



UNIVERSITI KEBANGSAAN MALAYSIA
The National University of Malaysia



BUKU PROGRAM & ABSTRAK

MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-17

08 - 14 OGOS 2015

**AUDITORIUM
KOMPLEKS PENDIDIKAN PERUBATAN, CANSELOR TUANKU JA'AFAR,
HOSPITAL CANSELOR TUANKU MUHRIZ,
PUSAT PERUBATAN UNIVERSITI KEBANGSAAN MALAYSIA**



BUKU PROGRAM DAN ABSTRAK

MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-17

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PENGENALAN

Minggu Penyelidikan ini telah dianjurkan sejak tahun 1999. Ia melibatkan Fakulti Perubatan, Fakulti Pergigian, Fakulti Sains Kesihatan, Fakulti Farmasi dan Institut Perubatan Molekul UKM (UMBI). Minggu ini merupakan minggu di mana ketrampilan penyelidikan, prasarana dan suasana penyelidikan di fakulti dilihat, dalam usaha untuk meningkatkan pencapaian dalam dunia penyelidikan, latihan dalam kaedah dan pengurusan penyelidikan selain daripada mengukuhkan hubungan antara fakulti di kampus kesihatan UKM.

OBJEKTIF

- Memaparkan sebahagian daripada hasil penyelidikan.
- Menemukan para penyelidik bagi merangsangkan minda dan menambahkan pemikiran untuk menghasilkan lebih banyak idea dan kolaborasi penyelidikan.
- Meningkatkan pembudayaan dan aktiviti penyelidikan di Fakulti Perubatan.

**KATA ALU-ALUAN
DEKAN FAKULTI PERUBATAN
& PENGARAH HOSPITAL CANSOLOR TUANKU MUHRIZ
PUSAT PERUBATAN UNIVERSITI KEBANGSAAN MALAYSIA**



Assalamualaikum Warahmatullahi Wabarakatuh dan Salam Sejahtera

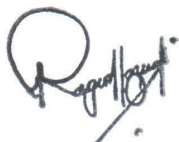
Alhamdulillah, syukur ke hadrat Allah SWT, Minggu Penyelidikan Perubatan & Kesihatan kali ke-17 dapat diadakan dengan jayanya. Tahniah dan syabas kepada Sekretariat Penyelidikan Perubatan & Inovasi, Hospital Canselor Tuanku Muhriz, Pusat Perubatan Universiti Kebangsaan Malaysia di atas penganjuran ini. Ini merupakan tahun ke-17 aktiviti tahunan ini diadakan dan saya percaya ianya amat menepati misi dan objektif UKM dalam menghasilkan lebih banyak penyelidikan yang membanggakan yang boleh membawa UKM hingga ke persada antarabangsa.

Program seperti ini harus diteruskan agar menjadi satu pemangkin kepada kecemerlangan penyelidikan. Apa juga jenis penyelidikan sama ada dalam bidang perubatan, kesihatan, pergigian, farmasi mahupun dalam bidang molekul, ianya harus merupakan kaedah paling berkesan untuk menghasilkan pengetahuan baru atau untuk mengisi jurang-jurang ilmu yang akan memberi manfaat kepada manusia sejagat serta memberi sumbangan yang tidak ternilai kepada pembangunan insan dan negara.

Saya yakin program ini dapat mencetuskan idea bagi menambah siri penyelidikan cemerlang dalam suasana persekitaran akademik yang mendorong dan mendukung ke arah penyelidikan yang kreatif dan inovatif. Saya berharap usaha ini akan dimanfaatkan oleh semua peserta terutamanya oleh semua pascasiswazah dalam mendalami ilmu penyelidikan.

Akhir kata, tahniah kepada jawatankuasa bengkel dan semua yang terlibat dalam program ini dan saya amat menghargai usaha yang dilakukan dan berharap usaha sebegini dapat diteruskan pada masa hadapan.

Sekian, terima kasih.



PROFESOR DATO' DR. RAYMOND AZMAN ALI
Dekan Fakulti Perubatan
& Pengarah Hospital Canselor Tuanku Muhriz
Pusat Perubatan Universiti Kebangsaan Malaysia

KATA ALU-ALUAN

PENGERUSI

**MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-17
PUSAT PERUBATAN UNIVERSITI KEBANGSAAN MALAYSIA**



Assalamualaikum Warahmatullahi Wabarakatuh dan Salam Sejahtera

Syukur ke hadrat Ilahi kerana dengan limpah kurniaNya maka sekali lagi Minggu Penyelidikan Perubatan & Kesihatan ke-17 (MP17) dapat diadakan pada tahun ini. MP17 ini adalah merupakan salah satu agenda tahunan yang penting dalam kalendar aktiviti di Fakulti Perubatan UKM dan ianya sentiasa mendapat penyertaan dari pelajar UKM mahupun dari luar UKM. Program ini adalah satu aktiviti untuk mencerap budaya penyelidikan selaras dengan wawasan Universiti kita bagi memastikan UKM terus menjadi Universiti Penyelidikan serta seiring dengan tahun lonjakan penerbitan ilmiah UKM. Objektif minggu penyelidikan bertujuan membolehkan para peserta meningkatkan pengetahuan dan memantapkan ilmu penyelidikan agar metodologi yang digunakan adalah bermutu tinggi dan bertaraf antarabangsa di samping memenuhi keperluan etika di mana hasilnya nanti dapat diterbitkan dalam jurnal-jurnal berimpak tinggi serta mampu menghasilkan suatu produk yang boleh dikomersialkan.

Di kesempatan ini, saya ingin merakamkan setinggi-tinggi penghargaan kepada Dekan Fakulti Perubatan & Pengarah Pusat Perubatan UKM, Y. Bhg Profesor Dato' Dr Raymond Azman Ali dan Y.Bhg. Profesor Dr. Ima Nirwana Soelaiman, Timbalan Dekan (Penyelidikan & Inovasi), selaku penasihat Minggu Penyelidikan Ke-17, serta pihak pengurusan atas sokongan yang telah diberikan dalam menjayakan Minggu Penyelidikan Ke-17. Penghargaan khusus juga buat para penceramah dan fasilitator di atas keikhlasan meluangkan masa untuk berkongsi ilmu dan juga kepada para peserta di atas kesudian meluangkan masa untuk turut serta menjayakan Minggu Penyelidikan ke-17. Seterusnya ucapan ribuan terima kasih yang tidak terhingga dan tahniah kepada semua ahli jawatankuasa, pihak urusetia dan individu-individu yang terlibat secara langsung mahupun tidak langsung dalam memastikan kejayaan dan kelancaran Minggu Penyelidikan ke-17.

Saya berharap agar kita semua dapat memanfaatkan dan mempraktikkan pengetahuan yang diperolehi melalui Minggu Penyelidikan dan seterusnya meningkatkan kualiti penyelidikan yang beretika, cemerlang dan diiktiraf di peringkat global. Saya percaya dengan izin Allah s.w.t dan kerjasama kita semua, InsyaAllah objektif Minggu Penyelidikan ke-17 dapat dicapai dengan jayanya.

Sekian, terima kasih.

PROFESOR MADYA DR. ISA NAINA MOHAMED

Pengerusi

Minggu Penyelidikan Perubatan & Kesihatan ke-17
Pusat Perubatan Universiti Kebangsaan Malaysia

**JAWATANKUASA PENGANJUR & URUSETIA
MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-17**

Penasihat: Profesor Dato' Dr. Raymond Azman Ali (Dekan Fakulti Perubatan & Pengarah Pusat Perubatan UKM)
Profesor Dr. Ima Nirwana Soelaiman (Timbalan Dekan, Penyelidikan & Inovasi)

Pengerusi: Profesor Madya Dr. Isa Naina Mohamed
Jabatan Farmakologi
Pusat Perubatan UKM

Ahli Jawatankuasa Penganjur Minggu Penyelidikan Perubatan & Kesihatan ke-17:

Profesor Dr. Ahmad Nazrun Shuid
Jabatan Farmakologi

Dr. Rizuana Iqbal Hussain
Jabatan Radiologi

Profesor Madya Dr. Azmi Mohd Tamil
Jabatan Kesihatan Masyarakat

Dr. Norhazlina Abdul Wahab
Jabatan Fisiologi

Profesor Madya Dr. Sabarul Afian Mokhtar
Jabatan Ortopedik

Dr. Ekram Alias
Jabatan Biokimia

Dr. Tan Toh Leong
Jabatan Perubatan Kecemasan

Dr. Khaizurin Tajul Arifin
Jabatan Biokimia

Profesor Madya Dr. Kamisah Yusof
Jabatan Farmakologi

Dr. Aqmar Suraya Sulaiman
Jabatan Obstetrik & Ginekologi

Dr. Mohammad Arif Kamarudin
Jabatan Pendidikan Perubatan

Dr. Nor Adzimah Johdi
Institut Perubatan Molekul UKM (UMBI)

Urusetia:

- Sekretariat Penyelidikan Perubatan & Inovasi
- Jabatan Perhubungan Awam
- Jabatan Multimedia & Penyiaran
- Jabatan Pengurusan Bangunan
- Jabatan Keselamatan
- Jabatan Teknologi Maklumat

**PENCERAMAH-PENCERAMAH JEMPUTAN
MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-17**

BIL	PENCERAMAH	JABATAN
1	Profesor Dr. Ima Nirwana Soelaiman	Timbalan Dekan (Penyelidikan & Inovasi)
2	Profesor Dr. Srijit Das	Anatomi
3	Profesor Dr. Nor Azmi Kamaruddin	Perubatan
4	Profesor Dr. Suzana Makpol	Biokimia
5	Profesor Madya (K) Dato' Dr. Fuad Ismail	Radioterapi & Onkologi
6	Profesor Madya Dr. Sabarul Alfian Mokhtar	Otopedik & Traumatologi
7	Profesor Madya Dr. Jemaima Che Hamzah	Oftalmologi
8	Profesor Madya Dr. Mohd Hasni Jaafar	Kesihatan Masyarakat
9	Profesor Madya Dr. Azmi Mohd Tamil	Kesihatan Masyarakat
10	Dr. Tan Toh Leong	Perubatan Kecemasan
11	Dr. Rizuana Iqbal Hussain	Radiologi
12	Dr. Halim Ismail	Kesihatan Masyarakat

**FASILITATOR-FASILITATOR JEMPUTAN
MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-17**

BIL	NAMA	JABATAN
1	Profesor Dr. Tong Seng Fah	Perubatan Keluarga
2	Profesor Dr. Norazlina Mohamed	Farmakologi
3	Profesor Dr. Asma Abdullah	Otorinolaringologi
4	Profesor Madya Dr. Khin Pa Pa Hlaing @ Farida Hussan	Anatomi
5	Dr. Norshamsiah Md Din	Oftalmologi
6	Dr. Goon Jo Aan	Biokimia
7	Dr. Azlin Ithnin	Patologi
8	Dr. Norhazlina Abdul Wahab	Fisiologi
9	Dr. Ekram Alias	Biokimia
10	Dr. Nor Adzimah Johdi	UMBI
11	Dr. Rosnah Ismail	Kesihatan Masyarakat
12	Dr. Norliza Muhammad	Farmakologi

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MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-17

**ATURCARA PROGRAM
MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-17**

TARIKH	MASA	AKTIVITI	TEMPAT
10/08/2015 (ISNIN)	0800 – 0830	Pendaftaran	Auditorium
	8.30 - 10.30	<p>Majlis Perasmian Ketibaan Tetamu Jemputan Ketibaan Dekan & Pengarah PPUKM Bacaan Doa</p> <ul style="list-style-type: none"> • Ucapan oleh Pengerusi Minggu Penyelidikan 17 • Ucapan oleh Dekan & Pengarah PPUKM • Pengenalan Tokoh Penyelidik oleh Prof. Dr. Norazlina Mohamed, Jabatan Farmakologi, PPUKM • Tokoh Penyelidik – Prof. Dr. Ima Nirwana Soelaiman (Timbalan Dekan (Penyelidikan & Inovasi), PPUKM) Penyampaian Cenderahati Sesi Bergambar Lawatan ke Tapak Poster	Auditorium
	10.30 – 11.00	Minum Pagi / Pengadil Poster	Foyer Kompleks Pendidikan
		Pengerusi : Prof. Madya Dr. Sabarul Afian Mokhtar	Auditorium
	11.00 – 11.45	Developing & Submitting a Project Proposal oleh Prof. Madya Dr. Sabarul Afian Mokhtar	Auditorium
	11.45 – 12.15	Research Opportunities in PPUKM oleh Prof. Dr. Ima Nirwana Soelaiman	Auditorium
	12.15- 1.00	Patient Information Sheet and Informed Consent and Ethics in Clinical Research oleh Prof. Madya (K) Dato' Dr. Fuad Ismail	Auditorium
	1.00 – 2.00	Makan Tengahari / Solat	Foyer Kompleks Pendidikan
	2.00 – 2.45	Taklimat Kerja Kumpulan oleh Dr. Norhazlina Abdul Wahab	Auditorium
	2.45 – 4.30	Sesi Pengenalan dan Suai Kenal dalam Kumpulan (Semua Fasilitator)	Bilik PBL, Bangunan Praktikal
4.30 – 5.00	Minum Petang	Bilik PBL, Bangunan Praktikal	

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TARIKH	MASA	AKTIVITI	TEMPAT
11/8/2015 (SELASA)		Pengerusi : Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	8.00 – 8.45	Sample Size Calculation oleh Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	8.45 – 9.30	Screening in Clinical Research oleh Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	9.30 – 10.15	Clinical Trial and Randomization oleh Prof. Dr. Nor Azmi Kamaruddin	Auditorium
	10.15 – 10.45	Minum Pagi	Foyer Blok Pendidikan
	10.45 – 11.30	Cross Sectional Study & Sampling Method oleh Prof. Madya Dr. Mohd Hasni Jaafar	Auditorium
	11.30 – 12.15	Case Control Study oleh Prof. Madya Dr. Mohd Hasni Jaafar	Auditorium
	12.15 - 1.00	Cohort Study oleh Dr. Tan Toh Leong	Auditorium
	1.00 – 2.00	Makan Tengahari / Solat	Foyer Kompleks Pendidikan
		Pengerusi : Dr. Rizuana Iqbal Hussain	Auditorium
	2.00 – 2.45	Clinical Disagreement and The Kappa oleh Dr. Rizuana Iqbal Hussain	Auditorium
	2.45 – 4.30	Perbincangan Proposal (Semua Fasilitator)	Bilik PBL, Bangunan Praklinikal
	4.30 – 5.00	Minum Petang	Bilik PBL, Bangunan Praklinikal

TARIKH	MASA	AKTIVITI	TEMPAT
12/8/2015 (RABU)	9.00 – 9.30	Minum Pagi	Foyer Kompleks Pendidikan
		Pengerusi : Prof. Madya Dr. Isa Naina Mohamed	Auditorium
	9.30 – 10.00	Manuscript Writing oleh Prof. Dr. Srijit Das	Auditorium
	10.00 – 11.00	Avoiding & Controlling for Biases oleh Dr. Halim Ismail	Auditorium
	11.00 – 11.45	Critical Appraisal Prof. Madya Dr. Jemaima Che Hamzah	Auditorium
	11.45 – 12.30	Presentation Skill Prof. Dr. Suzana Makpol	Auditorium
	12.30 – 2.00	Makan Tengahari / Solat	Auditorium
	2.00 – 4.30	Perbincangan Proposal (Semua Fasilitator)	Bilik PBL, Bangunan Praklinikal
	4.30 – 5.00	Minum Petang	Bilik PBL, Bangunan Praklinikal

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TARIKH	MASA	AKTIVITI	TEMPAT
13/8/2015 (KHAMIS)		Pengerusi : Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	8.00 – 9.00	Statistic I: Data Collection & Handling oleh Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	9.00 – 10.00	Statistic II: Testing Hypothesis oleh Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	10.00 – 10.30	Minum Pagi	Foyer Kompleks Pendidikan
	10.30 – 11.30	Statistic III: Chi-Square Test oleh Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	11.30 – 12.30	Statistic IV: t test and ANOVA oleh Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	12.30 – 2.00	Makan Tengahari / Solat	Foyer Kompleks Pendidikan
		Pengerusi : Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	2.00 – 2.45	Statistic V: Correlation and regression oleh Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	2.45 – 3.30	Statistic VII: Non-Parametric Tests oleh Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	3.30 - 4.30	Perbincangan Proposal (Semua Fasilitator)	Bilik PBL, Bangunan Praklinikal
	4.30 – 5.00	Minum Petang	Bilik PBL, Bangunan Praklinikal

TARIKH	MASA	AKTIVITI	TEMPAT
14/8/2015 (JUMAAT)		Pengerusi : Dr. Nor Adzimah Johdi dan Dr. Khaizurin Tajul Arifin	Auditorium dan Dewan Kuliah I
	8.00 – 10.30	Pembentangan Proposal Kumpulan	Auditorium dan Dewan Kuliah I
	10.30 – 11.00	Minum Pagi	Foyer Kompleks Pendidikan
	11.00 – 12.00	Pembentangan Proposal Kumpulan (sambungan)	Auditorium
	12.00 - 12.30	Penyampaian Hadiah Pemenang Poster dan Pembentangan Proposal Penutup	Auditorium

ABSTRAK (KATEGORI MAKMAL)

ID PENYERTAAN: M01_2015

THE EFFECT OF TOCOTRIENOL RICH FRACTION (TRF) SUPPLEMENTATION ON COGNITIVE FUNCTION OF ALZHEIMER'S DISEASE MOUSE MODEL

W Nasri WN^a, Abdul Rahim NI^a, Makpol S^a, Mazlan M^b, Tooyama I^c, , Abdul Halim H^a, Wan Ngah WZ^a, Ahmad Damanhuri MH^a

^a *Department of Biochemistry, Faculty of Medicine, The National University of Malaysia (UKM), Jalan Ya'acob Latif, Bandar Tun Razak, Cheras, 56000 KL, Malaysia*

^b *Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh Campus, Selangor, Malaysia*

^c *Molecular Neuroscience Research Centre, Shiga University of Medical Sciences, Seta Tsukinowacho, Otsu 520-2192, Shiga, Japan*

Abstract

Introduction:

Alzheimer's disease (AD) is a progressive neurodegenerative disorder and the most common form of dementia. AD is characterized by the deterioration of brain functions that results in impairment of memory, cognition and behavioural functions. Oxidative stress is well known to be one of the causative factors for AD, thus it is a great potential to find the effect of natural antioxidant such as vitamin E in combating this disease.

Objective:

The aim of this study was to investigate the effect of tocotrienol-rich fraction (TRF) supplementation in delaying cognitive impairment in transgenic APP^{swe}/PSEN1^{dE9} mouse model of Alzheimer's disease.

Methods:

Male transgenic (APP^{swe}/PSEN1^{Δe9}) mice and wild-type (C57BL/6J) mice at 15 months old were used in this study. The wild-type mice received distilled water (n=6) while the transgenic mice received strip oil (vehicle; n=6) and TRF (200 mg/kg body weight; n=6) by oral gavage daily, for 6 months prior to data acquisition. The cognitive functions were determined using open field test, Morris water maze (MWM) and object recognition test. The tests were performed consecutively for 17 days.

Results:

TRF supplementation significantly reduced the level of anxiety in transgenic (APP^{swe}/PSEN1^{dE9}) mice based on the duration of rearing (47.01±14.08) and time spent in inner zone (3.27±1.14) in the open field test. Moreover, treatment with TRF supplementation improved motor skills in transgenic (APP^{swe}/PSEN1^{dE9}) mice based on the shorter path length required to locate the platform (3.10±2.12) in MWM test.

Conclusion:

TRF supplementation has the potential to improve the cognitive functions in transgenic AD mouse model.

ID PENYERTAAN: M02_2015

HUMAN WHARTON'S JELLY DERIVED FROM FETAL SEGMENT OF HUMAN UMBILICAL CORD EXPRESSED HIGHER LEVELS OF HLA-G AND HLA-ABC.

Jeamine Lim¹, Min Hwei Ng², Zainul Rashid Bin Mohd Razi³, Jia Xian Law¹, Azmawati MN⁴, Ruszymah Bt Hj Idrus^{1,5}

¹Tissue Engineering Centre, Universiti Kebangsaan Malaysia Medical Centre

²Head of Department of Tissue Engineering Centre, Universiti Kebangsaan Malaysia Medical Centre

³Head of Department of Obstetrics and Gynaecology, Universiti Kebangsaan Malaysia Medical Centre

⁴Department of Community Health (Epidemiology & Statistic), Universiti Kebangsaan Malaysia Medical Centre

⁵Department of Physiology, Medical Faculty Universiti Kebangsaan Malaysia

Abstract

Introduction

Stem cells are proven to have tremendous potential for clinical application in regenerative medicine. Human Wharton's Jelly stem cells (hWJSCs) are primitive cells, which are known to express stem cell markers of embryonic and adult in origin. Hypoimmunogenic properties of hWJSCs are reported to be due to higher expression of HLA-G.

Objective

To determine the growth rate, presence of pluripotency markers and level of HLA-G and HLA-AB in maternal, middle and fetal segments human umbilical cords.

Methods.

hWJSCs were cultured in DMEM-LG with 10% FBS. Population doubling time and viability were determined at each passage. Immunophenotyping of surface markers and immunocytochemistry of pluripotency markers were performed. Level of HLA-G and degree of multipotency was analyzed.

Results.

Proliferation rate and viability of cells isolated from maternal and fetal segments were significantly higher compared to the middle segments. Immunophenotyping of all three segments showed presence of MSC markers of more than >95%. Level of HLA-G and HLA-ABC of fetal segment was significantly higher compared to maternal and middle segments. Immunocytochemistry showed presence of embryonic markers Nanog and Oct 3/4. Maternal and fetal segments had higher osteogenic potential.

Conclusion.

Maternal and fetal segments of hWJSCs cord might be a promising candidate as a stem cell source for bone tissue engineering. HLA-G is responsible for a successful pregnancy despite of having genetic and immunological mismatch. Lower level of HLA-ABC indicates lower immunogenicity. Contradictory results of HLA-ABC is high at the fetal segment.

ID PENYERTAAN: M03_2015

DEVELOPMENT OF RESPIRATORY EPITHELIUM MODEL USING COLLAGEN COATED ELECTROSPUN NANOFIBER AND HUMAN NASAL RESPIRATORY EPITHELIAL CELLS

Rabiatul AR^a, Lokanathan Ya^a, Rohaina CM^a, Chowdhury SR^a, Aminuddin BS^b, Ruszymah BHI^{ac}

^a *Tissue Engineering Centre, UKM Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur.*

^b *Ear, Nose & Throat Consultant Clinic, Ampang Puteri Specialist Hospital, Jalan Memanda 9, Taman Dato Ahmad Razali, 68000 Ampang, Selangor.*

^c *Department of Physiology, Medical Faculty UKM, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur.*

Abstract

Introduction:

Nanofiber scaffold can be fabricated to mimic the native extracellular matrix, hence are used in developing respiratory epithelium (RE) model. Surface modification makes nanofiber's surface to be more cytocompatible and to enhance protein adsorption.

Objective:

The aim of the study was to construct RE model using suitable PMMA nanofiber scaffold seeded with respiratory epithelial cells (RECs).

Methods:

Electrospun PMMA nanofiber sheets were divided into four groups and surface modified as follows: PMMA (PMMA nanofiber), PMMACOL (PMMA nanofiber coated with collagen), PMMACOLGEN (PMMA nanofiber coated with collagen and genipin), and PMMACOLUV (UV-irradiated PMMA nanofiber coated with collagen). Fiber thickness was calculated from scanning electron microscopy (SEM) analysis and amount of collagen adsorbed to nanofiber was estimated by bicinchoninic acid (BCA) assay. Total cell attachment and cell proliferation rate were calculated from day 4 to day 14 post-cell seeding.

Results:

Thickness of PMMA nanofiber without surface modification was $249.33 \pm 21.06 \mu\text{m}$. PMMACOLGEN group had significantly thicker nanofiber diameter due to higher collagen adsorption ($446.56 \pm 32.78 \mu\text{m}$) compared to the other groups. This correlated with protein quantification that showed PMMACOLGEN had significantly higher amount of collagen adsorption even when using lower amount of collagen. However, the highest amount of cells was attached on PMMACOLUV group ($6.44 \times 10^4 \pm 2.77 \times 10^4$ cells/cm²) on day 4 compared to the other groups and they also had the highest proliferation rate from day 4 to day 9 ($0.005 \pm 0.003 \text{ h}^{-1}$).

Conclusion:

Genipin crosslinking facilitated better adsorption of collagen to the PMMA nanofiber. However, UV irradiated PMMA group resulted in highest RECs growth and proliferation rate. Therefore, from cell growth and proliferation perspective, PMMACOLUV is superior scaffold compared to the other tested scaffolds.

ID PENYERTAAN: M04_2015

DETECTION OF G6PD VARIANTS AMONG MALAYSIAN NEWBORNS WITH G6PD ABNORMALITIES IN UKMMC BY MOLECULAR TESTING

Siti Hawa AA^a, Farisah NR^a, Hidayati NS^a, Jubaida Paraja MD^b, Nurulfatihah S^e, Nur Asma' M^a, Norunaluwar J^a, Aizuddin AB^a, Cheah FC^d, Hafiza A^b, Azma RZ^{ab}, Azlin I^b

^a Department of Diagnostics Laboratory Services, UKM Medical Centre,

^b Department of Pathology, Faculty of Medicine, The National University of Malaysia (UKM) ^c Department of Medicine, Faculty of Medicine, The National University of Malaysia (UKM)

^d Department of Paediatric, Faculty of Medicine, The National University of Malaysia (UKM)

^e Department of Medical Laboratory Technology, Faculty of Health Sciences, Universiti Teknologi MARA (UiTM)

Abstract

Introduction:

Glucose-6-phosphate dehydrogenase (G6PD) deficiency is a well known human enzyme defect, with several classes of genetic variants. Several tests are available for its detection but only a few such as molecular testing, reliably detect heterozygous females.

Objective:

This study was conducted to detect the presence of G6PD mutations among newborns with abnormal G6PD in UKM Medical Centre using SNP genotyping assay.

Method:

Cord blood samples from 143 newborns with abnormal G6PD were selected based on their FST and G6PD enzyme level assay results. The detection of mutations were performed using Taqman® SNP Genotyping Assay and end-point results were read using Applied Biosystem 7500 Fast Real-Time PCR system.

Results:

Molecular mutations were detected in 59.4% (85/143) of G6PD-deficient neonates. Homozygous type were detected in 25.9% (37/143) cases of G6PD Viangchan 871 G>A, 13.3% (19/143) cases of G6PD Mahidol 487G>A, 2.8% (4/143) cases of G6PD Kaiping 1388 G>A and G6PD Mediterranean C563T A>G and 0.7% (1/143) in G6PD Canton G1376T C>A. Mutation of G6PD Songklanagarind 196 T>A (a mutation found in Thailand) was not present. Meanwhile, we also detected heterogeneity in 2.8% G6PD Mahidol 487G>A, 6.7% G6PD Viangchan 871 G>A, 0.7% G6PD Kaiping 1388 G>A, 1.4% G6PD Mediterranean C563T A>G and 2.1% G6PD Canton G1376T C>A.

Conclusion:

Our findings support the observation that G6PD Viangchan and Mahidol are common Southeast Asian variants. SNP genotyping assay can be used as a rapid tool to detect G6PD mutations.

ID PENYERTAAN : M05_2015

IDENTIFYING BIOMARKERS FOR PREMATURE CORONARY ARTERY DISEASE

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Abstract

Introduction:

Coronary artery disease (CAD) remains one of the leading causes of death in the world. CAD predominantly manifests in older individuals but incidence in younger population has been reported.

Objective:

The aim of this research was to compare the biomarkers between premature CAD and CAD.

Methods

Subjects were recruited from Universiti Kebangsaan Malaysia Medical Centre and Institut Jantung Negara and divided into four groups, i.e., Healthy control < 45 years old; Premature CAD < 45 years old; Healthy control > 60 years old; Older CAD > 60 years old with n=30 for each group. Eight biomarkers for CAD including VCAM-1, ICAM-1, Interleukin 2, Interleukin-6, Interleukin-10, Apo-E and Apo-A1 were analyzed using Procarta Multiplex Kit. Homocysteine levels were determined using ELISA kit. Gene expression analysis was performed using microarray from Illumina.

Results:

Premature CAD patients had significantly higher VCAM-1 ($3.39 \mu\text{g/ml} \pm 0.41$ vs $2.84 \mu\text{g/ml} \pm 0.26$, $p < 0.05$) and Interleukin-6 ($3.66 \text{ pg/ml} \pm 0.43$ vs $2.40 \text{ pg/ml} \pm 0.28$, $p < 0.05$) when compared to age matched controls. There were 566 differentially expressed genes when comparing between premature CAD with age matched controls, 182 genes between premature CAD with older CAD and 353 genes between older CAD with age matched controls (Fold change = 1.5, $p < 0.05$). Gene set analysis revealed most gene sets were involved in inflammation and immune response.

Conclusion:

Differentially expressed genes in this study provide insights into molecular mechanisms relevant to the pathophysiology of CAD and may have the potential to become biomarkers for both CAD and premature CAD.

ID PENYERTAAN : M06_2015

STAPHYLOCOCCUS AUREUS SMALL COLONY VARIANTS (SCV) DEMONSTRATE SLOWER KILLING THAN NORMAL-SIZED COLONIES IN A CAENORHABDITIS ELEGANS INFECTION MODEL

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Abstract

Introduction:

Small colony variants (SCV) of *Staphylococcus aureus* are pin-point sized colonies of the bacteria associated with persistent infection. *S. aureus* strains Mu50Q1 and Mu50Q2 are genetically similar, but present with different colony sizes due to large-scale chromosome flip-flop inversion (Cui et al., PNAS, 2012:E1647-56). Mu50Q1 is a SCV, while Mu50Q2 is an NC (normal-sized colony). In this study, we employed a *Caenorhabditis elegans* infection model to investigate the effect of *S. aureus* colony size variants towards nematode killing.

Methods:

Mu50Q1 and Mu50Q2 were fed to *C. elegans* N2 worms over a period of 14 days. The number of dead and surviving worms was scored for every tested strain each day during the assay; worms that crawl off the bacterial lawn were excluded from the scoring. Worm survival (%) for the experiment duration was then plotted against time (day) in a Kaplan-Meier plot.

Results:

Even though Mu50Q1 and Mu50Q2 are genetically identical with only differences in colony size, they presented different killing effects on the worms. Mu50Q2 (NC) exhibited rapid killing of the worms, where all worms were killed in the short span of 3 days. On the other hand, Mu50Q1 (SCV) demonstrated much slower killing, where an average of only 2 worms died daily. Indeed, some worms (35.9 %) fed with Mu50Q1 were still alive at the end of the assay duration.

Conclusion:

S. aureus SCV Mu50Q1 demonstrated slow killing in a *C. elegans* infection model. Though the reason remains unknown, *S. aureus* colony size might be associated with virulence and its pathogenicity.

ID PENYERTAAN: M07_2015

MOLECULAR CLONING AND OVER-EXPRESSION OF *ISA*B CONFERS HETERO VANCOMYCIN-INTERMEDIATE RESISTANCE TO *STAPHYLOCOCCUS AUREUS* (VISA)

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Abstract

Introduction:

Vancomycin is the first-line antibiotic for treatment of methicillin-resistant *Staphylococcus aureus* (MRSA) infections. Nevertheless, MRSA strains with reduced susceptibilities to vancomycin, though rare, have been reported since 1997. In this study, we performed over-expression of a gene, *isaB*, which is highly expressed in vancomycin-intermediate *S. aureus* (VISA), into 2 vancomycin-susceptible *S. aureus* strains, N315 and Mu3 and evaluated the mutants' vancomycin resistance.

Methods:

isaB, a 528 bp gene fragment was amplified from strain Mu50 (VISA) and cloned into *E. coli-S. aureus* shuttle vector p(YT3). The constructed plasmid, p(*isaB*) was introduced into strains N315 and Mu3 via electroporation. Subsequently, the resulting *S. aureus* mutants, N315p(*isaB*) and Mu3p(*isaB*) were then tested for their vancomycin susceptibilities using Etest antibiotic strips and also vancomycin population analysis, where an increase in the area under the curve (AUC) compared to their parental strains signifies *hetero* phenotype vancomycin resistance.

Results:

Both mutants did not show increment in vancomycin resistance in the Etest experiment (vancomycin MICs of N315 and N315p(*isaB*) = 1.5mg/L; vancomycin MICs of Mu3 and Mu3p(*isaB*) = 2mg/L). However, interestingly, both mutants recorded an increase in their vancomycin population analysis profile AUCs. For N315, the AUC increased from 5.9 of N315 to 13.8 of N315p(*isaB*); while the AUC of Mu3 increased from 15.6 to 21.3 of Mu3p(*isaB*).

Conclusion:

This study showed that over-expression of *isaB* in *S. aureus* conferred *hetero* vancomycin resistance to the bacteria. Gene knockout of *isaB* will be carried out to confirm the importance of *isaB* in *S. aureus* vancomycin resistance.

ID PENYERTAAN: M08_2015

TOXIN GENE PROFILING REVEALS *SEI* AS THE MOST COMMONLY HARBOURED ENTEROTOXIN GENE IN UKM MEDICAL CENTRE (UKMMC) METHICILLIN-SUSCEPTIBLE *STAPHYLOCOCCUS AUREUS* (MSSA) STRAINS

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Abstract

Introduction:

Methicillin-susceptible *Staphylococcus aureus* (MSSA) infections garners less attention than their methicillin-resistant cousins as they are usually inhibited by antibiotics. Nevertheless, the MSSA remains an important reservoir in understanding the lineage and evolution of *S. aureus* strains. In this study, we performed toxin gene profiling for MSSA strains isolated from the UKM Medical Centre (UKMMC).

Methods:

A total of 105 MSSAs isolated from UKMMC wards in 2009 were enrolled into the study. Chromosomal DNA was isolated from each strain. Carriage of 7 staphylococcal enterotoxin genes (*sea*, *seb*, *sec*, *sed*, *see*, *seg*, *sei*) and 2 exfoliative toxin genes (*eta* and *etb*) in the strains were determined via PCR.

Results:

Forty-nine (46.7%) of the tested strains did not harbour any of the detected toxin genes. The most commonly carried toxin gene was *sei* (36 strains, 34.3%), either singly (5 strains, 4.8%) or in combination with other genes (31 strains, 29.5%). This was followed by *seg* (29 strains, 27.6%) and *sea* (26 strains, 24.8%). The more common toxin gene combinations were *sea* + *seg* + *sei*, *seb* + *sec* + *seg* + *sei* and *seg* + *sei* (4 strains (3.8%) each, respectively). Interestingly, 4 of the tested strains harboured *eta*, which was not detected in MRSA strains isolated in the same period.

Conclusion:

sei was the most commonly harboured enterotoxin gene in UKMMC MSSAs, and it was frequently found in combination with *seg*. It will be interesting to investigate if the genes are also co-expressed to enhance superantigenic activity in MSSA infections.

ID PENYERTAAN: M09_2015

TRANSCRIPTIONAL RESPONSE OF METHICILLIN RESISTANT *STAPHYLOCOCCUS AUREUS* TO SECONDARY METABOLITES COMPOUNDS ISOLATED FROM ENDOPHYTIC *STREPTOMYCES* SP., SUK

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Abstract

Introduction:

Methicillin Resistant *Staphylococcus aureus* (MRSA) is one of the most important pathogenic bacteria that infect human and animal. New source for compounds to combat this infection are urgently needed, as well as to understand the response at the molecular level of the compounds as anti-MRSA. Commercial Affymetrix GeneChips™ performed to determine the overall transcriptional response of *S. aureus* ATCC 43300 triggered by the treatment of subinhibitory concentrations of (CAP) and cyclo (L-Pro-L-Val) were isolated from endophytic *Streptomyces* sp., SUK 25 which exhibited a high degree of potency against MRSA. A total of 230 genes were identified to be differentially regulated by the two antibiotics. Of these genes cell division, ABC transporters, peptidoglycan biosynthesis, aminoacyl-tRNA synthetase, ribosome and energy metabolism genes were differentially up and down regulated.

Objective:

This study was conducted to determine the gene transcriptional profile of MRSA ATCC 43300 treated with subinhibitory concentration of CAP and cyclo (L-Pro-L-Val).

Methods:

Three independent MRSA ATCC 43300 bacterial cultures treated with CAP and cyclo (L-Pro-L-Val) and three control culture untreated were prepared for RNA isolation. Each culture was treated for 45 mins with CAP and cyclo (L-Pro-L-Val) at 4 µgml⁻¹ and 8 µgml⁻¹ (½ MIC), respectively. RNA isolation, cDNA synthesized, fragmentation, terminal labelling and hybridization were carried out according to manufacturer's protocol (Affymetrix, USA). The GeneSpring version 12 used for data analysis, at 1.5 -fold change between examined groups. Gene ontology and pathways were determine using KEGG and DVID pathway.

Results

Exposure of MRSA to CAP and cyclo (L-Pro-L-Val) revealed significant modulation of gene expression with up regulation of 91 genes and down regulation of 139 genes. The genes which changed involved genes encoding proteins essential to translation for ribosomal pathway, transcription, ATP metabolites, immunoglobulin G binding protein A, lipoprotein precursor and cell division protein.

Conclusions

The results showed that *Streptomyces* sp., SUK 25 represent an important source of natural product with good potential activity against MRSA. The transcriptional gene profiling of MRSA treated with this compounds appears regulation of multiple desirable targets in cell division, ABC transporters, peptidoglycan biosynthesis, aminoacyl-tRNA synthetase, and ribosome and energy metabolism pathways. This study also showed that CAP has single target which represent in inhibition of ribosome that lead to rapid resistant development. Whereas, cyclo (L-Pro-L-Val) has multiple targets which delay bacterial resistant development.

ID PENYERTAAN: M10_2015

**PRIMARY AND SECONDARY RESISTANCE OF *HELICOBACTER PYLORI* ISOLATES IN
UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE (UKMMC)**

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Abstract

Introduction:

Helicobacter pylori is one of the most common bacterial infections and it can cause gastritis, peptic ulcer disease and gastric adenocarcinoma.

Objective:

The aim of this study was to determine the prevalence of primary and secondary resistance of *H. pylori* isolates against six antibiotics.

Methods:

Biopsy samples from 192 patients with dyspepsia symptoms were collected during the period of April 2014 to March 2015. Overall, 41 *H. pylori* cultures were isolated and tested for susceptibility testing towards clarithromycin, metronidazole, amoxicillin, levofloxacin, rifampicin and tetracycline by E-test method. Primary resistance was evaluated in 27 isolates from patients who never had been treated for *H. pylori* infection and secondary resistance was evaluated in 14 isolates from patients in whom *H. pylori* was cultured after failure of eradication.

Results:

All isolates were susceptible to amoxicillin, rifampicin and tetracycline. Significant difference between the primary and secondary resistance to clarithromycin was identified which were 15.4% and 75%, respectively ($p = 0.001$). An increase in secondary resistance was also observed for metronidazole (83.3%) and levofloxacin (50%) compared to the primary resistance (metronidazole; 51.9%, levofloxacin 22.2%). However, the differences were not statistically significant. Resistance to single and triple antibiotics was detected in 42.3% and 15.4% of the primary *H. pylori* isolates, respectively. Among the secondary *H. pylori* isolates, resistance to single, double and triple antibiotics were detected in 16.7%, 33.3% and 41.7%, respectively.

Conclusion:

The increase in primary and secondary antibiotics resistance of *H. pylori* will become a significant limitation for effective eradication of *H. pylori* in the future.

ID PENYERTAAN: M11_2015

EFFECTS OF VIRGIN COCONUT OIL AND TOCOTRIENOL COMBINATION ON BLOOD PRESSURE AND VASCULAR REACTIVITY IN ATHEROSCLEROTIC RATS

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Introduction:

Previous studies have shown that repeatedly heated palm oil increased blood pressure and vascular reactivity as well as decreased plasma nitric oxide (NO) level in rats.

Objective:

Therefore, this study was performed to explore the effects of virgin coconut oil (VCO) and tocotrienol in atherosclerotic rats that were fed with repeatedly heated palm oil and cholesterol diet on these parameters.

Methods:

Fifty-six female rats were divided into 7 groups (n=8): (i) sham control group (SCG) was given basal rat diet, whereas other groups were ovariectomized and fed with 2% cholesterol diet and five-time heated palm oil (5HPO); (ii) atherosclerotic control group; (iii) VCO (1.43 ml/kg, oral), (iv) VCO (4.29 ml/kg, oral); (v) TRF (30 mg/kg, oral); (vi) VCO (1.43 ml/kg)+TRF (30 mg/kg), orally; (vii) VCO (4.29ml/kg)+TRF (30 mg/kg), orally. Blood pressure was measured at baseline and at four weekly intervals for 24 weeks. At the end of study, the rats were sacrificed and thoracic aortas were taken for measurements of vascular reactivity. Blood samples were analysed for nitric oxide (NO) level.

Results:

Blood pressure was increased significantly in the group (ii) compared to all other groups. Blood pressure in group (vii) was significantly lower than group (ii). Aortic rings from the group (ii) exhibited attenuated relaxation in response to acetylcholine and sodium nitroprusside as well as increased vasoconstriction to phenylephrine compared to the treatment groups. Aortic rings from group (vii) showed only attenuated vasoconstriction to phenylephrine which gives protective effect to the aortas. Plasma NO level in group (ii) was significantly lower compared to all groups treatment on week 24.

Conclusion:

The present study concluded that the combination of VCO and TRF with a higher dose of VCO able to prevent blood pressure elevation and improve endothelial function as well as increase plasma (NO) level in atherosclerotic rats that were fed with repeatedly heated palm oil.

ID PENYERTAAN: M12_2015

PROSPECTS OF *EURYCOMA LONGIFOLIA* IN MANAGING MALE SEXUAL DISORDERS: A SYSTEMATIC REVIEW ON HUMAN CLINICAL STUDIES

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Abstract

Background:

Eurycoma longifolia (EL) has been well-recognized as a tremendous booster of male sexual health. Over the past few decades, numerous in-vivo animal studies and human clinical trials across the globe have been conducted to explore the potential role of EL in managing various male sexual disorders that typically manifest as erectile dysfunction, male infertility, low libido and low testosterone levels.

Objective:

The aim of the present review was to analyze and summarize the perspective evidences from the literature on human clinical trials which revealed the clinical significance and therapeutic feasibility of EL in improving male sexual well-being.

Methods:

This systematic review focused on the following databases: Medline, Wiley Online Library, Scopus, BioMed Central, Hindawi, PubMed Central, Web of Knowledge and Google Scholar, using the terms "*Eurycoma longifolia*", "EL", "Tongkat Ali", "male sexual health", "male infertility", "erectile dysfunction", "male libido" and "testosterone levels". Notably, in the present systematic review only human clinical studies published between 2000 and 2014 were selected and thoroughly reviewed for relevant citations.

Results:

Out of 150, a total of 11 studies met the inclusion criteria. Among them, 7 studies revealed remarkable corresponding association between EL and male sexual disorders, and thus, were mainly focused on. The other 4 articles failed to produce enough data supporting association of EL to the principle parameters of male sexual disorders.

Conclusion:

The current systematic review summarized convincing evidences to support the prominent outcomes of EL in improving male sexual health.

ID PENYERTAAN: M13_2015

THERAPEUTIC POTENTIAL OF DERMAL FIBROBLAST CONDITIONED MEDIUM FOR SKIN WOUND HEALING

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Abstract

Introduction:

Impaired epithelialization, which is prevalent in chronic wounds and aging skin, is a key concern in wound healing. Impaired epithelialization is accompanied with reduced growth and migration of keratinocytes, a major cellular component in epidermis, due to lack of growth factors and extracellular matrix (ECM) components. Fibroblast has been known to secrete these essential factors, which can be collected from the waste medium of cultured dermal fibroblasts as dermal fibroblast conditioned medium (DFCM).

Objective:

This study was conducted to evaluate the potential of DFCM as therapeutic intervention for *in vitro* epithelialization in different age groups of patients.

Methods:

Human skin samples were collected from consented patients, and processed to isolate keratinocytes and fibroblasts. Fibroblasts were used to prepare DFCM by culturing with serum free minimal medium. DFCM from one fibroblast sample was used throughout the study. 1D-SDS PAGE, mass spectrometry, western blot and ELISA were used to identify proteins in DFCM. Scratch assay on confluent keratinocytes was performed to evaluate *in vitro* epithelialization. In order to determine effect of DFCM on aging patients, keratinocytes isolated from skin samples were divided into 3 groups that are <35, 36-55 and >55 years (n=3 for each group).

Results:

Proteomic analysis of DFCM identified presence of cytokines, chemokines, growth factors and ECM. Supplementation of DFCM increased keratinocytes migration for all age groups, and the rate of keratinocyte migration was significantly higher in <35-year age group compared with the control. Moreover, supplementation of DFCM facilitated formation of multilayer keratinocyte, which was an essential step in epithelialization during wound healing.

Conclusion:

DFCM contains essential factors that facilitate *in vitro* epithelialization, thus possesses high potential as therapeutic intervention for skin wound healing.

ID PENYERTAAN: M14_2015

DISTRIBUTION OF *GIARDIA DUODENALIS* ASSEMBLAGES A AND B AMONG ORANG ASLI IN MALAYSIA: RISK FACTORS AND CORRELATION WITH CLINICAL SYMPTOMS

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Abstract

Introduction:

Giardia duodenalis is a flagellate parasite which has been considered the most common protozoa infecting human worldwide. Molecular characterization of *G. duodenalis* isolates have revealed the existence of eight assemblages (A to H) which differ in their host distribution.

Objective:

A cross-sectional study was conducted to identify assemblage's related risk factors of *G. duodenalis* among Orang Asli.

Methods:

Stool samples were collected from 611 individuals and then processed with formalin-ether sedimentation and Wheatley's trichrome staining techniques for the primary identification of *G. duodenalis*. Molecular identification was carried out by the amplification of the triosephosphate isomerase gene using nested-PCR assay. Meanwhile, socioeconomic data were collected using a pre-tested questionnaire.

Results:

Sixty-two samples were assemblage A and 36 were assemblage B. Risk analysis based on the detected assemblages using univariate and logistic regression analyses identified three significant risk factors of giardiasis caused by assemblage B; (i) children ≤ 15 years old, (ii) consuming raw vegetables and (iii) presence of other family members infected with giardiasis. On the other hand, subjects who had close contact with household pets were found to be significant predictors for assemblage A. Individuals infected with assemblage A were also at higher risk of manifesting diarrhea ($P = 0.016$) and other gastroenteritis symptoms ($P = 0.024$).

Conclusion:

G. duodenalis infection is still a public health problem among Orang Asli and caused by both assemblages. The routes of transmission are most probably through zoonotic and anthroponotic. These routes should be considered in the control strategy of the disease.

ID PENYERTAAN: M15_2015

DISTINCT *HELICOBACTER PYLORI* CAGA GENOTYPES INDUCED DIFFERENT IMMUNOPHENOTYPIC CHANGES OF CD ANTIGENS IN GASTRIC ADENOCARCINOMA CELL LINE

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Abstract

Introduction:

CagA+ *H. pylori* can be divided into Western or Eastern type based on EPIYA motif, a site in which phosphorylation of CagA protein occurs. Eastern type is more virulent than Western type. Cluster of differentiation (CD) antigens play essential role in *H. pylori* pathogenesis.

Objective:

This study was designed to immunophenotype CD antigens in gastric adenocarcinoma cell line (AGS) infected with Eastern and Western strains of *H. pylori* using antibody microarray DotScan™.

Methods:

AGS cell was infected with J99 and HP644 strain which were characterized previously as Western and Eastern types, respectively. AGS cells without *H. pylori* infection served as control. Cells were harvested after 24 hours and captured on DotScan™ slides. Immunophenotypic changes of AGS cells were detected using DotScan™ software.

Results:

Western type repressed the following CD antigens in descending order: CD40, CD54, CD44, CD71, CD66c, CD73, CD49e, and CD29, with induction of CD 49f and CD55. Eastern type repressed the following CD antigens in descending order: CD44, CD40, CD54, CD166, CD71, CD49e, CD29, CD55, CD66c, CD49f, and CD73, with induction of CD20. More than half of CD antigens repressed in AGS cells infected with Western or Eastern type were involved in cell adhesion. CD49f and CD55 induced in cells infected with Western type involved in cell signalling and immune regulation, respectively whilst CD20 induced in cells infected with Eastern type involved in B-cell activation.

Conclusion:

Repression and induction of CD antigens by *H. pylori* in gastric epithelial cells might be strain specific and result in different disease outcome.

ID PENYERTAAN: M16_2015

CD ANTIGEN EXPRESSION IN *HELICOBACTER PYLORI*-INFECTED PATIENTS WITH CHRONIC GASTRITIS AND GASTRIC CANCER

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Abstract

Introduction:

Helicobacter pylori infection has been associated with gastroduodenal diseases. Cluster of differentiation (CD) antigens are potential markers for disease signature as their expression changes according to disease severity.

Objective:

This study was intended to determine the highly expressed CD antigens in *H. pylori*-infected patients with chronic gastritis and gastric cancer by using DotScan™ antibody microarray.

Methods:

Gastric biopsies were obtained from chronic gastritis and gastric cancer patients. *H. pylori* infection was determined histologically using Warthin-Starry stain. Tissues were enzymatically digested and sequentially passed through Filcon filters for preparation of single cell suspension. Cell concentration was determined by Trypan blue exclusion dye. Cells were captured on DotScan™ slides and scanned using MedSaic software for CD antigen profiling.

Results:

Thirty-five and six CD antigens were highly expressed (>2 fold) in *H. pylori*-infected gastric cancer and chronic gastritis cells, respectively. Surprisingly, nine highly expressed CD antigens in gastric cancer cells were markers for T cells whilst only one T cell marker was detected in chronic gastritis. A marker for dendritic cell, CD11c, was highly expressed in gastric cancer cells. CD2 and CD43 which involved in T cell co-stimulation were expressed >8 fold in gastric cancer cells whilst CD283 that functions as pathogen sensor and cytokine stimulus was expressed >5 fold in chronic gastritis.

Conclusion:

The role of T and dendritic cells initially intended for clearance of *H. pylori* infection needs further evaluation. Continuous inflammation for *H. pylori* clearance might result in imbalance immune regulation and hence, increasing host propensity of developing severe stomach diseases.

ID PENYERTAAN: M17_2015

THE INFLUENCE OF DAILY PHYSICAL ACTIVITY ON BONE HEALTH IN HEALTHY ABORIGINE ADOLESCENT POPULATIONS

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Abstract

Introduction:

Studies on the influence of adolescence physical activity and bone mineral accretion, and its association with bone structural and strength in healthy paediatric populations has not been widely studied. Quantitative Ultrasound (QUS) is a latest tool and method that could provide information on bone properties such as bone structure and elasticity in addition to density.

Objective:

This study was conducted to investigate bone properties as measured by Quantitative Ultrasound (QUS) in healthy aborigine adolescent population participating in daily physical activity as part of a larger study on bone mineral acquisition/accretion in adolescents.

Method:

A cross-sectional study was performed on 50 Aborigines, aged 14 to 17 years. QUS parameters [Broadband Ultrasound Attenuation (BUA), Speed of Sound (SOS) and Stiffness Index (SI)] of the left heel were measured using a Lunar Achilles™ ultrasound bone densitometer (Lunar Corporation, Madison, WI, USA). Physical activity was measured by using the validated International Physical Activity Questionnaire (IPAQ) and participants were then grouped according to their level of physical activity (low, moderate, high).

Results:

One-way ANOVA showed significant difference between the three levels of physical activity and BUA parameter ($p=0.41$). Post hoc analysis indicated that the subjects with moderate physical activity level had significantly higher calcaneal BUA value than subjects with low physical activity level. BUA parameter is dependent to both structural and density giving a good indication for bone strength. Majority (96%) of aborigines adolescents surveyed had moderate to high physical activity.

Conclusion:

This study supports the importance of participation in regular physical activity in optimising adolescent bone structure and maximising peak bone mass. Almost all adolescent aborigines surveyed have moderate to high levels of physical activity granting them strong healthy bones.

ID PENYERTAAN: M18_2015

INTERACTION OF PURINERGIC RECEPTOR (P2Y) WITH CHEMOTHERAPEUTIC AGENTS-MEDIATED APOPTOSIS IN OSCC CELL LINE

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Abstract

Introduction:

Metabotropic P2Y receptors are belonging to the superfamily of G-protein coupled receptor (GPCR) and have been shown to be a potential new target in cancer therapy. Adenosine triphosphate which is one of the main agonists to the receptor has also been found abundantly in the tumor environment but not healthy tissue. In this study, we aimed to learn more and explore P2Y purinergic receptors as novel therapeutic target in OSCC.

Objective:

This study was conducted to investigate the inhibitory effect of P2Y receptor activation in OSCC cell line treated with docetaxel and taxol and its relation with MAPK signaling pathway.

Methods:

Two established OSCC cell lines from the patients (early stage and late stage) were treated with ATP alone, drug alone and combination of ATP with drug. The number of apoptotic cells was compared to observe any reversible changes. Quantification of phosphorylated MAPK was done to study the interaction between the action of P2Y, MAPK and apoptosis.

Results:

Conclusion:

Different P2Y receptor subtypes had been identified in a variety of cancer types and its activation have shown to be able to increase tumour cell proliferation and migration. MAPK pathway is a major key regulator in many events including cell proliferation and apoptosis. The link between MAPK and P2Y activation is not fully elucidate. This study would help to understand more about the role of P2Y activation on OSCC cell line and its interaction with MAPK pathways.

ID PENYERTAAN: M19_2015

CHARACTERIZATION OF CHONDROCYTES ISOLATED FROM LESS AND SEVERELY AFFECTED HUMAN OSTEOARTHRITIC KNEE JOINT

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Abstract

Introduction:

Cartilage tissue has limited self-repair capacity and known to heal poorly, especially in cases of severe damage such as full-thickness trauma defect or age-related degeneration like osteoarthritis (OA). Current cell source for the treatment of autologous chondrocytes implantation (ACI) is harvesting cartilage from non-load bearing region of the same joint which cause additional stress to the affected joint.

Objective:

In this study, phenotypic and molecular properties of chondrocyte harvested from less and severely affected OA knee were compared, aiming to identify suitable region for tissue harvesting.

Methods:

Femoral condyle of consented OA patients (n=3) undergoing total knee replacement was collected. Cartilage tissue was harvested from two region, which was classified as less affected (LA; Grade 0-1) and severely affected (SA; Grade 2-3) based on Kellgren Lawrence assessment. Sample was minced and digested to harvest chondrocytes, which then cultured until passage 4, and its morphological properties were evaluated using light microscopy and gene expression level of anabolic markers (Collagen type 2 and Sox-9) and catabolic markers (Collagen type 1, MMP-3, MMP-13 and IL-1).

Results:

Chondrocytes from LA group maintained their chondrogenic phenotype throughout culture, whereas cells from SA group demonstrated fibroblastic phenotype at later passage (passage 3 and 4). Expression of collagen type 2 (anabolic marker) were shown to increase, whereas expression of IL-1 (catabolic marker) were decreased at passage 4 both LA and SA chondrocytes. MMP's gene however showed a stable increase of expression throughout the passage for both groups.

Conclusion:

Several differences in morphological and molecular properties were observed for chondrocytes isolated from less and severely affected region. However, difference was not statistically significant. Hence, chondrocyte from both region are considered as similar and suitable to be used as cell source for ACI therapy.

ID PENYERTAAN: M20_2015

THE DIAGNOSTIC UTILITY OF GALECTIN-3 IN DIFFERENTIATING MALIGNANT FROM BENIGN THYROID LESIONS

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Abstract

Introduction

Thyroid cancer is the most common endocrine malignancy. Despite World Health Organization (WHO) guidelines for diagnosis of thyroid cancer, diagnosis is still susceptible to interobserver variations in some cases. Galectin-3 is a potential immunohistochemical marker for diagnosis of thyroid malignancy. The aim of this study was to determine the diagnostic utility of galectin-3 as an immunohistochemical marker for thyroid malignancies.

Method

Immunohistochemical expression of galectin-3 was tested on 177 thyroid specimens excised from January 2010 to January 2013 at Universiti Kebangsaan Malaysia Medical Centre (UKMMC). The cases were comprised of 116 benign thyroid lesions (83 nodular hyperplasias, 11 lymphocytic thyroiditis, 17 follicular adenomas, two thyroid cysts, one diffuse hyperplasia, one hyalinizing trabecular adenoma and one Riedel's thyroiditis) and 61 malignant thyroid lesions (43 papillary carcinomas, 12 follicular carcinomas, two medullary carcinomas and four anaplastic carcinomas).

Result

Our results showed that 63 (54.3%) of benign and 59 (96.7%) of malignant thyroid lesions were positive for galectin-3. Even though, the galectin-3 sensitivity was high in distinguishing malignant (96.6%) from benign lesions, its specificity was comparatively low (45.7%).

Conclusion

Galectin-3 is a potential immunohistochemical marker in differentiating malignant from benign thyroid lesions. A higher cut-off point for galectin-3 positivity may improve its specificity while its use in combination with other markers may improve both sensitivity and specificity.

ID PENYERTAAN: M21_2015

QUANTIFICATION OF *BCR-ABL* TRANSCRIPTS IN CHRONIC MYELOID LEUKEMIA PATIENTS BY REAL-TIME QUANTITATIVE POLYMERASE CHAIN REACTION.

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Abstract

Introduction:

Molecular monitoring of chronic myeloid leukemia (CML) patients on therapy is vital for patient management. Reverse-transcription real-time quantitative PCR (RQ-PCR) is a method to quantify levels of *BCR-ABL* transcripts. Levels of *BCR-ABL* are reported on a standardized International Scale (IS) unit.

Objective:

This study was conducted to optimize RQ-PCR method for detection and quantification of *BCR-ABL* transcripts in CML patients diagnosed at UKMMC.

Methods:

A total of 32 known cases of CML confirmed by conventional reverse-transcription PCR were selected for this study. A number of 32 samples at diagnosis and 77 negative post chemotherapy samples by conventional reverse-transcription PCR were included. Total RNA was extracted from bone marrow or peripheral blood followed by cDNA synthesis. *BCR-ABL* and *ABL* transcripts were quantified using a commercially available BCR ABL IS MMR Kit (Qiagen, Germany) according to the EAC network protocol. Calculation of *BCR ABL* transcripts were based on the international standardized control.

Results:

All samples at diagnosis by RQ-PCR showed 100% concordance with the conventional reverse-transcription PCR method. All post-chemotherapy samples demonstrated a reduction of *BCR-ABL* transcript levels which was not detected by conventional reverse-transcription PCR. Of 32 cases, 15/32 achieved major molecular response (IS NCN < 0.05), 14/32 did not achieve major molecular response (IS NCN > 0.15) and 3/32 were inconclusive (0.05 < IS-NCN sample < 0.15).

Conclusion:

RQ-PCR is a reliable technique for monitoring response of CML patients to therapy as well as the disease progression.

ID PENYERTAAN: M22_2015

EFFECTS OF MONO AND COMBINATION THERAPY OF VIRGIN COCONUT OIL AND TOCOTRIENOL ON FOOD INTAKE AND VISCERAL FAT WEIGHT IN POSTMENOPAUSAL RAT MODEL

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Abstract

Introduction:

Consumption of food containing phenolic content may significantly contribute to human health. However, consumption of a high-fat diet is associated with obesity. Studies have shown dietary polyphenols have a role in preventing obesity.

Objective:

This study was performed to determine the protective effect of individual and combination therapy of virgin coconut oil (VCO) and palm tocotrienol (TT) on these parameters in postmenopausal rat model fed with repeatedly heated palm oil and cholesterol diet.

Methods:

Forty-two female Sprague-Dawley rats except for the sham control group were ovariectomized and then divided into 7 groups (n=6). The (i) sham control group (SCG) was fed with basal rat diet only throughout the study period while the treatment groups; (ii) control ovariectomized group, (iii) VCO (1.43 ml/kg), (iv) VCO (4.29 ml/kg), (v) TT (30 mg/kg), (vi) VCO (1.43 ml/kg) + TT (30 mg/kg), (vii) VCO (4.29 ml/kg) + TT (30 mg/kg) were fed with 2% cholesterol diet mix with five-time heated palm oil (5HPO). All treatments were given orally and food intake was measured daily. After 24 weeks of study, the rats were sacrificed. Visceral fats were harvested and weighted.

Results:

All treatment groups showed significant decreased in the mean of visceral fat weight per body weight and food intake compared to atherosclerotic control groups. However, VCO 1.43 ml/kg + TT 30 mg/kg group shown a significant increase in mean of visceral fat weight per body weight, while TT 30 mg/kg group shown a significant increase in mean of food intake compared to VCO 1.43 ml/kg group.

Conclusion:

These findings suggest that mono therapy of virgin coconut oil (VCO) and palm tocotrienol (TT) produce a better protective effect in certain parameter compared to their combination.

ID PENYERTAAN: M23_2015

DETERMINATION OF CYTOTOXIC LEVEL OF *CENTELLA ASIATICA* (L.) ON HUMAN MESENCHYMAL STEM CELLS (MSCS) *IN VITRO*

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Abstract

Introduction:

Since cytotoxic effect of *Centella asiatica* (L.) or "pegaga" relatively varies according to its geographical distribution and extraction process, robust investigations have been performed before it is ready for clinical application. Yet, study on its cytotoxic effect against human mesenchymal stem cells (MSCs) is far too limited to date.

Objective:

This present study was performed to investigate the cytotoxic level of *Centella asiatica* (CA) extract on *in vitro* human MSCs and to determine its therapeutic dose for neural differentiation.

Methods:

MTT assay was employed to measure cell viability upon treatment with different concentrations of CA extract (400, 800, 1200, 1600, 2000 and 2400 µg/ml) and LD₅₀ value was determined from concentration-response curve. Determination of proliferation rate for cells on the first, third, fifth and seventh day of post-RECA treatment below the LD₅₀ value will be undertaken.

Results:

CA extract was found to have cytotoxic effect on human MSCs above 1600 µg/ml. The LD₅₀ value was 2200 µg/ml.

Conclusion:

The cytotoxic effect of CA extract on human MSCs is dose-dependent, where the CA extract LD₅₀ was 2200 µg/ml. The result of cell proliferation rate will further clarify the optimal concentration to be used in the present study in directing the cells to neural lineage.

ID PENYERTAAN: M24_2015

**DETERMINATION OF POTENTIAL BIOMARKERS RELATED TO OXIDATIVE STATUS
IN PREMATURE CORONARY ARTERY DISEASE**

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Abstract

Introduction:

Premature coronary artery disease (PCAD) constitutes 10% of coronary artery disease (CAD) cases in the world. Oxidative stress has been proposed as a crucial step in the early development of PCAD.

Objective:

This study was conducted to determine oxidative status in PCAD in comparison to CAD patients.

Methods:

Thirty subjects for each PCAD (<45 year-old) and CAD (>60 year-old) were recruited with age-matched controls. Plasma protein carbonyl content was measured by using Cayman Chemical assay kit. Plasma malondialdehyde (MDA) and vitamin E isomers were determined by high-performance liquid chromatography (HPLC). Erythrocyte glutathione (GSH) and glutathione peroxidase activity (GPx) were assayed by Cayman Chemical kits.

Results:

Protein carbonyl content was significantly higher in both PCAD and CAD patients as compared to same-aged controls (PCAD; 0.57 ± 0.03 nmol/mg vs controls <45; 0.45 ± 0.02 nmol/mg and CAD; 0.55 ± 0.04 nmol/mg vs controls >60; 0.38 ± 0.03 nmol/mg). MDA level was increased significantly in PCAD patients group as compared to controls <45 and patients >60 (0.39 ± 0.03 nmol/ml vs 0.21 ± 0.01 , 0.27 ± 0.02 nmol/ml respectively). For vitamin E isomers, α -tocotrienol level was significantly lower in PCAD patients as compared to controls <45 (0.31 ± 0.04 μ g/ml vs 0.56 ± 0.06 μ g/ml). GSH level showed a significant decrease in patients <45 as compared to controls <45 and patients >60 (5.9 ± 1.7 μ M vs 16.7 ± 2.3 , 17.2 ± 3.9 μ M respectively). However, there was no significant change in GPx activity in all groups.

Conclusion:

Elevated plasma MDA level and low level of α -tocotrienol and GSH in patients below 45 years old could be potential biomarkers for PCAD.

ID PENYERTAAN: M25_2015

EFFECT OF LAMININ ON CO-CULTURED MYOBLAST AND FIBROBLAST IN 2D AND 3D CULTURE ENVIRONMENT

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*Both authors contributed equally to this paper

Abstract

Introduction:

Over the past decades, myoblasts have been tested as cell therapy to regenerate muscles and as gene therapy system to treat muscle and non-muscle diseases. Purified myoblasts is recommended for efficient clinical applications. However, isolation of myoblasts from skeletal muscle tissue contaminated with fibroblasts. Thus, regulation of growth and migratory properties of myoblasts and fibroblasts during expansion and construct formation are the long standing challenges.

Objective:

The aim of current study was to evaluate growth and migratory properties of myoblasts and fibroblasts on laminin-coated polystyrenesurface (2D culture) and PMMA nanofibers (3D culture), as laminin is the major extracellular matrix in skeletal muscle.

Methods:

Skeletal muscle tissue was collected from consented patients, and cells were isolated via trypsin digestion. Myoblast was identified via immunostaining with specific marker of desmin. Unstained cells were identified as fibroblast. Polystyrene surface and electrospun PMMA nanofibers were coated with laminin (50 µg/ml) for 2D and 3D cultures, respectively. Non-coated polystyrene surface was used as control. Myoblast and fibroblastare were co-cultured for 7 days and their growth rate and migration rate were evaluated.

Result:

A significant increase in growth rate of myoblast for both laminin-coated polystyrene and PMMA surfaces was seen compared to control, but no effect on fibroblasts growth rate. Migration rate of myoblasts was significantly higher on laminin-coated polystyrene surface than the control. In contrast, fibroblast migration rate was significantly decreased on laminin-coated polystyrene surface compared to the control.

Conclusion:

Enhanced growth and migration of myoblasts on laminin-coated surface increase and/or maintain their population compared to fibroblasts during expansion. Thus, laminin-coated surface (both 2D and 3D cultures) could be suitable for expansion and formation of tissue substitutes to be used in clinical applications.

ID PENYERTAAN: M26_2015

HER2 EXPRESSION IN GASTRIC CARCINOMA

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Abstract

Introduction:

Gastric cancer is a well-known malignancy that is detectable usually at advanced stage. Results from Trastuzumab for Gastric Cancer (ToGA) trial revealed an improved survival in patients with HER2 over-expression of advanced gastric cancer.

Objective:

The objectives of this study were to determine the expression of HER2 in gastric cancer and to correlate with histological types and pathological staging (pT and pN).

Methods:

Thirty-two gastrectomy specimens and 71 biopsies from 103 patients of both sexes and all age groups diagnosed with gastric cancer at Universiti Kebangsaan Malaysia Medical Center (UKMMC) from year 2007-2012 were analyzed. Immunohistochemistry (IHC) was performed using HER2 antibody, and its evaluation was made according to Hoffman validation study. Fluorescence in-situ hybridization (FISH) was done to validate HER2 2+ and 3+ cases.

Results:

Our results showed that HER2 expression was 4.9% and did not correlate with any histological type and pathological staging.

Conclusion:

Anti-HER2 therapies are becoming the standard of care in gastric cancer, determination of HER2 status and validation by in-situ hybridization should be established and implemented.

ID PENYERTAAN: M27_2013

POTENTIAL OF DILUTED PLATELET-RICH PLASMA AND PLATELET-POOR PLASMA IN PROMOTING CUTANEOUS WOUND HEALING

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Abstract

Introduction:

Concentrated platelet-rich plasma (PRP) and platelet-poor plasma (PPP) has been widely used for the treatment of skin injury. However, there is a lack of literature that reported the potential use of diluted PRP and PPP in wound therapy.

Objective:

The objective of this study was to investigate the potential of diluted PRP and PPP in promoting wound healing.

Methods:

Keratinocytes and fibroblast were indirectly co-cultured using transwell by seeding the keratinocytes in transwell and fibroblasts in companion plate. Transwell allows basolateral diffusion of proteins. As a control, co-cultured cells were fed with Epilife:DMEM/F12 (ratio 1:1) containing 5% fetal calf serum (FCS). In case of test samples, 5% FCS in culture medium was replaced with 10% and 20% (v/v) PRP or PPP. The wound healing potential was evaluated in term of growth property, extracellular matrix gene expression, migratory property and soluble factor secretion.

Results:

Growth rate analysis and RT-PCR showed that 20% PRP and PPP reduced the keratinocyte apparent specific growth rate and increased the expression of collagen type I and III significantly, compared to the control. Scratch wound assay found that all experimental groups exhibited significantly slower fibroblast migration compared to the control. Multiplex immunoassay analysis found that the 10% concentration cultures exhibited soluble factors secretory profile that promotes re-epithelialization, whereas the 20% concentration cultures favored collagen deposition.

Conclusion:

Diluted PRP and PPP demonstrated potential in promoting wound healing, especially the wounds with impaired matrix formation as they could increase the collagen deposition.

ABSTRAK (KATEGORI KLINIKAL)

ID PENYERTAAN: K01_2015

CASE REPORT OF PERIPAPILLARY DETACHMENT IN PATHOLOGIC MYOPIA

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Abstract

Introduction:

Peripapillary detachment in pathologic myopia (PDPM) is a newly-described finding in a pathologic myopia and was first mentioned by Freund et al. in 2003. This occurs in roughly 4.9% of highly myopic individuals.

Objective:

To report a case of peripapillary retinal detachment with vitreomacular traction in a myopic patient.

Case report:

A 74-year-old Malay gentleman presented with left eye blurring of vision, central scotoma and floaters for 2 months. He had no metamorphopsia and no recent ocular trauma. Visual acuity on presentation was 6/36 and N18. Posterior pole revealed a retinal detachment surrounding the optic disc with vitreomacular traction with presence of submacular fluid detected on OCT. Intraoperatively revealed a small slit retinal break superior to the optic disc. Pars plana vitrectomy with ILM peeling was performed. However after 3 months, there was persistent subretinal fluid involving the fovea and RRD extending to the edges of the optic disc 360-degrees. This remained stable for up to 6 months.

Conclusion:

This case shows the rare incidence of retinal detachment in PDPM involving the fovea centre. The case also highlights the difficulties in treatment for this condition. The report will show the clinical and fundoscopic features of this rare entity.

ID PENYERTAAN: K02_2015

SERUM LACTATE AS A BIOMARKER FOR RISK STRATIFICATION OF SEPSIS IN THE EMERGENCY DEPARTMENT OF A TEACHING HOSPITAL

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Abstract

Introduction:

Serum lactate is reported to be useful in assisting early risk stratification for sepsis, improving its management outcome.

Objective:

This study was carried out to determine whether initial serum lactate level is associated with 28-days all-cause mortality of septic patients in the emergency department of a teaching hospital in Malaysia.

Method:

This was a single center cross-sectional study. Seventy-three patients were recruited from December 2010 to September 2011. Initial blood lactate levels were measured and patients were followed-up via phone call or case records to determine for 28-days mortality outcome.

Results:

Serum lactate level proved to be a good predictor for 28-days mortality in sepsis, severe sepsis and septic shock (ROC-AUC=0.812). Results suggested a threshold lactate level of 2.85mmol/L for the three groups with 75% sensitivity (95% CI, 0.22-0.99) and 77% specificity (95% CI, 0.65-0.85). After adjustment for the sepsis group, the subset for severe sepsis and septic shock group (n=53) showed the same lactate threshold of 2.85mmol/L (ROC-AUC=0.735) with 75% sensitivity (95% CI, 0.02-0.19) and 67% specificity (95% CI, 0.52-0.80). Although the association between serum lactate levels and 28-day mortality for the 3 groups was not significant (p=0.052), the trend indicated a possible clinical value which may be seen with a larger sample size. Patients with higher initial lactate levels appeared to have a higher risk of 28-days mortality.

Conclusion

Serum lactate of more than 2.85mmol/L is fairly sensitive and specific to predict 28-days mortality in septic patients.

ID PENYERTAAN: K03_2015

DIGITAL AUTOPSY IN ENHANCING CLASSICAL MEDICO-LEGAL AUTOPSY IN A STAB INJURY DEATH: A CASE REPORT.

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Abstract

Introduction:

Cases with multiple stab wounds are difficult to be dissected and interpreted. Digital autopsy being a non-invasive approach offers certain distinct advantages over the classical forensic autopsy.

Case history:

Body of a young Indian male with multiple stab injuries was brought by the police to Hospital Universiti Kebangsaan Malaysia mortuary. Whole body scan with Multi Slice Computer Tomography (MSCT) was performed before routine classical autopsy. The external images were uploaded to INFOPSY Image Viewer Wizard. All the Digital Imaging and Communications in Medicine (DICOM) images generated were parsed on the secured server and then retrieved to Digital Certified Manager (DCM) directory on the visualization working station Digital Autopsy Software System (iDASS) which had forensic specific 3D, Multiplanar Reconstruction (MPR) and 2D capabilities.

Discussion:

The use of Forensic specific visualization tools like INFOPSY with Whole Body Scan (WBS) by MSCT provides a non invasive method to visualize the internal part of the body and document the findings without inserting any artifact into the actual physical body. The hemorrhage in the left side of chest cavity and the stab wound track as well as air embolism in the heart chamber can also be demonstrated precisely.

Conclusion:

Digital autopsy overcomes many of classical autopsy disadvantages and is a definite complementary procedure while minimizing the dissection of the body. A part from that, the findings can be demonstrated years and decades later as an aid to continue medical education.

ID PENYERTAAN: K04_2015

DIGITAL AUTOPSY AS ENHANCING TOOL FOR CLASSICAL MEDICOLEGAL AUTOPSY: A PRELIMINARY OBSERVATION.

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Abstract

Introduction:

Invasive “body-opening” or “body-cutting” autopsy represents the traditional means of postmortem investigation. Nevertheless, modern cross-sectional imaging technique can complement classical forensic autopsy.

Objectives:

The aim of this study was to prove that Digital Autopsy offers certain distinct advantages and complement the Classical Autopsy.

Method:

This study involved full body visualisation of multiple deceased with lung tuberculosis, ischaemic heart disease, multiple stab wounds, fallen from height, gunshot injury and skeletal exhumation using Multi Sliced Computer Tomography (MSCT) Scan as a preliminary observation followed by routine Classical Autopsy.

Result:

We found that Digital Autopsy was an important complementary procedure in establishing diagnoses of lung tuberculosis, ischaemic heart disease, multiple stab wounds, fallen from height, gunshot injury and skeletal exhumation cases. However, the role of Classical Autopsy was still vital and undeniable in those cases.

Conclusion:

Though Classical Autopsy is still a gold standard, Digital Autopsy offers certain distinct advantages and complements the Classical Autopsy.

ID PENYERTAAN: K05_2015

THE EFFICIENCY OF QUANTITATIVE ULTRASOUND (QUS) COMPARED WITH DUAL X-RAY ABSORPTIOMETRY IN DETERMINING BONE DENSITY AMONG UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE (UKMMC) PATIENTS

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Abstract

Introduction:

Dual X-ray absorptiometry (DXA) is the gold standard method to diagnose osteoporosis. However it is limited due to the device availability, cost, radiation and feasibility of implementing it as a monitoring device. Quantitative ultrasound (QUS) is a radiation-free method which can predict fracture to the same extent as DXA.

Objective:

This study was conducted to assess the efficiency of QUS in direct comparison with DXA in determining bone mineral density (BMD) classification of osteopenia and osteoporosis.

Methods:

Patients had their BMD at the hip and spine measured by DXA (Hologic) and left heel measured by QUS (Achilles Express II). Correlations between DXA and QUS parameters were calculated. Receiver operator characteristic (ROC) curves were plotted for T-score and used to define cut-off points for both machines. Femoral neck BMD was applied as the standard for diagnosing osteoporosis ($T \leq -2.5$) and osteopenia ($T > -2.5$ and ≤ -1) by WHO criteria.

Results:

A number of 123 patients (62.6% women) and (37.39% men) were studied. A total of 43.9%, 46.5% and 10.6% had femoral neck BMDs in the normal, osteopenia and osteoporosis, respectively. Corresponding T-scores for QUS classification for osteopenia and osteoporosis were -1.267 and -2.38 respectively with areas under the ROC curves (AUC) were 0.71 and 0.61 respectively. While a total of 77.23%, 20.23% and 3% had total femoral neck BMDs in the normal, osteopenia and osteoporosis. Corresponding T-scores for QUS classification for osteopenia and osteoporosis were -1.08 and -2.82 respectively with AUC of 0.69 and 0.89 respectively.

Conclusion:

QUS able to produce fair to good ROC equivalent characteristics for diagnosing osteopenia and osteoporosis when compared to DXA and will be a most useful tool for screening bone density and bone health.

ID PENYERTAAN: K06_2015

CARDIORESPIRATORY FITNESS AND BODY COMPOSITION IMPROVED IN YOUNG MEN WITH CARDIOVASCULAR RISKS PARTICIPATING IN Pedometer-BASED WORKPLACE PROGRAMME

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Abstract

Introduction:

Healthy lifestyle and good fitness levels are important elements for maintenance of health. Walking is a form of healthy lifestyle that is easy to adopt as it may be integrated easily into daily routine.

Objective:

The aim of this study was to assess walking programme among working adults in reducing cardiovascular risk factors and to evaluate improvement of cardiorespiratory fitness (CRF) and body composition.

Methods:

A programme was designed to enable subjects to increase their level of walking as part of their daily work routine and self-monitored by using pedometers. A total of 70 young men (20-40 years) who were sedentary, achieving less than 5,000 steps/day in casual walking with 2 or more cardiovascular risk factors were recruited from IKBN Hulu Langat. Subjects were randomly assigned to a control (CG) (n=34; no change in walking) and pedometer group (PG) (n=36; minimum target: 8,000 steps/day). Physical parameters, CRF and body composition were measured at baseline and after 12 weeks.

Results:

At post intervention, the CG step counts were similar (4983 ± 366 vs. 5697 ± 407 steps/day). The PG increased step count from 4996 ± 805 to 10,128 ± 511 steps/day (P<0.001). In PG, physical parameters and body composition were significantly improved for time and group effect (p<0.01); no change in CG. In PG, the CRF was significantly increased (pre=31.54 ± 9.66 vs. post=40.15 ± 9.55 ml/kg/min, time and group effect; P<0.01) but no change in CG (pre=31.46 ± 6.15 vs. post= 31.60 ± 8.99 ml/kg/min).

Conclusion:

The walking programme improves CRF and body composition and thus improve cardiovascular health status.

ID PENYERTAAN: K07_2015

DETERMINANTS OF GESTATIONAL DIABETES MELLITUS (GDM): A STUDY AMONG PREGNANT WOMEN IN SELANGOR, MALAYSIA.

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Abstract

Introduction:

According to International Diabetes Federation 2013, the prevalence of hyperglycaemia in pregnant women was 16.9%. A study in Malaysia had reported on the prevalence of GDM as 18.3% and 76.2% of GDM mothers had at least one risk factor. The prevalence of GDM is increasing parallel to the rising prevalence of obesity.

Objective:

This study aimed to determine the prevalence of GDM and its associated factors among pregnant women in Selangor, Malaysia.

Methods:

The study was carried out among 276 randomly selected pregnant women who had their follow-up in two randomly selected health clinics in the Klang district, Selangor from January to May 2014. Data was retrieved from mother home based card including socio-demographics, anthropometric measurement, present and past obstetric history, past medical history, and family history. Data entry and analysis were done using Statistical Package for Social Sciences (SPSS) version 21.0.

Results:

The prevalence of GDM was 14.1%. Multiple logistic regression showed that pregnant women aged ≥ 35 years (aOR 11.40, 95%CI 3.32, 39.09), being grand multipara (aOR 6.17, 95%CI 1.49, 25.58), obese (aOR 3.99, 95%CI 1.43, 11.16), with family history of GDM (aOR 9.34, 95%CI 3.03, 28.86) and previous history of GDM (aOR 17.70, 95%CI 3.82, 82.05) were at higher odds of having GDM.

Conclusion:

High prevalence of GDM cases corresponds with other studies in Asian countries. In view of maternal obesity as one of the predictors for GDM, future interventional study should be carried out to optimize glycaemic control; as well healthy weight gain during pregnancy.

ID PENYERTAAN: K08_2015

K-SIXD™: A New Approach for Stress Radiography Positioning in UKM Medical Center

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Abstract

Introduction:

Stress view radiography of the knee joints is important in determining the degree of knee injury. It helps in planning the treatment for the patient. A valgus and varus stress is applied to determine knee injury on the medial and lateral aspect. Normally, the radiographer gives pressure to the knee of the patient during examination. The problem arises when the pressure given is not adequate. So, a repeat examination is required. This situation exposes the patient and radiographers to unnecessary radiation. Other problems identified also include (i) higher costs in terms of staff energy and machinery maintenance and (ii) patient waits longer in order to complete the examination.

Methods:

A device is invented using recycled materials such as *Perspex™* and velcro straps. This tool has been designed in accordance with the size of Asian patients and for the comfort of both staff and patient. We named it K-SIXD™ (Knee Stress X-ray Immobilizer Device). The device is light (2.4 kg), low-cost (less RM 50), withstands pressure up to 2,047 kPa and stands patient's weight up to 110 kg.

Results and Discussion:

This device successfully reduced the percentage of low quality images which was then 30.06% to 9.3%. By avoiding a repeat examination, a total cost of RM 53.19 can be saved on each case. Patient and staff are totally avoided from unnecessary radiation. The waiting time decreased and the number of examination carried out also increased. The device is currently used in positioning and immobilizing patient during angiography examinations too.

Keywords: Knee stress radiography, valgus, varus, stress device

ID PENYERTAAN: K09_2015

SOLITARY ORBITAL TUMOR: A RARE CASE OF ORBITAL TUMOR

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Abstract

Introduction:

To report a case of solitary orbital tumor; a mesenchymal tumour, which rarely arise in the orbital area.

Methods:

Case report

Results:

A 35 year old Malay lady presented to PPUKM with six months history of painless, slow progressing swelling of the left upper eyelid. On examination, visual acuity was 6/6 OD and 6/9 OS. She was found to have left eye 4mm, non-axial proptosis. A firm, non-tender palpable mass at left upper eyelid laterally was noted and globe was displaced inferonasally. Extraocular movements were full bilaterally and she denied any diplopia. Anterior segment examination and intraocular pressures of both eyes were normal. On funduscopy, there was evidence of choroidal folds superotemporally in the left eye. However, optic disc and macula were normal. Her right fundus and other systemic examinations were unremarkable. CT scan of the brain and orbit was performed which showed a solitary, left extraconal mass superotemporally pressing the globe. The tumour was successfully removed via lateral orbitotomy. Histopathology showed areas of hyper and hypocellular regions with patternless proliferation of spindle shaped cells. Immunohistochemically, the tumor was positive for both CD34 and Vimentin leading to the diagnosis of left solitary orbital tumour. Patient has been well since.

Conclusion:

Solitary tumour rarely occurs in orbit. Nevertheless, it should be considered as one of the differential diagnosis for orbital tumours. Adequate sample for histology and appropriate immunochemical testing is important to confirm the diagnosis.

ID PENYERTAAN: K10_2015

FRASER SYNDROME: THE HIDDEN EYE

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Abstract

Introduction:

To report a rare autosomal recessive disorder known as Fraser syndrome

Method:

Case Report

Results:

A 6 month old baby girl born with bilateral fused eyelids was referred to PPUKM for further intervention. Upon presentation, she was noted to have bilateral cryptophthalmos, syndactyly, a large laryngeal web and abnormal genitalia. She was born full term via cesarean section due to prolonged labour. Her birth weight was 3.3kg. Antenatal was uneventful. Her parents are healthy and non-consanguineous. She is the third child of the family. Her parent claimed that their first child, a baby girl, was also born with the same condition and died soon after birth due to renal agenesis. The second child is a boy who is normal and healthy. Further chromosomal studies performed confirmed her to have Fraser Syndrome. MRI of the brain and orbit showed bilateral hypoplastic eyeballs with posteriorly located larger colobomatous cysts. Both optic nerves were noted to be hypoplastic and medially displaced. Based on the MRI findings, a high possibility of no visual potential following surgery was explained to parents and a conservative management was decided for the baby.

Conclusion:

Cryptophthalmos is one of the major criteria for diagnosing Fraser Syndrome. Baby born with this condition must be examined thoroughly to look for other fatal malformation like renal agenesis. Early genetic counselling is important to educate the parents with regards to the probability of them conceiving another child with Fraser syndrome.

ID PENYERTAAN: K11_2015

SUDDEN VISUAL LOSS AS THE INITIAL PRESENTATION OF CML

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Abstract

Introduction:

To emphasize that sudden vision loss can be the only isolated symptoms for chronic myeloid leukemia (CML) without other clinical symptoms and the importance of early initiation of treatment.

Method

Case study

Results:

A healthy, 26 year old Chinese gentleman presented with sudden onset reduced vision in the right eye associated with floaters. He claimed to be lethargic for past three weeks prior to presentation. There were no other constitutional and systemic symptoms. No significant family history of malignancy or eye problems. Examination revealed right eye best corrected visual acuity (BCVA) of 6/36 and left BCVA was 6/9. Anterior segment examinations were normal. However funduscopy revealed bilateral hyperemic optic discs swelling, dilated and tortuous retinal veins and multiple dots blots haemorrhage with Roth's spots. There was also vitreous haemorrhage in right eye. Cranial nerves and systemic examinations were normal. No organomegaly noted.

Full blood count revealed white cell count of 170×10^9 and full blood picture was suggestive of CML in chronic phase which was later confirmed by bone marrow aspiration and trephine. Chemotherapy was commenced immediately. 3 month later, his vision improved to 6/6 both eye with resolution of optic disc swelling, vitreous haemorrhage and retinal haemorrhages.

Conclusion:

Ocular manifestations can be the first presentation in CML. As illustrated by this case, early diagnosis of CML and prompt treatment prevented permanent vision loss as well as avoiding patient from going into blast crisis.

SEKALUNG PENGHARGAAN

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- Timbalan Dekan (Penyelidikan & Inovasi) Hospital Canselor Tuanku Muhriz, Pusat Perubatan UKM
- Semua Tetamu Jemputan
- Semua Penceramah Jemputan
- Semua Fasilitator Jemputan
- Semua Peserta Minggu Penyelidikan Perubatan & Kesihatan ke-17 (MP17)
- Jawatankuasa Penganjur MP17
- Urusetia MP17

Semua pihak lain yang terlibat secara langsung dan tidak langsung dalam menjayakan MP17



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