak District, Banten Province and has experienced several outbreaks until 2005. Malaria control programme has been conducted, especially during the dry season, by local primary health center, and its supporting and mobile units. The purpose of this study is to investigate malaria incidence in Bayah and to compare malaria incidence during dry season and wet season, also between villages that have health service units and those that have primary health center only.

Materials and Methods:
The study used *cross-sectional* design and obtained secondary data from malaria survey in Bayah health center during 2006-2009.

Results:
The number of malaria patients in 2006, 2007, 2008, and 2009 were 3555 patients, 1930 patients, 1231 patients, and 1475 patients respectively, while *slide positivity rate* (SPR) were 9,77% (*P. falciparum* 85 slides, *P. vivax* 300 slides, mixed infection 4 slides), 8,85% (Pf 50 slides, Pv 136 slides, mixed infection 2 slides), 8,44% (Pf 20 slides, Pv 97 slides, mixed infection 2 slides,), and 12,26% (Pf 4 slides, Pv 202 slides). *Annual parasite incidence*s (API) were 10.50%, 5.06%, 3.1%, and 5.28% respectively. This incidence has no association with either the season (Mann-Whitney test, $p>0.05$), or the availability of health service unit (independent t-test, $p>0.05$).

Conclusion:
Malaria incidence in Bayah subdistrict decreased during 2006-2008, but increased in 2009. It has no association with either the season or the availability of health service unit.

Keywords:
malaria incidence, season, health service unit

THE KNOWLEDGE OF PEOPLE IN BAYAH SUB DISTRICT BANTEN PROVINCE ABOUT DENGUE HEMORRHAGIC FEVER VECTOR AND THE PEOPLE CHARACTERISTICS

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Background:
Dengue Haemorrhagic Fever (DHF) is a public health problem in Indonesia, such as in the Bayah sub district. In eradicating DHF, the basic data of people knowledge level about DHF is needed. Therefore, the objective of this research is to assess the people's knowledge level on DHF vector in Bayah sub district.

Materials & Methods:
This research was a survey using cross sectional design.The data was collected between 12th-14th August 2009 from Bayah's population at that time by interviewing and filling questionnaires on the people's knowledge of DHF vector. The data was analyzed using chi square test.

Results:
The results showed that the individuals with good, fair, and poor knowledge level of DHF vector were 10 (9.4%), 27 (25.5%) and 69 persons (65.1%) respectively. Furthermore, the individuals were evenly distributed in the age group.The age group of 18-34 years old were 45 (42.5%), 35-50 years old were 39 (36.8%) and more than 50 years old were 22 persons (20.8%). Most of the people had low education level that were 68 persons (64.2%). Also, more than half of the people that joined in this research had not worked. Moreover, most of the people were females, consisting of 83 persons (72.3%). Most of the people had received information only from a source of information (43%) that was most attractive was the electronic media (48.1%) and followed by information from the neighbour (28.3%). From chi square analysis test, there were significant associations between knowledge level of DHF vector and age and education level. However, there were no significant associations between knowledge level of DHF vector and gender, job status, and source of information.

Conclusion:
This research concluded that the people's knowledge level about DHF vector was poor and the knowledge level had significant associations with age and educational level.

Keywords:
Dengue Haemorrhagic Fever, people knowledge

THE EFFECT OF ACUTE INTERMITTENT HYPOBARIC HYPOXIA EXPOSURE ON THE CARBONYL CONCENTRATION AS OXIDATIVE STRESS MARKER IN VITAL ORGANS OF RATS

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Background:
Hypobaric hypoxia is commonly experienced by the air force army when they undergo simulation training inside the hypobaric chamber. The effect of hypobaric hypoxia to human body is still unclear although some studies have suggested that oxidative stress process occurs in rats exposed to hypobaric hypoxia. This research aim is to analyze the protein peroxidation level through carbonyl concentration of the vital organs, namely the brain, heart, kidney, and liver of rats exposed to acute intermittent hypobaric hypoxia exposure through the hypobaric chamber training program.

Materials and Methods:
The research design is experimental with the sample of five group of rats each containing five male Wistar rats. The first group is the control group with no exposure whereas the rest were exposed to once, twice, three, and four times hypobaric chamber training procedure respectively. Vital organs were harvested and carbonyl concentration was measured with spectrophotometer after derivatized by a series of biochemical reaction with DNPH reagent.

Results:
There was different variation of trend among the carbonyl concentration between the brain, heart, kidney, and liver of rats but generally they increase upon the first exposure and will decrease at the next exposure, suggesting possibility of adaptive mechanism towards free radical damage. Brain and heart seemed to respond the earliest with brain reaching significantly lower carbonyl after four exposures. The kidney responded and adapted slower to hypobaric hypoxia whereas the liver seemed to be able to induce adaptive mechanism without having to be extensively damaged by oxidative stress prior to the adaptation, unlike the other organs.

Conclusion:
It can be concluded that acute intermittent hypobaric hypoxia exposure through hypobaric chamber training procedure may be beneficial by inducing an adaptive response in the vital organs toward oxidative stress, so that less extensive oxidative damage in the cell would occur on the subsequent exposures.

Keywords:
acute intermittent hypobaric hypoxia, carbonyl concentration, oxidative stress, vital organs

PREVALENCE OF TRICHOMONIASIS AMONG COMMERCIAL SEX WORKERS IN SOME REGIONS IN JAKARTA AND TANGERANG 2008: RELATIONSHIP BETWEEN TRICHOMONIASIS WITH TYPES OF CONTRACEPTION USED

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Background:
The prevalence of trichomoniasis varies in different group of population. Commercial sex workers are high risk population to suffer from Sexually Transmitted Disease (STD). On the other hand, condom usage as well as other types of contraception is a valuable aspect to be elaborated in studying the relationship between sexual intercourse behavior and STD. The purpose of this study is to find out the prevalence of trichomoniasis in a high risk population and whether types of contraception is related to trichomoniasis.

Materials and Methods:
This research study is categorized as cross-sectional study. The data in this study is secondary data. Sufficient amount of samples were recruited and 272 samples were examined by vaginal swab procedure to identify trichomoniasis. The types of contraception used were extracted by using questionnaire. The result is summarized in tables and diagrams.

Results:
Trichomoniasis prevalence is 58.5%. The proportion of condom usage in commercial sex worker population in Jakarta and Tangerang 2008 is 14%. There was no significant relationship between trichomoniasis and the region from where the data was extracted (p=0.099). Significant association was found between trichomoniasis and types of contraception used (p=0.000).

Conclusion:
This research's analysis on condom and trichomoniasis are similar to a large number of literature which concluded that use of condom prevent STD. Causal relationship between hormonal contraception and trichomoniasis is still unexplainable although this research's result showed that their relationship was significant.

Keywords:
Trichomoniasis, Commercial Sex Worker, Contraception.

CURRENT STATUS OF DENGUE VIRUS INFECTION IN BRUNEI DARUSSALAM

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Background:
In 2010, a total of 306 patients were diagnosed positive for dengue virus infection. The aims of this study were to generate useful epidemiological data of dengue infection in Brunei Darussalam, to link the onset of infection within age group and gender in Brunei Darussalam and to correlate dengue infection with the climatic factor.

Material & Methods:
This retrospective study includes a total number of 172 serum samples. Each serum sample was screened using Dengue Duo Capture IgG/ IgM ELISA to identify the onset of the infection (primary or secondary) and Dengue NS1 antigen ELISA to detect dengue virus NS1 antigen. Positive cases were then compared with the total amount of rainfall and mean humidity.

Results:
The result has shown that 121 samples (70.3%) were tested positive with either dengue specific IgM, dengue specific IgG and NS1 antigen (69 Males and 52 females). A higher proportion of primary infections were seen in male for all age groups, except for age groups of 50-59 and 60-69 years. In female, age groups of 1-9, 10-19 and 20-29 years had more primary infection as compared to the secondary infection. The difference between the number of positive cases against the amount of rainfall and average relative humidity are not significance ($P>0.05$).

Conclusion:
The proportion of male and female infected with dengue infection were almost equal with age group of 20-29 years were more susceptible to the infection. The drop in the number of positive cases between September and October was corresponding to the drop of total rainfall from September to October.

Keywords:
dengue virus, serotyping, dengue IgM/IgG, NS1 antigen, Brunei Darussalam.

SALINITY TOLERANCE OF MOSQUITO VECTORS OF HUMAN DISEASE IN BRUNEI DARUSSALAM

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Background:
Vector-borne infectious diseases are a significant cause of morbidity and mortality in humans. The causative agents to most of these diseases are mostly transmitted by arthropod vectors with mosquitoes being the most prominent. With the increase of global temperature due to Greenhouse effect, there is a rise in sea levels from melting glaciers and ice sheets. This will cause an expansion of brackish water bodies that may serve as breeding sites for mosquito vectors.

Material & Methods:
Twelve sites were studied in this project and water samples positive for mosquito larvae were taken and analysed for salinity and pH. In the following study, 85 eggs of *Aedes albopictus* were collected and placed in separate petri dishes containing rain water, 8 ppt, 10 ppt, 11 ppt, 12 ppt, 13 ppt, 15 ppt and 20 ppt of brackish water to determine the salinity tolerance. Subsequently, another batch of larvae was tested to obtain its percentage survival in 8 ppt and 10 ppt brackish water.

Results:
Aedes albopictus was found breeding in salinities between 0 to 8 ppt and *Culex quinquefasciatus* between 0 to 6 ppt. In the salinity tolerance test, it was found that the *Aedes albopictus* larvae had a mean percentage survival of 83.4% and 6.7% in salinities of 8 ppt and 10 ppt, respectively.

Conclusion:
Aedes albopictus and *Culex quinquefasciatus* are known vectors of dengue and bancroftian filariasis in Brunei respectively. These findings have implication for understanding of the vector mosquito breeding habitats in Brunei. They point to the need to improve vector control strategies currently practiced in Brunei to curb the spread of diseases transmitted by these brackish water breeding vectors.

Keywords:
salinity tolerance, *Aedes albopictus*, *Culex quinquefasciatus*, Brunei Darussalam

OSTEOCALCIN IS RELATED TO HYPERGLYCAEMIA AND INSULIN RESISTANCE BUT NOT LIPIDS IN METABOLIC SYNDROME PATIENTS

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Background:
Osteocalcin has been reported to reduce insulin resistance in animal models. Insulin resistance plays a major role in metabolic syndrome. Clinical features of metabolic syndrome include hyperglycaemia, dyslipidaemia i.e. increased triglyceride with decreased high density lipoprotein cholesterol (HDL-c), abdominal obesity and elevated blood pressure. Therefore this study was conducted to determine the relationship between osteocalcin, insulin resistance and lipid parameters in metabolic syndrome.

Materials and Methods:
This was a cross-sectional study of 90 patients with metabolic syndrome according to the International Diabetes Federation consensus worldwide definition (2006). Anthropometric and demographic data were recorded. Fasting blood samples were collected for analysis of lipids, osteocalcin, insulin and fasting blood glucose (FBG). Osteocalcin and insulin were measured by automated immunoassay. Insulin resistance was calculated using the homeostasis model assessment index (HOMA-IR).

Results:
The mean age for all subjects was 51.2±10.7 years. Generally, they were obese (BMI 30.1±5.3) with waist circumference of 101.3±10.2 cm and systolic hypertension (143±17mmHg). Diabetics had higher FBG and HOMA-IR but lower osteocalcin compared to non diabetics ($p<0.05$). There were no differences in the age, body mass index, waist circumference, systolic and diastolic blood pressure, triglyceride, HDL-c, low density lipoprotein cholesterol, total cholesterol and insulin level between diabetics and non-diabetics. Osteocalcin was negatively correlated with FBG ($p<0.001$) and HOMA-IR ($p<0.01$) but did not correlate with triglyceride or HDL-c ($p>0.05$). HOMA-IR was positively correlated with triglyceride ($p<0.001$) and negatively correlated with HDL-c ($p<0.05$). In multiple regression analysis, FBG was the only parameter independently associated with osteocalcin.

Conclusion:
In conclusion, osteocalcin is related to hyperglycaemia and insulin resistance but not dyslipidaemia in metabolic syndrome patients.

Keywords:
osteocalcin, insulin resistance, metabolic syndrome, hyperlipidaemia.

PEROXIDE VALUE IN REPEATEDLY HEATED VEGETABLE OILS USING DIFFERENT TYPES OF FOOD IN THE FRYING PROCESS

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Background:
Vegetable oils are commonly used repeatedly in cooking process. This process produces free radicals such as peroxides which have been implicated in pathogenesis of cardiovascular disorder. The present study was performed to determine the peroxide values of repeatedly heated palm oil and soybean oil which was used to fry *keropok lekor* and potato chips.

Materials and Methods:
Frying process was started with 2500 millilitre of one type of fresh vegetable oil fried with one kilogram of one type of food. The food was fried at 180° Celsius for 10 minutes. The cooling interval was fixed at 24 hours. Food quantity was reduced proportionately with amount of vegetable oil left till fifth time heated. The peroxide value was measured by Iodine liberation method

Results:
There was a significant increase in peroxide values of once, twice and five times heated for both palm and soybean oils with the latter having the highest values. The increase in peroxides values were significantly higher for *keropok lekor* (16.37±0.6) and potato chips (13.93±0.56) fried with soybean oil respectively compared to *keropok lekor* (13.85±0.53) and potato chips (11.67±0.56) fried with palm oil. The peroxides values of *keropok lekor* fried with both palm and soybean oil was significantly higher compared to potato chips, with the latter having the highest value.

Conclusion:
From this study, we conclude that thermally oxidized oils increase peroxide values. The increase in the peroxide value is influenced by heating frequency, types of oil and types of food. Oil that is rich in polyunsaturated fatty acids like soy oil produces higher peroxide value compared to monounsaturated palm oil. Fish related product like *keropok lekor* produce higher peroxide value compared to vegetable product like potato chips. It appears that the peroxide values of twice heated vegetables do not exceed the cut off points for oil quality (10 miliequavalent/kg oil).

Keywords:
peroxide value, palm oil, soybean oil, *keropok lekor*, repeatedly heated oil

Poster Free Paper

Group 1

Cancer

SHORT TANDEM REPEAT (STR) ANALYSIS OF CHIMERISM IN ALLOGENEIC PERIPHERAL BLOOD STEM CELL TRANSPLANT IN UKMMC KUALA LUMPUR.

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Background:
Detection of the degree of chimeras after transplantation is important to determine whether engraftment is successful. Short tandem repeats (STR) analysis is an approach that can give reproducible informative data. We have used a commercial multiplex STR-PCR assay to evaluate the chimerism status in patients with allogeneic peripheral blood stem cell transplantation (PBSCT) in UKMMC.

Materials and Methods:
Whole peripheral blood samples were collected in 3ml EDTA from donor and recipient before transplantation in order to determine the informative locus. Samples of recipients during post-transplant periods were collected on days 30, 60,100 and 180 and every three months to monitor the engraftment. Extraction of DNA was done using QIAamp® DNA Blood Mini Kit (Qiagen, USA), and DNA concentration and purity was evaluated by Nanovue spectrophotometer. DNA amplification using AmpFISTR Identifiler Kit (Applied Biosystem) consisting of 15 STR loci plus amelogenin marker was carried out using the GeneAmp PCR System 9700 (ABI Prism). Fragment analysis of the PCR product was performed on the Genetic Analyzer 3130 (Applied Biosystem) and quantitation of the proportion of receipient/donor cells was determined by Genemapper V4.0 software. We analyzed the genetic profiles of each recipient/donor pair at pre-transplant as well as the genetic profiles of the recipients at post-transplant to determine the chimerism status.

Results:
A total of 30 cases of allogeneic (PBSCT) were analyzed by this method. The chimerism status, either complete, partially or mixed chimerism from the distribution of informative donors and recipients were successfully determined for all the cases.

Conclusion:
In conclusion, the STR-PCR assay gives quantitative information with low variability and high reproducibility, and has provided relevant clinical information of the PBSCT cases in our hospital.

Keywords:
Short tandem repeat (STR), donor chimerism, allogeneic PBSCT

PALM OIL VITAMIN E (γ-TOCOTRIENOL) AND HYDROGEN PEROXIDE TRIGGER APOPTOSIS ON HEPG2 LIVER CANCER CELLS BY ACTIVATING THE SAME SIGNALING TRANSDUCTION CASCADE

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Background:
Tocotrienols has been reported as antitumour agents and widely commercialized as an antioxidant dietary supplement. Our findings showed that, inhibition of proliferation and apoptosis effects induced by γ-tocotrienol (GTT) were comparable to the oxidative injury demonstrated by hydrogen proxide (H_2O_2) and pretreatment with N-acetylcysteine (NAC), a direct antioxidant reduced the antiproliferation and apoptosis effects of GTT. This study suggested that antiproliferation effect, induction of apoptosis and modulation of cell cycle are involved in anticarcinogenesis mechanism of palm oil tocotrienols on HepG2 liver cancer cells.

Materials and Methods:
HepG2 cancer cells were treated with GTT, NAC-GTT and H_2O_2. Apoptosis assays were conducted to determine the IC_{50} for GTT and H_2O_2 after treatments. DNA laddering assays and morphological evaluation were performed to confirm the apoptosis of cancer cells after treatments. Proteins were extracted from treated cells for western blotting technique to determine the changes of protein expression involved in signals transduction.

Results:
Apoptosis rate was increased 7.4-fold and 6.8-fold ($p<0.05$) after treatment with 170μM GTT and 5.5mM H_2O_2 respectively. Morphological evaluation of propidium iodide stained cells showed that the cells undergoing apoptosis with GTT and H_2O_2 treatment exhibited typical apoptotic features such as reduction in cell volume, nucleus fragmentation, chromatin condensation and formation of apoptotic bodies. Despite the potent apoptotic effect of GTT, pretreatment of cells with NAC, a direct antioxidant, reduced the apoptotic effects of GTT. Apoptosis rate was only enhanced 2.5 fold with NAC-pretreatment which was dramatically reduced compared to treatment with GTT alone while DNA fragments were not detected by DNA laddering assays. These findings suggest that oxidant/antioxidant equilibrium may be involved in GTT action. To elucidate the GTT and H_2O_2 mechanism of action, changes in apoptosis and signal transduction proteins were examined. Both treatments showed similar changes of proteins expression. Cell cycle protein expression (CDK2, CDK 4 and CDK 6) and Bcl-2 were decreased. MAP Kinase proteins expression (ERK-1, ERK-2, MEK-2, JKN46 & p38) were also decreased The active form of caspase-3 and caspase-8 were detected after 1 hour treatment and p53 protein expression were increased ($p<0.05$).

Conclusion:
These findings suggest that the antiproliferative effect of GTT is comparable to H_2O_2 and apoptosis is induced by activating the same signaling transduction cascade.

Keywords:
apoptosis, proliferation, GTT, cancer, signaling

THE INFLUENCE OF SURGICAL-CHEMOTHERAPY INTERVAL ON THE CLINICAL OUTCOME OF PATIENTS WITH OVARIAN CARCINOMA: THE SHORT-TERM MORBIDITY AND CA 125 LEVEL

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Background*:*
We hypothesized that longer interval between primary debulking surgery and adjuvant chemotherapy has less adverse effects on short term morbidity in ovarian carcinoma. The primary objective of this randomized controlled trial is to assess the impact of interval between times of debulking surgery to the adjuvant chemotherapy, on the short term morbidity.

Materials and Methods:
We randomized 43 patients of operable epithelial ovarian cancer (stage IB to IIIC) from Jan 2008 to Jan 2010, who underwent primary debulking surgery into two groups. The first group commenced adjuvant chemotherapy with a combination of carboplatin and paclitaxel within two weeks following primary surgery, and the second group had the same regime of adjuvant chemotherapy six weeks after the primary surgery.

Results:
Patients who received adjuvant chemotherapy two weeks after primary surgery (n=22) has better response in terms of CA125 reduction after completing six cycles of chemotherapy (P=0.002) compared to patients commenced on chemotherapy six weeks after primary surgery (n=21); however, there was more incidence of anaemia after completing three cycles of chemotherapy (P<0.001) There was no significant difference in terms of incidence of wound breakdown, neutropaenia and thrombocytopaenia as well as clinical response during chemotherapy between these two groups.

Conclusion:
This study indicates that the time interval between primary surgery to the commencement of adjuvant chemotherapy has no major impact on the short term morbidity, but better CA125 response.

Keywords:
CA125, chemotherapy, ovarian carcinoma

NODULAR LYMPHOCYTE-PREDOMINANT HODGKIN LYMPHOMA: A RARE INDOLENT TUMOUR WITH RECURRENCE AT EXTRANODAL SITES

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Background
Nodular lymphocyte-predominant Hodgkin lymphoma (LPHD) is an indolent and rare form of Hodgkin lymphoma, usually involving lymph nodes. It is characterized by scattered large neoplastic cells known as popcorn or lymphocytic predominant cells (LP cells) with typical immunophenotype (CD20+, CD15-, CD30-) that forms the basis of distinction from the subtypes of classical Hodgkin lymphoma. Nevertheless, morphological features overlap between LPHD and other lymphomas which may cause diagnostic difficulty. We present a case of LPHD that was previously diagnosed as chronic lymphocytic lymphoma (CLL) and classical Hodgkin lymphoma at two different institutions. This case was referred to our department for consultation.

Case history:
A 55-year-old lady presented with recurrent lymphadenopathy and developed paravertebral lesion eight years after initial disease. We received her axillary lymph node, paravertebral lesion and trephine biopsies for review of diagnosis.

Histopathological examination:
The lymph node showed complete effacement of the architecture by scattered LP cell infiltrates, residing in an expanded CD21-positive follicular dendritic cell meshworks and surrounded by small lymphocytes. The malignant cells expressed B cell marker (CD20) and BCL6, and are rimed by CD3- and CD57-positive T cells. Examination of paravertebral and trephine biopsies showed presence of similar malignant infiltrates. Careful microscopic examination of the H&E and immunostained sections did not show the typical morphology and immunophenotype of either CLL or classical Hodgkin lymphoma. Thus a final diagnosis of LPDH with evidence of paravertebral and bone marrow involvement was made.

Discussion and conclusion:
The diagnosis of nodular lymphocyte-predominant Hodgkin lymphoma can be challenging and is often overlooked as was in this case. Extranodal involvement (including bone marrow) is rare and this may point towards transformation to a more aggressive lymphoma.

Keywords:
Nodular lymphocyte-predominant Hodgkin lymphoma, LP cells, extranodal, diagnosis.

ASSESSMENT OF OSTEOARTICULAR TUMOURS IN A GENERAL PATHOLOGY LABORATORY: THE UKM EXPERIENCE

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Background:
The assessment of osteoarticular tumours is a highly specialized area which ideally requires the expertise of a dedicated specialist tertiary centre. The Histopathology Department at the University Kebangsaan Malaysia Medical Centre (UKMMC) has recently begun reporting osteoarticular bone tumours pre and post neo-adjuvant chemotherapy. We would like to share our experience and delineate practical methods in osteoarticular tumour reporting.

Materials and Methods:
Our department is not a dedicated osteoarticular tumour reporting centre. However, our laboratory was adequately equipped to facilitate the processing of these specimens. We modified certain sampling methods based on existing laboratory equipment. We based our sampling and histopathology reporting methods on the latest edition of the College of American Pathologists (CAP) protocol for malignant bone tumour specimen examination. A standard proforma, adapted from the CAP protocol was used in the reporting of our cases. All of our cases were from patients who received neo-adjuvant chemotherapy. Thus, the quantification of tumour response to chemotherapy was a vital data point in our reporting criteria. These cases were discussed at a joint Multi Disciplinary Team Meeting (MDT) following verification of our reports.

Results:
To date, we have reported three cases of osteoarticular tumours comprising osteoblastic osteosarcoma and Ewing tumour. The reports were released within an adequate time frame prior to patient review in the outpatients' setting. Our methodology has been implemented as the standard protocol in the management of such cases.

Conclusion:
We have been able to adhere to good reporting guidelines in producing timely and accurate reports for osteoarticular tumours by using existing laboratory equipment and applying up-to-date reporting protocols. These protocols are reproducible in most general histopathology laboratories and thus, the reporting of osteoarticular tumours can be adequately performed in other centres in the country.

Keywords:
osteoarticular tumours, histopathology reporting protocols

RHABDOID MENINGIOMA: A RARE MALIGNANT SUBTYPE

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Background:
Meningiomas are meningiothelial neoplasms with wide range of histological features, typically attached to the dura mater and accounts for up to 30% of primary intracranial tumours. While most subtypes are benign, some histological subtypes are considered more aggressive and are associated with a worse clinical outcome. We hereby report a case of a rhabdoid meningioma, which is a rare, more aggressive meningioma subtype.

Case Report:
A 60 year-old-man was admitted to the neurosurgery ward with a history of intermittent confusional state and generalized weakness associated with loss of weight and appetite for one month duration. Magnetic resonance imaging (MRI) of the brain showed an enhancing right frontal extra axial mass just behind the frontal sinus and above the olfactory groove with a massive perilesional oedema that was suggestive of meningioma. Intraoperatively, a soft vascular tumour was seen at the frontal lobe of the brain and was not attached to the dura mater. The brain tumour tissue was then sent for histopathological examination. The patient unfortunately succumbed to his disease eleven days post surgery.

Histopathological Examination:
Microscopically, the tumour tissue is composed predominantly of medium to large sized tumour cells which displayed pleomorphic, eccentric nuclei, prominent nucleoli and abundant eosinophilic cytoplasm. The tumour cells showed strong positivity towards vimentin and is focally positive to epithelial membrane antigen (EMA). The tumour cells morphology, supported by the immunohistochemical studies are consistent with rhabdoid meningioma.

Conclusion:
Rhabdoid meningioma is an aggressive meningioma subtype which corresponds to a poor clinical outcome. Appreciation and recognition of this variant is important as it is rare in clinical and histopathological practice.

Keywords:
rhabdoid meningioma, frontal lobe tumour, meningioma, histopathology

LYMPHOEPITHELIAL CARCINOMA OF THE PAROTID GLAND: A RARE TUMOUR

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Background:
Lymphoepithelial carcinoma (LEC) are rare tumours of the salivary glands with higher frequency of parotid and slight female predominance. This tumour is particularly common in Asians and native Alaskan Eskimos but can involve any geo-ethnic group. The patients range in age from teenagers to the elderly. Cervical lymph node involvement, which may be extensive, is seen in 10-40% of cases at presentation. As with its nasopharyngeal counterpart, nasopharyngeal carcinoma, which is much more common with similar morphology, this tumour is also strongly associated with EBV, as can often be demonstrated by in situ hybridization.

Case history:
A 26-year-old Malay male presented with multiple enlarged cervical lymph nodes for two months which was rapidly increasing in size. Initial clinical impression was tuberculosis and he underwent a Trucut-needle biopsy of the cervical lymph node.

Histopathological examination:
A strip of tissue infiltrated by malignant cells arranged in syncytial islands separated by a lymphoid stroma. The malignant cells possess indistinct cell borders, lightly eosinophilic cytoplasm, pleomorphic cells with vesicular nuclei and prominent eosinophilic nucleoli. Immunohistochemical studies revealed the malignant cells were positive for CK and CK5/6 but negative for LCA. In situ hybridization for Epstein-Barr virus (EBV) was interpreted as strongly positive. Thus a diagnosis of undifferentiated carcinoma most likely from nasopharyngeal carcinoma (NPC) was made and correlation with clinical, radiological and ENT examination was recommended. CT scan findings revealed an enlarged parotid mass with no evidence of a nasopharyngeal lesion and further biopsies from the nasopharynx showed no evidence of malignancy. Given the radiological features of a parotid lesion and the absence of a nasopharygeal lesion, LEC was the new working diagnosis and the patient underwent radical neck dissection, which confirmed the primary parotid gland as the origin.

Conclusion:
Since LEC and NPC are morphologically indistinguishable and both are strongly associated with EBV, the diagnosis of LEC can be challenging and it is important to examine and biopsy the nasopharynx thoroughly before accepting the salivary gland tumour as primary LEC.

Keywords:
lymphoepithelial carcinoma, nasopharyngeal carcinoma, parotid gland

DO CALCIFIED FIBROADENOMATA OF THE BREAST REQUIRE ROUTINE SONOGRAPHY?

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Background:
Calcium deposits in breast tissue result in breast calcifications. Many confuse calcification with ossification. Calcifications can occur during ossification. However, ossification does not commonly occur during calcification. Normally found on mammography, they are divided into macrocalcifications (large white dots/dashes) and microcalcifications (fine white specks like salt grains). Macrocalcifications are degenerative changes that may occur in cysts, inflammation, duct ectasia, fibroadenoma, breast arteries or trauma (injury, surgery, radiation). Fibroadenomata can form large popcorn- like calcifications.

Materials & Methods:
A 56 year old woman presented with a screen that detected a calcified fibroadenoma of the right breast. She has had several benign lumps excised from both breasts in the past. Ultrasound of this hypoechoic 0.8cm nodule was reported as suspicious (Birads 4). An ultrasound guided biopsy found hyalinised fibrous stroma surrounding glands with fibroadipose tissue. We were concerned of a non-representative specimen. She then underwent a hookwire localization excision of this lesion.

Results:
This 1.5cm operated specimen had focal areas of osseous metaplasia consisting of bone trabecule and bone marrow formation. There was florid hyperplasia and apocrine metaplasia without atypia or malignancy. She is followed up with an annual physical examination and a mammograph every other year.

Conclusion:
As macrocalcifications are almost always benign, many choose to ignore them. McDermott has described differentiating a calcified fibroadenoma from an aggressive osteogenic sarcoma based on its association with soft tissue density on mammographs. Calcified fibroadenomata should be assessed with ultrasound as well, to avoid missing suspicious lesions, as in this case. Osseous metaplasia may occur in fibroadenoma, fat necrosis, phyllodes tumour, primary osteosarcoma and primary pleomorphic adenoma. A malignant phyllodes tumour with osteosarcomatous component has been described occurring in a benign lesion with osseous metaplasia seen two years earlier. Tissues with osseous metaplasia should be excised to achieve comprehensive pathological assessment.

Keywords:
calcified, fibroadenoma, osseous, metaplasia, sonography

PREDICTIVE FACTORS OF INTRAHEPATIC RECURRENCE AMONG HEPATOCELULLAR CARCINOMA (HCC) PATIENTS IN LIVER CENTRE, MALAYSIA.

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Background:
Hepatocelullar carcinoma (HCC) is one of the common tumor in Malaysia with now days increase rate of intrahepatic recurrence. The main objectives of the study were to measure the recurrence free survival of the patients and to understand the influencing factors contributed to it.

Material and Methods:
A retrospective cohort study measuring the recurrence free survival of HCC patients who received treatment in Selayang Hospital was conducted from 1 January 2003 to 31 December 2006. The recurrence free survival time was measured from the date of treatment until the subjects had intrahepatic recurrence, or failed to follow-up at the end of the study period (31 December 2007).

Results:
Of 209 HCC patients, 101 (48.3%) had intrahepatic recurrence with median 29 months of survival rate. Surgical treatment significantly (p=0.002) contributed 58.4% (66 patients) to intrahepatic recurrence while nonsurgical treatment only 36.5% (35 patients) in which TACE; 37.0% (30 patients), RFA; 36.4% (four patients) and PEI; 25.0% (one patient only). Kaplan Meir analysis showed that only types of treatment of non-surgical significantly gave a recurrence free survival of median 26 months (95CI% 23.35-28.65) compare to surgical with median 19 months (95CI% 13.48-24.52). Others factors such as age, gender, ethnic, married status, smoking status, alcohol consumer status, hepatitis status, AFP level, Child Pugh Class, size tumor and number of nodules were not significant. Only types of treatment became predictive factor of intrahepatic recurrence as non-surgical contributed 1.5 times to have it compared to surgical treatment (cHR 1.8, 95CI% 1.10-2.74; aHR 1.5, 95CI% 1.02-2.32).

Conclusion:
HCC patients need to educate and promote more in view of choice of treatment as surgical give a better recurrence free survival rate. Patients who diagnosed early can be offer surgical treatment which may reduce intrahepatic recurrence.

Keywords:
HCC, intrahepatic recurrence, surgical, predictive factor

PARENTING STRESS IN CHILDHOOD LEUKAEMIA

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Background:
The experience of having a child with acute leukaemia can be one of the most heartfelt severe stressors that parents could possibly endure. Parents must cope with their child and their own emotional reactions from the time of diagnosis until completion of treatment. The objectives of this study are to determine the level of parenting stress, the risk factors contributing to high parenting stress, and the coping mechanisms used to handle the stress.

Materials & Methods:
This single centred, cross-sectional study was done amongst 117 parents at the Paediatric Haematology and Oncology Unit, Universiti Kebangsaan Malaysia Medical Centre (UKMMC) over two years duration. Self-administered questionnaires comprising the Parenting Stress Index/Short Form (PSI/SF) and Coping Inventory for Stressful Situation (CISS) were distributed to parents of children who were 12 years old and below.

Results:
The mean total parenting stress score amongst parents of children diagnosed with acute leukaemia was 91.5. Only 27.3% of parents experienced a high total parenting stress score (total PSI score≥75th centile). Task-oriented coping mechanism was used by the majority of parents. Emotion-oriented coping mechanism was the only identifiable risk factor for high parenting stress score following multiple logistic regression analysis. A parent who uses emotion-oriented coping mechanism was 7.1 times (95% Confidence Interval 1.2 to 41.4) more likely to have a high parenting stress score compared to a parent who uses other coping mechanisms.

Conclusion:
By identifying these at risk parents, counselling and psychological support may be offered early to alleviate the stress as well as assist in the coping and adjustment mechanisms of these parents.

Keywords:
parenting stress; childhood leukaemia

DEVELOPMENT OF A PATIENT EDUCATION AID FOR WOMEN NEWLY DIAGNOSED WITH BREAST CANCER

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Background:
Health care education is important for all women with breast cancer and the effectiveness of information and decision aids have been widely reported in many literature. The Malaysian Breast Cancer Clinical Practice Guidelines 2010 has recommended the use of educational aids and packages to provide information to women upon their diagnosis of breast cancer in all health care settings. The purpose of this study is to develop an educational information aid based on the nine (9) item information needs (Gopal et al. 2005) and test for its clarity, acceptability, feasibility and credibility. The rationale for its development is to educate women upon their diagnosis of breast cancer on breast cancer disease, breast cancer treatment and its side-effects and other related information for coping with the disease.

Materials and Methods:
The educational aid covered information about cure, sexual attractiveness, spread of disease, types of treatment, side-effects of treatment, genetic risk, social life, self care and impact of breast cancer on family members. It was evaluated by educational experts, breast cancer survivors, breast cancer patients, oncologist, psychologist and foreign experts.

Results:
Qualitative and quantitative feedback regarding attitude towards the information aid was obtained and the majority rated the information aid as being highly acceptable, clear and informative and would recommend it to be used in women upon their diagnosis of breast cancer and to be translated into other languages.

Conclusion:
This is the first such educational information aid developed for women newly diagnosed with breast cancer. A randomized controlled trial is currently being carried out to evaluate its effect on women's knowledge, treatment decision making and coping upon their diagnosis of breast cancer.

Keywords:
patient education aids, information aids, decision aids, health care education

A CASE OF t(14;18)-NEGATIVE FOLLICULAR LYMPHOMA WITH UNUSUAL IMMUNOPHENOTYPE: A DIAGNOSTIC DILEMMA

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Background:
Follicular lymphoma is characterised by the t(14;18)(q32;q21) chromosomal translocation causing an overexpression of BCL2 protein. Interestingly, a proportion of follicular lymphoma do not carry the t(14;18) translocation and consequently lack BCL2 protein expression. We described a case of a t(14;18)-negative follicular lymphoma that lack BCL2 protein expression which had caused diagnostic difficulty.

Case history:
This case was referred to our department for consultation. The patient, a 51-year-old man presented with lymphadenopathy.

Histopathological features:
Examination of his lymph node biopsy showed complete effacement of the architecture by neoplastic follicles containing centrocytes and excess of centroblasts, consistent with high grade (grade 3A) follicular lymphoma. In addition, there were areas of large cell transformation within the same lymph node.

Immunohistochemistry and fluorescent in situ hybridisation (FISH) analysis:
The neoplastic cells expressed pan-B cell markers (CD20, CD79a) and germinal centre marker (BCL6) but were negative for BCL2 and CD10, which are characteristic hallmark found in most follicular lymphoma. The proliferative index was high as indicated by Ki-67 at 50%. Intact expanded follicular dendritic meshworks were present as demonstrated by CD23. FISH analysis using BCL2 break-apart probes showed no evidence of t(14;18) translocation. A diagnosis of high grade follicular lymphoma (3A) with diffuse large B cell transformation was made.

Discussion and conclusion:
The diagnosis of follicular lymphoma that lacked characteristic immunophenotype (BCL2+ and CD10+) and *BCL2* gene rearrangement can be challenging. However, accurate diagnosis can be made with careful observation of the lymph node architecture, cell morphology and the presence of intact follicular dendritic meshworks. We also found that the pattern of Ki-67 was helpful.

Keywords:
Follicular lymphoma, t(14;18)-negative, BCL2, CD10

CHARACTERIZATION OF MANGANESE SUPEROXIDE DISMUTASE EXPRESSION (MnSOD) IN HUMAN BREAST CANCER STEM CELLS AND ITS CORRELATION WITH CELL PLURIPOTENCY

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Background:
MnSOD - a major cellular antioxidant enzyme - is suggested to be responsible for the resistance of breast cancer stem cells (CSCs) against oxidative stress. The aim of this study is to analyze the MnSOD expression in human breast CSCs and its correlation with cell pluripotency.

Methods:
Specimens were tumor and normal breast tissues collected during radical mastectomy from 10 patients. CSCs were isolated using magnetic beads column and identified using immunofluorescence. Analysis of cell pluripotency (Oct-4 mRNA) and characterization of MnSOD mRNA expression were performed using Real Time RT-PCR. MnSOD specific activity was determined using xantin-oxidase inhibition assay. Data were statistically analyzed using t-test and Pearson Correlation.

Results and Discussion:
Higher expression of Oct-4 and MnSOD mRNA, as well as MnSOD specific activity were demonstrated significantly in $CD24^-$ and $CD24^-/CD44^+$ cells containing breast CSCs compared to their counterparts. This study could demonstrate a very strong correlation between MnSOD mRNA level and specific activity, and between MnSOD and Oct-4 expression, suggesting that MnSOD might play an essential role on the survival of human breast CSCs against oxidative stress and is required for maintaining their pluripotency.

Conclusion:
This is the first study characterizing the MnSOD expression and activity in human breast CSCs from clinical specimens. MnSOD expression is up-regulated in human breast CSCs and strong correlated with their pluripotency.

Keywords:
Breast cancer stem cells, MnSOD expression, Oct-4 expression, cell pluripotency

GENE EXPRESSION OF BCL-2 FAMILY AND PROTEINS INVOLVED IN THE MITOCHONDRIAL TRANSPORT SYSTEMS (VDAC AND TOMM) AS POSSIBLE MARKER FOR PROSTATE CANCER

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Background:
One of the pathomechanisms of prostate carcinogenesis is losing the ability of epithelial cells in the prostate gland to accumulate zinc. Zinc may induce apoptosis in prostate tissue through release of cytochrome c and other proapoptotic molecules which is regulated by Bcl-2 family protein. Cytochrome c release is associated with the transport system in the mitochondrial membrane. However, it is not clear, whether cytochrome c is released through VDACs (voltage dependent anion channels) or by the involvement of the TOMM (translocase of outer mitochondrial membrane) complex protein. Both play a role in molecule transport through the outer mitochondrial membrane. The aim of this study is to investigate mRNA expression of Bcl-2 family (proapoptotic Bax and Bid, antiapoptotic Bcl-2), VDAC isoforms and TOMM isoforms genes.

Methods:
The levels of mRNA expression of Bcl-2 family (proapoptotic Bax and Bid, antiapoptotic Bcl-2), VDAC isoforms (VDAC1, VDAC2, VDAC3) and TOMM isoforms (TOMM20, TOMM22, TOMM40) genes were analyzed by custom designed quantitative PCR array (SAB Biosciences) method in 13 paraffin embedded prostate cancer tissue and 5 normal prostate tissue as control.

Results:
We found a significant increase of mRNA expression of antiapoptotic Bcl-2 and VDAC1 genes in prostate cancer tissue compared to normal tissue. There is no significant difference in mRNA expression between the proapoptotic Bax and Bid genes, the VDAC2 and the VDAC3 isoform as well as the three TOMM isoforms in prostate cancer tissue and normal tissue.

Conclusion:
It is already known that VDAC1 especially N-terminus domain interacts with Bcl-2 protein to induce apoptosis. This is in accordance with our results that showed increase of Bcl-2 followed by VDAC1 transcript. How the mechanism of VDAC1 play a role in prostate carcinogenesis remains unclear however. Our results provide the first evidence that both Bcl-2 and VDAC1 play a role for prostate carcinogenesis and could be used as diagnostic biomarkers in the future.

Keywords:
Bcl-2 Family, VDACs, TOMM Complex, PCR Array

THE EFFICACY OF RADIOTHERAPY CITO IN THORACIC MALIGNANCY WITH VENA CAVA SUPERIOR SYNDROME

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Background:
The objective of this study is to evaluate the efficacy of radiotherapy-cito in thoracis malignancy with vena cava superior syndrome (VCSS) by observing subjective responses and objective responses not only clinically but also based on additional examination.

Materials & Method:
The observation of symptoms and signs reduction was conducted within 5 up to 10 days in 43 patients according to the inclusion criteria before and after radiotherapy-cito in Persahabatan Hospital, Jakarta. The subjective and objective symptoms and signs were calculated statistically using Mc-Nemar test, while additional examination was calculated by using t-test. The relationship between risk factors with mortality rate was calculated by using Fischer test and between additional examinations with mortality by using Mann Whitney rank test. While the level of severity of VCSS and performance status was by using Chi-square test. Patients were observed from May 2009 until May 2010.

Results:
The subjects observed were mostly male (83.7%) with predominant age group of 46 - 55 years old (30.2%) and predominant histopathologic type of VCSS in lung tumour group was adenocarcinoma (58.1%) and mediastinum group was mix germ cell (6,9%). Subjective clinical symtoms and clinical signs in VCSS were reduced consecutively o 70% and 60% after radiotherapy-cito. Through additional examination it was also found that the size of tumour diameter reduced in chest x-ray, increased the expiration peak flow rate and the SpO2 was also reduced significantly. The VCSS mortality post radiotherapy-cito was determined by dyspnoea, level of severity, performance status and the strength of the expiration peak flow rate.

Conclusion:
Radiotherapy-cito has a significant effect on the reduction of symptoms and signs of vena cava superior syndrome. The response of radiotherapy-cito could be determined through the type of histology of adenocarcinoma. Sex and age did not result in complication, the tumour position either under or over the vena azygos may result in complication. However this study did not present both the thoracic CT-scan and lateral chest x-ray which might describe the obstruction position in further details.

Keyword:
Vena cava superior syndrome, thoracic malignancy, radiotherapy-cito.

TOTAL PLEURECTOMY: THE MECHANICAL PLEURODESIS OF CHOICE FOR RECURRENT SECONDARY SPONTANEOUS PNEUMOTHORAX IN A CHILD WITH PULMONARY LANGERHANS CELL HISTIOCYTOSIS; A CASE REPORT

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Background:
Pulmonary Langerhans Cell Histiocytosis (LCH) is a rare entity, characterized by accumulation of Langerhans cells (LC) infiltrating the interstitium of small airways of the lung leading to chronic progressive interstitial lung disease. Patients may present with spontaneous secondary pneumothorax (SSP) which tends to be recurrent and refractory to conventional treatment. In children, the disease is more extensive and will progress despite aggressive chemotherapy with 50% survival rate at 5 years. Pulmonary LCH is a rare cause of SSP and its occurrence in paediatric patients posed great challenge to the choice of surgical management.

Case history:
We report a case of malignant LCH with severe bilateral pulmonary involvement in a 9 year old boy. The boy presented with bilateral recurrent spontaneous pneumothorax which initially responded to multiple thoracic drain insertions. Surgical consult was made following failed conservative treatment with specific request for mechanical pleurodesis. Computed tomography (CT) scan of the thorax confirmed bilateral extensive cystic and bullae lesions. The right lung appeared worse. The patient underwent 2 surgeries. The first was bilateral thoracotomy with partial right pleurectomy and left thoracic pleural abrasion. The patient was symptom-free for only 3 weeks before a huge pneumothorax on the left lung and a small pneumothorax on the right recurred. A second surgery was then performed; this time bilateral thoracotomy with right completion pleurectomy and left total pleurectomy were carried out. The patient's condition improved. There was no further episode of pneumothorax since then.

Discussion and conclusion:
The surgical experience of managing SSP is usually from adult patients with chronic obstructive pulmonary disease (COPD). These patients usually undergo mechanical pleurodesis via pleural abrasions either thoracoscopically or open thoracotomy. Based on our experience, in pulmonary LCH, partial pleurectomy or pleural abrasion are not sufficient to eradicate SSP. We recommend total pleurectomy as the technique of choice for mechanical pleurodesis in patients with extensive pulmonary disease like Pulmonary LCH.

Keywords:
Pulmonary LCH, secondary spontaneous pneumothorax, mechanical pleurodesis, total pleurectomy, children.

Group 2

Medical Education / Medical Ethics

NURSES COMPLIANCE WITH HAND HYGIENE PRACTICE AND KNOWLEDGE IN A HOSPITAL

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Background:
Hospital-acquired infection is a major problem in most intensive care units. Hand hygiene has been considered as the most important measure in preventing hospital-acquired infection. The objective of this study was to assess nurses' compliance to hand hygiene practice and knowledge in a hospital.

Materials and methods:
A descriptive cross-sectional study was conducted in the intensive care units of a hospital in Kuala Lumpur. A total of 84 registered nurses from the intensive care unit were recruited in this study. A self-administered questionnaire was employed to measure knowledge and compliance about hand hygiene. A *Five Moments Hand Hygiene* was used and it was adopted from WHO Guidelines (Annex 34) and observation on 7 steps of hand washing techniques.

Results:
The findings reported that the total means and standard deviation of knowledge (60.65±4.213) and compliance (84.65±7.024) were high among the respondents. The findings indicated significant differences between the respondents' years of service with knowledge and compliance ($F=3.456$, $p<0.05$). The results reported significant differences between respondents' with post basic course with compliance to hand hygiene ($t=3.439$, $p<0.05$). The five moment's observation guidelines showed reasonable compliance after patient contact but unsatisfactory result after contact with patient surroundings. By observation, the seven steps of compliance to hand hygiene reported 70 respondents (83.3%) did not perform it correctly and only 14 respondents (16.7%) had the steps correct.

Conclusion:
Nurses' compliance to hand hygiene practice and knowledge was good. However, the findings revealed that the five moments observation guidelines were unsatisfactory. Hawthorne effects could be the aggravating factor. This study implied that education and reinforcement of hand hygiene among hospital care providers and nurses are needed constantly.

Keywords:
hand, hygiene, compliance, practice, knowledge, nurse

PERCEPTION, KNOWLEDGE AND ATTITUDE TOWARDS HUMAN PAPILLOMAVIRUS (HPV) AND HPV VACCINATION FOR CERVICAL CANCER PREVENTION AMONG UNIVERSITY STUDENTS

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Background:
Human papillomavirus (HPV) is found to be a major causative factor for developing cervical cancer. Even with routine HPV vaccination programme in preventing cervical cancer, it confers less optimal benefit if educational element of the disease is not highlighted among this population. We assessed the perception, knowledge and attitude of university students towards HPV vaccination and cervical cancer prevention.

Materials & Methods:
A cross-sectional survey using a validated questionnaire by simple-randomized sampling technique in Universiti Kebangsaan Malaysia was conducted.

Results:
A total of 826 male and female students were included. From the total respondents, 78.6% were aware of the availability of HPV vaccine. The mean total knowledge score was 8.03 (95% CI 7.83-8.24). Majority, 66.5% of the students perceived themselves as not being at risk of HPV infection. Approximately 54.7% of respondents indicated an intention to receive HPV vaccination. Of those who declined HPV vaccination, 36.4% were worried of the side effects.

Conclusion:
The perception and knowledge on HPV infection and vaccination for cervical cancer prevention was poor. This contributed to reduce acceptability of vaccination and cancer prevention. Hence, education has a major role for this awareness.

Keywords:
Cervical cancer, human papilloma virus, vaccination

KNOWLEDGE, ATTITUDE AND PRACTICE OF INFLUENZA A (H1N1) AMONG RURAL COMMUNITY IN MALAYSIA

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Background
The 2009 influenza A (H1N1) pandemic has affected most countries of the world including Malaysia in a short span of time. Assessment of general public's knowledge, attitude and practice is needed for better prevention and control activities.

Materials & Methods
A cross sectional questionnaire survey was conducted in rural community (Kuala Selangor), Malaysia among 250 individuals from 5 November till 26 November 2009.

Results
The mean age of respondents was 45.9 (16.58) years old. The highest knowledge score were among those age 36-45 years old (mean=7.9±2.11, p<0.001), females (mean=7.1±2.23, p=0.904), higher educational level (median=9±1, p<0.001) and working respondents (mean=7.1±2.09, p=0.60). Attitude score were more towards older age more than 60 years old (mean=8.2±1.22, p=0.380), females (mean=7.9±1.45, p=0.383), higher educational level (mean=8.4±1.16, p=0.070) and non-working (mean=8.0±1.42, p=0.05) respondents. Practice score was higher and significantly different in higher education respondents (mean=9.0±1.89, p<0.001) but no other demographic factors. There was significant correlation between knowledge and attitude(r=0.38), knowledge and practice(r=0.51) and attitude and practice(r=0.47).

Conclusion
Knowledge, attitude and practice influence each other in pandemic Influenza A (H1N1). Efforts should be targeted at educating the general population to improve practice in the current pandemic, as well as for future epidemics.

Keywords:
KAP, H1N1, Rural

ERECTILE DYSFUNCTION AMONGST MEN WITH DIABETES MELLITUS IN A PRIMARY HEALTHCARE SETTING, MALAYSIA.

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Background:
Erectile dysfunction (ED) can disrupt men's quality of life to various extend. It is associated with numerous co-morbidities and is a well known complication of diabetes mellitus (DM). The objectives of this study are to estimate the prevalence and identify factors associated ED among DM men in our primary healthcare setting.

Materials and Methods:
This cross sectional study was conducted in a primary healthcare clinic at Pusat Perubatan Primer UKM from February 2010 until March 2010. A total of 281 male diabetic patients participated in this study by using convenience sampling method. The questionnaire used consists of three parts; demography, 5-Item Version of the International Index of Erectile Function (IIEF-5) and medical information.

Results:
The prevalence of perceived erectile dysfunction is 56.0% and the prevalence of proven erectile dysfunction is 86.6%. The significant factors of ED in this study are duration of diabetes mellitus ($p=0.005$), ischemia heart disease ($p=0.014$), nephropathy ($p=0.022$) and age ($p<0.001$). From logistic regression analysis, age is the only variable found to be significantly associated with erectile dysfunction ($p=0.010$).

Conclusion:
ED is common among men with DM especially with the advance of age. Increased duration of DM is significantly associated with higher prevalence of ED. Screening for ED should be routinely performed among men with DM and it is significantly associated with cardiovascular disease and other complications of DM such as nephropathy, neuropathy and retinopathy.

Key Words:
erectile dysfunction, diabetes mellitus, primary healthcare, screening.

A CROSS SECTIONAL STUDY ON MATERNAL KNOWLEDGE LEVEL RELATED TO HEALTH CARE OF THE NEONATES AT UKM MEDICAL CENTRE

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Background:
Every pregnant mother should be equipped with good knowledge on health care for her neonate. A study was conducted at UKM Medical Centre (UKMMC) to assess the prevalence of knowledge level on health care of neonate among third trimester pregnant mothers, identify factors influenced and source of information gained.

Material and Methods:
A cross-sectional study was done in November 2010 till Feb 2011 using simple random sampling among 355 pregnant mothers at UKMMC Antenatal Clinic.

Result:
A total of 52.7% respondents have good knowledge level on health care of their neonates. The knowledge level was significantly influenced by the pregnancy status (p=0.001), explanations given by the doctors/nurses (p=0.003), received information on health care of neonate (p=0.001) and the sources of information was gained from health talks (p=0.001), Majalah Wanita (p=0.001), Majalah PaMa (p=0.001) and Majalah Keluarga (p=0.004).

Conclusion:
Prevalence of knowledge level on healthcare of neonate among the pregnant mothers was only 52.7%. Effort to improve the knowledge level for pregnant mother on health care of their neonates should be initiated since early antenatal period. Dissemination of health care of neonate's information should have better coverage.

Key words:
knowledge on health care of neonate, antenatal mother and antenatal health education.

Group 3

Current Health Issues / Medical Disasters

THE EMOTIONAL WELLBEING OF RESUSCITATION TEAM MEMBERS: THE FORGOTTEN REALM

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Introduction:
Resuscitation is an event that is physically, mentally and emotionally demanding for most Emergency Department (ED) personnel. When it does not meet the targeted outcome, there may be feelings of frustration and inadequacy. If the emotional effect of dealing with dying patients and their surviving family members are not acknowledged, deleterious outcome may ensue.

Case:
A child succumbed to foreign body airway obstruction despite resuscitation efforts. The resuscitation team members took a few minutes to gather themselves together, then continued to perform their clinical duties. During the shift, they handled six other resuscitations.

Discussion:
ED personnel deal with dying patients every day. In an effort to escape the necessity of coping with death, many staff members experience career disillusionment and some even leave the ED line of work altogether. To add to the stress they have to continue working the shift, attending to other patients requiring their attention. Therefore, what mechanisms are in place to ensure that staff are coping and are able to function for the benefit of other patients?

At the end of any resuscitation effort, a debriefing session should be held for the resuscitation team members. Apart from identifying areas of possible improvement, these sessions also serve another very important role; to provide support and some form of closure to team members. It provides the perfect opportunity to tackle the question of 'Could we or should we have done more?' It should be held in a private, confidential and comfortable environment where team members feel safe to explore questions without fear of judgment or repercussions.

Conclusion:
The importance of the emotional well being of resuscitation team members should be emphasized. The ability to confide in others during debriefing sessions should be regarded as a basic skill to ensure self care, so that they are then able to deliver the best patient care.

Keywords:
resuscitation, emotional wellbeing, debriefing sessions

HOLISTIC APPROACH TO RESUSCITATION: THE IMPORTANCE OF FAMILY PRESENCE

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Background:
Resuscitation is an event that most healthcare providers (HCPs) find extremely challenging. The resuscitation team deals not only with the patient but also the family members.

Case:
A 20 month old baby boy was brought to the emergency department (ED) by his father in a collapsed state, after he was noted to be choking. The child was taken immediately to the resuscitation zone while his father was asked to wait in the 'Family Room'. Despite resuscitation efforts, the child succumbed.

Discussion:
Family presence during resuscitation is not a well practiced phenomenon due to fear of psychological trauma to the family, distraction and performance anxiety among HCPs, as well as medico legal issues. Foote Hospital, Michigan, USA, initiated a change in this customary policy. Family members were given the option of being involved in the resuscitation effort, not just as a spectator but as participants. They were encouraged to talk to the patient, informing of their presence and to say farewell. Their presence places the patient in a social network and deeply alters the resuscitation experience for HCPs. Many argue that patients may feel their confidentiality was compromised or that they may want to be remembered as they were and not their last dying moments. An interview with patients who survived resuscitation revealed that they felt content and supported by family presence and none felt their confidentiality or dignity was compromised. Should the resuscitation effort end negatively, many fear the psychological trauma to the surviving family members. However, family members do not share this concern as it provides the opportunity for closure.

Conclusion:
Holistic approach to resuscitation requires a holistic health delivery system, beyond advanced life support. Clear policies on family presence during resuscitation should be in place as this will profoundly influence the experience and healing process of the affected family members, as well as HCPs.

Keywords:
resuscitation, family presence, holistic approach

COST ANALYSIS OF OPEN APPENDICECTOMY COMPARED TO LAPAROSCOPIC APPENDICECTOMY IN UNIVERSITY KEBANGSAAN MALAYSIA MEDICAL CENTRE (UKMMC) 2011

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Background:
Acute appendicitis is a common intra-abdominal inflammatory disease that requires surgery. The advantages of laparoscopic appendicectomy (LA) are controversial in previous studies. The aim of this study is to assess the cost-analysis of LA compared to open appendicectomy (OA) in Universiti Kebangsaan Malaysia Medical Centre.

Material and Methods:
This was a retrospective study of patient's record who underwent appendicectomy in UKMMC from January to December 2010. In this study, the cost was calculated merely on provider's point of view and further classified into capital costs and recurrent costs.

Results:
The subject was 30 patients diagnosed with acute appendicitis, male was 63.3%, and female was 36.7%. Mean age of the subjects was 27.97. Average length of stay for OA (4.13 days) was slightly longer than LA (3.67 days). Capital cost were 57.9% higher (RM626.23) higher for LA. Only equipment cost was higher in LA, however building and furniture cost were 9.9% higher for OA. Recurrent cost were 30.3% higher (RM631.85) for LA.

Conclusion:
The treatment cost for LA was found to be higher as compared with OA. The higher cost of LA is attributed to capital cost; the cost for equipment per patient use for LA is expected relatively higher. Also, it can be related to the number of surgeons trained using laparoscopic technique is small and hence this type of operation is not being carried out frequently compared to OA. In order to minimise the cost of LA, frequency of equipment use for laparoscopic operation should be increase in order to reduce the cost of equipment per patient.

Keywords:
cost analysis, open appendicectomy, laparoscopic appendicectomy, appendicitis

ENTOMOFAUNA OBTAINED FROM FORENSIC ENTOMOLOGICAL STUDIES CONDUCTED IN A SECONDARY FOREST IN ULU GOMBAK, SELANGOR

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Background:
Medico-legal forensic entomology plays an important role in determination of time since death or post mortem interval (PMI). The present study reported the entomofauna recovered from forensic entomological studies conducted in a forested area in Ulu Gombak, Selangor.

Materials and Methods:
Monkey carcasses were used as model for human decomposition study. Monkeys were euthanized in accordance with established procedures by Department of Wildlife and National Parks Peninsular Malaysia. The study protocol was approved by Institute for Medical Research's Unit of Animal Care and Use Committee [ACUC/KKM/02(2/2008)]. After death was confirmed, the monkey carcasses were placed in outdoor (two replicates) and indoor (two replicates), respectively. The carcass was monitored daily from until no more larvae and bones were observed from the carcass. Adult flies were caught by using a sweep net. The fly larvae, ants and beetles were collected using forceps for preserved in 70% ethyl alcohol. The collected specimens were then processed for species identification.

Results:
Flies (Diptera) belonging to four families were obtained from the studies. However, only 13 species of flies belonging to three families can be identified, which are Calliphoridae, Muscidae and Stratiomyiidae, while a number of flies belonging to the family of Sarcophagidae were not able to be identified. Flies belonging to family Calliphoridae were the dominant flies as forensic indicator, followed by Muscidae, Sarcophagidae and Stratiomyiidae. This study showed that *Chrysomya villeneuve* (Patton), *Chrysomya chani* (Kurahashi) and *Chrysomya pinguis* (Walker) were dominant in monkey carcasses in forested area. On the other hand, three species of ants (Hymenoptera) were found visiting the carcasses in all decomposition stages. Beetles (Coleoptera) belonging to eight families were obtained throughout the studies.

Conclusion:
Different species of insect fauna obtained from carcasses may act as a habitat indicator. Generally, *Chrysomya* sp. (Diptera: Calliphoridae) were mainly found in outdoors; while beetles found in indoor were more diverse compared to outdoor.

Keywords:
forensic entomology, post mortem interval (PMI), Diptera, Hymenoptera, Coleoptera

DISTRIBUTION OF FORENSICALLY-IMPORTANT ENTOMOFAUNA ON CARCASS AT HIGH RISE BUILDING IN KUALA LUMPUR, MALAYSIA

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Background:
The knowledge of fly distribution and succession is a necessary pre-requisite for estimating the post-mortem interval using entomological data. Given the increasing number of abandoned dead bodies found at high rise buildings, the first set of study was carried out to investigate the distribution of forensically important entomofauna at high rise building in Malaysia.

Materials and Methods:
Paired dead monkeys were exposed simultaneously, one at the top floor (130-feet height) of the Clinical Block of UKM Medical Centre (UKMMC) and the other at the ground level at the backyard of UKMMC as control. The species visiting both carcasses were monitored daily for 30 days. Adult flies were captured using sticky papers, while larval stages were preserved using 70% alcohol.

Results:
The top floor carcass was infested with only three species: *Megaselia scalaris, Sarcophaga* sp. and *Synthesiomyia nudiseta.* Fewer larvae were observed, too few to form maggot masses. In comparison, the outdoor carcass was infested by huge numbers of a variety of common corpse-visiting species: *Chrysomya megacephala, Ch. rufifacies, Ch. nigripes, Sarcophaga spp., Hemipyrellia sp., Hydrotea spp., Musca sorbens* and other insect species. The difference in entomofauna distribution was most probably due to the ability of certain flies to reach high altitude and could survive different types of environmental conditions. The presence of *S. nudiseta* only on the carcass at the top floor was in agreement with previous findings that this species only can be found indoors.

Conclusion:
The above findings highlight the importance of better understanding of fly behaviour and distribution in assisting forensic investigations, especially when death occurs at high rise buildings.

Keywords:
forensic entomology, fly distribution, high rise building, *Synthesiomyia nudiseta*

ANXIETY AND STRESS AND THEIR CORRELATES AMONG A GROUP OF MALAYSIAN UNIVERSITY STUDENTS

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Background:
Young adults, particularly university students face not only challenges associated with independent living- living away from parents, and preparation for work and family, but also academic challenges. Anxiety and stress may be common mental health problems among them. The aims of this paper are to assess the prevalence of anxiety and stress, and identify their correlates among university students.

Materials and Methods:
A cross-sectional study was conducted among 506 students between the ages of 18-24 years enrolled in four public universities in the Klang Valley**.** Data was obtained through anonymous, self administrated questionnaire using the DASS21 inventory to measure anxiety and stress. Data on socio-demographic and family characteristics as well as living arrangement were also obtained.

Results:
Analysis showed among all students in the study, 34% had moderate, and 29% had severe or extremely severe anxiety; and 18.6 had moderate and 5.1% had severe or extremely severe stress scores based on the DASS21 inventory. Anxiety scores were significantly higher among the older students (20 and above), and those born in rural areas. However for stress scores, they were significantly higher among younger students (less than 20), females, and those whose family had either low or high incomes compared to those with middle incomes.

Conclusion:
In these university students, the prevalence of anxiety is much higher than stress, and their correlates differ. These differences need to be further explored to enable the development of better intervention programs to manage anxiety and stress among university students.

Key words:
Malaysian, urban, youths, anxiety, stress, correlates, university students

UNIVERSAL ACCESS TO REPRODUCTIVE HEALTH: OPINIONS OF URBAN YOUNG ADULTS

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Background:
Many surveys had shown that sexual activities amongst young people are not uncommon.

Material & Methods:
A study was conducted to explore opinions of a group of young adults on their understanding of the meaning of reproductive health, its importance and ways to access reproductive health services. Four focus group discussions (FGDs) were conducted among urban youths between the ages of 18-24.

Results:
The majority of the respondents did not have clear knowledge of reproductive health services and on why it is important for them to access such services. They did not know the range of reproductive health services available except for the treatment of sexually transmitted infections. Most did say that healthcare facilities are not their first choice for seeking treatment if they do have any reproductive health problems. Traditional methods or seeking advice from friends or internet surfing are their first line of choices when facing such problems. They were also not sure of the methods, techniques and services that contributed to health and well-being by preventing and solving reproductive health problems. In this study, they did mention that education modules related to reproductive health topics were given during their secondary school but they admitted not taking them seriously. They were aware of the various programmes such as PRoSTAR and the National Service which offer opportunities for increasing reproductive health knowledge but not everybody are directly involved in such programmes.

Conclusion:
Even though the respondents have access to health care facilities, information and awareness on access to reproductive health services did not reach them well.

Key words:
access, reproductive health services, young adults, qualitative approach

THE PREVALENCE OF CAROTID ARTERY STENOSIS IN PATIENTS WITH CORONARY ARTERY DISEASE IN OUR LOCAL SETTING - UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE

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Background:
There is still lack of information regarding the prevalence of carotid artery stenosis in patients with coronary artery disease among Malaysian population. Therefore, this study was conducted to investigate the prevalence and the correlation with vascular risk factors.

Materials and Methods:
The study population consisted of 73 patients with coronary artery disease diagnosed via coronary angiography at Universiti Kebangsaan Malaysia Medical Centre (UKMMC) from November 2010 until April 2011. These patients were then subjected to carotid arteries Echo-Doppler ultrasonography and an area of stenosis > 50% was considered significant**.** The patients' risks factors were obtained from the medical records.

Results:
The prevalence of carotid artery stenosis among 1-, 2-, 3-vessel coronary artery disease were 0 of 14 (0%), two of five (13.33%), 10 of 44 (22.73%) respectively with p=0.127. Only three of eight (37.5%) left main stem disease patients have significant carotid stenosis (p=0.088). Thus, the prevalence increased with the number of coronary artery vessels involved. In relation with the risks factors, only hyperlipidaemia showed a significant association with carotid artery stenosis (p=0.018). This study was unable to prove any significant correlation with other risk factors such as diabetes mellitus (p=0.134), hypertension (p=0.407), chronic kidney disease (p=0.070) and smoking status (p=0.303). Among multi-ethnicity, Indians had the highest prevalence of 28.57% followed by Chinese 20.69%, and Malays 11.43% (p=0.539).

Conclusion:
In conclusion, the prevalence of carotid artery stenosis in coronary artery disease patients was high in Malaysia as compared to other Asian countries with a significant association with hyperlipidemia.

Keywords:
Coronary artery disease, carotid artery stenosis, coronary angiography, Doppler ultrasonography, atherosclerosis

Group 4

Pharmacotherapeutics / Traditional & Complementary Medicine

EFFECT OF CONSUMPTION OF REPEATEDLY HEATED PALM AND SOY OILS ON BLOOD PRESSURE AND AORTIC MORPHOMETRIC ALTERATIONS IN RATS.

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Background:
Much of the fat consumed in our diet has been exposed to heat during processing and in the preparation of food during cooking. In deep-frying, often the fat is kept hot for a long period of time at 180^{o}C and both moisture and air are mixed into the hot oil. This heating process generates free radicals. The repeated heating has oxidized the lipid content to potentially toxic lipid peroxidation products. Lipid hydroperoxides decomposed to highly cytotoxic products especially aldehydes, which are partly absorbed into the systemic circulation. Peroxyl radicals and aldehydes caused severe damage to membrane proteins, inactivating receptors and membrane-bound enzymes. The fried food absorbs this heated oil and free radicals thus it becomes part of our diet. The common practice of reusing these heated oils for frying may generate more free radicals that are harmful to tissues. Free radicals may cause endothelial dysfunctions, which may be responsible for blood pressure rise. In view of the potential hazardous effect of heated oils on health, we undertake this study to see whether thermally oxidized palm oils have any effect on the Blood pressure and aortic morphology.

Methods:
Thirty six male Sprague-Dawley rats were divided into six groups and fed basal diet fortified with 15% weight/weight (w/w) (i) fresh palm oil (FPO) or (ii) fresh soy oil (FSO); (iii) five-time-heated palm oil (5HPO) or (iv) five-time-heated soy oil (5HSO); (v) ten-time-heated palm oil (10HPO) or (iv) ten-time-heated soy oil (10HSO) for 24 weeks. Blood pressure was measured at monthly intervals using tail-cuff method. After 24 weeks the rats were sacrificed and the aortic arches were taken out for histological and morphometric measurements

Results:
Both FPO and FSO groups did not show any significant changes in blood pressure and morphometric measurements. There were significant increases in blood pressure, IMT and IMA in the five-time and ten-time-heated oils treated groups compared to fresh oils groups. However, there were no significant differences in lumen diameter and elastic fibre lamellar number among the groups. Histomorphology showed increased interlamellar space in aortas of five-time and ten-time-heated oils treated rats, indicating aortic hypertrophy. No significant differences in the effects of palm and soy oils on blood pressure and aorta morphometry were observed.

Conclusion:
Prolonged consumption of repeatedly heated palm and soy oils similarly causes blood pressure elevation and hypertrophy of aortic wall.

Keywords:
Repeated heating, vegetable oils, blood pressure

THE EFFECTS OF *PIPER SARMENTOSUM* ON BONE FRACTURE HEALING: A BIOMECHANICAL STUDY IN OVARIECTOMISED RATS

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Background:
Osteoporosis affects the biomechanical properties of bone by causing brittleness, therefore increasing the risk of fractures. The biomechanical integrity of bone is essential as it has a structural role in fracture healing. Clinically, mechanical restoration of healed bone is considered as the main target of fracture healing. Oxidative stress is considered to be a pathogenic factor for delayed fracture healing. *Piper sarmentosum* (P.s) is a herb commonly used in Malaysian traditional medicine and is known to possess antioxidant, anti-inflammatory and anticarcinogenic properties. This study aimed to investigate the effects of P.s aqueous extract on fracture callus in osteoporotic female rats by observing changes in the biomechanical properties of the femoral bone.

Materials and Methods:
Thirty two female Sprague-Dawley rats weighing 200-250gm were assigned into four groups: Sham-operated (SX) group; Ovariectomised-control (VHC) group; Ovariectomised+conjugated equine oestrogen 100 µg/kg/day (OVX+CEE) group; Ovariectomised+P.s extract 125mg/kg/day (OVX+P.s) group. All the rats underwent mid-diaphyseal closed fracture of the right femur followed by insertion of intramedullary Kirschner wire 6 weeks post-ovariectomy. Following the fracture, all the rats received the above treatment for another six weeks. The fractured right femora were then harvested and subjected to biomechanical evaluation.

Results:
There was a significant increase in the mean flexure load, flexure stress and elastic modulus in the OVX+P.s group, compared to the VHC group ($P<0.05$), however, the mean flexure strain in the OVX+P.s and VHC groups was identical ($P>0.05$). The biomechanical parameters were found to be identical in the SX, OVX+CEE and OVX+P.s ($P>0.05$).

Conclusion:
Supplementation of P.s during fracture healing in osteoporotic bone has contributed to the bone's strength and stiffness rather than to the strain. Since oestrogen is linked to oestrogen dependent tumours, long-term treatment with P.s may be safer than oestrogen replacement therapy in patients with osteoporotic fractures.

Keywords:
Antioxidant, biomechanics, bone healing, osteoporosis, *Piper sarmentosum.*

INTRAUMBILICAL VEIN INJECTION OF OXYTOCIN FOR RETAINED PLACENTA IN HOSPITAL TENGKU AMPUAN RAHIMAH: HIGH DOSE VERSUS LOW DOSE REGIME

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Background:
Postpartum hemorrhage and retained placenta are the most common serious abnormalities encountered during the third stage of labor. If retained placenta is left untreated, there is a high risk of maternal death from hemorrhage or infection. The current standard of management of retained placenta, by manual removal, aims to prevent these problems, but it is unsatisfactory. The objective of the study is to evaluate whether the effectiveness of umbilical vein injection of oxytocin is dose dependent.

Materials and Methods:
A randomized prospective clinical trial was conducted in HTAR over a period of 18 months from December 2007 to May 2009. A diagnosis of retained placenta is made if the placenta was still not expelled after 30 minutes. Participants were randomized into three groups. Twenty milliliters of solution containing either 100 units of oxytocin or 10 units of oxytocin would be injected through a catheter in the first two groups while expectant management was taken in the third group. If the placenta is still not expelled after one hour of third stage manual removal of placenta would be performed.

Results:
A total of 108 eligible patients were recruited and equally divided in this study. Manual Removal of Placenta required and the success rate of the intervention were; Saline + 100 units oxytocin group 21 (41.7%); Saline+10 units oxytocin group 29 (19.4%); and expectant management group 31 (13.9%) with a P-value of 0.016. There was no incidence of nausea or vomiting observed in the three groups.

Conclusion:
Intra-umbilical vein injection of oxytocin in cases of retained placenta seems a simple and beneficial technique to reduce the incidence of a potentially hazardous procedure. Higher doses of intraumbilical oxytocin can be used with increase rate of success without any observed clinical side effects. We conclude from our study that increase doses of intra-umbilical oxytocin does improve outcome.

Keywords:
retained placenta, intraumbilical oxytocin

TOCOTRIENOL-RICH FRACTION FORMULATION ENHANCES WOUND HEALING IN STREPTOZOTOCIN-INDUCED DIABETIC RATS

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Background:
Impaired wound healing is a well-documented phenomenon in experimental and clinical diabetes. Emerging evidence favours the involvement of free radicals in the pathogenesis of diabetes-related healing deficit. This study assessed the effect of topical administration of 0.5% tocotrienol-rich fraction formulation, which is a well known antioxidant on wound healing by using streptozotocin-induced diabetic rats.

Material and Methods:
The wound healing effect of TRF formulation was investigated by using excisional skin-wound model produced on the back of streptozotocin-induced Sprague-Dawley male rats. Animals were then randomized to the following treatment: 0.5% TRF formulation or its vehicle (base cream). Treatments were applied once daily. Wound areas were serially photographed on different days and the photos were analyzed with digital image analyzer software to measure wound area. The animals were killed on the 10th day post treatment. The wounded skin tissues were used for analysis of total protein content.

Results:
Wounds treated with TRF formulation showed better wound contraction on the 8th day post treatment (TRF formulation 0.0493±0.00898cm$^{2;}$ vehicle 0.0989±0.01263cm$^{2)}$. Furthermore, TRF formulation treatment increased total protein content in the wounded tissue (TRF formulation 79.046±10.58mg/ml; vehicle 56.57±6.93mg/ml).

Conclusion:
Our result indicates that 0.5% TRF formulation enhances wound healing in experimental diabetes-impaired wounds.

Keywords:
wound healing, diabetes, tocotrienol-rich fraction

EFFECTS OF *MOMORDICA CHARANTIA* AQUEOUS EXTRACT ON CUTANEOUS WOUND HEALING IN DIABETIC RATS

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Background:
Diabetes mellitus is a chronic disorder that affects an increasing number of people worldwide. Impaired wound healing is one of the complications that can lead to infection, gangrene and amputation. Besides current standard medication, some traditional herbs have been used to treat this disease. *Momordica charantia* or bitter gourd is known to possess antioxidant, antibacterial and antihyperglycaemic properties. It has also been used for wound healing.

Materials and Methods:
A total of 24 male *Spraque Dawley* rats were used in the study. They were divided into a control group (n=8), a diabetic non-treated group (n=8) and a diabetic-treated *Momordica charantia* aqueous extract group (n=8). A single intravenous injection of 50mg/kg streptozotocin was used for induction of diabetes while the control group received normal saline intravenously. Four full thickness wounds were created on the dorsal aspect of the thoracolumbar area of each rat using a six millimetres punch biopsy needle. The treated group received 50mg aqueous extract of *Momordica charantia* while the diabetic non-treated and control group received normal saline topically. The treatment was given daily and serial photographs were taken on day 0 and day 10 following wound creation. Wound areas were measured using image analyzer software and the wound closure rate was calculated. At day 10, the wounded skin were excised and processed for hematoxylin and eosin staining.

Results:
On day 10, the wound closure rate among the diabetic-treated *Momordica charantia* aqueous extract group was better than the diabetic non-treated group. Histologically, epithelization, keratinization, granulation tissues and collagen fibres were well formed and organized in the diabetic-treated *Momordica charantia* aqueous extract group as compared to the diabetic non treated group.

Conclusion:
Momordica charantia aqueous extract seems to accelerate wound healing in the diabetic induced rats at the above dose.

Keywords:
Wound healing, Wound closure rate, *Momordica charantia* aqueous extract

FLAVONOID CONTENT OF PIPER SARMENTOSUM

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Background:
Previous studies have shown a relationship between a diet rich in flavonoid and a reduced incidence of cardiovascular diseases. *Piper sarmentosum* (PS) or locally known as daun kadok is a tropical plant with antioxidant, anti-inflammatory and anti-atherosclerotic activities. It is suggested that the cardiovascular protective effects of PS is related to its flavonoid content. Therefore this study aims to investigate the flavonoid content of aqueous extract of PS.

Materials and Methods:
Dried PS leaves were boiled with purified water at 80°C for three hours to extract its water soluble contents. The extract was then filtered, concentrated and freeze-dried to powder. The extract was dissolved and analysed by means of a HPLC system (Waters Delta 600 with 600 Controller) with photodiode array detector (Waters 996). The retention times and UV absorption characteristics of major peaks in the chromatograms of the extract were compared with those of standards (naringin, genistein, fisetin, myricetin, vitexin, isovitexin, apigenin, rutin and naringenin).

Results:
The peaks in the chromatogram of the extract corresponded to rutin and vitexin. The extract was spiked with rutin and vitexin and the results confirmed the presence of rutin and vitexin.

Conclusion:
Aqueous extract of PS leaves contains the flavonoid rutin and vitexin.

Keywords:
Piper sarmentosum, flavonoid, rutin, vitexin

EVALUATION OF THE WOUND-HEALING PROPERTY OF *MOMORDICA CHARANTIA* (MC) IN DIABETIC RATS

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Background:
Momordica charantia (MC; bitter gourd) has been reported to possess antihyperglycemic effects in previous studies involving animals induced with diabetes. However, its effect on wound healing has not been well documented. The aim of this study was to evaluate the topical effect of MC extract on the wound-healing process in rats with diabetes induced by streptozotocin.

Materials and Methods:
A total of 56 male *Sprague-Dawley* rats were divided into two main groups: a non-diabetic group (*n*=6) and a streptozotocin-induced diabetic group (*n*=50). The diabetic groups were further subdivided into 5 groups; a non-treated group (*n*=10), a treated group with MC extract in powder form (n=10), treated groups with or without MC extract in ointment form (*n*=10 each) and a treated group with povidine ointment (n=10). The wound was inflicted with a 6-mm punch-biopsy needle on the dorsal aspect of the thoracolumbar region. The wounds were treated for 10 days and the animals killed on day 11 after wound creation. The rate of wound closure and total protein content were estimated. Changes in the wound tissue were also identified histologically.

Results:
The diabetic groups showed a significant delay in wound healing compared with the normal untreated group which showed complete closure of wounds at day 10 ($p<0.05$).Interestingly, the diabetic group treated with topical MC ointment showed better results than the non-treated group. There was also a significant difference in total protein content between the normal and diabetic groups, in which the MC powder treated group showed higher total protein content than the normal group ($p<0.05$).

Conclusion:
Topical use of MC extract improved and accelerated the process of wound healing in diabetic animals.

Keywords:
Momordica charantia, diabetes, wound closure

EFFECT OF TOPICAL FORMULATION OF *CENTELLA ASIATICA* EXTRACT AND TOCOTRIENOL RICH FRACTION (TRF) ON WOUND HEALING IN DIABETIC INDUCED RATS

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Background:
Centella asiatica is a traditional herb known to possess anti-oxidant, anti-inflammatory, anti-tumor, anti-genotoxic, anti-proliferative properties and used externally for the rapid healing of wounds. Similarly, vitamin E which is an excellent source of anti-oxidant has also been utilized in wound healing studies. Vitamin E used in this study is obtained from palm oil and contains tocotrienol rich fraction (TRF).

Materials and Methods:
Forty male *Sprague dawley* rats were randomly divided into four groups (n=10): basic gel, CA 0.4% extract gel, TRF 0.5% gel and formulation gel mixture of CA 0.4% extract + TRF 0.5%. Full thickness cutaneous wounds were inflicted with a six mm punch-biopsy needle on the dorsal aspect of the thoracolumbar region. The animals were sacrificed on day ten following wound creation. The rate of wound closure and total protein content were determined and histological analysis was performed using light microscopy.

Results:
It was observed that animals treated with formulation gel mixture of CA 0.4% extract + TRF 0.5% had higher total protein content, faster rate of wound closure, higher proliferation and migration of cells with greater collagen fiber deposition and arrangement within the wound tissues in comparison to other treatment groups. The smaller dimension of scar tissue in the dermis of animals treated with the formulation gel mixture of CA 0.4% extract + TRF 0.5% indicates that the wounds were healed.

Conclusion:
Present study demonstrated the formulation mixture incorporating both CA and TRF exhibited synergistic effect in accelerating the process of wound healing.

Keywords:
Centella asiatica, diabetes mellitus, wound healing, tocotrienol rich fraction

EFFECT OF PALM VITAMIN E ON THE OXIDATIVE STRESS IN THE PANCREAS OF STREPTOZOTOCIN-INDUCED DIABETIC RATS

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Background:
Palm Vitamin E (PVE) is tocotrienol and tocopherol rich antioxidant that reduce the oxidative stress in many pathological conditions. Hyperglycemic state in diabetes can increase free radicals production and decrease the antioxidant defense mechanisms. This study was conducted to observe the effect of PVE against oxidative stress in the pancreas of streptozotocin-induced diabetic rats.

Materials and Methods:
Forty rats were divided into four groups which were normal, normal rats given PVE (normal+PVE), diabetic, and diabetic rats given PVE (diabetic+PVE). Diabetes was induced by a single intravenous injection of streptozotocin at the dose of 45mg/kg and PVE was administered at the dose of 200mg/kg dose for 28 days consecutively through oral feeding.

Results:
At the end of four weeks of study, diabetic rats exhibit significantly higher glucose levels as compared to normal rats. Diabetic rats with PVE supplementation has significant lower blood glucose than diabetic rats without PVE. Malondealdehyde and protein carbonyl levels of the pancreas were significantly reduced in PVE supplemented diabetic rats. Meanwhile, PVE supplementation to the diabetic rats significantly increased the total protein levels and glutathione and superoxide dismutase activities of the pancreas. The histological evaluation clearly showed that diabetic rats exhibit the significant destruction of beta cell of the Langerhans Islet. The presence of beta cells was observed diabetic rats supplemented with PVE.

Conclusion:
In conclusion, this study proved that PVE may reduce the oxidative stress in hyperglycemic state and has protective effect on pancreas tissue in streptozotocin-induced diabetic rats.

Keywords:
Palm vitamin E, tocotrienol-rich fraction, diabetes mellitus, oxidative stress, pancreas

ATHEROSCLEROSIS: CURCUMIN AGAINTS HEATED PALM OIL DIET IN OVARIECTOMIZED RATS

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Background:
Heated palm oil has been shown to increase the level of homocysteine; a marker for atherosclerosis in low oestrogen state. Curcumin (Cn), an extract from *Curcuma longa* has been shown to have protective effects against homocysteine. The objective was to study the effects of curcumin on the aorta of ovariectomized rats fed with five-times heated palm oil.

Materials and Methods:
Eighteen ovariectomized *Sprague-Dawley* rats were divided into three groups. Each group was given rat chow diet mixed with 2% cholesterol. The first group (OVX+Cn) was given curcumin (50mg/kg) only. The second group (5HPO) were given five-times heated palm oil while the third group (5HPO+Cn) were given five-times heated palm oil with curcumin. After four months treatment, blood was taken prior to sacrifice and the aortic tissues were processed for electron microscopic studies.

Results:
The homocysteine level for 5HPO and 5HPO+Cn groups showed significant difference as compared to the OVX+Cn. The electron microscopic study showed lipid accumulation on the intimal layer for each group. There were presence of mononuclear cells attached on the intimal layer of 5HPO and 5HPO+Cn groups. The internal basal lamina of OVX+Cn was still intact compared to both groups 5HPO and 5HPO+Cn. The endothelial cells present were more numerous in OVX+Cn compared to the 5HPO group.

Conclusion:
In conclusion, curcumin with dose 50mg/kg had little effects against five-time heated palm oil with high cholesterol diet in oestrogen deficient ovariectomized rats.

Keywords:
Palm oil, curcumin, homocysteine, aorta

γ-TOCOTRIENOL PROTECTS AGAINST HYDROGEN PEROXIDE-INDUCED REPLICATIVE SENESCENCE BY REGULATING APOPTOTIC PATHWAY AND MODULATING TELOMERASE ACTIVITY

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Background:
Oxidative stress has been shown to be associated with apoptosis (programmed cell death) in a number of cell systems. Apoptosis is controlled by a diverse range of intracellular signaling that regulates genes and proteins such as apoptotic and anti-apoptotic molecules. Besides, oxidative stress also resulted in telomere shortening and progressive reduction of telomerase activity leading to cellular senescence. Vitamin E has revealed many important molecular properties, such as scavenging free radicals, modulating signal transduction in antioxidant and non-antioxidant manners and plays a role in regulating apoptosis. In this study, we developed H_2O_2-induced premature senescence model of human skin fibroblasts to investigate the protection of γ-tocotrienol against cellular senescence.

Materials and Methods:
Primary human diploid fibroblasts derived from circumcision foreskins were cultured until passage 4 and were treated with 1 μM γ-tocotrienol. Exposure to 20 μM H_2O_2 was carried out for two weeks to induce replicative senescence. Real time RT-PCR was performed to determine the expression of pro-apoptotic genes (*Bax* and *Bid*) and anti-apoptotic genes (*Bcl-2* and *Bcl-xL*). Proteins expression of Bax and Bcl-2 was determined by Western blotting. Telomerase activity was detected using telomeric repeat amplification protocol (TRAP) while telomere length was determined by Southern Blotting.

Results:
Exposure to H_2O_2 up regulated *Bax* and increased its protein expression, decreased Bcl-2 protein expression, shortened telomere length and reduced telomerase activity in HDFs ($p<0.05$). While, treatment with γ-tocotrienol was found to down regulate *Bax* and increased telomerase activity in H_2O_2-induced cells ($p<0.05$).

Conclusion:
Our data suggested that γ-tocotrienol inhibited the progression of apoptosis as evidenced by inhibition of *Bax* expression. γ-Tocotrienol also showed protection against telomerase activity loss in H_2O_2-induced cells. This finding revealed the molecular mechanism of γ-tocotrienol in preventing H_2O_2-induced replicative senescence in human diploid fibroblasts.

Keywords:
γ-Tocotrienol, apoptosis, telomerase, fibroblasts, aging

GELAM HONEY PROTECTS AGAINST RADIATION DAMAGE IN HUMAN DIPLOID FIBROBLASTS

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Background:
Ionizing radiation has been found to induce lesion in the cells by triggering the formation of free radicals and altered cell antioxidant defence system. Although cell posses an effective antioxidant mechanism, the presence of free radicals may result in adverse effects especially when the defence mechanisms are overwhelmed. To overcome this problem, free radical scavenger is needed and previous study has shown that honey possessed antioxidant property. The aim of this study was to determine the antioxidant enzymes specific activities and gene expression of related enzymes in human diploid fibroblasts (HDFs) when exposed to gamma-irradiation. Furthermore, the ability of gelam honey to protect the HDFs from radiation damage will determine the role of honey as radioprotectant agent.

Materials and Methods:
HDFs were treated with 6 mg/ml of irradiated gelam honey for 24 hours pre-, during and post-exposure to 1 Gy of gamma-ray using Cobalt-60 machine with dose rate of 0.26 Gy/min. The antioxidant enzymes specific activities i.e. superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPx) were determined. The gene expression of related enzymes was determined by measuring the relative expression value (REV) of *SOD1, SOD2, CAT* and *GPx1* using quantitative real-time PCR (RT-PCR) analysis.

Results:
Our results showed that the activites of SOD, CAT and GPx decreased with exposure to 1 Gy of gamma-ray ($p<0.05$). However SOD, CAT and GPx activities increased in HDF pre-treated with gelam honey. In addition, HDFs treated with gelam honey during gamma irradiation also showed increased SOD activity ($p<0.05$). No similar effects were observed for the post-treated group. Similarly, *SOD1, SOD2, CAT* and *GPx1* were down regulated with exposure to gamma-radiation and up regulated in HDFs pre-treated with gelam honey ($p<0.05$). During- and post-treatment with gelam honey however did not exert similar up regulation in antioxidant genes expression.

Conclusion:
Gamma radiation decreased antioxidant enzymes specific activities and down-regulated the expression of *SOD, CAT* and *GPx* genes in HDFs. Pre-treatment with gelam honey protects against radiation damage in HDFs as indicated by increased in

antioxidant enzymes activities and genes expression. This finding suggested that gelam honey can act as radioprotectant agent.

Keywords:
HDFs, enzyme specific activity, gene expression, gamma-irradiation

MODULATION OF SENESCENCE ASSOCIATED GENES EXPRESSION IN HUMAN DIPLOID FIBROBLASTS BY TOCOTRIENOL-RICH FRACTION PREVENTS CELLULAR SENESCENCE

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Background:
Human diploid fibroblasts (HDFs) have a limited ability to divide when cultured *in vitro* and eventually enter a state of irreversible proliferation, termed replicative or cellular senescence. This study was conducted to evaluate the anti aging effects of tocotrienol-rich fraction (TRF) by determining the expression of senescence associated genes in human diploid fibroblasts (HDFs).

Materials and Methods:
Primary HDFs were cultured into passage 4 (young cells), passage 15 (pre-senescent cells) and passage 30 (senescent cells) with and without TRF treatment. Expression of antioxidant associated genes (*SOD1, SOD2, CAT, GPx-1, CCS-1, AOP-2*), IGF-1/ PI3K/ Akt associated genes (*FOXO3a*), DNA damage ($p16^{INK}$, $p21^{WAF}$, *p53*) and cell proliferation genes ($p38^{MAPK}$, *AP-1*) was quantitatively analyzed with real time RT-PCR method.

Results:
Expression of *p53* and $p21^{WAF}$ was increased in senescent HDFs. Similar increase in gene expression was observed in senescent HDFs for *AOP-2* and $p38^{MAPK}$ with no change in *FOXO3a and AP-1.* Treatment with TRF has shown to modulate the expression of antioxidant associated genes, IGF-1/ PI3K/ Akt associated genes, DNA damage and cell proliferation genes.

Conclusion:
Our results confirmed that the expression of these genes was altered during cells senescent. Treatment with TRF however modulated these changes indicating the potential protective mechanism in delaying and preventing cellular aging.

Keywords:
Tocotrienol-rich fraction, senescence associated genes, cellular aging

EFFECT OF CURCUMIN ON THE AORTA OF EXPERIMENTAL OVARIECTOMIZED RATS FED WITH 2% CHOLESTEROL DIET: AN ELECTRON MICROSCOPIC STUDY

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Background:
Curcumin is the active compound of Curcuma longa (turmeric). Curcumin has been reported to possess antitumor, antifungal, anti-inflammatory, antioxidant, antispasmodic and hypocholesterolemic effects. The main aim of the present study was to observe the effect of curcumin on the aorta of ovariectomized rats fed with 2% cholesterol diet.

Materials and methods:
Twenty four female Spraque-Dawley rats (200-250g) were taken for the study. The rats were acclimatized for one week and divided equally into four groups. The first two groups were sham control groups, while the later two groups were ovariectomized group. Group I (SHM-VL) was fed with 2% cholesterol diet+vehicle; group II (SHM-CC) with 2% cholesterol diet+curcumin; group III (OVX-VL) with 2% cholesterol diet+vehicle and group IV (OVX-CC) was fed with 2% cholesterol diet+curcumin. The curcumin was administered orally in the dose of 50mg/ml/kg body weight. The treatment was performed after two weeks following ovariectomy. Commercially available Vitamin E free RBD Olein was used as vehicle. Following four months of treatment, the rats were sacrificed and the proximal aorta was taken for histological studies.

Results:
There was no change in the ration of the tunica intima: tunica media in all the groups. Electron microscopy showed that tunica intima layer was filled with high number of collagen fibers and subendothelial cells, showed internal elastic lamina damage and migration of smooth muscle cells from tunica media to the tunica intima in the OVX-VL and OVX-CC groups compared to the SHM-VL and SHM-CC groups. However, no prominent ultra structure changes were seen in the SHM-CC and OVX-CC groups compared to the SHM-VL and OVX-VL groups.

Conclusion:
Orally administration of curcumin in dose of 50mg/ml/kg body weight did not show any changes in the aorta of the ovariectomized rats.

Key word:
Curcumin, Ovariectomy, Aorta, Atherosclerosis, Rats

EFFECT OF *PIPER SARMENTOSUM* ON PARACETAMOL-INDUCED OXIDATIVE INJURY IN RATS LIVER

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Background:
Piper sarmentosum or locally known as kaduk had been proven to contain naringenin, a potent natural antioxidant. Although it is widely used in traditional medicine, its efficacy has not been widely studied. In this study, paracetamol-induced hepatotoxity model was utilized to evaluate the effect of *piper sarmentosum* on oxidative injuries.

Materials and Methods:
Twenty-three male Wistar rats weighing between 200-250g were randomly divided into three equal sized groups. The control and paracetamol groups received normal rat diet and sham treated with olive oil. The kaduk group received the same diet with addition of 500mg/kg methanolic kaduk extract via oral gavage for 28 days. At the end of the treatment period the control group was administered one millilitre per 100g normal saline while the paracetamol and kaduk groups were administered one gram per kilogram paracetamol via intraperitoneum injection. After 24 hours, blood was collected, the rats were sacrificed and liver tissue was collected for analysis.

Results:
There was a significant increased in aminotransferase enzymes in the blood, malondialdehyde, protein carbonyl and superoxide dismutase activity in the liver after insult with paracetamol compared to the control group. Kaduk extract was able to significantly decrease the malondialdehyde and protein carbonyl levels and there was also an increased in the superoxide dismutase activity. However, there were insignificant changes to the aminotransferase enzymes level in the blood with treatment with kaduk.

Conclusion:
The methanolic extract of *piper sarmentosum* at the dose of 500 mg/kg showed some level of protection to the liver against lipid peroxidation and protein oxidation by increasing the antioxidant enzymes activity. However the protection was not complete as shown by the inability to overcome the elevation of aminotransferase enzymes in the blood.

Keywords:
Piper sarmentosum, paracetamol, hepatoxicity, oxidative stress

NEUROPROTECTIVE POTENTIAL OF *PIPER BETLE* AGAINST BSO-INDUCED NEURONAL CELL DEATH

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Background:
Neuronal loss resulting in neurodegenerative diseases has been associated with increased oxidative stress. The brain is more susceptible to oxidative damage due to its high oxygen consumption, high iron and polyunsaturated fatty acids contents but low in antioxidants. Thus the higher metabolism in the brain induces an increased generation of free radicals which will react with the polyunsaturated fatty acids with consequent cell damage and ultimately cell death via apoptosis. The low endogenous antioxidants in the brain can be remedied with increased intake of exogenous antioxidants. Plants and herbs are rich in antioxidants and thus the aim of the present study is to evaluate the effectiveness of *piper betle (sirih*) in preventing oxidative stress-induced cell death. BSO is used to induce increased oxidative stress condition in the neurons.

Materials and Methods:
Apoptosis was induced in neurons by incubating cells with BSO for 24 hours. The neuroprotective effects of hot water extract of *piper betle* was analysed by incubating cells with the extract after incubation with BSO. Cell viability was assayed using the MTS assay, apoptosis using flowcytometry FITC Annexin V Apoptosis Detection Kit and the morphological changes determined using propidium iodide and calcein-AM dyes. The activities of the enzymes involved in the apoptotic pathway were also determined by measuring the caspase-8 and -9 activities using a commercial colorimetric kit.

Results:
Results showed that the hot water extract of *piper betle* was able to prevent BSO-induced neuronal cell death via apoptosis when used at low concentrations (0.001-25µg/ml). This neuroprotective effects seemed to involve the inhibition of caspase-9 activity. However, at high concentrations (>50µg/ml) it is cytotoxic to the cells.

Conclusion:
The present finding showed that hot water extract of *piper betle* exerts neuroprotective effects against oxidative-stress-induced neuronal cell death when used at low concentrations.

Keywords:
Piper betle, antioxidant, neuroprotection

Group 5

Immunology & Infection / Emerging Technologies

EVALUATION OF BV®BLUE TEST KIT FOR THE DIAGNOSIS OF BACTERIAL VAGINOSIS

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Background:
The aim of this study is to determine the sensitivity, specificity and the predictive value of the BV® Blue Test Kit in the diagnosis of bacterial vaginosis and to observe the risk factors associated with bacterial vaginosis (BV) in the study population.

Materials & Methods:
A prospective, cross-sectional study on 151 non-pregnant women who presented or referred to UKM Medical Centre with presence of vaginal discharge, abnormal vaginal odour, pruritus vulvae of lower genital tract or incidental finding of abnormal PV discharge on pelvic examination. Samples of vaginal discharge was tested for bacterial vaginosis infection using Amsel's criteria, BV® Blue test and Gram stain (Nugent's score). Gram stain interpretation was made blinded without knowledge of other test result. Using Gram stain's criteria as a gold standard, the sensitivity, specificity, positive and negative predictive value of BV® Blue test and each of Amsel's criteria were estimated.

Results:
The use of vaginal douches increased the risk of BV. The risk of BV with vaginal douching was 2.8 (95% CI 1.0-7.8) compared to never users. BV® Blue test showed a sensitivity of 100.0%, specificity of 98.3%, positive predictive value (PPV) of 94.4% and negative predictive value (NPV) of 100.0% compared to Gram stain (Nugent's method). BV® Blue test had excellent agreement with Gram stain which was 98.7%.

Conclusion:
BV® Blue test is a simple, rapid and reliable test allowing immediate diagnosis and prompt treatment of BV in the absence of microscopy which would greatly benefit majority of women at the greatest risk of sequel of bacterial vaginosis.

Key words:
bacterial vaginosis, miscarriages, preterm labour, lower genital tract infection, vaginal infection.

STAPHYLOCOCCAL VIRULENCE GENES AND INFECTION: THE METHICILLIN-SUSCEPTIBLE *STAPHYLOCOCCUS AUREUS* (MSSA) EXPERIENCE IN AN ORTHOPAEDIC WARD

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Background:
Staphylococcus aureus has been known to produce several toxins that contribute to its virulence. Many studies on methicillin resistant *S. aureus* (MRSA) virulence have been done, however, reports on its methicillin susceptible counterpart (MSSA) are few.

Materials and methods:
We collected MSSA strains isolated in our university medical centre's orthopaedic ward during 2009 and determined the presence of four virulence genes (collagen binding adhesion, *cna*; staphylococcal enterotoxin H, *seh*; Panton-Valentine leukocidin, PVL and toxic shock syndrome toxin-1, TSST-1) in these strains by multiplex PCR. Type of MSSA infection for each corresponding patient was also recorded. Statistical analysis was performed to investigate the presence, if any, of association between staphylococcal virulence gene carriage and MSSA infection.

Results:
Ninety-nine MSSA infections were included in this study. A total of 62 (62.6%) cases from these infections were due to MSSA which haboured virulence genes (either one of *cna*, *seh*, PVL, TSST-1 or in combination), where 54.5% (54/99) had *cna*, 23.2% (23/99) possessed *seh*, 13.1% (13/99) carried PVL and 3.0% (3/99) were positive for TSST-1. Most of the orthopaedic patients (65.6%, 62/99) had skin and soft tissue infections, followed by surgical site infection (16.2%, 16/99). In our study, we could not find any association between staphylococcal virulence gene carriage with MSSA infection ($P>0.05$).

Conclusion:
Among the four virulence genes detected in this study, the most common virulence gene found in our medical centre's orthopaedic ward MSSA isolates was *cna*. Even though MSSA infections are generally easier to manage as they are commonly susceptible to most available antibiotics, infections with MSSA should be treated be caution as they could still serve as reservoirs of virulence factors which might introduce complications into patients' clinical course.

Keywords:
MSSA, virulence gene, patient's diagnosis

A COMPARISON OF ROUTINE AND RAPID MICROWAVE TISSUE PROCESSING IN HISTOPATHOLOGICAL TISSUE EXAMINATION

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Background:
Routine tissue processing technique performed in pathology labaratories requires an overnight schedule for optimal processing. However, microwave processing permits a more rapid procedure, allowing earlier histopathologic diagnosis. In this study, we compared the quality of microwave-processed tissue, using the Rapid Microwave Histoprocessor (RHS-1), and tissues processed using the standard method (i.e. with Leica TP-1020).

Materials and methods:
A total of 25 paired tissue samples were collected from tonsil, appendix, uterus, breast and prostate. One member of the pair was processed routinely overnight, while the other was processed by the rapid microwave technique. The slides were then stained for routine hematoxylin and eosin (H&E), Periodic Acid Schiff (PAS) and immunohistochemistry using cytokeratin, leucocyte common antigen and Ki67 antibodies. The slides were then compared for quality of histologic preparation in a blinded fashion by two pathologists and were given a score of 1 to 3.

Results:
Our results showed that the H&E stained slides showed good architecture and cell morphology with microwave-processed tissue in 21/25 samples (84%) while the standard method has 23/25 (92%) good results. The immunohistochemical staining showed good result in 10/16 samples (63%) and 11/16 samples (69%) of microwave-processed tissue and the standard method-processed tissue respectively. PAS stained slides show an equally good results in both microwave-processed tissue and the standard method (1/1 sample). All the staining techniques have shown satisfactory and comparable results for both histoprocessor.

Conclusions:
It can be concluded that tissues processed by rapid microwave technique produce equally good quality tissue sections with the added advantage of a faster turnaround time. This procedure would be useful for specimens that require rapid and urgent diagnosis.

Keywords:
histoprocessor, rapid microwave processing, histopathology

GENETIC PROFILING FOR GENES INVOLVED IN GDM RISK FACTORS AND COMPLICATIONS

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Background:
Gestational diabetes mellitus (GDM) is associated with pregnancy complications, however, its mechanism has not been fully understood. The aim of this study was to look at the possible SNP profiling genes involvement in the complications and risk factors of GDM.

Materials and Methods:
A total of 174 pregnant women with GDM and 114 healthy pregnant women were recruited. They were screened with modified glucose tolerance test (MGTT) at 28 weeks and six weeks post partum to recognize their diabetic status. The case-control subjects were genotyped with 384 SNPs using the Illumina's Golden Gate genotyping assay. Chi square test was employed to use Fisher's exact p-value for SNP association in GDM related traits.

Results:
Family history of diabetes risk factor had significant different in genotypes of *CDKAL1, TSPAN8* and *LTA* between GDM and the control group. This was similarly seen in *LPL* and *OXTR* genes for complications of uterus bigger than dates, cesarean section and macrosomia. Other genes such as *RFTN1, FBXW7, AHI1, SLC2A2* and *IRS1* had suggested feasible role in either one of the GDM clinical manifestations and complications. The relationship between the occurrences of type 2 diabetes mellitus and SNP was presented at three markers of *TCF7L2* gene and *ALG10*.

Conclusion:
The above mentioned genes were found to have possible association with GDM risk factors and complications.

Keywords:
gestational diabetes mellitus, complications, single nucleotide polymorphism, association, Malaysian

MOLECULAR EPIDEMIOLOGY OF METHICILLIN RESISTANT *STAPHYLOCOCCUS AUREUS* (MRSA) ISOLATED FROM A MALAYSIAN UNIVERSITY TEACHING HOSPITAL

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Background:
MRSA is one of the major human pathogen and causes of infections among health care settings and community. It was first reported in the UK and Europe in the 1960's and in the US in 1968. In this study, we characterized the *mec* and *ccr* elements and also the determined the carriage of four virulence genes (*cna, seh,* PVL and TSST-1) of each index MRSA strain isolated from our hospital in 2009..

Materials & Methods:
Index strains of each MRSA infection in 2009 at our hospital were collected**.** A modified multiplex PCR was carried out to determine *mec* and *ccr* elements carried by each strain. Antimicrobial Susceptibility Testing was performed for all MRSA strain using disks diffusion method. Carriages of cna, seh, PVL and TSST-1virulence genes were determined using PCR.

Results:
In 2009, a total of 306 cases of MRSA infection were recorded in our hospital. 73.5% of the index strains carried SCC*mec* type III-SCC*mercury* which habours *ccrAB3*, *ccrC* and class A *mec* complex. Some strains haboured SCC*mec* type 4 (2.3%), SCC*mec* type 5 (1.3%) or SCC*mec* type 2 (0.3%). SCC*mec* type 1 was not detected, though we noted that a few strains (10.5%) might be habouring new SCC*mec* types. 12.1% of the strains were untypeable. Almost all strains were resistant to ciprofloxacin, erythromycin and gentamicin, while maintaining varied susceptibilities towards fucidic acid, clindamycin, mupirocin, rifampicin and chloramphenicol. From the virulence gene typing, 93.97% of the strains carried cna, 22.70% haboured *seh,* and 3.35% of the strains carried PVL. No TSST-1 gene was detected among our collection of MRSA.

Conclusion:
Most of our university hospital MRSA strains carried the SCC*mec* type III-SCC*mercury*, were resistant to commonly used antibiotics such as ciprofloxacin, erythromycin and gentamicin, and haboured the *cna* gene.

Keywords:
MRSA, molecular epidemiology, PCR

ESTABLISHMENT OF *MACACA FASCICULARIS* BONE MARROW STEM CELLS CULTURE FOR FUTURE USE AS A PROOF OF CONCEPT IN BIG ANIMAL MODEL

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Background:
Tissue engineering technique using bone marrow stem cells (BMSCs) requires the establishment of culture condition that permits the rapid expansion of these cells ex vivo while retaining their potential to differentiate into specific tissues. Fetal bovine serum (FBS) is commonly used as a source of growth factors for cell number expansion. Culturing the *Macaca fascicularis* bone marrow stem cells resulted in low proliferation and long period of incubation using FBS. Therefore, there was failure in obtaining enough number of cells. Here we report the establishment of culturing the *Macaca fascicularis* bone marrow stem cells using the FBS and combination with autologous serum.

Materials and Methods:
Bone marrow stem cells were separated using Ficol-paque, a density gradient centrifugation and cells cultured in MEM alpha medium, 10% FBS with the addition of 5% autologous serum. The osteogenic inductions agents were 0.2mM acid ascorbic 2-phosphate, ten milimolar β-glycerolphosphate and 10^{-8} molar dexamethasone.

Results:
The establishment of culturing technique for the Macaca fascicularis bone marrow stem cells using FBS combines with autologous serum showed higher growth kinetic and shorter population doubling time compared to the culture without the autologous serum. The cells culture using the combination of serum has 1.4% higher growth rate compared to 0.4% of the cells using FBS alone. The population doubling time takes only four days compared to 33 days culture.

Conclusion:
Thus, the combination of FBS and autologous serum permits faster cell growth and this will be able to provide enough number of cells for tissue engineering.

Keywords:
Macaca fascicularis, bone marrow stem cells, serum, autologous, tissue engineering.

THE REGENERATION OF DENTAL HARD TISSUES FROM CULTURED RAT TOOTH BUD CELLS

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Background:
The incidence of children with missing primary and adult teeth is high. The main aim of our study is to engineer teeth using cultured tooth bud cells seeded onto PLGA scaffold.

Materials and Methods: Three- to five-days old post-natal (dpn) Lewis rat tooth bud cells were cultured and then seeded onto 3mmx5mm PLGA scaffold. The PLGA scaffold was coated with fibrin. The tooth constructs were grown in the subcutaneous of nude mice for eight weeks, and then harvested. For characterization of the cells, RT-PCR and immunocytochemistry were performed. Dentin Sialophosphoprotein (DSPP) and Amelogenin Precursor were the primers used in this study. AMELX and PCK-26 were the antibodies for immnunocytochemistry. For in vivo analysis, Micro CTScan was done at four, six, and eight weeks to observe the hard tissue formation of tooth construct in the subcutaneous of nude mice. Haematoxylin and Eosin had been carried out to observe the histological formation after harvesting.

Results:
For cell characterization, Dentin Sialophosphoprotein (DSPP) and Amelogenin Precursor were positively expressed. Immunocytochemistry staining demonstrates positive staining for both antibodies; AMELX and PCK-26. After eight weeks implantation, hard tissue formations were observed using Micro CTScan. For H&E analysis, extracellular matrix and residual PLGA were observed.

Conclusions:
Implantation of cultured Lewis rat tooth bud cells incorporated with PLGA into subcutaneous of nude mice showed promising results for tooth tissue engineering.

Keywords:
Tissue engineering, tooth bud cells, PLGA

CULTURED HUMAN BUCCAL MUCOSA EPITHELIAL CELLS CAN BE DIFFERENTIATIED TO CORNEAL LINEAGES PROVEN BY PRESENCE OF β-INTEGRIN AND C/EBPδ

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Background:
Limbal stem cell deficiency may lead to severe corneal opacification and consequently, severe losses of vision as a result of complete loss of corneal epithelial stem cells. The aim of this study was to differentiate human buccal mucosa epithelial cells to corneal epithelial lineages.

Materials and methods:
Buccal mucosa was obtained from excess mucosa in post-tonsillectomy. The tissue was minced into several pieces of about 1mmx1mm in size and digested with 0.3% Collagenase Type I. Cells were re-suspended in mixed medium of Define Keratinocytes Serum Free Medium (DKSFM) and Ham's F12 medium added with Dulbecco's Modified Eagle Medium supplemented with 10% foetal bovine serum (F12: DMEM+10%FBS). Fibroblast cells were removed after confluence was reached by differential trypsinization technique and epithelial cells were divided into two plates containing DKSFM and limbal medium for up to ten days respectively. Total RNA for both types of cells were extracted and subjected to quantitative Real Time Polymerase Chain Reaction (RT-PCR) to detect β-integrin and C/EBPδ expression. β-integrin acts as a cell adhesion regulator which is very important in maintaining epithelial cellular attachment and plays a vital role in normal corneal phenotype maintenance and wound healing. Meanwhile C/EBPδ functions as a regulator of cell cycle and self-renewal in human limbal stem cells.

Results:
Induced buccal epithelial cells showed up-regulation (β-integrin: $3.24\times10^{-1}\pm1.01\times10^{-1}$; C/EBPδ: $1.62\times10^{-2}\pm6.29\times10^{-3}$) of both corneal markers as compared to uninduced buccal epithelial cells (β-integrin: $4.55\times10^{-5}\pm3.46\times10^{-6}$; C/EBPδ: $2.34\times10^{-6}\pm4.59\times10^{-7}$) ($p=0.01$).

Conclusion:
We conclude that buccal mucosa epithelial cells have the potential to differentiate to corneal lineages.

Keywords:
corneal lineages, buccal mucosa, limbal medium, RT-PCR, tissue engineering.

hTERT TRANSPECTED HUMAN ADIPOSE-DERIVED MESENCHYMAL STEM CELLS MAINTAINS ADIPOGENIC DIFFERENTIATION POTENTIAL AND EXPRESSED MSC MARKERS

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Background:
Human mesenchymal stem cells can be isolated from adipose tissue and expanded in culture while maintaining their multipotency. It is a potential cell source for tissue engineering and regenerative medicine. However, telomeres shorten with each cell division eventually leading to cell senescence during long-term *in vitro* culture. It was reported that cellular life span can be extended by the transfection of human telomerase reverse transcriptase (*hTERT*) gene. In this study, we aim to compare the adipogenesis capacity and CD markers expression of adipose derived-mesenchymal stem cells (AD-MSC) before and after transfection with the *hTERT* gene.

Material and methods:
AD-MSC isolated from aged patients (>55 years old) was transfected by plasmid containing the gene *hTERT* at passage 3. Flow cytometric analysis was performed using CD34, CD45, CD73, CD90 and CD105 on non-transfected and transfected AD-MSC. To investigate the adipogenic differentiation potential, both non-transfected and transfected AD-MSC at passage 5 was induced for adipogenesis followed by Oil Red O staining.

Results:
Transfection efficiency of 30% was achieved by nucleofection. Flow cytometric analysis showed that the transfected AD-MSC expressed CD73, CD90 and CD105 which is similar to that of non-transfected AD-MSC. Both showed no expression of haematopoietic markers CD45. The transfected AD-MSC still maintained the adipogenic differentiation potential *in vitro* based on Oil Red O staining.

Conclusion:
These results demonstrated that *hTERT* transfected AD-MSC maintains its mesenchymal properties.

Keywords:
Adipose-derived mesenchymal stem Cells, transfection, *hTERT*, tissue engineering

HUMAN RESPIRATORY EPITHELIAL CELLS DERIVED FROM THE NASAL TURBINATE EXPRESS MESENCHYMAL STEM CELL MARKERS

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Background:
Respiratory epithelium is the epithelial lining for most of the conducting portion of the respiratory system. The respiratory epithelium is a ciliated pseudo-stratified columnar epithelium with numerous scattered goblet cells and provides an efficient barrier against microorganisms and harmful molecules. In numerous airway diseases, such as rhinitis, asthma, chronic obstructive pulmonary disease and cystic fibrosis, respiratory epithelium is severely damaged and must regenerate to restore its function. Tissue engineering is an emerging field directed toward reconstituting structurally and functionally normal tissues and organs. Stem cell markers are cell surface receptors used to isolate and identify stem cells. Many recent studies have identified set of surface markers that are expressed by mesenchymal stem cells. It is generally agreed that adult human mesenchymal stem cells express CD73, CD90 and CD105 and do not express the hematopoietic stem cell markers CD45. The objective of this study is to detect the mesenchymal stem cells in human respiratory epithelium.

Materials & methods:
Respiratory epitheliums from the nasal turbinates were cultured using co-culture technique and then passaged. Respiratory epithelial cells were examined for the expression of CD73, CD90, CD105 and CD45 at passage 1 and passage 4 using flowcytometry.

Results:
The result showed that respiratory epithelial cells expressed CD73, CD90 and CD105 at passage 1 and passage 4 with no significant difference between passages. There was no expression of CD45.

Conclusion:
This preliminary study indicates that human respiratory epithelial cells from the nasal turbinate expressed mesenchymal stem cell markers and this expression is maintained till passage 4.

Keywords:
nasal, mesenchymal, stem cells, respiratory

HUMAN ADIPOSE TISSUE DERIVED STEM CELLS AS A SOURCE OF SMOOTH MUSCLE CELLS IN THE REGENERATION OF MUSCULAR LAYER OF URINARY BLADDER WALL

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Background:
Adipose tissue provides an abundant source of multipotent cells which represent a source for cell-based regeneration strategies for urinary bladder smooth muscle repair. Our objective is to confirm that adipose derived stem cells (ADSCs) can be differentiated to smooth muscle cells.

Materials & Methods:
In this study adipose tissue sample was digested with 0.075% collagenase, and the resulted ADSCs cultured and expanded in vitro. ADSCs at passage 2 was differentiated by incubation in smooth muscle inductive media (SMIM) consisting of MCDB I31 medium, 1% FBS, 100 U/ml heparin for three and six weeks. ADSCs in non-inductive media were used as control. Characterizations were performed by cells morphology, gene and protein expression.

Results:
Differentiated cells became elongated and spindle shaped, and towards the end of 6 weeks, sporadic cell aggregation appeared which is typical for smooth muscle cells culture. For gene expression study smooth muscle markers i.e. Alfa smooth muscle actin (ASMA), calponin, and Myocin heavy chain (MHC) were used. Expression of these genes was detected by PCR after three weeks differentiation. At the protein expression level ASMA, MHC, Smoothelin were expressed after six weeks differentiation. However only ASMA, and Smoothelin was expressed after three weeks differentiation.

Conclusion:
Adipose tissue provides a possible source of smooth muscle precursor cells which possess the potential capability for smooth muscle differentiation. This represents a promising alternative for urinary bladder smooth muscle repair.

Key Words:
tissue engineering, human, adipose stem cells, smooth muscle cells, urinary bladder

CARBODIIMIDE IS A BETTER CROSSLINKER FOR OVINE COLLAGEN SPONGE

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Background:
Collagen is a natural polymer which is well known to be a biocompatible biomaterial. Collagen is one of the common scaffolds for skin substitute. The main collagen that is available in the market is from bovine and porcine origin. These two sources have some limitation due to religious issues. We have successfully extracted collagen from the sheep tendon and in this present study, cross-linked it with two cross-linking agent to enhance the biomechanical properties. The pure form is very compatible to dermal fibroblast cells but it is too soft and has poor mechanical strength. This study was conducted to produce cross-linked ovine collagen sponges and to determine its biomechanical properties as well as porosity and cell attachment.

Materials and methods:
1-ethyl-3-(3-dimethylaminopropyl) carbodiimide (EDC) and glutaraldehyde (GA) were used to crosslink the collagen. Biomechanical properties of non cross-linked and cross-linked collagen were compared by tensile test.

Results:
Tensile strength for non cross-linked collagen is 0.060±0.009, collagen cross-linked-EDC is 0.110±0.034 while collagen cross-linked-GA is 0.190±0.028. The elongation value for non cross-linked collagen was 48.06±5.02mm, collagen cross-linked-EDC was 35.48mm±5.19 while collagen cross-linked-GA was 16.81mm±2.31. The modulus of non cross-linked collagen was 0.32±0.26, collagen cross-linked-EDC was 0.81±0.51 while collagen cross-linked-GA was 1.12±0.28. Scanning Electron Microscope (SEM) showed collagen cross-linked-EDC had moderate porosity and good cell attachments as compared to collagen cross-linked-GA. Although collagen cross-linked-GA demonstrated higher biomechanical properties but for porosity and cell attachment, collagen cross-linked-EDC was better.

Conclusion:
EDC is a better ovine collagen crosslinker agent for future use as a scaffold in skin tissue engineering.

Keywords:
tissue engineering, collagen, biomechanical, carbodiimide (EDC), glutaraldehyde (GA)

EVIDENCE OF CARTILAGE REGENERATION BY CHONDROGENIC INDUCED BONE MARROW MESENCHYMAL STEM CELLS IN A SHEEP MODEL

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Background:
Cartilage is one of the tissues in the body that lack the ability of self regeneration after injuries. There were reports that chondrogenic induced mesenchymal stem cells can regenerate damaged cartilage. In this study chondrogenic induced bone marrow stem cells (BMSC) was monitored to prove the regeneration of cartilage.

Materials & Methods:
The stem cells from the experimental sheep were expanded, labeled with PKH26 and induced to chondrocytes. Osteoarthritis was created by the complete resection of the anterior cruciate ligament and the medial meniscus following a three weeks exercise regime. The test sheep received $2x10^7$ autologous chondrogenic induced BMSCs as a five milliliters suspension, while the control received the same volume of basal medium.

Results:
Grossly, the treated knee joints showed varying degree of regenerated cartilage. Using the ICRS grading, the control scored a mean grade of 2.5, while the test group scored a mean grade of 1.5. The H&E and Safranin O showed a loosely packed matrix and mucins of the regenerating cartilage. The PKH26 fluorescence was detected on the resected pieces of the regenerated area. The 3D confocal image showed a two layered packed arrangement of the regenerated cartilage, depicting a fresh condensation of tissue.

Conclusion:
With the evidence of the PKH26 fluorescence on the resected piece of the regenerated cartilage, the regeneration capacity of the chondrogenic induced stem cells was confirmed.

Keywords:
tissue engineering, cartilage regeneration, cell tracking, stem cells

MODIFICATION OF THE WOUNDING TECHNIQUE FOR THE SCRATCH WOUND ASSAY FOR THE EVALUATION OF WOUND HEALING PROPERTIES

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Background:
Wound healing is a complicated and highly regulated cellular and biochemical events that involve the interaction between various cell types, intermediate cytokines and extracellular matrix (ECM). Scratch wound healing assay is developed to study directional cell migration *in vitro* that mimics the *in vivo* process. Most wounding assays are performed using a mechanical means to generate a break in a confluent monolayer of cells that resulted variable wound size, which was reported up to 33%. Moreover, the secretion of growth factors from damaged cells during scratching also influence the cellular activity at the wound site.

Materials and Methods:
In this study, we used silicon rubber to prepare the wound model, where silicon rubber for wound size was incorporated into the culture dish prior to cell seeding. For testing wound healing, dermal fibroblasts isolated from human skin were seeded at 1.0×10^5 cells/cm^2 in silicon rubber embedded culture dish along with the control group. After two days culture, the wound was created by removing silicon rubber from the test group and scratching by pipette tip in control group, and wound size were measured. In addition, migration was also observed using live cell imaging technique. The experiment was performed in triplicate.

Results:
It was found that the wound created by silicon rubber have uniform size and shape between experiments. The average wound size for test sample was measured to be 0.90±0.001, while for the control group was 0.38±0.03. The variability of wounds among different experiment for test group was evaluated on average 0.2%, while for control group was 16%. Moreover, use of silicon rubber didn't affect the migration of cells on the wound area created by silicon rubber.

Conclusion:
These results suggest that this new technique for wounding can be used to create a standardized wound to investigate the effect of various substances on wound healing.

Keywords:
tissue engineering, wound assay, wounding technique, silicon rubber

IDENTIFICATION OF THE MAJOR ALLERGEN OF *LOLIGO EDULIS* (WHITE SQUID) BY TWO-DIMENSIONAL ELECTROPHORESIS AND MASS SPECTROMETRY ANALYSIS

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Background:
IgE-mediated allergic reaction to squid is one of the most frequent molluscan shellfish allergies. Previously, we have detected a 36 kDa protein as the major allergen of *Loligo edulis* (white squid) by immunoblotting using sera from patients with squid allergy. Thus, the aim of this present study was to further identify this major allergen using the proteomics approach.

Materials and methods:
The major allergen was identified by a combination of two-dimensional electrophoresis (2-DE), immunoblotting, mass spectrometry and bioinformatics tools.

Results:
The 2-DE gel fractionated the white squid proteins to more than 50 different protein spots between 10 to 38 kDa and isoelectric point (pI) from 3.0 to 10.0. *A highly reactive* protein *spot* with a molecular mass of 36 *kDa* and a pI of 4.55 was observed in all of the serum samples tested. Matrix assisted laser desorption/ionization-time of flight (MALDI-TOF) analysis led to identification of this allergen as tropomyosin.

Conclusion:
This finding would contribute to advancement in component-based diagnosis, management of squid allergic patients to the development of immunotherapy and to the standardisation of allergenic test products as tools in molecular allergology.

Keywords:
Squid allergy, MALDI-TOF, tropomyosin

HUMAN KERATINOCYTES AND FIBROBLAST GENE EXPRESSIONS WERE MAINTAINED EVEN WHEN TRYPSINIZED WITH RECOMBINANT TRYPSIN: TOWARDS CLINICAL APPLICATION

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Background:
Animal derivative free trypsin, is a current Good Manufacturing Practice (cGMP) requirement to be used in human treatment. Performance of two different types of trypsin in trypsinization process of keratinocytes and fibroblast cells were studied to evaluate their activity level.

Materials and Methods:
Human skin was digested in 0.6% Collagenase Type I for six hours to isolate the fibroblast. This was followed by trypsinization of epidermal layer using animal derived trypsin, Trypsin EDTA (TE) and recombinant trypsin, TrypLE Select (TS). The cells were cultured until passage 2 and then trypsinized using either TE or TS. Gene expression of Collagen type III, Cytokeratin 10 and Cytokeratin 14 were quantitatively analyzed by using RT-PCR and further confirmed by immunocytohemistery staining.

Results:
Cells trypsinized using both trypsins positively expressed the specific gene of interest. TS showed higher gene expression level for both Cytokeratin 10 (TE: 0.012±0.065; TS: 0.396±0.085) and Cytokeratin 14 (TE: 0.160±0.076; TS: 0.321±0.101) compared to TE for keratinocytes, but they were all not significant. Expression of Collagen type III genes in TS was slightly lower compared to TE for dermal fibroblast (TE: 0.024±0.012; TS: 0.015±0.001) but was also not significant. Immunocytochemistry staining supported the finding and showed that keratinocytes was positively stained with Cytokeratin 10 and Cytokeratin 14 antibodies. Collagen type 1 was expressed in fibroblast.

Conclusion:
This demonstrated that dermal fibroblast and keratinocytes maintained their characteristics even when trypsinized with recombinant trypsin. Therefore, recombinant trypsin can be used as an alternative to animal derived trypsin for clinical application.

Keywords:
tissue engineering, recombinant Trypsin, cGMP, fibroblast, keratinocytes

THE PROPORTIONAL DIFFERENCE OF PROSTATE-SPECIFIC ANTIGEN (PSA) REACTIVITY IN SEMINAL FLUID AND URINE USING RAPID TEST DEVICE

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Background:
Ejaculate or seminal fluid contains a specific component of prostate-specific antigen (PSA). Currently, in Indonesia, there aren't any PSA screening tools that use semen. The purpose of this study is to determine whether the rapid test devices can be used to detect PSA in seminal fluid specifically.

Methods:
A cross sectional study has been conducted. Semen was diluted in stages up to 1/5x106 and male urine up to 1/200 using distilled water, whereas female urine was not diluted. Then, two drops of sample were transferred to the test device. Positive tests results are indicated by the appearance of a pink line on the test region (T).

Results:
A total of 45 samples were analyzed using rapid test device PSA. The proportion of positive results of PSA in seminal fluid, male urine and female urine respectively is 100%, 6.67%, and 0%. Statistically, these differences are highly significant. The analysis revealed that the PSA rapid test device was 100% sensitive and 96.67% specific to detect seminal fluid. The test also have PPV 93.75%, NPV 100%, LR(+) 33.33, LR(-) 0, and AUC 0.983.

Conclusions:
Based on these results, the PSA rapid test device are very sensitive in detecting semen that has been diluted until 1/5000, making the test ideal for forensic use in sexual assault cases, in which the amount of specimens are usually very low. This PSA rapid test device is also highly specific for seminal fluid. Therefore, this tool is highly recommended to determine that the specimen examined is seminal fluid, and be confident that a positive result is due to the presence of semen, not urine.

Keywords:
PSA, rapid test device, sexual assault

RENIN EXPRESSION IN THE KIDNEY IS REGULATED BY HYPOXIA INDUCIBLE FACTOR-1α (HIF-1α)

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Background:
Hypoxia could give a rise of protein known as Hypoxia inducible Factor-1(HIF-1), which turns out to be a transcription factor that plays a key role in hypoxia. On the other hand hypoxia or ischemia that was caused by atherosclerosis and systemic hypoxia could cause hypertension in human when ischemia/hypoxia was occured in the kidney. Considering those conditions we conclude a hypothesis that renin expression is regulated by HIF-1.

Materials and methods:
This study consist of two parts, first the analysis of HIF-1α and renal renin expression in rats systemic chronic hypoxia and second was to find out the HIF-1 regulation in renin gene expression by trans-binding method. Analysis of HIF-1α and renin mRNA was run by RT-PCR. Whereas protein analysis of HIF-1α was done using Western blot, immunohistochemistry and renin protein was analyzed by ELISA method. Blood gas analysis was measured during treatment.

Results:
Results indicate that relative expression of HIF-1α mRNA was significantly increase during chronic (1, 3, 7 and 14 days) systemic hypoxia. There was a strong correlation between HIF-1α mRNA and its protein (Pearson correlation coefficient=0.9). Immunohistochemistry examination showed that HIF-1α was increased since one day hypoxia, as observed by brown color intensity and has highest intensity in 7 days hypoxia. Relative expressions of renin mRNA was increased since 1 day of hypoxia and reached the highest expression in three days of hypoxia. There was a strong correlation between relative expression of renin mRNA and protein (Pearson coefficient correlation=0.9). We also found a strong correlation between HIF-1α protein and relative expression of renin mRNA (Pearson coefficient correlation=0.7). Transbinding test proofed that renin promoter, containing Hypoxia Respons Element that could bind HIF-1 protein.

Conclusion:
Renin expression is regulated by hypoxia inducible factor-1α.

Keywords:
Hypoxia, hypoxia inducible factor, renin, hypoxia response element

DYNAMICS OF GXM ANTIGEN IN SPINAL FLUID OF AIDS PATIENTS SUFFERING FROM MENINGEAL CRYPTOCOCCOSIS

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Background:
Cryptococcus neoformans is a low virulent yeast that causes infection in patients with low cellular immunity. The most common clinical manifestation of cryptococcosis in AIDS is meningitis. *Glucuronoxylomannan* (GXM) is one of methods of diagnosis of cryptococcosis which could be done on the basis of GXM concentration in the clinical samples e.g. serum, spinal fluid. GXM is not merely a virulence factor but it also has an important role in serology based diagnosis.

Materials and Methods:
We examined spinal fluid by direct examination with Indian ink, fungus isolation by culture on *Sabourraud Dextrose Agar* (SDA) and *Bird Sheed Agar* (BSA), and GXM antigen detection (BioRad-Pastorex). We evaluated the results.

Results:
All direct examination via Indian ink test from spinal tap were positive, but the fungus could be isolated just from the first tap. Antigen detection for GXM was positive for neat from all tap, and positive for 100× dilution just from the first and the second tap, but for 300× dilution only positive for the first tap.

Conclusion:
GXM detection can be used for the diagnosis and follow-up of therapy in HIV infected patients with cryptococcal meningitis. The detection of polysaccharide antigen GXM of Cr. neoformans is both sensitive and specific for the diagnosis of cryptococcosis. The dynamics concentration of GXM in spinal fluid of these patients might be use for follow up of therapy.

Key words:
Cr. neoformans, HIV infection, antifungal therapy.

RISK FACTORS FOR CONTACT LENS RELATED MICROBIAL KERATITIS

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Background:
Contact lens related microbial keratitis (CLRMK) is a complication of contact lens wear and is sight threatening. A hospital case control study was conducted to determine the risk factors for CLRMK in patients with CLRMK in government hospitals in the Klang Valley.

Materials and Methods:
All patients who presented with CLRMK (n=94) at the hospitals were selected as cases and controls (n=94) were taken from contact lens users without CLRMK. Self administered questionnaire in *Bahasa Malaysia* was used to collect data on socio-demographics, contact lens characteristics, personal habit and contact lens care procedures. Data was analysed using SPSS 16.

Results:
The most common causative agent was *Pseudomonas aeruginosa.* Chinese ethnicity (aOR 0.126, CI 0.045, 0.355 p=0.001) and Indian ethnicity (aOR 0.295, CI 0.088, 0.989 p=0.048) had decreased risks for CLRMK while Malay ethnicity was a predictor for CLRMK with an increased risk of 70%-87%. Non-compliance to lens care procedures contributed to an increased risk of 2.6 times for CLRMK (aOR 2.590, CI 1.003, 6.689 p=0.049). Not washing hands with soap (aOR 2.98, CI 1.02, 8.70 p=0.046), not performing rubbing technique (aOR 3, CI 1.19, 7.54 p=0.019) and not cleaning lens case with multipurpose solution (aOR 3.24, CI 1.46, 7.19 p=0.004) were identified as predictors for CLRMK.

Conclusion:
The risk of CLRMK is increased in Malays and in non-compliant wearers.

Keywords:
contact lens, microbial keratitis, lens care procedures, risk factors

Group 6

Preventive Medicine / Rehabilitation

HOSPITAL BASED CHILD DEVELOPMENT CENTRE

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The number of children with special needs is on the increasing trend. With the increased awareness among the society regarding the importance of providing a good quality care for these children, more and more parents are now coming forward to seek assessment and treatment for their special children. Being part of UKM Medical Centre, a tertiary teaching hospital in Malaysia, the paediatric clinic received around 400 new neurodevelopmental cases per year. With state of the art neonatal intensive care, extremely low birthweight premature babies are also being saved. These children require a comphrehensive multidisciplinary long term follow up to ensure that they receive the best management. Based on these developments, the Department of Paediatrics has established a Developmental Paediatrics Unit. This unit initially operated in the general paediatric clinics but due to the limited space, a new Child Development Centre was proposed in year 2001. It is the first centre of its kind in Malaysia. The new centre was subsequently fully operational in January 2006. It is run by a team of developmental paediatricians, a clinical psychologist, hospital social worker, counselor with staff nurses and clinic assistants. It caters for multidisciplinary clinics with other specialists and the rehabilitation team besides assessing, diagnosing and following up the children with special needs. The latest addition to the centre is the Suspect Child Abuse and Neglect (SCAN) clinic. The presentation will highlight the centre's vision, mission and the details of the centre's activities in being one of the centres of excellence in UKM Medical Centre.

Keywords: children with special need, child development centre

DENGUE CLUSTER MONITORING USING GEOGRAPHICAL INFORMATION SYSTEM (GIS) IN SEREMBAN, NEGERI SEMBILAN.

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Background:
The Ministry of Health (MOH) Malaysia is giving serious attention to the rising national trend of dengue cases over the last few years. In Negeri Sembilan, Seremban reported the highest number of dengue cases over the years. To understand the transmission dynamic of dengue we use GIS to analyse and visualize the cases in Seremban.

Materials and Methods:
Data for the dengue cases from 2008 to 2009 was taken from VEKPRO System, Vector Borne Disease Unit, State Health Department, Negeri Sembilan. The data was then overlay with digital map of Negeri Sembilan and analyse using ArcGIS 9.2.

Results:
In district of Seremban, the highest dengue cases reported was in Ampangan subdistrict. Clusters of dengue cases can be visualized in many residential areas such as Taman Paroi Jaya, Taman Tuanku Jaafar and Taman Seremban Jaya.

Conclusion:
Dengue transmission depends on vector population and density of population in the affected areas. Using GIS we could visualize the pattern of dengue transmission in the community and perhaps providing better prevention and control in the future.

Keywords:
dengue, GIS, cluster, visualization

INFLUENCE OF LEG LENGTH DISCREPANCY IN ACTIVATION OF BACK MUSCLES–CAN IT CONTRIBUTE TO LOW BACK PAIN?

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Background:
Impaired muscle activation and altered back muscle activity were reported consistently among patients with lumbosacral dysfunction and back pain. On the other hand, leg length discrepancy was also quoted to contribute to spinal disorders and lumbosacral dysfunction. However, the influence of leg length discrepancy in altering the motor pattern of back muscles was still not fully understood. But, such a clinical interaction between leg length difference and kinetics of back muscles were highly speculated among clinicians and musculoskeletal physiotherapists. Therefore, the main purpose of this study was to investigate the influence of leg length discrepancy on the muscle activation pattern of gluteus maximus and lattisimus dorsi.

Material & Methods:
A total of 28 healthy subjects (13 males and 15 females) participated in this study. The subjects who were free of pain, with no history of any medication and with no known physical deformities were recruited for this study. The clinical measurement of apparent leg length (ALLD) was measured from the boney landmarks between anterior superior iliac spine and lower margin of medial malleolus. Based on the measurement, the subjects were divided into three groups which include normal group (without ALLD), ALLD<1cm and ALLD≥1cm-≤2cm. Surface electromyography was used to record muscle activity of gluteus maximus and latissimus dorsi among the subjects during modified prone hip extension task. The data was analyzed using SPSS version 16.0.

Results:
One Way between groups analysis of variance (ANOVA) showed that there were no significant difference among the groups in the muscle activation of gluteus maximus, $F(2.25) = 0.588$, $p=0.56$, $\eta^2=0.04$ and latissimus dorsi, $F(2.25)=0.763$, $p=0.47$, $\eta^2=0.06$.

Conclusion:
Apparent Leg length discrepancy (≤2cm) was not shown to influence the back muscle activation in this study.

Keywords:
leg length discrepancy, gluteus maximus, electromyography, lattisimus dorsi

LARVICIDE SUSCEPTIBILITY STATUS OF *CULEX QUINQUEFASCIATUS* SAY OBTAINED FROM KLANG VALLEY AND EAST COAST, PENINSULAR MALAYSIA

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Background:
Culex quinquefasciatus Say is an urban vector of filariasis and it is the most common nuisance mosquito in all living premises. Insecticide application is the most widely used strategy to control the mosquito populations. However, repeated use of the same insecticide could contribute to the development of insecticide resistance due to the selection pressure. Therefore, the aim of this study is to determine the susceptibility status of *Cx.quinquefasciatus* populations obtained from the Klang Valley (Shah Alam, Selangor and Kepong, Kuala Lumpur) and East Coast (Kuala Terengganu, Terengganu) against DDT, propoxur, malathion and permethrin.

Materials and Methods:
Mosquito larvae were collected from high organic stagnant water in Kuala Lumpur (Kepong), Selangor (Shah Alam) and Terengganu (Kuala Terengganu) by dipping method. Larval bioassay was conducted according to WHO standard procedures for insecticide susceptibility test. A total of five concentrations of each insecticide were test against third instar larvae. Larval mortality was recorded after 24 hours of exposure period. Bioassay results were subjected to probit analysis to obtain 50% lethal concentration (LC_{50}) values, and resistance ratio (RR) was also determined by the LC_{50} of field strain to the LC_{50} of laboratory susceptible strain.

Results:
Malathion resistance was detected in *Cx. quinquefasciatus* collected from Klang Valley by 12 folds, compared to laboratory susceptible strain. This finding indicated that malathion no longer effective to control the mosquito populations Klang Valley. In addition, our study also found that *Cx. quinquefasciatus* collected from Klang Valley showed the tendency in resistance development toward DDT, propoxur and permethrin, with resistance ratio ranged from 1.77 to 3.00. However, it is interesting to note that no resistance were detected in Terengganu against all groups of insecticides, with resistance ratio less than one, suggesting that these insecticides are still able to control mosquito populations effectively in Terengganu.

Conclusion:
This study provides baseline information for the vector control management and insecticide resistance programme should be monitored from time to time to update the current susceptibility status of vector against various insecticides.

Keywords:
Culex quinquefasciatus, larval bioassay, insecticide resistance, Malaysia

INSECTICIDES SUSCEPTIBILITY IN *CULEX QUINQUEFASCIATUS* SAY OBTAINED FROM RICE CULTIVATION AREA IN SEKINCHAN, SELANGOR, MALAYSIA

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Background:
Culex quinquefasciatus has been reported as a nuisance biting pest and vector of urban filariasis and Japanese encephalitis. Its control relies heavily on application of insecticides. The present study was conducted to determine the susceptibility of *Cx. quinquefasciatus* larvae collected from a rice cultivation area in Sekinchan, Selangor, Malaysia against malathion, temephos and permethrin.

Material and Methods:
The adult mosquitoes were obtained from the study site by using human landing catch (HLC) and identified. The adult *Cx. quinquefasciatus* were reared under laboratory conditions to obtained first generation larvae for bioassay. Larvae bioassay was performed according to the WHO standard procedures for insecticide susceptibility test. Three insecticides were tested against *Cx. quinquefasciatus* larvae, namely malathion, temephos and permethrin. The larvae were tested against diagnostic dosage of malathion (0.125mg/L) and temephos (0.002mg/L). On the other hand, a total of five to ten concentrations of each insecticide were also tested to obtain 50% lethal concentration (LC_{50}). For each concentration, 25 late third or early fourth instars larvae *Cx. quinquefasciatus* were added. Each concentration was replicated three times. An untreated (control) was similarly set up without addition of insecticide. The larvae were exposed continuously for 24 hours. The larvae mortality was recorded after 24 hours post treatment. The test results obtained from bioassay were pooled and analysed using probit analysis.

Results:
Culex quinquefasciatus larvae were tolerated to diagnostic dosage of malathion and temephos with no mortality were observed after 24 hours post-treatment. However, temephos (0.03±0.00mg/L) exhibited significant lower LC_{50} value against *Cx. quinquefasciatus*, in comparison to permethrin (0.06±0.00mg/L) and malathion (1.49±0.13mg/L) ($p<0.05$).

Conclusion:
Culex quinquefasciatus was susceptible against temephos followed by permethrin and malathion. This indicating that temephos was effective in controlling *Cx. quinquefasciatus* in this site.

Keywords:
Culex quinquefasciatus, insecticides resistance, larval bioassay, Malaysia

DETECTION OF INTESTINAL PARASITES IN GOATS AND CATTLE FROM AN AGRICULTURAL FARM

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Background:
Intestinal parasites with multiple hosts are a major problem to public health especially in hosts which have frequent contact with human. The aim of the present study is to determine the occurrence and types of intestinal parasites found in goats and cattle.

Materials and Methods:
A total of 94 cattle and 51 goat fecal samples were collected from a farm in Serdang, Selangor. Formalin-ether concentration technique and wet mount iodine stain were used to examine the presence of intestinal parasites. In addition, modified Ziehl-Neelsen stain was utilized for the identification of coccidian protozoan. All the laboratory procedures were carried out at the Department of Parasitology, University of Malaya.

Results:
The overall prevalence of intestinal parasitic infections accounted for 80.9% (of 94) in cattle and 80.4% (of 51) in goats. Protozoan infection was found to be higher than helminth infection in both cattle (58.8% versus 8.5%) and goats (43.1% versus 2.0%). In addition, co-infections of protozoa and helminths were also detected in 35.3% of infection in goats and 13.8% in cattle. In goats, parasites detected included *Entamoeba* sp. (66.7%), Strongyle (35.3%), *Giardia* sp. (15.7%), *Moniezia* sp. (7.8%), *Cryptosporidium* sp. (2.0%), *Strongyloides* sp. (2.0%), *Trichuris* sp. (2.0%) and *Fasciola* sp. (2.0%). Meanwhile in cattle, only *Entamoeba* sp. (72.3%), Strongyle (6.4%) and *Strongyloides* sp. (1.1%) were recorded.

Conclusion:
The results demonstrated high prevalence of intestinal parasites especially protozoa in both goats and cattle. Given that all animals that were infected were found to be asymptomatic with moderate parasite loads, routine monitoring of the presence of parasites in animals is imperative in assisting farm managers formulate and implement effective preventive and control measures against the spread of infectious parasitic diseases to susceptible animals or to humans.

Key words:
intestinal parasites, goats, cattle

DIVERSITY OF INTESTINAL PARASITES IN HUMAN AND ANIMALS LIVING IN AN INDIGENOUS COMMUNITY IN PENINSULAR MALAYSIA

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Background:
The indigenous communities are prone to parasitic diseases due to the lack of personal hygiene and proper health practices. Given that they live in close proximity with animals, parasitic infections could also be acquired from infected animals. Currently, information on intestinal parasites in animals found in indigenous communities is lacking. Hence, a cross sectional study was conducted to assess the diversity of intestinal parasites in human and animals in an indigenous community.

Materials and Methods:
Detection of parasites was performed on 54 human fecal samples and 62 animal fecal samples using formalin ether concentration technique and wet mount iodine stain for the presence of ova, larva and cysts, whilst modified Ziehl-Neelsen was used to detect presence of coccidian protozoan.

Results:
Overall prevalence of intestinal parasites in human and animals was 74.1% (out of 54) and 85% (out of 62), respectively. Observed protozoa in human included *Entamoeba histolytica/dispar/moshkovskii* (18.5%), *Cryptosporidium sp.* (5.6%), *Giardia sp.* (3.7%) and *Isospora sp.* (1.9%) whilst soil-transmitted helminths (STH) detected comprised of *Trichuris trichuria* (51.9%), *Ascaris lumbricoides* (27.8%) and hookworm (13.0%). In animals, protozoa that were determined consisted of *Giardia sp.* (11.3%), *Cryptosporidium sp.* (9.7%), *Entamoeba histolytica/dispar/moshkovskii* (9.7%), *Balantidium sp.* (6.5%), *Isospora sp.* (3.2%) and *Eimeria sp.* (1.6%) whereas STH found in this study were hookworm (46.8%), *Toxocara canis* (37.1%), *Trichuris vulpis* (16.1%), *Toxoascaris leonina* (8.1%), *Dipylidium caninum* (6.5%), *Capillaria sp.* (4.8%), *Parascaris equorum* (3.2%), *Enterobius vermicularis* (1.6%) and *Opisthorchiasis viverrini* (1.6%).

Conclusion:
These results demonstrated the high rates and diversity of intestinal parasites in human and the animals living in close proximity with these indigenous people. In addition, the presence of zoonotic parasites also highlighted the potential of zoonoses in this community however this hypothesis needs to be confirmed with the utilization of advanced molecular tools.

Keywords:
Intestinal parasites, indigenous people, animals, zoonotic transmission

ASSOCIATION BETWEEN PERIODONTAL DISEASE AND SYSTEMIC CONDITIONS: IMPLICATIONS FOR PRIMARY CARE PHYSICIANS

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Background:
Periodontal disease has been recognised as a major global public health problem because of its prevalence, economic impact and health consequences. Nevertheless, its burden to the health care system is often largely neglected. With mounting interest in the association between periodontal disease with certain systemic diseases and disorders, dentists and primary care physicians must find ways to work together for optimal control of the common risk factors affecting periodontal and general health. The objective is to review recent data on association between periodontal disease and some systemic conditions. Integration of oral and periodontal health promotion into management of these systemic conditions in primary care settings were also appraised.

Materials and Methods:
Electronic literature search was done using Medline database for period between 2001 to May 2011. The search was limited to clinical/ human studies published in English and included the following levels of available evidence: systematic reviews, narrative reviews, clinical trials as well as cross-sectional and cohort studies. Selected papers were articles relating to studies investigating whether or not a systemic condition is a risk factor for periodontitis.

Results:
An overwhelming body of evidence supports the association between periodontal disease and systemic conditions such as cardiovascular disease (OR 1.1-2.2), type 2 diabetes mellitus (OR 1.5-2.3) and adverse pregnancy outcomes (OR 1.10-20.0). Etiological and pathological links between periodontal disease and these conditions have also been suggested. There is global support towards control of periodontal disease through common risk factor approaches with these systemic conditions.

Conclusion:
Findings support associations between periodontal disease and some important systemic conditions. There is a need to translate these findings into a practical and feasible model of care that consolidates efforts to manage and prevent these diseases efficiently.

Keywords:
periodontitis, systemic diseases, review

CORRELATES OF SEXUAL AND NON SEXUAL RISKY BEHAVIOURS AMONG MALAYSIAN YOUTH IN THE UNIVERSITY

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Background:
The aim of this paper is to examine the prevalence of sexual and nonsexual risky behaviors and its associated factors among urban youth.

Materials and Methods:
A cross-sectional study was conducted among students between age 18-24 years enrolled in both public and private universities in the Klang Valley. An anonymous pre-tested, self administrated questionnaire survey was carried out. Smoking, alcohol drinking, using needles or syringes to inject drugs, using marijuana, taking heroine were selected as non-sexual risky behavior and having more than one sexual partners, having sex without condom, sex with someone whose HIV/AIDS status is unknown, having unprotected sex under the influence of alcohol and having sex with sex workers were selected as risky sexual behaviors. Each behavior was dichotomized as either risk absent (0) or risk present (1). An index of multiple-risk behavior was derived by summing the values for the five behaviors separately for sexual and non-sexual risky behaviors. Scores ranged from 0 (no risk behavior) to 5 (have all risk behaviors) in each category. Data analysis was performed using SPSS Version 19.

Results:
A total of 890 students agreed to participate in the study. 61.5% were from public and 38.5% were from private universities. Only 3.7% reported had had at least 1 or more risky sexual behaviors whilst 26.0% reported having involved with non-sexual risky behaviors. The correlates ($p<0.05$) for sexual risky behaviours are male, history of work for pay, watched pornography videos and poor communication with mother. Meanwhile for non-sexual risky behaviors the correlates are male, history of work for pay, watched pornography videos, history of past or current physical abuse smaller family size, higher family income and poor communication with mother ($p<0.05$).

Conclusion:
Having tertiary education does not ensure total protection against risky behaviours among Malaysian youth.

Key words:
Urban, youth, risky behaviours, socioeconomic factors, family factors, maternal communication, students

EFFICACY TEST OF *BACILLUS THURINGIENSIS ISRAELENSIS* AGAINST LARVAE *CX.QUINQUEFASCIATUS, AE.AEGYPTI*, AND *AE.ALBOPICTUS* IN VARIOUS CONTAINERS AT LABORATORY OF PARASITOLOGY FACULTY OF MEDICINE, UNIVERSITAS INDONESIA

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Background:
Vector borne disease is still a public health problem, such as dengue hemorrhagic fever (DHF) which is transmitted by *Ae.aegypti* and *Ae.albopictus*, and *Cx.quinquefasciatus* which transmits filariasis. Nowadays the vector biological elimination, among others, is done using *Bacillus thuringiensis israelensis* (Bti). This study aims to determine the efficacy of Bti on those three larvae, by calculating lethal concentration and residual effects.

Materials & Method:
This study was conducted with experimental methods using larvae colonies in the laboratory of Parasitology FKUI between August 2010 till January 2011. To determine the lethal concentration, various concentrations of liquid Bti provided to 100 third instar larvae Ae.aegypti and Cx.quinquefasciatus, after 24 hours, number of dead larvae was counted. For residual effect, two millilitre per meter square of Bti was given to 100 third instar larvae of *Ae.aegypti*, *Ae.albopictus*, and *Cx.quinquefasciatus* inserted in fiberglass, ceramics, and cement container. The study was repeated the following weeks, and stopped until detection of died larvae under 70% without draining the container.

Results:
Probit Analysis showed LC50 and LC95 for *Cx.quinquefasciatus* was 0.575 (0.288-0.801)ml/m^2 and 2.839 (2.431-3.482)ml/m^2 (R^2=0.968) and on *Ae.aegypti* is 0.98 (0.68 to 1.24)ml/m^2 and 2.76 (2.31 to 3.57)ml/m^2 (R^2=0.905). Bti residual effect against *Ae.aegypti* and *Ae.albopictus* was seen in the third container for two weeks while on *Cx.quinquefasciatus* in cement and ceramic containers a week, and the fiberglass container two weeks. Bti residual effect worked better against *Ae.albopictus* and *Ae.aegypti* larvae (McNemar, $p<0.05$).

Conclusion:
For application in the field study, the highest concentration estimated at 3.48 and 3.57ml/m^2 respectively for *Cx.quinquefasciatus* on *Ae.aegypti* should be used. Bti residual effects work more hours in a row than *Ae.albopictus*, *Ae.aegypti*, and *Cx.quinquefasciatus*.

Keywords:
efficacy, *Bacillus thuringiensis israelensis*, *Culex quinquefasciatus*, *Aedes aegypti*, *Aedes albopictus*, lethal concentrations, residual effects

A SEVEN YEAR STUDY OF STILLBIRTHS AND NEONATAL DEATHS IN UKMMC: 2004-2010

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Background:
Data of stillbirth (SB) and neonatal deaths (ND) are routinely collected in tertiary hospital in Malaysia. The objective of this study was to analyze the trend of SB and ND in UKMMC from 2004 until 2010.

Materials and Methods:
A retrospective cross-sectional study was conducted. The Rapid Reporting Format of SB and ND were analyzed along with the monthly data from the Department of Obstetrics & Gynaecology UKMMC. Study populations were cases in UKMMC during the study period.

Results:
The total deliveries in the seven year period were 45 277. The total live births were 44 994 and the total cases of SB and ND were 526. Stillbirth consisted of 54% of total deaths and 46% of the deaths were made up from neonatal deaths. The major cause of death in SB was normally formed macerated stillbirths (53.2%), followed by prematurity in neonatal deaths. Women who did not have any antenatal care delivered a higher percentage of stillbirth cases, 70.3%. The mean maternal age between SB and ND are almost similar. The analysis showed that parity of more than five had the highest mortality rate in SB and ND. Maternal medical illness such as hypertension and other medical conditions such as thyrotoxicosis and systemic lupus erythematosus were significantly associated with SB and ND.

Conclusion:
As maternal health improves, there is generally a greater reduction in neonatal deaths, increasing the proportion of perinatal deaths attributed to stillbirth. Screening of maternal conditions such as hyperthyroidism in pregnancy is suggested as prevention for SB.

Keywords:
Stillbirths, neonatal deaths, perinatal deaths, analysis, trends.

RE-COUNSELLING ON PROPER EXERCISE AND ANTIHYPERTENSIVE MEDICINE NEEDED TO CONTROL BLOOD PRESSURE THREE YEARS POST QUASI EXPERIMENTAL STUDY

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Background
It is very common that after finishing quasi experimental study, no further observation or evaluation on the study subjects is performed. This study aimed to evaluate three years post counselling on proper exercise and taking antihypertensive medicine on systolic blood pressure (SBP) and diastolic blood pressure (DBP).

Materials and Methods
A follow-up of a quasi-experimentation study was done three years post quasi experimental study (May 2008 - May 2011) among hypertensive subjects of a government bureau in Jakarta who had counselling on proper exercise and taking antihypertensive medicine during which the last three years without any intervention.

Results
In 2008, from 1300 employees, 1063 participated in the survey and 318 among them, 19.1% were pre-hypertensive and 7.6% were hypertensive. Among the 168 subjects that participated in three times monitoring of blood pressure measurements, only 120 subject completed the 2008 study. In 2011 evaluation among 120 subjects, 44 (37.3%) subjects responded to the invitation for blood pressure measurement and brief counselling.

Less females than males, less aged between 55-64 years than the other age groups, less those who took regular than irregular taking medicines, less stage 1 than stage 2 hypertensive patients participated in the 2011 evaluation. The mean of SBP as well as DBP in 2011 were increased (p=0.000) compared with the 2008 figures.

Conclusion
Three years post quasi experimental study, less females, less patients aged between 55-64 years, less those who took regular medicines, less stage 1 hypertensive patients responded; SBP as well as DBP increased compared with the 2008 figures. Re-counselling is needed on proper exercise and taking antihypertensive medicine in reducing SBP and DBP to control hypertension.

Key words:
hypertension, re-counselling, antihypertensive medicine, exercise

REDUCING LENGTH OF STAY WITH CLINICAL PATHWAYS: DO PATHWAYS WORK?

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Background:
Clinical pathways have been implemented in many healthcare systems and proven to be a beneficial tool in improving the quality of care and controlling the cost. Only few studies were conducted in Asia, however none has been carried out in Malaysia. Clinical pathway (CP) is a multidisciplinary plan of care based on best clinical practice for patients with particular diagnosis, designed to minimize delays optimum resource utilization and to maximize the quality of care.

Materials and Methods:
UKMMC in collaboration with UNU-IIGH has developed, implemented and evaluated four clinical pathways namely ST Elevation Myocardial Infarction, Chronic Obstructive Pulmonary Diseases, Elective Lower Segment Caesarean Section and Elective Total Knee Replacement. This non randomized single blind controlled study had enrolled patients from January 2008 to December 2008 as a control group (non CP group). The CP has been assigned to all new patients' admission of the above diseases from year 2009 until 2010.

Results:
There was a significant different in average length of stay (ALOS) of COAD CP group (5.85±1.92) compared to the non CP group (7.31±2.75, Z=-3.893, P<0.001). In STEMI CP, the ALOS prior to implementation of CP is 8.15±2.25 days while in the CP group is 5.52±1.42 (t=-4.85, P<0.001). There was a significant different in ALOS of LSCS CP group 4.04±0.61 compared to the non CP group 4.99±2.94 (Z=-3.221, P<0.001). The non CP group of TKR has shorter ALOS (9.05±3.59) compared to CP group (9.93±4.32), however no significant difference.(Z=-1.027,P=0.3). In all the CPs there was no difference between the co-morbidity, readmission and complication rates.

Conclusion:
The study concluded that the implementation of CP has a positive impact and therefore, the use of CP in these diseases is recommended in UKMMC and in public hospitals in Malaysia.

Keywords:
clinical pathway, quality of care, average length of stay

Group 7
Miscellaneous

SENESCENCE-INDUCED GENES EXPRESSION OF EXPANDED HUMAN CORD BLOOD HAEMATOPOIETIC STEM CELLS

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Background:
The functions of haematopoietic stem cells (HSCs) include division, self-renewal and generation of specialized cells that make up the blood components. However, these functions could be impaired as demonstrated by many studies using human and animal models whereby HSCs eventually undergo replicative senescence. It is believed that accumulations of DNA damage, genetic modification and oxidative stress are responsible for the senescence but the specific mechanism remains unknown. This study aims to determine senescence-induced genes expression in expanded human cord blood (CB) HSCs by real time PCR.

Materials and Methods:
Human CB HSCs were isolated using immunomagnetic beads and characterized by immunophenotyping. These cells were expanded in culture medium. After 14 days, the cells were harvested, further characterized by immunophenotyping and its differentiation potential assessed by *in vitro* colony assay. Total RNA of the cells were extracted, transcribed to cDNA followed by real time PCR amplification with primers specific for *P16, P53* and *Rb* genes.

Results:
The expression of HSC cell surface markers and its differentiation potential were decreased. *P16*, *P53* and *Rb* genes were expressed more in the expanded cells compared to non expanded cells.

Conclusion:
The decrease in the expression of HSC cell surface markers and its differentiation potential were due to impairment of the expanded HSCs to divide and self-renew thus depletion and/or maturation of HSCs. This impairment could be explained by cell senescence since the expressions of *P16*, *P53* and *Rb* genes were observed.

Keywords:
haematopoietic stem cells, senescence-induced genes

MANAGING MASSIVE OBSTETRIC HEMORRHAGE WITH BAKRI BALLOON TAMPONADE UKM MEDICAL CENTRE EXPERIENCE

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Background:
Massive obstetric hemorrhage, defined by loss of >1500mls of blood include postpartum hemorrhage (PPH) and bleeding from early pregnancy complications. Various types of intervention such as usage of blood products, pharmacological agents and surgical intervention are readily known. The use of Bakri balloon tamponade has been shown to provide temporary reduction of postpartum uterine bleeding following unsuccessful management with uterotonic agents, repair of genital tract laceration or removal of retained product of conception, thus reducing the necessity for hysterectomy. The review aimed to determine the efficacy of Bakri balloon tamponade in management of obstetric hemorrhage with avoidance of hysterectomy and maternal death.

Materials & Methods:
This was a retrospective review of all massive postpartum hemorrhage in University Kebangsaan Malaysia Medical Centre (UKMMC) during the period of 27 months between 1 January 2009 to 31 April 2011. Data collection was obtained from the delivery record, high dependency and intensive care unit census and patients' medical records.

Results:
Forty two cases of massive obstetric hemorrhage were identified. Twelve patients were managed with Bakri balloon and two cases were failed insertion of balloon. Mean age of patients was 33.9±4.8 years. There were eight cases of primary PPH, one case of secondary PPH and three cases following early pregnancy complications. Five patients had lower segment caesarean sections, three had spontaneous vaginal deliveries and one had vacuum assisted vaginal delivery. Seventy five percent of cases with primary PPH were caused by uterine atony. All cases were unsuccessfully managed with first line uterotonic agents. The estimated blood loss ranged from 1.5 to 5.5 litres. Six cases were complicated by DIVC and one required hysterectomy. There were no maternal deaths.

Conclusion:
The review has shown that Bakri Balloon tamponade is a reliable alternative in the management of massive obstetrics hemorrhage following failure of first line uterotonic agents, thus avoiding need of surgical intervention.

Keywords:
Bakri baloon, obstetric hemorrhage

PREDICTION OF SIGNIFICANT NEONATAL JAUNDICE IN BABIES WITH ABO INCOMPATIBILITY BY CORD BLOOD TESTS

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Background:
Haemolytic disease of the newborn (HDN) due to ABO incompatibility is a risk condition, many newborns require treatment due to severe hyperbilirubinemia. The objective of this study was to evaluate prospective parameters such as direct antiglobulin test (DAT), IgG anti-A or anti-B titer and total bilirubin in the cord blood to be used as tools to predict the occurrence of significant hyperbilirubinemia in healthy term newborns with ABO incompatibility.

Materials & Methods:
A total of 214 cord blood samples from healthy newborn of mothers with blood group O, were selected for this study. They were divided into two groups which were ABO incompatible group (114 babies with either blood group A or B) and ABO compatible group (100 babies with blood group O) (as control group). All the cord blood samples were analyzed for total bilirubin. In ABO incompatible group, severity of jaundice was assessed and types of treament were recorded. In this group, DAT and IgG anti-A or anti-B titer were also performed.

Results:
There was significant correlation between severity of jaundice, phototherapy requirement and total bilirubin in the cord blood with ABO incompatible newborns (p<0.05). However, there was no significant difference in the cord blood total bilirubin level below or above 44μmol/L (2.5mg/dL) in the occurrence of neonatal jaundice (p>0.05). Newborns with antibody titer (IgG anti-A or anti-B) of four and above were jaundiced. Specificity and sensitivity of cord blood tests for prediction of neonatal jaundice were 95% and 14.9% respectively for DAT positivity; 85% and 36.2% respectively for the presence of antibody and; 85% and 21.3% respectively for cord blood total bilirubin level of ≥44μmol/L.

Conclusion:
This study has shown that the cord blood tests for DAT, presence of IgG anti-A or anti-B and cord blood total bilirubin were specific but not sensitive to predict neonatal jaundice. However the IgG anti-A or anti-B titers of four and above were very useful in predicting the occurrence of neonatal hyperbilirubinemia. The level of cord blood total bilirubin ≥44μmol/L (2.5mg/dL) was not shown to have a good prediction of significant hyperbilirubinemia.

Keywords:
neonatal jaundice, ABO incompatibility, cord blood

SOD TRANSFECTED CELLS EXHIBIT CHANGES SIMILAR TO INCREASED OXIDATIVE STRESS CONDITIONS

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Background:
Superoxide dismutase (SOD) is an antioxidant enzyme which catalyses the conversion of oxygen free radicals to hydrogen peroxide. The hydrogen peroxide is further metabolised to water by the action of either catalase (Cat) or glutathione peroxidase (GPx). An imbalance between the enzymes, for example, the presence of an extra SOD gene in Down syndrome has been postulated as a possible cause for the neurodegeneration observed. In order to understand further the role of SOD in neurodegeneration, the present study aims to evaluate the characteristic of SOD-transfected versus normal neurons in terms of its oxidative DNA damage, apoptotic markers and cell cycle proggression.

Material and Methods:
Neuron and SOD-transfected neurons (a gift from Dr Coral Sanfeliu, Institute of Biological Sciences, Barcelona, Spain) were incubated and the apoptosis rate determined using propidium iodide staining and Annexin V-FITC assay. DNA damage was assessed using comet assay. G0/G1, S and G2/M phases in cell cycle were evaluated from propidium iodide staining using flow cytometry. Caspase-8 and -9 activities were determined using Flowcytometric Caspases Activity kit and protein expressions (ATM kinase, ATR, p53, p73, Bax and Bcl2) of both cells were determined by Western Blotting.

Results:
Results showed that the presence of an extra copy of SOD gene increases apoptosis, DNA damage and the number of cells arrested in G0/G1 phase of the cell cycles which mirrors changes associated with increased oxidative stress conditions. There was upregulaion of apoptotoc pathway related proteins i.e ATM kinase, ATR, p53 and p73.

Conclusion:
These present findings indicate that overexpression of SOD increased oxidative stress related changes in cells which may lead to cell damage and death.

Keywords:
SOD, Neuron, oxidative stress, apoptosis

SONOGRAPHIC COMPARISON BETWEEN AMNIOTIC FLUID INDEX AND FETAL ABDOMINAL CIRCUMFERENCES IN GESTATIONAL DIABETES MELLITUS ON DIETARY MODIFICATION ALONE AND INSULIN THERAPY

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Background:
This study was conducted to compare the amniotic fluid index (AFI) and fetal abdominal circumference (AC) measurements between pregnant women with gestational diabetes mellitus (GDM) on dietary modification alone and those with insulin therapy.

Materials and Methods:
All pregnant women with GDM (confirmed by Modified Glucose Tolerance Test) attending antenatal clinics and eligible for the study were recruited. Ultrasound scan was utilized to determine AFI and AC measurements at 36 weeks period of gestation. These parameters and maternal blood glucose control were analysed with regards to dietary modification alone and those women with insulin therapy.

Results:
A total 15 patients were recruited into each arm. There was no significant different between AFI in GDM on dietary modification versus insulin (16.01±5.2cm in diet modification versus 18.28±4.5cm in insulin therapy, $p>0.05$). Fetal AC also did not show any statistical different between the two groups (dietary modification 329.4±20.9 mm^2 and insulin therapy 332.87±14.11mm^2, $p>0.05$). HbA1c levels in the women showed no strong correlation between AFI in dietary modification group (r:-0.054, $p>0.05$) and AFI in insulin therapy (r:-0.086, $p>0.05$). There was also no strong correlation between HbA1C and AC in dietary modification (r:-0.167, $p>0.05$) and insulin therapy group (r:-0.086, $p>0.05$). Similarly, maternal age and AFI showed no strong correlation in dietary modification (r:-0.0129, $p>0.05$) and also in insulin therapy group (r:-0.194, $p>0.05$). There was neither strong correlation between maternal age with AC in dietary modification (r:-0.088, $p>0.05$) nor in insulin therapy group (r: 0.107, $p>0.05$).

Conclusion:
Treatment with dietary modification alone or insulin therapy had no effect on amniotic fluid index and fetal abdominal circumference in women with GDM. Neither HbA1c levels nor maternal age have strong correlation with regards to AFI and AC in both methods of treatment.

Keywords:
GDM, amniotic fluid index, abdominal circumference, fetal, HbA1c

INVOLVEMENT OF p16^{INK4a} IN SENESCENT FIBROBLAST MORPHOGENESIS

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Background:
During cellular senescence, normal human diploid fibroblasts (HDFs) change their morphology from spindle shape to enlarged, flattened and irregular shape. Besides, senescent HDFs express elevated levels of p16^{INK4a} which is known as cyclin-dependent kinase inhibitor (CDKI). The aim of this study was to determine the involvement of p16^{INK4a} in HDFs senescent morphogenesis.

Materials and Methods:
Serial passaging was done and the number of population doublings (PDs) was monitored until HDFs reached senescence (passage 30). Senescent cells were transfected with p16^{INK4a} siRNA for 48 hour and subsequently the RNA was extracted for real time RT PCR analysis.

Results:
Our results showed normal human diploid fibroblasts enter senescence state after 50-60 population doublings. Senescent HDFs showed morphological changes with the presence of senescence-associated β-galactosidase and increased p16^{INK4a} expression. However, senescent HDFs transfected with p16^{INK4a} siRNA showed downregulation of p16^{INK4a} and changes of morphology from senescent morphology to morphology of young cells with the presence of small and spindle shaped fibroblasts.

Conclusion:
In conclusion, increased of p16^{INK4a} expression is correlated with senescent morphology. However, inhibition of p16^{INK4a} expression may delay the onset of cellular senescence.

Keywords:
siRNA, cellular senescence, p16^{INK4a}

FACTORS CONTRIBUTING TO AGE-RELATED BONE LOSS AMONG MALAYSIAN MEN

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Background:
Involutional osteoporosis is a condition confronted by many elderly men in Malaysia. This study aimed to determine several factors contributing to age-related bone loss so that suitable intervention may be administered to prevent the progression of osteoporosis among Malaysian elderly men.

Materials and Methods:
A total of 759 healthy Malaysian Chinese and Malay men age 20 years old and above were recruited. Their body anthropometry and quantitative ultrasound bone density values were determined. Blood was collected for biochemical analysis. Subjects were also required to answer a questionnaire to assess their lifestyle and level of physical activity.

Results:
The results indicated a significant correlation between age and bone density ($r=-0.306$, $p<0.001$), serum total calcium level ($r=-0.320$, $p<0.001$), serum inorganic calcium level ($r=-0.166$, $p<0.001$) and serum total testosterone level ($r=-0.091$, $p<0.05$). Bone density was significantly correlated with serum total calcium level ($r=0.170$, $p<0.001$), total testosterone level ($r=0.074$, $p<0.05$) and total physical activity level ($r=0.089$, $p<0.05$). Bone density and serum total calcium level of Chinese men was constantly lower than Malay men but significant differences could only be seen in the total calcium level for men aged 40 years old and above.

Conclusion:
This suggested that the difference in bone density between the two ethnic groups may due to differences in calcium metabolism. Age-related bone loss among Malaysian men may be prevented by calcium supplementation, increased physical activity and testosterone replacement therapy. Further studies on the relationship of age and bone density with parathyroid hormone, biomarkers of bone metabolism, bioavailable testosterone and estradiol are being conducted.

Keywords:
male osteoporosis, total testosterone, serum calcium, physical activity

ELEVATED OXIDATIVE STRESS AND ADAPTIVE RESPONSE NF-KB AND HSP 70 IN NITROX DIVING: EXPERIMENTAL STUDY ON NON DIVERS POPULATION

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Background:
Nitrox I has been widely used in diving and has some advantages such as extended bottom time and shorter decompression time compare to Air in the same depth. However, little is known about the effect of hyperoxic condition in Nitrox I on oxidative stress and adaptive response at biomolecular level. The aim of this study was to prove using *Nitrox 1* for sub maximal exercise on non diver population increased oxidative stress (H_2O_2) and adaptive response NF-κB and Hsp70.

Methods:
A double blind randomized controlled trial study was conducted during September 2009-January 2010 in Hyperbaric facilities at LAKESLA Surabaya in two groups (each group consisted of 11 person) nondivers healthy male age 18–22 years old. Both groups were asked to do sub-maximal ergo cycle test in hyperbaric chamber at 20 meters depth (3 ATA) and breathing different gas (Air or Nitrox I). Blood was sampled from forearm vein pre and post exercise outside hyperbaric chamber and analyzed for H_2O_2, NF-κB and Hsp70 expression. H_2O_2 were measured quantitatively using chemiluminescence method at the LAKESLA. Free NF-κB/p65 expression were measured using ELISA sandwich protocol and read with ELISA reader at 405 nm. Hsp70 expression was measured using ELISA method and read with ELISA reader at 450 nm. NF-κB dan Hsp70 measurement was done at physiology laboratorium of Universitas Brawijaya Malang, Indonesia.

Results:
H_2O_2 expression elevated in both group was greater value in Nitrox I group compared to Air group. Elevated H_2O_2 expression in Air group was followed by elevated NF-κB and Hsp70 expression. However, elevated H_2O_2 expression in Nitrox I group was followed by decreased NF-κB and Hsp70 expression.

Conclusion:
Using Nitrox I for sub maximal exercise at 20 meters depth delay counter shock phase of adaptive response compare using Air.

Keywords:
Oxidative stress, nitrox diving, sub maximal exercise, hyperbaric

SENSITIVITY OF WHOLE BLOOD CLOTTING TIME COMPARED TO ACTIVATED PARTIAL THROMBOPLASTIN TIME

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Background:
Whole blood clotting time (WBCT) was first introduced by Lee and White in 1912 as a method to assess the clotting system. The role of WBCT in the assessment the intrinsic pathway of coagulation system has later been replaced by activated partial thromboplastin time (APTT) due to higher sensitivity and this test can be done by an automatic coagulometer. However, many clinicians still request WBCT as a part of the preoperative screening test. The aim of this study was to evaluate the sensitivity of WBCT compared to APTT in detecting coagulation abnormality.

Materials & Method:
One hundred patients who underwent coagulation tests were enrolled in this cross sectional study. Whole blood clotting time was performed by the Lee and White method, while APTT was performed on automatic coagulometer Sysmex CA 560. The resupormal or abnormal test was based on their reference value. Statistical analysis was done by Fisher exact test.

Results:
Abnormal coagulation was found in 56 and 13 out of 100 subjects by APTT and WBCT, respectively. There was a significant difference between WBCT and APTT in detecting coagulation abnormality with $p<0.000$. Sixteen out of 100 subjects were haemophiliac, but only 8 patients indicated prolonged WBCT. WBCT started to prolong at 70 seconds of APTT. The sensitivity and specificity of WBCT was only 23.2% and 100%, respectively.

Conclusion:
There was a significant difference between WBCT and APTT in detecting coagulation abnormality. The sensitivity of WBCT in detecting abnormal coagulation was 23.2% compared to APTT. Therefore WBCT is not recommended as a preoperative screening test.

Keywords:
WBCT, APTT, coagulation abnormality, sensitivity.

COMPARISON OF SURGICALLY INDUCED ASTIGMATISM (SIA) AND CORNEAL WAVEFRONT ABERRATION IN PHACOEMULSIFICATION BETWEEN 1.8MM AND 2.75MM CLEAR CORNEAL INCISION

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Background:
Cataract operation has move towards achieving crystal clear vision with the advent of premium intraocular lens and superior surgical techniques. The size of corneal incision may cause surgically induced astigmatism and alteration of corneal wavefront aberration, leading to compromised final visual outcome. The aim of this study was to compare the differences between 1.8mm and 2.75mm clear corneal incision (CCI) on surgically induced astigmatism (SIA) as well as postoperative Root Mean Square (RMS) and corneal wavefront aberration changes.

Materials and Methods:
Phacoemulsification was performed on 59 eyes which included 28 eyes having 1.8mm and 31 eyes having 2.75mm CCI. Corneal topography was done two weeks preoperatively and one month postoperatively. The data was used to calculate SIA, RMS and corneal wavefront aberrations.

Results:
The results showed that there was no significant difference for central and simulated SIA between the 1.8mm and 2.75mm group ($p=0.081$, $p=0.641$ respectively). The mean simulated SIA in the 2.75mm group (0.914±0.603 D) was higher than in the 1.8mm group (0.556±0.496 D). There were no significant changes in total RMS and high order RMS (HoRMS) ($p>0.05$). In the 2.75mm group, there were significant changes in two Zernike aberrations which are WTR/ATR Astigmatism ($p<0.05$) and Horizontal Coma ($p<0.05$). Whereas, in the 1.8mm group, there were no significant changes.

Conclusion:
In conclusion, there was no statistical difference to show that the smaller incision group (1.8mm) had better results compared to the bigger incision group (2.75mm) in terms of surgically induced astigmatism and corneal wavefront aberration except in few Zernike terms. Incisional site (at the steepest axis) however was the most important factor to produce better visual outcome for cataract patients.

Key words:
astigmatism, corneal wavefront aberration, cataract, phacoemulsification, corneal topography

THE HbA_2 LEVELS IN NORMAL, B -THALASSAEMIA AND HAEMOGLOBIN E HETEROZYGOTES AND HAEMOGLOBIN E (HbE) LEVEL IN HbE HETEROZYGOTES BY CAPILLARY ELECTROPHORESIS SYSTEM

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Background:
Capillary electrophoresis (CE) is a technology that has recently been applied to thalassaemia screening and diagnosis. It utilizes the technique of electrokinetic separation of molecules in eight electrolyte buffer-filled capillaries. Our study aimed to establish the normal ranges of HbA_2 and HbF in normal population and to quantify the values of HbA_2 and HbE in the β-thalassaemia and haemoglobin E (HbE) heterozygous states.

Methodology:
A total of 173 normal individuals, 218 β-thalassaemia trait and 92 HbE trait cases were selected. All samples were analysed by both CE and High Performance Liquid Chromatography (HPLC) techniques.

Results:
Our results showed that the mean HbA_2 and HbF were 2.75% (SD 0.25%) and 0.06% (SD 0.24%) respectively, which was significantly lower than that of HPLC, 2.88%(SD 0.25%) and 0.31% (SD 0.61%) ($p<0.001$ for both results). For β-thalassaemia heterozygotes, the HbA_2 level was slightly higher than that of HPLC, where CE recorded values of 5.23% (SD 0.63%) versus 5.14% (SD 0.55%) by HPLC ($p<0.001$). The HbA_2 level for HbE heterozygotes was 3.61% (SD 0.44%), which was significantly higher than normal but lower than that of β-thalassaemia heterozygotes ($P<0.00$ for both). Peculiar to CE, the HbE level in HbE heterozygotes was determined as 25.41% (SD 3.38%). The correlation of HbA_2 levels between both methods was excellent ($R^2=0.99$).

Conclusion:
The CE system was a practical option for medical laboratories for analysis of thalassaemia and haemoglobinopathies. We established the ranges of HbA2 for the normal population, β-thalassaemia and HbE heterozygotes. Unique to the CE system, the HbE level was also able to be ascertained.

Keywords:
Capillary electrophoresis, HPLC, beta thalassaemia, HbE, HbA2

YOUNG HYPERTENSION AND ITS ASSOCIATED FACTORS AT UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE (UKMMC): A 2008 REVIEW

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Background:
To date, the prevalence, aetiology and characteristics associated with young hypertension is very scanty.

Materials and Methods:
A cross-sectional analysis was performed. A total of 553 hypertension records were identified in the year of 2008 of which 549 cases fulfilled the study criteria. These cases were divided into young and non-young hypertension.

Results:
A total of 9.8% were young hypertensives and only 22% were investigated for a secondary cause. Metabolic [e.g. metabolic syndrome (n=2)] and endocrine diseases [Cushing's disease (n=1), primary aldosteronism (n=2)] were the main causes. Those not investigated were due to the diagnosis of hypertension made many years ago, where investigations for secondary causes were rarely done. The median age of diagnosis for young and non-young hypertension was 32 and 55 years respectively; while their mean blood pressure at presentation was 139/81mmHg and 147/83mmHg respectively. In both groups, beta blockers remained the most frequently used antihypertensive agent. In the young hypertension, patient with family history of hypertension, ischemic heart disease, and diabetes mellitus is significantly ($p<0.001$) higher than the young hypertension without family history. There was no significant difference with regards to co-morbidities, complications (including target organ damage) and baseline investigations (such as renal and lipid profiles, fasting blood sugar) except a significantly lower urea and LDL-cholesterol in the young hypertension group ($p<0.001$). The complications (including target organ damage) between the two groups were compared at baseline and after five years of diagnosis. No significant differences were noted.

Conclusion:
Early detection and treatment in young hypertension is essential to prevent target organ damage and reduce the economic burden associated with long-standing hypertension.

Key words:
hypertension, secondary hypertension, young hypertension, endocrine hypertension, blood pressure