



UNIVERSITI KEBANGSAAN MALAYSIA
The National University of Malaysia



BUKU PROGRAM & ABSTRAK

MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15

7 - 13 SEPTEMBER 2013

AUDITORIUM

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



ISI KANDUNGAN

Pengenalan & Objektif	2
Kata Alu-Aluan Dekan Fakulti Perubatan & Pengarah Pusat Perubatan, Universiti Kebangsaan Malaysia	3
Kata Alu-Aluan Pengarah Institut Perubatan Molekul UKM (UMBI), Universiti Kebangsaan Malaysia	4
Kata Alu-Aluan Dekan Fakulti Sains Kesihatan, Universiti Kebangsaan Malaysia	5
Kata Alu-Aluan Dekan Fakulti Pergigian, Universiti Kebangsaan Malaysia	6
Kata Alu-Aluan Dekan Fakulti Farmasi, Universiti Kebangsaan Malaysia	7
Kata Alu-Aluan Pengerusi Minggu Penyelidikan Perubatan & Kesihatan ke-15, Pusat Perubatan Universiti Kebangsaan Malaysia	8
Jawatankuasa Penganjur & Urusetia Minggu Penyelidikan Perubatan & Kesihatan ke-15	9
Penceramah-penceramah Jemputan	10
Fasilitator-fasilitator Jemputan	11
Program sepanjang Minggu Penyelidikan Perubatan & Kesihatan ke-15	12
Abstrak (kategori makmal)	16
Abstrak (kategori klinikal)	40
Sekalung Penghargaan	83

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 PUSAT PERUBATAN
UNIVERSITI KEBANGSAAN MALAYSIA**

Assalamualaikum Warahmatullahi Wabarakatuh dan Salam Sejahtera

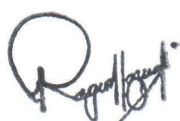
Alhamdulillah, syukur ke hadrat Allah SWT, Minggu Penyelidikan Perubatan & Kesihatan kali ke-15 dapat diadakan dengan jayanya. Tahniah dan syabas kepada Pusat Perubatan Universiti Kebangsaan Malaysia, Fakulti Sains Kesihatan, Fakulti Pergigian, Fakulti Farmasi serta Institut Perubatan Molekul UKM (UMBI) di atas kerjasama yang murni ini. Ini merupakan tahun ke-15 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.

Kerjasama yang telah terjalin harus diteruskan agar menjadi satu pemangkin kepada kecemerlangan penyelidikan. Apa juga jenis penyelidikan sama ada dalam bidang perubatan, kesihatan, pergigian, farmasi mahupun dalam bidang molekular, 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 Pusat Perubatan
Universiti Kebangsaan Malaysia

**KATA ALU-ALUAN
PENGARAH INSTITUT PERUBATAN MOLEKUL UKM (UMBI)
UNIVERSITI KEBANGSAAN MALAYSIA**

Assalamualaikum Warahmatullahi Wabarakatuh dan Salam Sejahtera

Saya ingin mengucapkan tahniah kepada jawatankuasa penganjur Minggu Penyelidikan Perubatan dan Kesihatan ke-15 atas kejayaan menganjurkan program ini. Kerjasama Fakulti Perubatan dengan Fakulti Sains Kesihatan, Fakulti Pergigian, Fakulti Farmasi dan UMBI mencerminkan semangat keserakanan penyelidikan yang semakin mantap.

Nic Teknologi Kesihatan dan Perubatan (TKP) terus bergerak melalui kelompok dan kumpulan penyelidikan serta menekankan *output* penyelidikan dalam bentuk penerbitan berimpak serta produk yang berpotensi untuk dikomersilkan. Program ini menyediakan peluang untuk para penyelidik memaparkan hasil penyelidikan mereka serta berkongsi idea dan pengalaman bagi merealisasikan potensi yang ada dalam nic TKP ini.

Penyelidikan perubatan dan kesihatan masa kini telah menjadi lebih mencabar dengan peningkatan prevalens penyakit kronik serta penyakit yang disebabkan gaya hidup yang tidak sihat. Fokus penyelidikan seharusnya menjurus kepada impak maksimum terhadap perubahan status kesihatan komuniti. Teknologi canggih dalam era perubatan genomik ini harus digembeling sepenuhnya supaya kita terus menjadi relevan. Justeru, para penyelidik harus sentiasa mengikuti perkembangan terbaru dalam dunia sains perubatan dan kesihatan.

Saya berharap peserta akan memanfaatkan program ini dengan sepenuhnya.

Sekian, terima kasih.



PROFESOR DATUK DR. A RAHMAN A JAMAL
Pengarah
Institut Perubatan Molekul UKM (UMBI)

**KATA ALU-ALUAN
DEKAN FAKULTI SAINS KESIHATAN
UNIVERSITI KEBANGSAAN MALAYSIA**

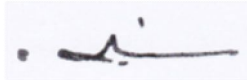
Assalamualaikum Warahmatullahi Wabarakatuh dan Salam Sejahtera

Alhamdulillah, bersyukur saya ke hadrat Allah Subhanahuwataala kerana dengan limpah kurnianya, sekali lagi Fakulti Sains Kesihatan bersama-sama Fakulti Farmasi, Fakulti Pergigian, Institut Perubatan Molekul UKM (UMBI) dan Pusat Perubatan UKM dapat menganjurkan Minggu Penyelidikan Perubatan & Kesihatan yang ke-15 ini. Dalam usaha mencapai universiti bertaraf dunia, pencapaian dalam bidang penyelidikan telah menjadi salah satu aspek utama yang diberi penekanan. Oleh yang demikian, adalah wajar sesi perkongsian ilmu sebegini dianjurkan untuk membolehkan para penyelidik di Gugusan Kesihatan yang terdiri dari pelbagai disiplin menonjolkan penemuan-penemuan terkini dari penyelidikan mereka.

Saya amat berharap Minggu Penyelidikan ini mampu menjana projek-projek berimpak tinggi melalui kolaborasi pelbagai disiplin di samping meningkatkan kemahiran para penyelidik dalam memaparkan hasil-hasil penyelidikan yang bermutu sekaligus menyemarakkan budaya penyelidikan.

Akhir kata, saya ucapkan tahniah kepada semua yang terlibat dalam menjayakan program ini. Semoga Minggu Penyelidikan Perubatan & Kesihatan ini dapat diadakan secara berterusan bagi memberi manfaat kepada setiap warga UKM sama ada Gugusan Kesihatan ataupun di Fakulti dan Institut yang lain.

Sekian, terima kasih.



PROF. DR. SITI ZAMRATOL-MAI SARAH MUKARI
Dekan Fakulti Sains Kesihatan
Universiti Kebangsaan Malaysia

**KATA ALU-ALUAN
DEKAN FAKULTI PERGIGIAN
UNIVERSITI KEBANGSAAN MALAYSIA**

Assalamualaikum Warahmatullahi Wabarakatuh dan Salam Sejahtera

Sepertimana yang sedia maklum, objektif Bengkel Minggu Penyelidikan ini adalah satu aktiviti untuk meningkatkan kemahiran dan membudayakan aktiviti penyelidikan didalam pengajaran dan pembelajaran. Ia bertujuan membolehkan para peserta menambah ilmu pengetahuan serta berpeluang berkongsi hasil penyelidikan masing. Adalah diharapkan agar penyelidikan yang dijalankan adalah bermutu tinggi dan hasilnya nanti dapat diterbitkan di jurnal yang diiktiraf.

Saya ingin mengucapkan syabas dan tahniah kepada Jawatankuasa dan Urusetia Minggu Penyelidikan Perubatan & Kesihatan pada tahun ini, yang telah berusaha untuk menjayakan program tahunan ini.

Saya berharap agar kita semua dapat memanfaatkan pengetahuan yang diperolehi melalui Minggu Penyelidikan ini dan seterusnya menrealisasikan lagi universiti ini sebagai uinversiti penyelidikan.

Terima kasih



PROFESOR DATO' DR. GHAZALI MAT NOR
Dekan Fakulti Pergigian
Universiti Kebangsaan Malaysia

**KATA ALU-ALUAN
DEKAN FAKULTI FARMASI
UNIVERSITI KEBANGSAAN MALAYSIA**

Assalamualaikum Warahmatullahi Wabarakatuh dan Salam Sejahtera

Alhamdulillah, bersyukur saya ke hadrat Allah S.W.T. kerana dengan izin, limpah dan kurnia-Nya jua dapat saya menyampaikan sepatah dua kata-kata aluan sempena Minggu Penyelidikan Perubatan & Kesihatan Ke-15 pada kali ini.

Tahniah dan syabas diucapkan kepada Jawatankuasa Induk Minggu Penyelidikan Perubatan & Kesihatan Ke-15 kerana sekali lagi telah berjaya menganjurkannya pada tahun ini. Sepertimana lazimnya, program ini adalah merupakan program tahunan yang melibatkan penyelidikan di bawah empat fakulti yang berpayung di bawah Gugusan Sains Kesihatan. Gugusan ini pula diletakkan di bawah NIC Teknologi Perubatan & Kesihatan yang merupakan salah satu daripada 8 NIC penyelidikan yang telah dikenalpasti di UKM. Kesemua kumpulan penyelidikan daripada keempat-empat fakulti ini berkumpul pada hari tersebut untuk mempamerkan kekuatan dan penemuan-penemuan terbaru dalam bidang penyelidikan masing-masing.

Akhir kata, saya sekali lagi bagi pihak seluruh warga Fakulti Farmasi mengucapkan syabas dan tahniah kepada Jawatankuasa Induk Minggu Penyelidikan Perubatan & Kesihatan Ke-15 kerana telah berjaya menganjurkan program ini.

Sekian, terima kasih.



PROFESOR DR. IBRAHIM JANTAN
Dekan Fakulti Farmasi
Universiti Kebangsaan Malaysia

KATA ALU-ALUAN

PENGERUSI

MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15

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-15 (MP15) dapat diadakan pada tahun ini. MP15 ini adalah merupakan salah satu agenda tahunan yang penting dalam kalendar aktiviti di Pusat Perubatan UKM dan ianya sentiasa mendapat penyertaan dari pelajar UKM mahupun dari luar UKM yang sangat memberangsangkan. Program ini adalah satu aktiviti dalam mencerap budaya penyelidikan selaras dengan wawasan Universiti kita bagi memastikan UKM terus menjadi Universiti Penyelidikan seiring dengan universiti yang lain. Objektif bengkel seperti ini bertujuan membolehkan para peserta meningkatkan pengetahuan dan memantapkan ilmu penyelidikan agar metodologi yang digunakan adalah bermutu tinggi 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-15, Dekan-Dekan daripada Fakulti Sains Kesihatan, Fakulti Pergigian, Fakulti Farmasi dan Pengarah UMBI serta pihak pengurusan atas sokongan yang telah diberikan dalam menjayakan Minggu Penyelidikan Ke-15 ini. 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 ini. 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 ini.

Saya berharap agar kita semua dapat memanfaatkan dan seterusnya mempraktikkan pengetahuan yang diperolehi melalui Minggu Penyelidikan ke-15 ini, dalam usaha meningkatkan kualiti penyelidikan yang beretika, cemerlang dan seterusnya diiktiraf di peringkat global. Saya percaya dengan izin Allah dan kerjasama kita semua, InsyaAllah objektif Minggu Penyelidikan ini dapat dicapai dengan jayanya.

Sekian, terima kasih.



PROFESOR DR. AHMAD NAZRUN SHUID

Pengerusi

Minggu Penyelidikan Perubatan & Kesihatan ke-15

Pusat Perubatan Universiti Kebangsaan Malaysia

**JAWATANKUASA PENGANJUR & URUSETIA
MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15**

Penasihat: Profesor Dato' Dr. Raymond Azman Ali (Dekan Fakulti Perubatan & Pengarah Pusat Perubatan UKM)
Profesor Datuk Dr. A. Rahman A. Jamal (Pengarah Institut Perubatan Molekul UKM, UMBI)
Profesor Dr. Siti Zamratol-Mai Sarah Mukari (Dekan Fakulti Sains Kesihatan)
Profesor Dato' Dr. Ghazali Mat Nor (Dekan Fakulti Pergigian)
Profesor Dr. Ibrahim Jantan (Dekan Fakulti Farmasi)
Profesor Dr. Ima Nirwana Soelaiman (Timbalan Dekan, Penyelidikan & Inovasi)

Pengerusi: Profesor Dr. Ahmad nazrun Shuid
Jabatan Farmakologi
Pusat Perubatan UKM

Ahli Jawatankuasa Penganjur Minggu Penyelidikan ke-15:

Profesor Dr. Mohd Rizal Abd Manaf
Jabatan Kesihatan Masyarakat, PPUKM

Dr. Suehazlyn Zainudin
Jabatan Perubatan, PPUKM

Profesor Madya Dr. Azmi Mohd Tamil
Jabatan Kesihatan Masyarakat, PPUKM

Profesor Madya Dr. Norfilza M. Mokhtar
Jabatan Fisiologi, PPUKM

Profesor Madya Dr. Sabarul Afian Mokhtar
Jabatan Ortopedik, PPUKM

Profesor Madya Dr. Nur Azurah Abdul Ghani
Jabatan Obstetrik & Ginekologi, PPUKM

Dr. Tan Toh Leong
Jabatan Perubatan Kecemasan, PPUKM

Dr. Norhazlina Abdul Wahab
Jabatan Fisiologi, PPUKM

Dr. Mohammad Arif Kamarudin
Jabatan Pendidikan Perubatan, PPUKM

Profesor Madya Dr. Rohaya Megat Abdul Wahab
Jabatan Ortodontik, Fakulti Pergigian

Dr. Isa Naina Mohamed
Jabatan Farmakologi, PPUKM

Profesor Madya Dr. Nor Fadilah Rajab
Jabatan Sains Bioperubatan, Fakulti Sains Kesihatan

Profesor Madya Dr. Kamisah Yusof
Jabatan Farmakologi, PPUKM

Dr. Noraida Mohamed Shah
Fakulti Farmasi

Dr. Azizah Ugusman
Jabatan Fisiologi, PPUKM

Dr. Neoh Hui Min
Institut Perubatan Molekul UKM (UMBI)

Dr. Rizuana Iqbal Hussain
Jabatan Radiologi, PPUKM

Urusetia:

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

BUKU PROGRAM DAN ABSTRAK

MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15

**PENCERAMAH-PENCERAMAH JEMPUTAN
MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15**

Prof. Dr. Ima Nirwana Soelaiman	Prof. Dr. Ahmad Nazrun Shuid
Prof. Dr. Mohd Rizal Abdul Manaf	Prof. Dr. Baharudin Omar
Prof. Dr. Rahimah Abdul Kadir	Prof. Dato' Dr. Wan Zurinah Wan Ngah
Prof. Dr. Srijit Das	Prof. Dr. Nor Azmi Kamaruddin
Prof. Dr. Cheah Fook Choe	Prof. Madya Dr. Shamsul Azhar Shah
Prof. Madya Dr. Sabarul Afian Mokhtar	Prof. Madya Dato' Dr. Fuad Ismail
Prof. Madya Dr. Azmi Mohd Tamil	Prof. Madya Dr. Jemaima Che Hamzah
Prof. Madya Dr. Mohd Hasni Jaafar	Prof. Madya Dr. Kamisah Yusof
Dr. Azmawati Mohammed Nawi	

BUKU PROGRAM DAN ABSTRAK**MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15****FASILITATOR-FASILITATOR JEMPUTAN
MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15**

BIL	NAMA	JABATAN
1	Prof. Madya Dr. Tang Swee Fong	Pediatrik
2	Prof. Madya Dr. Hasniah Abdul Latif	Pediatrik
3	Prof. Dr. Zulfiqar Mohd. Annuar	Radiologi
4	Dr. Kew Thean Yean	Radiologi
5	Prof. Madya Dr. Shahrin Niza Abdullah Suhaimi	Surgeri
6	Prof. Datin Dr. Norhayati Moktar	Parasitologi & Entomologi Perubatan
7	Prof. Madya Dr. Jemaima Che Hamzah	Oftalmologi
8	Dr. Sakthiswary Rajalingham	Perubatan
9	Prof. Madya Dr. Salina Husain	Otorinolaringologi
10	Prof. Madya Dr. Tan Geok Chin	Patologi
11	Dr. Dian Nasriana Nasuruddin	Patologi
12	Dr. Chan Lai Fong	Psikiatri
13	Cik Shalisah Sharip	Psikiatri
14	Dr. Asma Alhusna Abang Abdullah	Ortodontik , Fakulti Pergigian
15	Dr. Neoh Hui Min	Umbi
16	Dr. Nor Azian Abdul Murad	Umbi
17	Dr. Mohd Makmor Bakry	Farmasi
18	Dr. Norwahidah Abdul Karim	Biokimia
19	Dr. Siti Nidzwani Mohamad Mahdi	Perubatan Kecemasan
20	Dr. Esa Kamaruzaman	Anestesiologi & Rawatan Intensif
21	Dr. Emelia Osman	Parasitologi & Entomologi Perubatan
22	Prof. Madya Dr. Chua Kien Hui	Fisiologi
23	Dr. Ng Beng Kwang	Obstetrik & Ginekologi
24	Dr. Rashidi Mohamed Pakri Mohamed	Perubatan Keluarga
25	Dr. Majmin Sheikh Hamzah	Perubatan Keluarga
26	Dr. Shahida Mohd Said	Periodontologi, Fakulti Pergigian

BUKU PROGRAM DAN ABSTRAK

MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15

**ATUR CARA PROGRAM
MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15**

TARIKH	MASA	AKTIVITI	TEMPAT
9/9/2013 (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 15 • Ucapan oleh Dekan & Pengarah PPUKM • Pengenalan Tokoh Penyelidik oleh Prof. Madya Dr. Jamia Azdina Jamal • Tokoh Penyelidik – Prof. Dr. Ibrahim Jantan (Dekan Fakulti Farmasi, UKM) <p>Penyampaian Cenderahati Sesi Bergambar Lawatan ke Tapak Poster</p>	Auditorium
	10.30 – 11.00	Minum Pagi / Pengadil Poster	Foyer Blok Pendidikan
		Pengerusi : Prof. Dr. Mohd Rizal Abdul Manaf	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 oleh Prof. Dr. Mohd Rizal Abdul Manaf	Auditorium
	1.00 – 2.00	Makan Tengahari / Solat	Foyer Blok Pendidikan
		Pengerusi : Prof. Madya Dr. Sabarul Afian Mokhtar	Auditorium
	2.00 – 2.45	Ethics in Clinical Research oleh Prof. Madya Dato' Dr. Fuad Ismail	Auditorium
	2.45 – 3.30	Designing, Validating & Pre-Testing A Questionnaire oleh Dr. Azmawati Mohammed Nawi	Auditorium
	3.30 – 3.45	Taklimat Kerja Kumpulan oleh Prof. Madya Dr. Norfilza Mohd Mokhtar	Auditorium
	3.45 – 4.30	Sesi Pengenalan dan Suai Kenal dalam Kumpulan (Semua Fasilitator)	Dewan Peperiksaan Tingkat 10, Blok Klinikal
	4.30 – 5.00	Minum Petang	Dewan Peperiksaan Tingkat 10, Blok Klinikal

BUKU PROGRAM DAN ABSTRAK

MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15

TARIKH	MASA	AKTIVITI	TEMPAT
10/9/2013 (SELASA)		Pengerusi : Prof. Dr. Ahmad Nazrun Shuid	Auditorium
	8.00 – 8.45	Research Collaborations Oleh Prof. Dr. Ahmad Nazrun Shuid	Auditorium
	8.45 – 9.30	Sample Size Calculation oleh Prof. Madya Dr. Azmi Mohd Tamil	Auditorium
	9.30 – 10.15	Avoiding & Controlling for Biases oleh Prof. Dr. Rahimah Abdul Kadir	Auditorium
	10.15 – 10.45	Minum Pagi	Foyer Blok Pendidikan
	10.45 – 11.30	Case-Control Study oleh Prof. Madya Dr. Shamsul Azhar Shah	Auditorium
	11.30 – 12.15	Cohort Study oleh Prof. Madya Dr. Shamsul Azhar Shah	Auditorium
	12.15 - 1.00	Cross Sectional Study & Sampling Method oleh Prof. Madya Dr. Mohd Hasni Jaafar	Auditorium
	1.00 – 2.00	Makan Tengahari / Solat	Foyer Blok Pendidikan
		Pengerusi : Prof. Madya Dr. Mohd Hasni Jaafar	Auditorium
	2.00 – 2.45	Meta Analysis oleh Prof. Madya Dr. Mohd Hasni Jaafar	Auditorium
	2.45 – 3.30	Clinical Disagreement and The Kappa oleh Prof. Dr. Baharudin Omar	Auditorium
	3.30 – 4.30	Perbincangan Proposal (Semua Fasilitator)	Dewan Peperiksaan Tingkat 10, Blok Klinikal
	4.30 – 5.00	Minum Petang	Dewan Peperiksaan Tingkat 10, Blok Klinikal

BUKU PROGRAM DAN ABSTRAK

MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15

TARIKH	MASA	AKTIVITI	TEMPAT
11/9/2013 (RABU)	8.00 – 9.30	Clinical Pathological Conference	
		Pengerusi : Dr. Rizuana Iqbal Hussain	Auditorium
	9.30 – 10.30	Manuscript Writing oleh Prof. Dr. Srijit Das	Auditorium
	10.30 – 11.00	Minum Pagi	Foyer Blok Pendidikan
	11.00 – 11.45	Critical Appraisal Prof. Madya Dr. Jemaima Che Hamzah	Auditorium
	11.45 – 12.30	Presentation Skill Prof. Dato' Dr. Wan Zurinah Wan Ngah	Auditorium
	12.30 - 1.00	Procedure for Animal Ethics Approval oleh Prof. Madya Dr. Kamisah Yusof	Auditorium
	1.00 – 2.00	Makan Tengahari / Solat	Auditorium
		Pengerusi : Dr. Isa Naina Mohamed	Auditorium
	2.00 – 2.45	Clinical Trial & Randomization oleh Prof. Dr. Nor Azmi Kamaruddin	Auditorium
	2.45 – 3.30	Screening in Clinical Research oleh Prof. Dr. Cheah Fook Choe	Auditorium
	3.50 – 4.30	Perbincangan Proposal (Semua Fasilitator)	Dewan Peperiksaan Tingkat 10, Blok Klinikal
4.30 – 5.00	Minum Petang	Dewan Peperiksaan Tingkat 10, Blok Klinikal	

BUKU PROGRAM DAN ABSTRAK

MINGGU PENYELIDIKAN PERUBATAN & KESIHATAN KE-15

TARIKH	MASA	AKTIVITI	TEMPAT
12/9/2013 (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 Blok 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 Blok 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. Dr. Baharudin Omar	Auditorium
	3.50 - 4.30	Perbincangan Proposal (Semua Fasilitator)	Dewan Peperiksaan Tingkat 10, Blok Klinikal
	4.30 – 5.00	Minum Petang	Dewan Peperiksaan Tingkat 10, Blok Klinikal

TARIKH	MASA	AKTIVITI	TEMPAT
13/9/2013 (JUMAAT)		Pengerusi : Prof. Madya Dr. Norfilza Mokhtar	Auditorium
	8.00 – 10.00	Pembentangan Proposal Kumpulan I	Auditorium
	10.30 – 11.00	Minum Pagi	Foyer Blok Pendidikan
	11.00 – 12.00	Pembentangan Proposal Kumpulan I (sambungan)	Auditorium
	12.00 - 12.30	Penyampaian Hadiah Pemenang Poster dan Pembentangan Proposal Penutup	Auditorium

ABSTRAK (KATEGORI MAKMAL)

MOLECULAR EPIDEMIOLOGY OF AMOEBIASIS IN PENINSULAR MALAYSIA: HIGHLIGHTING THE DIFFERENT RISK FACTORS OF *Entamoeba histolytica* AND *Entamoeba dispar* INFECTIONS AMONG ORANG ASLI

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Introduction: Currently, species-specific information on *Entamoeba* infections is unavailable in Malaysia and is restricted worldwide due to the re-description of pathogenic *E. histolytica* and non-pathogenic *E. dispar* and *E. moshkovskii*. Therefore, this cross-sectional study was conducted to provide the first known prevalence and risk factors of these species in Malaysia using single-round PCR.

Methods: Socioeconomic data were collected using a pre-tested questionnaire. Stool samples were examined by formalin-ether sedimentation and trichrome stain. All samples were subjected to PCR assay, sequencing and phylogenetic analyses.

Results: A total of 500 stool samples from Orang Asli were randomly collected. The overall prevalence of *Entamoeba* complex determined by microscopy was 18.6%. Molecular analysis revealed that while most *Entamoeba*-positive subjects were infected with *E. dispar* (13.4%), followed by *E. histolytica* (3.2%) and *E. moshkovskii* (1%). However, the present findings showed low prevalence rates of mixed infections. Logistical regression analysis indicated that three significant risk factors for *E. histolytica* infection were; (i) not washing hands after playing with soil or gardening ($P = 0.013$), (ii) indiscriminate defecation in the river or bush ($P = 0.012$) and (iii) close contact with domestic animals ($P = 0.017$). On the other hand, subjects with family members who were infected with *Entamoeba* complex ($P < 0.001$) and those who consumed raw vegetables ($P = 0.047$) were more likely to be infected with *E. dispar*. No associated factor was identified with *E. moshkovskii* infection. Nevertheless, diarrhoea and other gastroenteritis symptoms were only associated with *E. histolytica* infection.

Conclusions: The present study provides new insight into the distribution and risk factors of three *Entamoeba* spp. infections among Orang Asli. Identifying the different risk factors of *E. histolytica* and *E. dispar* infections will help in the planning specific strategies in the control and prevention of each infection in the communities.

ISOMORPHEN DIAGRAM OF *Chrysomya villeneuvei* Patton (DIPTERA: CALLIPHORIDAE), A FLY SPECIES OF FORENSIC IMPORTANCE IN MALAYSIA

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Developmental history of eggs, larvae and pupae of a blowfly species *Chrysomya villeneuvei* Patton was investigated under five different temperatures. Stage-wise data are used to construct an isomorphen diagram which is useful for Post Mortem Interval determination. A laboratory colony was established from adult flies collected using rat-baited traps set at 16th Mile, Gombak. Approximately 150 eggs were placed in a container with 200 g of beef liver as a food source for newly hatched larvae. Observations on the development of eggs, larvae and pupae of *C. villeneuvei* were carried out at 25°C, 27°C, 30°C, 33°C and 37°C inside an insect growth chamber. As for larvae, their lengths were measured every three hours to get an average value for size at each temperature. Time from hatching to eclosion is plotted against temperature, whereby each line representing all morphological stages from oviposition to eclosion. *C. villeneuvei* needed 9.40 ± 0.02 days at 25°C, 9.34 ± 0.04 days at 27°C, 9.00 ± 0.07 days at 30°C, 7.95 ± 0.02 days at 33°C and 7.51 ± 0.02 days at 37°C to complete its life cycle. The isomorphen diagram obtained from this study is proposed as a reference to Malaysian forensic investigators for a quick and more credible estimate of the postmortem interval when *C. villeneuvei* is obtained as a forensic specimen.

MULTIPLEX PCR FOR DETECTION OF *Helicobacter pylori* INFECTION IN GASTRIC BIOPSIES WITH LOWER INFLAMMATORY SCORE

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Introduction: *Helicobacter pylori* is well known as a major cause of chronic gastritis and peptic ulcer disease in association with developing gastric adenocarcinoma. However, there is no established gold standard for the diagnosis of *H. pylori* infection at present.

Method: Antral biopsy specimens were obtained from 230 consecutive patients with dyspepsia who underwent oesophagogastroduodenoscopy (OGDS). *H. pylori* infections were diagnosed by in-house rapid urease test (iRUT), culture, histology and PCR. Multiplex PCR assay was developed for detection of 179 bp fragment of *hpaA* gene, 422 bp fragment of 16S rDNA and 627 bp fragment of *ureA* of *H. pylori*. A positive result was determined by culture, histological examination, PCR and/ or iRUT being positive.

Results: Of these 230 patients, a total of 140 (60.9%) were positive for *H. pylori* infection. *H. pylori* were detected in 22 (15.7%) antral biopsies by culture, 39 (27.9%) by iRUT and 29 (20.7%) by histology examination. In this study, PCR identified *H. pylori* infection in 100% of patients who had positive histopathology examination and culture. All patients who were positive by iRUT showed positive PCR results except for two. Overall, PCR detected *H. pylori* in additional 111, 118, and 99 cases that were negative by histopathology examination, culture and iRUT, respectively. Positive samples detected only by multiplex PCR showed lower active and chronic inflammation score.

Conclusion: PCR method showed a high sensitivity to detect the presence of *H. pylori* in biopsies with low inflammation score. In addition, PCR was able to detect the highest number of positive cases compared to the other test methods.

***Acinetobacter* : DETECTION OF RESISTANCE GENES AND THEIR ANTIBIOTIC SUSCEPTIBILITY**

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Introduction: *Acinetobacter* spp. has emerged as a significant hospital pathogen, quickly becoming resistant to commonly prescribed antimicrobials. The aim of this study was to detect the presence of resistance genes and to correlate these with resistance to antimicrobial agents.

Methods: *Acinetobacter* spp. were isolated from 178 non-repetitive specimens in Universiti Kebangsaan Malaysia Medical Centre (UKMMC). Isolates were identified by sequence analysis of the 16SrRNA gene. The minimum inhibitory concentration (MIC) for ceftazidime, cefepime, imipenem and meropenem was determined by E-test. The detection of three resistant genes (*bla*_{OXA-23-like}, *bla*_{OXA-51-like} and *bla*_{ADC}) was performed for carbapenem-hydrolyzing class D β-lactamases (CHDLs) and *Acinetobacter*-derived cephalosporinases by multiplex PCR.

Results: *Acinetobacter* clinical isolates were assigned to five distinct *Acinetobacter* genospecies based on their 16SrRNA sequences: *A. baumannii* (172), *A. Iwoffii* (3), *A. haemolyticus* (1), *A. johnsonii* (1) and *A. radioresistens* (1). In this study, more than 68.0% of *Acinetobacter* spp. isolates were resistant to all four antibiotics. Resistance to imipenem or meropenem, ceftazidime and cefepime were identified in 73.0%, 71.9% and 68.6% of the isolates, respectively. The resistant genes, *bla*_{OXA-23-like}, *bla*_{OXA-51-like} and *bla*_{ADC} were detected in 78%, 93% and 83% of the isolates, respectively. Furthermore, the presence of *bla*_{OXA-23-like}, *bla*_{OXA-51-like} genes (carbapenem group) and *bla*_{ADC} gene (cephalosporin group) in *Acinetobacter* spp. were significantly correlated with the susceptibility to carbapenem and cephalosporin groups.

Conclusion: *Acinetobacter* spp. isolated from clinical samples showed high resistance to the antibiotics tested. The presence of the resistance genes in the majority of the isolates showed that other mechanisms or other resistance genes might be involved in the mechanisms of resistance in *Acinetobacter* clinical isolates.

GAMMA-TOCOTRIENOL AND HYDROXY-CHAVICOL SYNERGISTICALLY INHIBITS GROWTH AND INDUCES APOPTOSIS IN HUMAN GLIOMA CELLS

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Gamma-tocotrienol (GTT), a natural form of vitamin E displays potent anticancer effects, while hydroxy-chavicol (HC), a major compound of *Piper betle*, plays a crucial role in modulating various cellular signaling events and possesses anti-inflammatory, antimutagenic and anticarcinogenic properties. We investigated the interaction in cell culture of GTT and HC through the use of an isobologram and its effect on the mode of cell death. GTT, HC and their combination were tested for cytotoxicity on glioma cell lines 1321N1 (Grade II), SW1783 (Grade III) and LN18 (Grade IV) by [3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxy-phenyl)-2-(4-sulfophenyl)-2H-tetrazolium] MTS assay. The interactions of each combination were evaluated by using the combination index (CI). Individually, GTT or HC displayed mild growth inhibitory effects against glioma cancer cell lines with high estimated concentration values ranging from 42-100 µg/ml and 75-119 µg/ml respectively. The combination of sub-lethal doses of GTT + HC dramatically enhance the inhibition of glioma cancer cell proliferation and exhibited a strong synergistic effect on 1321N1 with CI of 0.55, and CI=0.51 for SW1783. While in LN18 cells, moderate synergism interaction of GTT + HC was observed with CI value of 0.73. Exposure of grade II, III and IV cells to combined treatments for 24 hours led to the induction of apoptosis as determined by annexin-V/PI staining and caspase-3 apoptosis assay, showing caspase-3 activation of 27%, 7.1% and 79% respectively. Our current data suggests that combined treatment with sub-effective doses of GTT and HC provide enhanced therapeutic response for the induction of apoptosis in human glioma cells *in vitro*.

GENE EXPRESSION ANALYSIS BY RNA SEQUENCING OF AZOXYMETHANE-INDUCED ABERRANT CRYPT FOCI IN F344 RAT AND MODULATION BY TOCOTRIENOL RICH FRACTION.

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Introduction: Tocotrienol-Rich Fraction (TRF) has shown potential as an anticancer compound probably through its antioxidant properties. Antioxidants have been reported to inhibit the formation of Aberrant Crypt Foci (ACF). However, the mechanisms involved are not well elucidated. The aim of this study is to determine the differentially expressed genes in ACF induced by Azoxymethane (AOM) using RNA sequencing.

Methods: A total of 36 Male F344 rats were divided into 4 groups: normal + olive oil (vehicle), normal + TRF, cancer + olive oil and cancer + TRF. After 8 weeks, the RNA samples were extracted from the colon and prepared for RNA sequencing. The sequencing data were pre-analysed by CLC Genomics Workbench Software and further analysed using DAVID and WEBGESTALT.

Results: Treatment of TRF to normal rats resulted in 81 genes (69 ↑, 12 ↓) compared to vehicle. The induction of AOM to normal rats compared to vehicle resulted in 414 genes (241 ↑, 173 ↓) at proximal, 293 genes (203 ↑, 90 ↓) at middle and 419 genes (218 ↑, 201 ↓) at distal. When TRF was administered to AOM-induced rats compared to AOM untreated group, there were 43 genes (13 ↑, 30 ↓) at proximal, 57 genes (41 ↑, 16 ↓) at middle and 146 genes (91 ↑, 55 ↓) at distal. Analysis of TRF supplemented to AOM-induced rats revealed most of genes involved in Huntington and Parkinson's disease.

Conclusion: Results showed that TRF modulated genes associated to ACF formation via different gene expression in the identified KEGG pathways.

STATUS OF ZINC, COPPER LEVELS AND DIET INTAKE AMONG COMMUNITY OF KAMPUNG SRI BAHAGIA AND PULAU AUR, MERSING

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Introduction: Trace elements such as zinc and copper are very important in normal body physiological function. The objective was to measure zinc and copper levels and to identify their relationship with community diet intake.

Methods: A cross-sectional study was conducted using the questionnaire and the samples used were nails and hair from fisherman community (n=56) in Kampung Sri Bahagia and Pulau Aur, Mersing. Trace elements were determined by Inductively Coupled Plasma Mass Spectrometry (ICP-MS) machine while diet histories were determined by Nutritionist Pro software. Data were analyzed using SPSS 17.0.

Results: The levels of the dietary zinc (3.85 ± 0.25 mg/day) was similar ($p > 0.05$) compared to the reference level of zinc (5.80 mg/day) but copper (0.78 ± 0.60 mg/day) was significantly ($p < 0.05$) lower compared to the reference level of copper (0.90 mg/day). Meanwhile, zinc (2038 ± 130 µg/L) and copper (133.0 ± 8.8 µg/L) levels in nail subjects were significantly lower ($p < 0.05$) compared to the reference level of zinc (6250 µg/L) and copper (250 µg/L). However, the levels of zinc (1579 ± 85 µg/L) and copper (82.4 ± 4.0 µg/L) in hair were similar ($p > 0.05$) compared to the reference level of zinc (1824 µg/L) and copper (84.8 µg/L). Comparison of the levels with gender, location and age group showed no significant difference ($p > 0.05$). This study also showed no relationship ($p > 0.05$) between subjects' diet intake with zinc level in nails ($r = -0.16$) and hair ($r = 0.07$) as well as between copper level in nails ($r = -0.11$) and hair ($r = -0.13$). In conclusion, most subjects had enough zinc requirements in their diet intake but not for copper.

STATUS OF ZINC IN NAILS AND HAIR AMONG FARMERS IN DISTRICT OF BACHOK AND PASIR PUTEH, KELANTAN AND FISHERMEN AT PULAU AUR, MERSING

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Introduction: Zinc is required in various cell processes including cell proliferation, reproduction, immune function and defence against free radicals. However, pesticide exposure can cause zinc deficiency which may lead to various health problems. The objective of this study was to determine and compare the zinc status between farmers who were exposed to pesticides and fishermen who were not.

Methods: This study was a cross-sectional study conducted in Bachok and Pasir Puteh, Kelantan and Pulau Aur, Mersing. The samples were nails and hair taken from farmers who were exposed to pesticides or chemical fertilizers and fishermen who were not exposed to pesticides. The level of zinc was analyzed by using acid digestion method and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) machine. Dietary assessment, blood glucose and blood pressure measurements were also performed. Content of zinc in their diet was analyzed by using Nutritionist Pro.

Results: Zinc level in the farmers' nails was 1001 ± 125 µg/L while in fishermen was 1320 ± 228 µg/L. However, there were no significant differences of zinc level in both nail and hair samples between the farmer and fisherman groups. Zinc content in the nails showed a weak and negative significant correlation ($p < 0.05$, $r = -0.220$) with diastolic blood pressure. There were also no significant differences of zinc level according to gender, age and duration of exposure to pesticides. There was no significant relationship between the zinc content in the diet with the zinc level in the nail and hair samples.

Conclusion: Pesticide exposure among farmers had no influence on their zinc status.

SELENIUM STATUS IN NAILS AND HAIR AMONG FARMERS IN DISTRICT OF BACHOK AND PASIR PUTEH, KELANTAN AND FISHERMEN IN PULAU AUR, MERSING

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Introduction: Selenium is a micronutrient which helps in the defence against oxidative damage. Exposure to pesticides may lead to selenium deficiency. The objective of this study was to determine the selenium level in farmers exposed to pesticides and chemical fertilizers in Kelantan.

Methods: This study was a cross-sectional study conducted at Bachok and Pasir Puteh, Kelantan and Pulau Aur, Mersing. The samples were nails and hair taken from farmers who were exposed to pesticides or chemical fertilizers and fishermen who were not exposed to pesticide. Selenium level was analyzed by using acid digestion method and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) machine. Dietary assessment measurements were also taken and selenium content in their diet was analyzed by using Nutritionist Pro.

Results: Selenium level in the farmers' hair ($1.15 \pm 0.06 \mu\text{g/L}$) was significantly lower ($p < 0.05$) compared to fishermen's ($15.67 \pm 1.41 \mu\text{g/L}$). Meanwhile, there was no significant difference in the nails' selenium level between farmers ($5.87 \pm 0.26 \mu\text{g/L}$) and fishermen ($6.67 \pm 0.39 \mu\text{g/L}$). There were also no significant differences of selenium level according to gender, age and duration of exposure to pesticides. There was no significant relationship between the selenium content in the diet with the selenium level in the nail and hair samples.

Conclusion: Farmers exposed to pesticides had significantly lower selenium content in their hair compared to fishermen who were not exposed to pesticides.

FABRICATION AND IN VITRO CHARACTERIZATION OF BIPHASIC GELS FOR TOPICAL DRUG DELIVERY

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Introduction: Bigel or Biphasic gel formulation is a new intervention in pharmaceutical industry. It is a semi-solid dosage form made of the intimate mixture of an oleogel and an aqueous gel for topical and transdermal administration of drugs.

Methods: A biphasic gel or bigel topical drug delivery vehicle was developed from edible oils (palm oil, olive oil and fish oil) oleogels and carbopol hydrogels for the pharmaceutical and cosmetic purposes by high speed homogenization. The biphasic gels were closely monitored at different storage conditions ($25^{\circ}\text{C} \pm 2^{\circ}\text{C}$, $60\% \text{RH} \pm 5\% \text{RH}$ and $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$, $75\% \text{RH} \pm 5\% \text{RH}$), along with investigation of pH and rheological characteristics.

Results: Generally all the bigels were of appropriate pH range (3.0-6.0) for the topical drug delivery across the skin. The bigels exhibited pseudoplastic and thixotropic rheological features which indicate excellent spreadability nature and can be used for the application on skin. Hydrocortisone was then used to determine the capability of the bigel system as drug delivery vehicle. During the *in vitro* permeation studies, it was observed that the palm oil bigels were more effective in terms of enhancing the permeability across the membrane, whereas olive oil based bigels released the least amount of hydrocortisone. We conclude that bigel formulations can be employed as an option for effective topical drug delivery for cosmetic and pharmaceutical purposes.

GAMMA-TOCOTRIENOL AND 6-GINGEROL COMBINATION INDUCED CYTOTOXICITY AND APOPTOSIS IN HT29 AND SW837 HUMAN COLORECTAL CANCER CELLS

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Introduction: Combination of dietary phytochemicals has been suggested to induce toxicity in cancer cells and improve efficacy of its treatment. The objective of this study is to determine the anti-proliferative effect of gamma-tocotrienol (γ -T3) and 6-gingerol (Gin) in combination by evaluating apoptosis and active caspase-3 status in HT29 and SW837 colorectal cancer cells.

Methods: (3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium, inner salt) or MTS assay was performed to determine the anti-proliferative and cytotoxicity effect of γ -T3 (0–150 ug/ml) and Gin (0–300 ug/ml) on cells. The cells were treated with combination of γ -T3 and [6]-gingerol and IC_{50} value was obtained. Assays of apoptosis, active caspase-3 and annexin V FITC were performed after 24 hours of treatment using flow cytometry.

Results: The IC_{50} of combination γ -T3+ Gin for HT29 was 105+67 ug/ml γ -T3 and SW837 was 70+20 ug/ml. The combination of these phytochemicals showed synergistic effect HT29 (0.89 ± 0.02 , $P < 0.05$) and SW837 (0.77 ± 0.10 , $P < 0.05$). This combination has significantly induced apoptosis by 21.2% in HT29 and 39.7% ($p < 0.05$) after 24 hours treatment. Active caspase-3 activity was not increased significantly in both cell lines HT29 (4.37%) and SW837 (1.68%).

Conclusion: Combination treatment of γ -T3 and Gin inhibited the proliferation of HT29 and SW837 cell lines. This combination showed synergistic effect where the combination index for HT29 and SW837 are 0.89 and 0.77 (Chou, 2006). This combination also induced apoptosis in both cell lines. However, as the active caspase-3 finding is not significant, further test need to be done to determine the apoptotic pathway that is affected by this combination.

**THE EFFECTS OF 'ULAM RAJA' (*Cosmos caudatus*) ON DETOXYFYING ENZYMES IN MICE
EXTRAHEPATIC ORGANS**

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Introduction: 'Ulam Raja' or *Cosmos caudatus* is a common appetizer (ulam) consumed by the Malay community in Malaysia. However, *in vivo* studies pertaining to its antioxidant and chemoprotective properties are lacking. This study was done to determine the effects of *Cosmos caudatus* on detoxifying enzymes in extrahepatic organs (lungs, kidneys and stomach) in mice.

Methods: Thirty adult male mice were treated orally for 21 days with different doses of 'Ulam Raja' aqueous extract (UR) (100, 500, 1000mg/kg). The control group were given distilled water by oral gavage. After 21 days, the mice were sacrificed and extrahepatic organs were harvested. The activities of several detoxifying enzymes [catalase (CAT), superoxide dismutase (SOD), glutathione S-transferase (GST), DT-diaphorase (DTD)] were measured. Lipid peroxidation level was determined by measuring the malondialdehyde (MDA) concentration.

Results: In lungs, 100, 500 & 1000 mg/kg UR oral supplementation resulted in significant increases in CAT, SOD and GST activities. DTD activity in lungs was significantly increased in mice treated with 1000mg/kg UR. MDA levels in lungs were significantly decreased in mice treated with 100mg/kg & 500 mg/kg UR but was significantly increased in mice treated with 1000mg/kg UR. In kidneys, DTD activity was significantly increased in mice treated with 1000mg/kg UR. In stomach, CAT activity was significantly increased in mice treated with 1000mg/kg UR.

Conclusion: The results showed that *Cosmos caudatus* supplementation in mice could protect extrahepatic organs from xenobiotic and oxidative injury. This indicates that consumption of 'Ulam Raja' might be a useful chemoprotective measure.

EFFECTS OF MORGUE STORAGE FACTORS ON THE DEVELOPMENT OF FORENSICALLY IMPORTANT BLOWFLY *Chrysomya rufifacies* (Macquart) LARVAE

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Introduction: In forensic investigation, entomological evidence for post-mortem interval (PMI) analysis is usually collected at the death scene, and/or during autopsy. By using monkey carcasses, this study aims to simulate conditions experienced by blowfly *Chrysomya rufifacies* (Macquart) larvae on corpses in morgue storage prior to autopsy and investigate their effects on larval development.

Methods: Four monkey carcasses were exposed simultaneously to outdoor environment to attract blowfly oviposition. Carcass A was left for 10 days as control, while Carcass B, C and D were taken separately in body bags to morgue storage after 24, 48 and 72 hours of outdoor exposure, respectively. Samples of the eldest living larvae from each carcass were collected daily and preserved in 70% alcohol for further analysis.

Results: The effect of low temperature on larval growth depended on the stages presence on monkey carcasses when first submitted to morgue storage. Daily observation on Monkey B indicated that there were no sign of any living *Ch. rufifacies* larvae. Third instar larvae on Monkey C and D did develop minimally under the same conditions and could survive up to Day 14 and Day 17 respectively. However, both of them were unable to proceed to pupal stage, as achieved by larvae on control carcass (Monkey A) on Day 7.

Conclusions: These findings show that 1) entomological evidence is best collected from the death scene, and 2) keeping *Ch. rufifacies* larvae in morgue storage disturbs their normal development. Therefore, forensic entomologist must be cautious in estimating the PMI when dealing with samples collected during autopsy.

THE EFFECTS OF KESUM LEAVES (*Persicaria minor*) METHANOL EXTRACT ON ANTIOXIDANT STATUS AND LIPID PEROXIDATION IN MICE LIVER

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Introduction: This study was conducted to determine the effects of kesum leaves (*Persicaria minor*) methanol extract on antioxidant status and lipid peroxidation in mice.

Methods: 30% ethanol solution was used as a vehicle for kesum leaves methanol extract. 36 male ICR mice weighing between 20 - 25 g were randomly assigned into six groups. Two control groups (mice given normal diet and mice given normal diet plus vehicle) and three oral treatment groups (dosed at 100, 500 and 1000 mg/kg body weight of the extract) were utilized in this study. A diet containing 0.5% butylated hydroxyanisole (BHA) and oral vehicle treatment were given to the positive control group. After 28 days of treatment, mice were sacrificed and their livers were harvested to determine the antioxidant status; superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx), glutathione reductase (GR) and reduced glutathione (GSH) concentration. The level of lipid peroxidation was determined through malondialdehyde (MDA) concentration whereby the level of tissue injury was measured through lactate dehydrogenase (LDH) activity.

Results: The activities of SOD, CAT, GPx, GR and GSH were significantly increased when dosed at 500 mg/kg of the extract as compared to the normal group while the treatment groups (100, 500 and 1000 mg/kg) successfully reduced the level of MDA concentration significantly as compared to the control groups. No significant difference was observed in LDH activity of all groups. In conclusion, kesum leaves (*Persicaria minor*) methanol extract was capable of reducing oxidative stress by improving the antioxidant status and preventing lipid peroxidation in mice live

PROTEIN-BASED TRANSDUCTION STUDY: DELIVERY OF GREEN FLUORESCENT PROTEIN AS A SECRETABLE TAT κ FUSION PRODUCT

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Introduction: Finding ways to safely and efficiently grow and expand the number of transplantable human haematopoietic stem cells (HSCs) *in vitro* will be a major achievement for their application in haematological malignancies. Exposure of HSCs to appropriate culture conditions (e.g. stem cell factor, GM-CSF and IL-3) and specific growth/transcription factors (e.g. HoxB4) can promote the *in vitro* proliferation and expansion of these cells, whilst maintaining their ability to subsequently differentiate into various lineages.

Aim/ Objective: The aim of this study is to expand the number of human HSC without genetic modification using a protein transduction approach. The immediate objective described in this present study is the secretion of green fluorescent protein (GFP) by transfected genetically modified cells that produce and secrete GFP into culture medium and its subsequent uptake by protein transduction into target cells.

Materials and Methods: GFP cDNA was fused to TAT κ (a synthetic TAT domain) to form a fusion protein. Plasmid DNA was transiently transfected into 293T cell lines (producer cells) by the standard calcium phosphate (CaPO₄) co-precipitation method, and further validated by FACS. Subsequently, puromycin-resistant population of GFP producing cells were selected, and the secretion of the GFP protein was further validated by Western blot analysis of concentrated culture medium.

Results/ Conclusions: The successful secretion and transduction of TAT κ -GFP into JURKAT and FDC-P1 cells has been confirmed. In addition, a stable mixed population secreting TAT κ -GFP has been established. These preliminary studies lay the foundation for the production of chimeric pluripotency proteins such as KLF4, Oct-3/4, Sox2 and SV40-LT, for delivery of fusion proteins into HSCs.

**MOLECULAR CHARACTERISATION OF METHICILLIN-RESISTANT *Staphylococcus aureus* BY
MULTILOCUS SEQUENCE TYPING IN UKM MEDICAL CENTRE: A PILOT STUDY**

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Introduction: Multilocus sequence typing (MLST) has enabled the characterisation of methicillin-resistant *Staphylococcus aureus* (MRSA) isolates into sequence types (STs), and in conjunction with SCC*mec* typing, forms the international clonal nomenclature for MRSA. Until recently, a relatively small number of MRSA clones with epidemic potential have been reported worldwide. However, local detection of these different clones has varied from one study to another. Our study characterises ten selected MRSA isolates representing members of each previously assigned SCC*mec* type group, to identify MRSA clones circulating in UKMMC within a one-year period.

Methods: Ten isolates representing members of four different SCC*mec* type groups were selected by convenience sampling from 236 isolates collected from January to December 2009. MLST was conducted as previously described. Relationship analysis was performed with eBURST via the MLST website.

Results: Four unlinked 'singleton' STs were detected; ST30, ST239, ST772 and ST1178. In conjunction with SCC*mec* typing, five clones were identified; ST30-IV, ST239-II, ST239-III, ST772-V and ST1178-IV.

Conclusions: We demonstrate the presence of clones already established in Malaysian hospitals (ST239-III) and in the local community (ST30-IV), as well as an emerging clone (ST772-V) reported in other countries with a propensity to displace previously predominant clones. A clone involving the predominant ST in Malaysia (ST239) with SCC*mec* type II is the first to be identified. Study findings call for future continuous clone surveillance with bigger sample sizes, better sampling strategy and joint efforts between local institutions to maximise detection coverage.

TOCOTRIENOL RICH FRACTION MODULATED SERUM GFAP AND IGFBP-2 ON MUTATED AKT/KRAS INDUCE GLIOMA IN THE MOUSE

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Introduction: Tocotrienol Rich Fraction (TRF) has potent anti-cancer properties which could be effective for suppression of glioma. Thus, the study aims to develop an animal model for glioma using RCAS/TVA system and its modulation by TRF using two proteins which is glial fibrillary artificial protein (GFAP) and insulin growth factor binding protein 2 (IGFBP2) act as markers for glioma progression.

Methods: Plasmid DNA carrying oncogenes of glioma (AKT and KRAS) was transformed into competent *E. coli* and the successful transformed plasmid DNA were extracted. The plasmid DNA was cut by restriction enzyme and then was transfected into chicken fibroblast DF-1 cell. The transfected DF-1 cell was confirmed by ALV p27 ELISA and western blot. Newborn mice carrying Nestin/*T-va* strains were injected with infected DF-1 cell. Stripped oil and TRF were administered by force feeding started at week 3 for Phase I and week 7 for Phase II. Blood of mice was obtained from the tail. Serum GFAP and IGFBP2 were measured by ELISA.

Results: Glioma was successfully developed in the mouse model using a mutated AKT/KRAS plasmid DNA. Serum GFAP and IGFBP2 were significantly higher in mice injected with infected DF-1 cell carrying oncogenes for glioma ($p < 0.05$). A significant decrease in the GFAP and IGFBP2 expression level were observed on glioma mice treated with TRF and stripped oil compared to glioma mice without treatment ($p < 0.05$).

Conclusion: TRF has a potential as a chemopreventive agent by selectively reduced expression of serum GFAP and IGFBP2 in the mouse model.

A PRELIMINARY STUDY OF NON-INTEGRATING LENTIVIRAL –BASED TRANSDUCTION SYSTEM

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Introduction: Lentiviral vectors have been extensively analysed and used for clinical gene therapy application. The transgene expression is higher due to direct integration into the target cell genome which carries the risk of insertional mutagenesis, thus can lead to malignant transformation. Non-integrating lentiviral vectors (NILV) produced through mutation in the integrase enzymes to interrupt viral RNA integration in the host genome. However, the transgene expression remains episomal which minimized the genomic alteration. Most importantly, NILVs have shown to be capable of efficient gene expression in cell culture.

Aim/Objective: The aim of this preliminary study is to investigate the efficiency of the NILV in expressing the transgene in transduced cells.

Materials and Methods: The expression of the transgene was driven by the spleen focus-forming virus (SFFV). Integrase proficient SFFV-GFP (wild-type) and NILV-SFFV-GFP were produced and the viral titres were determined by qRT-PCR. U937 cells were transduced with both NILVs and their wild type counterparts at multiplicity of infection (MOI) 5, and 10. GFP expression was determined by fluorescence microscopy and FACS analysis.

Results/ Conclusion: Based on qRT-PCR analysis, the NILV-GFP titres obtained were similar to the wild-type virus (1.4×10^8 copies/mL, and 8.7×10^9 copies/mL, respectively). NILV transduced target cells with at least 50% lower efficiency than wild-type virus. Although GFP-expressing cells significantly reduced over time, as the NILV-transduced cells proliferated, the expression was sustained albeit at a continuously decreasing level, for about 11 days. These data confirmed that transgene expression in the NILV-transduced cells is transient in dividing cells, thus can be an alternative transgene expression for safer clinical applications.

IDENTIFICATION AND MOLECULAR CHARACTERIZATION OF HETERO-VANCOMYCIN-INTERMEDIATE *Staphylococcus aureus* (hVISA) STRAINS ISOLATED FROM UKM MEDICAL CENTRE (UKMMC)

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Introduction: hVISA strains are vancomycin-susceptible *S. aureus* strains that harbour vancomycin-resistant subpopulations undetectable via conventional MIC determination methods. These strains are generated via prolonged administration of carbapenems and vancomycin, and might cause treatment failure. In this study, we identified hVISA strains from a subset of *S. aureus* strains isolated in UKMMC and molecularly characterized the strains.

Methods: A total of 41 strains were randomly selected from UKMMC's 2009 *S. aureus* collection stored at the Department of Microbiology. Population analysis was performed for all selected strains using vancomycin. Strains with an area under curve (AUC) of > 0.9 compared to a control hVISA strain were identified as hVISA. Vancomycin MIC for all hVISA strains was determined using broth dilution and Etest strips. Toxin gene profiling (*sea*, *seb*, *sec*, *sed*, *seg*, *seh*, *sei*, *eta*, *etb*) and SCC*mec* typing were also carried out for the hVISA strains.

Results: Using population analysis and AUC calculation, we identified a total of 7 hVISA from 41 strains, giving a prevalence of 17.1%. The hVISAs were found to have vancomycin MICs of 1 - 2 mg/L for broth dilution, while the range was higher at 2 - 3 mg/L using Etest. Most strains had only 1 toxin gene (*sea*) out of the 9 tested genes, and 6 strains were typed as SCC*mec* type IIIA-*ccrC*.

Conclusion: This pilot study shows a high prevalence of hVISA strains in UKMMC. Proper monitoring of vancomycin and carbapenem administration will be crucial to control the development of these strains in the clinical setting.

THE EFFECT OF ULAM RAJA (*COSMOS CAUDATUS*) ON DRUG METABOLIZING ENZYMES, LIPID PEROXIDATION AND ANTIOXIDANT STATUS IN MICE LIVER

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Introduction: *Cosmos caudatus* (Ulam Raja) is an appetizer (ulam) consumed mainly by the Malay community in Malaysia. Previous studies indicated that *C. caudatus* possess strong antioxidant and free radical scavenging activities, and it might have potential tumour-inhibitory effect. This study was conducted to investigate the effects of *C. caudatus* on drug metabolizing enzymes, antioxidant status and lipid peroxidation in mice liver.

Methods: Aqueous extract of *C. caudatus* (UR) were administered orally to mice for 21 days in three different doses [100, 500 and 1000 mg/kg body weight respectively]. Positive control mice were treated with butylated hydroxyanisole (BHA). After 21 days, the mice were sacrificed and their livers harvested.

Results: The results showed that NADPH cytochrome P450 reductase activity was significantly increased in mice treated with 500 mg/kg UR compared to the control group. DT-diaphorase (DTD) activity was significantly increased in mice treated with 1000 mg/kg UR. Superoxide dismutase (SOD) activity was significantly increased in mice treated with 500 mg/kg UR. Catalase (CAT) activity was significantly increased in mice treated with 1000 mg/kg UR. MDA level (which indicate the extent of lipid peroxidation) was significantly reduced in all UR treated groups. Lactate dehydrogenase (LDH) level (which indicates the extent of liver injury) was significantly reduced in all UR treated groups.

Conclusion: We therefore conclude that UR supplementation might be able to protect mice livers against damage caused by oxidative stress mainly through inhibition of the lipid peroxidation process and LDH activity, as well as through some modulation of the activities of certain antioxidant enzymes.

HIGHLY SENSITIVE AND RELIABLE HUMAN SEX DETERMINATION USING MULTIPLEX PCR

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Introduction: Gender validation is indispensable in data verification for demographic information particularly in large-scale population studies and also as part of the quality assurance of biospecimen repositories. Gender validation is also critical as part of quality control processes before specimens are subjected to sequencing analysis to identify germline and somatic mutations. The SRY gene is considered a useful signature gene marker that differentiates male from female.

Aims: The aim of the study is to validate SRY gene marker for use in gender determination in large cohort studies.

Methods: PCR was performed on human DNA samples. SRY gene-specific sequences were amplified, electrophoresed on agarose gels and the 254 bp band was visualized for male samples. A series of DNA template concentrations were tested for sensitivity determination. The reaction was validated on 48 gender-blinded samples obtained from UKMMC-UMBI BioBank to determine the specificity. ATL1 gene-specific sequence on X chromosome was used as the internal control.

Results: This PCR method has demonstrated 100% gender specificity. The sensitivity of the reaction was demonstrated with as low as 0.1 ng male DNA.

Conclusions: The findings had suggested that SRY analysis by Multiplex PCR is a highly sensitive and specific method for gender determination and can be extremely useful for large-scale samples.

THE ASSOCIATION BETWEEN EXPOSURE TO BROAD SPECTRUM ANTIBIOTICS AND EXTENDED-SPECTRUM BETA LACTAMASE (ESBL)-PRODUCING *Klebsiella pneumoniae* COLONIZATION IN THE NEONATAL INTENSIVE CARE UNIT

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Introduction: Infections caused by extended-spectrum beta lactamase (ESBL)-producing Enterobacteriaceae especially *Klebsiella pneumoniae* are associated with high mortality and morbidity in premature infants. Prolonged exposure to broad spectrum antimicrobial therapy increases the risk of acquiring these organisms.

Methods: Weekly surveillance microbiological culture of rectal swabs of neonates in our neonatal intensive care unit (NICU) between January and August 2012 was carried out to determine the association between acquisition of rectal colonization of ESBL-producing *Klebsiella pneumoniae* and the usage of third generations Cephalosporin and Carbapenem. We tested all ESBL-producing *Klebsiella pneumoniae* isolates with Ertapenem discs as a screening for *Klebsiella pneumoniae* Carbapenemase (KPC)-producing bacteria.

Results: The incidence densities of ESBL-producing *Klebsiella pneumoniae* were positively correlated with the use of third generations Cephalosporin and Carbapenem ($r=0.22$ and $r=0.71$, respectively). Among the infants who had rectal colonization ($n= 71$), 23% had received Carbapenem prior to rectal ESBL acquisition. All the ESBL-producing *Klebsiella pneumoniae* isolates were sensitive to ertapenem, indicating they were not KPC-producing bacterias.

INFLUENCE OF HYPERBARIC PRESSURE ON SHEAR BOND STRENGTH OF VENEERING CERAMIC TO ZIRCONIA AND METAL

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Introduction: Underwater diving has an increasing popularity since past few decades. However, concerns arise if changes in pressure during diving would influence the failure of zirconia and metal-based restorations. The aim of this study is to evaluate the influence of hyperbaric pressure on the shear bond strength of veneering ceramic to zirconia and metal.

Methods: Twenty specimens were prepared according to manufacturer's instruction for each zirconia and metal group. Each group were further divided into two subgroups of different barometric pressures (n=10), which were control and hyperbaric subgroups. Corresponding veneering ceramic with the size of 4 mm X 4.5 mm were fabricated on zirconia and metal specimens with the size of 14 mm X 4 mm. The specimens were then pretreated with hyperbaric condition in simulated hyperbaric chamber. Shear bond strength test were carried out using a semicircular knife-edge jig at 0.5 mm/min crosshead speed. Microscopic examinations were done for evaluation of failure modes of specimens.

Results: Mean shear bond strength for all group ranges from 22 to 25 MPa. Metal group in hyperbaric condition showed highest mean shear bond strength (25.23 ± 7.18 MPa). While metal group in control showed the lowest mean shear bond strength (22.11 ± 4.77 MPa). One-way ANOVA showed that there was no significant difference in shear bond strength between groups ($p>0.05$). Microscopic examination showed mixed adhesive/cohesive failure for most of the specimens.

Conclusion: In conclusion, hyperbaric pressure does not influence the shear bond strength of veneering ceramic to zirconia and metal copings.

EFFECT OF *PIPER BETLE* AQUEOUS EXTRACTS ON GENE EXPRESSION IN AZOXYMETHANE-INDUCED COLON CANCER IN FISCHER 344 RAT

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Introduction: Colon cancer in Malaysia is the second most frequently reported cancer after breast cancer. Several studies have been conducted on the effect of *P. betle* (PB) in inhibiting various types of tumors. The focus of this study is to determine the effect of PB extracts in gene expression in normal and azoxymethane-induced colon cancer in rat. Azoxymethane (AOM) is known to induce the formation of aberrant crypt foci (ACF) in mice and rats indicating precancerous lesions of colon cancer.

Methods: Total RNA extracted from rat colon tissues were purified and converted to cDNA using TruSeq RNA Sample Preparation kit based on the sample preparation protocol provided by the manufacturer (Illumina, San Diego, CA). Data processing, quality control and gene expression analysis of RNA-seq data were performed by using CLC Genomic Workbench software version 5.5.1.

Results: ACF were predominantly observed in the middle region of colon for both AOM and AOM rats treated with PB. PB treated caused 3 genes (2 ↑, 1 ↓) to be differentially expressed at 8 weeks treatment. Treatment with AOM alone in proximal colon caused 208 genes (78 ↑, 130 ↓), middle colon caused 170 genes (50 ↑, 120 ↓) and in distal colon caused 43 genes (15 ↑, 28 ↓) to be differentially expressed. When PB was given together with AOM, in proximal, middle and distal colon, caused 171 genes (135 ↑, 36 ↓), 648 genes (531 ↑, 117 ↓) and 49 genes (46 ↑, 3 ↓) to be differentially expressed at 8 weeks treatment respectively.

Conclusion: *P. betle* extracts caused changes in genes expression when given in both normal and AOM-induced colon cancer in rat. This quantitative gene expression data also provides the basis for further molecular understanding of *P. betle* bioactivity at the molecular level as well as in identifying biomarkers.

Keywords: Colon cancer, Piper betle (PB), Gene expression, RNA-seq, DE (differentially expressed)

ABSTRAK (KATEGORI KLINIKAL)

METFORMIN VERSUS GLYBENCLAMIDE IN THE TREATMENT OF GESTATIONAL DIABETES : A PILOT STUDY

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Introduction: Gestational diabetes (GDM) is increasing globally. The mainstay of the management is achieving normoglycaemia. This study was to compare the glycaemic control between metformin and glybenclamide in GDM women.

Method: This was a randomized control trial conducted involving GDM women requiring treatment. They were randomized into two groups (metformin versus glybenclamide) to achieve glycaemic control as the first line treatment. Second medication (glybenclamide for those started with metformin and vice versa) was exchanged before converting to insulin when the study failed. Progress of the pregnancies was then analysed.

Results: About 20 (30% of sample size) women were recruited. Metformin group required more increment of dosage (median 750mg; IQR 500, 1700mg) to achieve targeted glycaemic control compared to glybenclamide (median 2.4mg; IQR 2.5, 5.0mg) group. The blood sugar profiles in both groups were similar. Blood sugar controls were no difference in HbA1C and serum fructosamine (5.9% (IQR 5.2%, 6.8%) in metformin versus 6.0% (IQR 5.8%, 6.1%) in glybenclamide group (p=0.853] ; 203 umol/L (IQR 193, 230 umol/L) in metformin versus 200 umol/L (IQR 191, 213 umol/L; p=0.481 in glybenclamide). No patient required both medications. Maternal hypoglycaemia in glybenclamide group (20%) and gastrointestinal discomfort in metformin group (20%) were observed. Fetal hypoglycaemia was also observed in 10% from each group. There was no major maternal and fetal adverse outcome. In this pilot study, metformin and glybenclamide are equally effective in achieving glycaemic control. Metformin is recommended as the first line of oral hypoglycaemic agent in GDM with lesser maternal hypoglycaemia.

THE INCIDENCE OF NEONATAL HYPOGLYCAEMIA IN INFANTS BORN TO MOTHERS WITH GESTATIONAL DIABETES MELLITUS IN UNIVERSITI KEBANGSAAN MALAYSIA

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Introduction: Maternal glucose control and neonatal outcomes are closely related and there is evidence that poor glycaemic control leads to fetal hyperglycaemia, which increases neonatal morbidity and mortality. The aim of this study was to determine the prevalence of neonatal hypoglycaemia and associated risk factors in relation to maternal gestational diabetes mellitus (GDM) monitoring and control.

Methods: All GDM deliveries for the year 2010 were traced from the labour room and neonatal admissions registry, with maternal diabetes monitoring parameters, treatment modalities, neonatal outcomes and complications were extracted from the patients' hospital records.

Results: There were 302 babies; 58.3% (n=176) were male and 41.7% were female. Mean birth weight was 3.1±0.5 kg. The prevalence of neonatal hypoglycaemia was 4.6% (n=14). There were significant associations between neonatal hypoglycaemia with maternal blood sugar profile (BSP) ($p<0.001$), maternal treatment with insulin ($p<0.001$) and neonatal respiratory complications at birth ($p<0.001$). Notably, almost half of the neonates with hypoglycaemia were in the only-diet-controlled treatment group. Logistic regression analysis (14.908) showed mothers with elevated HbA1c are an independent predictor of neonates to develop hypoglycaemia. In addition, neonates who had respiratory complications at birth were ten times more likely to have hypoglycaemia than those who were born without these. Hence, tighter control of maternal diabetes and targeting normal BSP and HbA1c levels may lead to fewer neonates with hypoglycaemia. Diet control alone may not be sufficient in controlling GDM.

ANTENATAL SCORING SYSTEM IN PREDICTING THE SUCCESS OF VAGINAL DELIVERY AFTER ONE PREVIOUS CAESAREAN SECTION

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Introduction: The prevalence of previous uterine scar has increased globally. This is known to associate with further maternal morbidity. The study was to determine predicting factors and to produce an antenatal scoring system for predicting a successful vaginal birth after caesarean section (VBAC).

Methods: Patients with a previous caesarean section (CS) were recruited for the study. They were scored antenatally for predicting VBAC success. Maternal demographic data, obstetric history and pregnancy progresses were analysed. An antenatal scoring system for predicting VBAC success was then developed.

Results: About 186 patients were involved with 142 (76.3%) women had successful VBAC. Previous vaginal delivery (31.2%) and non-recurrent indications (63.4%) were the significant predicting factors for successful VBAC. Other clinical predictors were age < 35 years old (61.2%), pre pregnancy BMI < 30kg/m² (61.3%) and estimated baby's weight < 3.5kg at 36 weeks (65.0%), were statistically insignificant. Scoring system tool for predicting VBAC success proposed a mean score of 4 out of 7. Ninety nine (53.2%) patients with score > 4 were successful in VBAC. This scoring system had a sensitivity of 69%, specificity of 18% and a positive predictive value of 73.3%. Maternal and perinatal complications were 7% and 1% respectively. In conclusion, VBAC success was 76.3%, similar to worldwide. Previous vaginal delivery and non-recurrent indications were significant predicting factors for VBAC success. Antenatal scoring system is helpful for counseling in predicting VBAC success. Predictive score of 4 has an acceptable prediction towards a successful VBAC.

KNOWLEDGE, ATTITUDES AND PRACTICES AMONG MILK HANDLERS IN NEONATAL INTENSIVE CARE UNIT OF A HOSPITAL REGARDING FOOD SAFETY AND HYGIENIC LEVEL OF MILK PREPARATION SURFACES

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Introduction: This study was carried out to compare the level of knowledge, attitudes and practices (KAP) among milk handlers before and after food hygiene and safety training in the Neonatal Intensive Care Unit (NICU) of a Hospital in Klang Valley, Selangor, Malaysia, regarding food safety. The level of cleanliness of milk preparation surfaces was also evaluated.

Methods: Questionnaires on KAP were given to 8 milk handlers before and after food safety, hygiene and milk handling training at this hospital. The questionnaires were consisted of four sections, i.e. demography, knowledge, attitude and practices regarding food safety, hygiene and milk handling practices. For the microbiological analyses, a total of 42 samples were taken from water bath, surfaces of equipments (refrigerator's racks and milk bottles) and milk preparation areas (tap of water boilers, faucets, sinks and tables) by using the 3M *Quick Swab* method. Microbiological analyses were total plate count (TPC), enumeration of Enterobacteriaceae using *Petrifilm*, enumeration of *Escherichia coli* and coliforms (spread plate and *Petrifilm*), enumeration of *Staphylococcus aureus* (spread plate) and detection of *Cronobacter sakazakii* (ISO/TS 22964). The data obtained was analyzed using *Statistical Package for Social Science* (SPSS) software version 17.0.

Results: The levels of knowledge and practices of milk handlers had increased after training while the level of attitudes had decreased. There was significant difference ($p < 0.05$) for the level of knowledge before and after training. The TPC for all samples were satisfactory except for faucets ($n=5$), sinks ($n=3$) and tables ($n=3$) with the counts greater than 10^3 CFU/faucet, sink or 100 cm^2 . *Escherichia coli*, coliforms, *S. aureus* and Enterobacteriaceae had acceptable counts which were $< 10^3$ CFU/equipment or 100 cm^2 . No *C. sakazakii* were present in the tested samples. Scheduled training for the milk handlers need to be conducted to increase their attitudes regarding milk safety handling.

MICROFLORA OF ENTERAL FEEDING TUBES FROM NEONATAL INTENSIVE CARE UNIT OF A HOSPITAL IN MALAYSIA

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Introduction: This study was carried out to determine the microflora of enteral feeding tubes from Neonatal Intensive Care Unit (NICU) of a Hospital in Klang Valley, Selangor, Malaysia.

Methods: A total of thirty enteral feeding tubes were analysed for Total Plate Count (TPC), detection of *Cronobacter sakazakii* and *Salmonella* spp., enumeration of Enterobacteriaceae, *Staphylococcus aureus*, lactic acid bacteria, *Enterococcus* spp. and yeasts and moulds. Biochemical profiles were confirmed using ID 32E (bioMerieux) and RapID STR (Remel). Morphology of moulds was also observed via simple stain and under microscope. Field Emission Scanning Electron Microscopy (FESEM) was used to observed biofilm formation in the tubes.

Results: The TPC of the tubes ranged from 2.5 to 6.5 log cfu/g with a mean value of 4.7 log cfu/g. Twenty tubes did not comply with the microbiological criteria for powdered infant formula in the Malaysian Food Act 1983 ($<10^4$ cfu/g). Enterobacteriaceae was detected in 21 tubes with the highest count of 3.0 log cfu/g. *Klebsiella pneumoniae* ssp. *pneumonia*, *K. oxytoca*, *Escherichia coli* and *Enterobacter cloacae* were confirmed present using ID 32E (bioMerieux). *C. sakazakii*, *Salmonella* spp., lactic acid bacteria and yeasts were absent in all tubes. *S. aureus* (2.0-2.9 log cfu/g) and *Enterococcus* spp. (3.2-3.5 log cfu/g) were found in 2 of the tubes. *Enterococcus* spp. identified using RapID STR was *E. faecalis*. Moulds were also isolated from 6 of the tubes. The genres of moulds identified by cellular and colonial morphology were presumed as *Cladosporium* spp. and *Penicillium* spp. Biofilm formed on the walls of tubes were confirmed as Enterobacteriaceae, *S. aureus* and *E. faecalis* using FESEM. Moulds on the wall were believed to be *Cladosporium* spp. or *Penicillium* spp. Although *C. sakazakii* and *Salmonella* spp. were not detected, but the high TPC indicated that the safety level of enteral feeding tubes can be compromised and may cause milk borne infection to vulnerable groups such as the infants and neonates in this unit.

RETINAL NERVE FIBRE LAYER THICKNESS MEASUREMENT IN POST CORONARY ARTERY BYPASS GRAFTING (CABG) PATIENTS IN UKM MEDICAL CENTRE USING OPTICAL COHERENCE TOMOGRAPHY (A PILOT STUDY)

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Introduction: Coronary artery bypass graft (CABG) may affect the retinal nerve fiber layer thickness (RNFL). Optical Coherence Tomography can detect any early changes.

Objective: To measure retinal nerve fiber layer thickness in patient pre and post coronary artery bypass grafting.

Methods: A non-randomized prospective descriptive study involving patients who underwent CABG in June 2011 until January 2013 in UKM Medical Centre. Complete eye examination was done preoperatively and postoperatively at one month and three months. The RNFL thickness was measured by using Optical Coherence Tomography. The Mean Arterial Pressure (MAP), Cardiopulmonary Bypass (CPB) time and Aortic Cross Clamp (ACC) time were taken from the intra-operative notes.

Results: A total of 20 subjects were included in the study analysis. The median age was 55 years. It was found that there was a significant thinning of the nasal RNFL thickness at three months ($p=0.03$) with an associated thickening in temporal quadrant at one month ($p=0.04$) and at three month ($p=0.01$) compared to preoperatively. There was a significant negative correlation between RNFL thickness at the temporal quadrant and CPB time at one month ($p=0.01$) and at three months ($p=0.02$) and ACC time at one month ($p=0.03$). The RNFL thickness was not found to have correlation with MAP.

Conclusions: RNFL thinning was found at the nasal quadrant at third month post CABG and RNFL thickening at the temporal quadrant at one month and three months. The temporal quadrant RNFL thinning was observed to have negative correlation with CPB and ACC time.

RETINAL NERVE FIBER LAYER CHANGES IN OBSTRUCTIVE SLEEP APNOEA SYNDROME

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Introduction: Normal tension glaucoma is a subset of primary open angle glaucoma that is characterized by optic neuropathy that is associated with a glaucomatous optic nerve head, progressive retinal nerve fiber layer thinning, and visual field defects. Obstructive sleep apnoea syndrome (OSA) is a condition characterized by recurrent upper airway obstruction accompanied by hypoxemia, hypercapnia and sleep disruption. There is a hypothesis that the vascular theory links OSA and glaucoma. In OSA, there is prolonged and recurrent apnoea that leads to impairment in optic nerve head blood flow autoregulation and direct damage to the optic nerve. This study is to determine OSA as a risk factor of normal tension glaucoma and to determine the thickness of retinal nerve fiber layer (RNFL) in OSA patients

Methods: Case-control study

Result: The result showed OSA is one of the risk factor of normal tension glaucoma. There is significant difference in mean RNFL thickness in OSA patient compared to normal population with $p=0.04$. Further analysis in each quadrant showed significant difference in RNFL thickness in superior ($p=0.026$) and nasal quadrants ($p=0.024$) among the OSA patients. The thinning of RNFL thickness is more significant in severe OSA with $p=0.025$. The result also showed there was significant difference in cup to disc ratio in OSA patients compared to normal population. However, there was no significant difference in intraocular pressure and mean deviation of Humphrey visual field in between both groups.

EFFICACY OF ENDOSCOPIC CYCLOPHOTOCOAGULATION (ECP) FOR THE TREATMENT OF SECONDARY GLAUCOMA IN UKM MEDICAL CENTER (UKMMC)

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Introduction: Cyclodestructive procedures have been reserved for glaucoma eyes with poor visual prognosis. ECP revolutionized the procedure by direct visualization and application of diode laser to ciliary process to reduce aqueous humour production and lower intraocular pressure (IOP).

Methods: Retrospective chart review of indications, complications and efficacy of ECP, in 6 cases performed at UKMMC from January to June 2013, with 6 weeks follow up was done.

Results: Six eyes of six patients, from age group 15-65 years (mean 46 ± 19.9) were recruited. There were 3 males and 3 females.

Indications for ECP were unsuitable for filtering surgery (n=3) and failed glaucoma drainage device (n=3). IOP was not control with optimal anti-glaucoma medical treatment. Causes varied from secondary glaucoma to steroid induced glaucoma, such as central retinal artery occlusion, posterior scleritis, rubeotic and ghost cell glaucoma. Standard ECP settings performed.

Post-operatively visual acuity showed no change (n=2), and reduced 1-2 lines of Snellen chart (n=4). No post operation hypotony, hyphaema or severe inflammation noted. Four patients achieved post-operative IOP < 18mmHg, two patients without medications, and two patients with medications.

Conclusion: ECP proved to be an alternative procedure for IOP lowering in refractory glaucoma patients. However, post operatively patients have risk of wipe out syndrome, due to severity of disease. Further studies are needed to validate this.

**HEALTHY RICE OPTIONS FOR MALAYSIANS: USING THE METABOLIC MODEL TO EVALUATE
CROSSBRED AND COMMERCIAL RICE VARIETIES**

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Introduction: White rice consumption is associated with increased risk of Type 2 diabetes in Asians. Advanced cross-breeding techniques are developing rice varieties with high agronomic values and untested health potential. This study aims to evaluate the glycaemic and insulin responses from feeding 3 new red transgressive (UKMRC9, UKMRC10, UKMRC11) and 3 commercial rice varieties (Basmati, Thai red, Jasmine) compared to reference glucose loads.

Methods: Twelve normoglycaemic adults (5m+7w, 23.2±1.4yrs, BMI 22.1±3.1 kg/m²) participated in this crossover design trial with 8 postprandial evaluations for 50g-carbohydrate equivalents of test rice and glucose loads. Venous blood samples were drawn fasted (0min) and postprandially (15, 30, 45, 60, 90, 120 and 180min). Incremental area under-the-curve (IAUC) and indices for glucose (GI), insulin (II) and postprandial insulin resistance (HOMA-PP) were calculated.

Results: Jasmine rice elicited the highest postprandial glycaemia, with a GI (mean ± SEM) of 77±7, followed by UKMRC10 (67±11), UKMRC11 (63±9), Thai red (54±9), Basmati (50±6) and UKMRC9 (46±8). Postprandial insulinaemia was lowest after consuming UKMRC9, with an II (mean ± SEM) of 51±5, followed by Basmati (52±5), Thai red (59±4), UKMRC10 (69±8), Jasmine (76±7) and UKMRC11 (77±9). The GI and II values of UKMRC9, Basmati, Thai red and UKMRC11 rice were significantly lower than the glucose reference (p<0.05). Based on HOMA-PP scores, Jasmine rice consumption resulted in postprandial insulin resistance comparable to the glucose reference (p>0.05).

Conclusion: Crossbreeding rice varieties with low GI and II properties is a promising Malaysian agronomic solution to preventing diabetes as well as offer diabetics healthier cereal options.

COMPARISON OF RETINAL NERVE FIBER LAYER (RNFL) THICKNESS CHANGES USING ARGON LASER VERSUS MULTISPOT PATTERN SCANNING LASER (PASCAL) IN TREATING PROLIFERATIVE DIABETIC RETINOPATHY

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Objective: To compare the retinal nerve fibre layer (RNFL) thickness changes post pan retinal photocoagulation between argon and pattern scanning laser (PASCAL) in patient with proliferative diabetic retinopathy.

Methodology: This is a randomized control trial study. A total numbers of 32 subjects were recruited. There were 16 patients in each group. Diabetic patients were recruited from Ophthalmology Clinic, Pusat Perubatan Universiti Kebangsaan Malaysia. Complete eye examination and fundus photograph were done pre laser treatment and post laser treatment at two month and four month. The retinal nerve fiber layer (RNFL) thickness was measured by using Optical Coherence Tomography.

Results: The mean age for argon group was 55.22 ± 7.88 years and Pascal group was 54.00 ± 7.94 years with p value = 0.390. Both groups were comparable in clinical characteristic and demographic. There was no significant mean difference in average RNFL thickness between two laser group in this study; $F(1,669) = 1.008$, $p = 0.323$. There were also no significant differences for all mean RNFL thickness in four quadrants over time (before and after laser treatment) for argon group. However, for Pascal group, significant differences were observed between mean average RNFL thickness with time, mean difference = $-6.26 (-9.97, -2.55)$, $p = 0.003$ and $-7.94 (-12.29, -3.59)$, $p = 0.001$. The repeated measure ANOVA test showed no significant differences in over time for both type of laser, results was $F(2,28)=0.585$, $p= 0.564$.(average RNFL thickness)

Conclusion: This study suggests that between argon and PASCAL treatment is equivalent, no significant RNFL changes.

SUTURE GRANULOMA 14-YEARS POST PARTIAL-THYROIDECTOMY MIMICKING TUBERCULOUS SINUS TRACT

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Introduction: Suture granuloma is a non-immune reaction to an exogenous inert material. It is a persistent reaction to a foreign body. The most common causative material is non absorbable material such as Dacron[®]. It can complicate various surgical procedures like splenectomy, gastrectomy, face-lifts and thyroidectomy as well as mimic an infectious, inflammatory or neoplastic process. The definitive diagnosis is to demonstrate the foreign body granuloma under polarized light. The time frame for a suture granuloma to develop varies from 3 months to 50 years.

Case report: A 63-year-old woman presented with a 12-month history of intermittent discharge from a sinus tract on the right anterior aspect of her neck. She had a background history of thyrotoxicosis and had a subtotal thyroidectomy 14 years ago. She developed a small subcentimeter nodule at the right anterior neck 14 years later. Imaging revealed a sinus tract, which was excised, and no foreign body was seen. She was treated as tuberculosis of the sinus tract. The investigations for evidence of active tuberculosis proved negative, the Mantoux test was 0mm. Acid-fast bacilli (AFB) direct stain as well as culture were negative.

The tissue slides were reviewed and deeper sections were made. Refractile body was found under polarized light microscopy. We revised the diagnosis to suture granuloma. Antituberculous medications were stopped and there were no more discharges from the sinus tract.

Conclusion: Suture granuloma can mimic an infectious process such as tuberculosis. Its presence should be considered in a patient with a history of surgical procedures.

Keywords: Suture granuloma, thyroidectomy, tuberculosis

RISK OF DEVELOPING OBSTRUCTIVE SLEEP APNEA: EXPERIENCE IN A PRIMARY CARE CLINIC, SOUTHERN MALAYSIA

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Introduction: Obstructive sleep apnea (OSA) is associated with multiple medical and psychosocial impacts. Current evidence on patients at risk of developing OSA in Malaysia is scarce. This study aimed to determine the magnitude of patients at risk of developing OSA and associated factors in a primary care clinic, southern Malaysia.

Methodology: This was a cross sectional study of adults ≥ 18 -year old using systematic random sampling. Berlin Questionnaire was used to determine the risk of developing OSA. Respondent's socio-demographic characteristics and clinical parameters including body mass index, weight, blood pressure, neck and waist circumference were obtained. Data was analyzed using SPSS version 20.0

Results: Out of 160 participants, 65.6% were females with the median (IQR) age of 55.6 (27.75) years and 81.9% were obese. Self-reported hypertension and diabetes was 55.6% and 35.60% respectively. One-fifths (19.4%) had high risk of developing OSA. Regarding symptoms described in the Berlin questionnaire, 37.5% reported snoring and 10.6% had excessive daytime sleepiness. The risk of developing OSA is associated with gender ($p= 0.008$), neck circumference ($p=0.010$) and diastolic blood pressure ($p=0.015$). Multivariate logistic regression found the only factor significantly associated with at high risk of developing OSA is diastolic blood pressure ($p=0.031$).

Conclusions: This study found that the risk of developing OSA was lower compared to western population. Interestingly, diastolic blood pressure is an independently factor found associated with at high risk of developing OSA. Further study is needed to understand this relationship.

Keywords: Obstructive sleep apnea, primary care, Berlin Questionnaire

QUALITY OF LIFE AND SEXUAL FUNCTION IN FEMALE PATIENTS WITH PSORIASIS

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Introduction: Psoriasis is a chronic immune mediated, hyperproliferative skin disease that is known to cause substantial impact on quality of life. Sexual dysfunction is a relatively unexplored area in patients with skin diseases. We aimed to determine the relationship between quality of life, specifically in the personal relationship domain with female sexual function in patients with psoriasis.

Methods: This is a cross sectional study conducted in two dermatology outpatient clinics. Inclusion criteria were female patients with chronic plaque psoriasis, age ≥ 18 years with an active sexual life, and are literate in the Malay or English language. Excluded were patients in the post-partum period, patients with gynaecological disorders or chronic medical illnesses that interfere with sexual function, history of psychiatric illness and patients on medications known to interfere with sexual function. Quality of life was assessed using the Dermatology Life Quality Index (DLQI) questionnaire and female sexual function was evaluated using the validated Malay or English version of the Female Sexual Function Index (FSFI) questionnaire.

Results: Seventy-nine women with psoriasis, aged 39.0 (32.0, 48.0) years with median psoriasis area and severity index (PASI) of 6.9 (3.0, 11.6) participated in the study. The median DLQI score was 10.0 (5.0, 14.0), 31.6% of patients reported a moderate effect of psoriasis on their lives while 40.5% reported very large to extremely large effect on their lives. The personal relationship domain was affected in 52 (65.8%) of patients. The median FSFI score was 67.0 (59.0, 77.0), 16 patients (20.3%) had sexual dysfunction. There was a significant correlation between total DLQI and FSFI scores ($p=0.021$). Significant correlations were seen between FSFI and two DLQI domains ie domain of leisure ($p=0.009$), and personal relationship ($p=0.017$).

Conclusion: Psoriasis affects both quality of life and sexual function in our patients. Management of psoriasis should include physical and psychological aspects with consideration of patients' sexual health. Correlations between FSFI and DLQI, including in the DLQI domain of personal relationship suggests that the DLQI may be used to screen patients' sexual health, this requires further confirmatory studies.

Keywords: psoriasis, psychiatry, sexual function, quality of life

PSYCHIATRIC MORBIDITY AMONG MALAYSIAN CHILDREN: EXPLORING THE SOCIAL DETERMINANTS

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Introductions: Psychiatric morbidity is one of the important causes of **disease burden** worldwide with overall prevalence of 20.3% in children population of Malaysia, based on Third National Health and Morbidity Survey in 2006. Social influences are known to impart great effect on the outcome of individual health, resulting in health disparities. This study was conducted to review the prevalence and to identify the social determinants of psychiatric morbidity among children in Malaysia.

Methods: The respondents were 240 school children and adolescents between 5-16 years of age. The respondents answered questionnaires which contained Reported Questionnaire for Children (RQC) to assess the children's mental health. Chi-square test was used to analyze the association between psychiatric morbidity and socio-demographic characteristics of participants and the social determinants.

Results: There were 102 children (42.5%) with childhood psychiatric morbidity with higher prevalence in females (25.8% vs. 15.7%). The prevalence rate was found to be 42.5% which was two-fold higher when compared to the previous prevalence of 20.3%. In their association with social determinants, the respondents' ethnicity, Indians were found to be afflicted the most ($p < 0.01$), followed by Bajaus and Dusuns. There was also a significant association between the caretakers' marital status to caseness ($p < 0.05$). The financial status of caretakers ($p < 0.05$) and sound pollution ($p < 0.05$) have significant role in contributing to the prevalence of childhood psychiatric morbidity. Health behavior ($p < 0.05$) and number of children per household ($p < 0.05$) were also significantly associated with children suffering from psychiatric morbidity.

Conclusions: Multi-leveled approaches are to be taken which include plans on elevating the socio-economic status of high risk population; improve access and use of psychiatric management, screening programs and community intervention programs.

Keywords: Psychiatric Morbidity, Social Determinants, Malaysian Children

EFFECT OF VEGETABLE-OIL BASED MAYONNAISE ON CARDIOVASCULAR RISK ASSESSED THROUGH LONG-TERM HUMAN STUDIES

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Introduction: Mayonnaise is a source of dietary cholesterol as well as vegetable oils rich in fatty acids. We evaluated vegetable-oil based Mayonnaise effect on cardiometabolic risk in normocholesterolemic and mildly hypercholesterolemic subjects.

Method: Thirty-four subjects in a double-blinded crossover trial were fed diets containing 20g/day of soybean-based Kewpie mayonnaise (KP-mayo, linoleic acid-rich) or 20g/day palm oil-based mayonnaise (PO-mayo, palmitic acid-rich) for 4 weeks before switching diets for the next 4 weeks after a 2-week wash-out period. Controlled meals provided <150mg total dietary cholesterol.

Results: Plasma total cholesterol concentrations reduced significantly after both KP-mayo ($p < 0.001$, $es = 1.031$) and PO-mayo ($p = 0.014$, $es = 0.445$) compared to baseline with reduction effect larger after KP-mayo (diff = -0.26 ± 0.36 ; $p = 0.004$; $es = 0.716$). Both treatments registered significant LDL-C reductions ($p < 0.001$ for KP-mayo and $p = 0.015$ for PO-mayo) compared to baseline with a larger difference associated with KP-mayo ($es = 0.960$) compared to PO-mayo ($es = 0.438$). Differences between diets were also significant ($p = 0.035$). HDL-cholesterol concentrations significantly reduced from baseline after KP-mayo ($p < 0.001$, $es = 1.061$) but remained unaffected ($p > 0.05$) after PO-mayo diet. ApoB-100 concentrations reductions from baseline were associated with KP-mayo ($p = 0.030$) and PO-mayo ($p = 0.009$, $es = 0.654$). However, no significant difference in Apo A1 concentrations, triglyceride, glucose, free fatty acid, glucose, TBARS, and CRP concentrations were observed between test diets. Lipoprotein particle size differences were also associated with changes in LDL and HDL particle sizes ($p < 0.05$).

Conclusion: Cholesterol-rich mayonnaise appears safe in terms of cardiovascular risk. An important finding was inclusion of as little as 15g of linoleic acid was enough to modify atherosclerosis risk .

Keywords: cardiometabolic risk, vegetable-oil, palm oil.

VIABILITY OF HUMAN KERATINOCYTES CELL LINES TOWARDS NEWLY DEVELOPED NANO ZIRCONIA

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Introduction: Zirconia is widely used in dentistry due to its biocompatibility, strength, fit, and esthetics. Studies on zirconia as a ceramic biomaterial are now being concentrated on the improvement of its performance which brought to the development of nanozirconia. Newly developed nanozirconia has to be tested for biocompatibility before it can be used as restorative material. The aim of this study is to evaluate cytotoxicity of nano zirconia in vitro from different surface characteristics, in the form of powder and solid material in short time exposure.

Methods: The viability of human keratinocytes cell line (HaCat) was tested in vitro on three different forms of zirconia samples; nano zirconia tablet, nano zirconia powder, and commercially available zirconia tablet (Cercon). All 3 samples were immersed in growth medium for 1, 3 and 7 days. HaCat were cultured for 24h and grown to subconfluent monolayers. Cultures were exposed to growth medium of different types of zirconia using direct-indirect technique for 24h. Exposed cell culture was tested with MTT (3-[4,5-dimethylthiazol-2-yl]-2,5 diphenyl tetrazolium bromide) assay and viability rate was calculated.

Results: Statistical analysis using 2 Way ANOVA reveals no significant difference between viability of cell lines towards newly developed nano zirconia.

ANTIMICROBIAL STEWARDSHIP PROGRAM IN MEDICAL WARDS IN UKMMC

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Introduction: Inappropriate use of antimicrobials leads to the emergence of resistant bacteria and subsequent transmission to other patients. This leads to delayed recovery, treatment failure and even death.

Methods: According to local priorities and resources, a group of pharmacists and an infectious disease physician looked through cases that were prescribed carbapenem in the general medical wards totaling six every Thursday afternoon, from January to July 2012. Before that, certain activities were done including educating prescribers and the pharmacists about good antimicrobial prescribing practice and antimicrobial resistance. Prospective feedback mechanism was adopted in making recommendations on risk for ESBL infection and appropriate use of carbapenem. Feedback was made mainly by writing down in the notes itself and/or communicating with senior medical officers regarding streamlining or de-escalation of therapy and dose optimization.

Results: Out of the 84 cases that were reviewed, 68 cases (81%) were appropriate and 16 cases (19%) were deemed inappropriate. Out of the appropriate cases, 28 cases (41%) were ESBL organisms and 27 cases (40%) were failure of first line antibiotic therapy with high risk of harboring ESBL organisms. Out of the inappropriate cases, 11 cases (69%) had no evidence of infection. The acceptance of our recommendations by the primary team doctors were 93% (13 out of 14 recommendations made).

Conclusions: The appropriateness of carbapenem use from January to July 2012 was 81%. The main inappropriate use of carbapenem was mainly deemed to no objective evidence of infection. We found a surprising high level of acceptance to our recommendations despite not having to resort to a very strict antibiotic restriction policy, which may have caused loss of autonomy to the general physicians.

Keywords: antimicrobial stewardship, carbapenem, ESBL, UKMMC

ETIOLOGY AND OUTCOME OF GRAM NEGATIVE BACTERIA IN IN ADULT COMMUNITY-ACQUIRED PNEUMONIA (CAP) AND HEALTH-CARE ASSOCIATED PNEUMONIA (HCAP) IN UNIVERSITY KEBANGSAAN MALAYSIA MEDICAL CENTER (UKMMC)

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Background: *Klebsiellapneumoniae* is the commonest cause of pneumonia in Malaysia based on 2 previous studies¹⁻² Overall, gram negative infections carries a higher mortality rate. It has become an increasingly important disease especially in the elderly, immunosuppressed individuals, and those with multiple comorbidities. Early recognition and appropriate initial antibiotics will improve patients' outcome.

Objective: To determine the etiology and outcome of gram negative CAP and HCAP in UKMMC

Methods: This was a prospective cohort study involving patients 18 years and above admitted for community-acquired pneumonia (CAP) or health-care associated pneumonia (HCAP) to UKMMC between December 2011 and June 2012. BinaxNOW test for *Streptococcus pneumoniae*, serology for *Mycoplasma*, *Legionella* and *Chlamydia* and cultures from blood/sputum/respiratory tract including other routine investigations were taken. Outcomes of pneumonia were reviewed.

Results: 102 patients were recruited; 89 patients (87.3%) with CAP, 13 patients (12.7%) with HCAP. 15 patients (14.7%) had gram-positive organism, 16 patients (15.7%) had gram-negative organism, 3 patients (2.9%) had other organism and 68 patients (66.7%) were culture negative. *Klebsiellapneumoniae* was the commonest gram negative organism isolated accounting for 7 cases followed by *Burkholderiacepacia* in 4 cases and *Pseudomonas aeruginosa* in 3 cases. 11 patients were given inappropriate antibiotics initially before cultures were known. 3 patients with gram negative pneumonia died in our hospital.

Conclusion: Commonest gram-negative organism for CAP and HCAP in UKMMC is *Klebsiellapneumoniae* Mortality rate of gram negative organism in our hospital is 2.9%.

HYPERLACTATEMIA OUTCOME IN A COHORT OF PATIENTS WITH HIV ON HAART

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Introduction: Hyperlactatemia is a problem in patients with HIV in the developing world especially with the use of stavudine. We assessed features of hyperlactatemia in a cohort of patients with HIV.

Methods: A retrospective study where patients on HAART attending routine clinic visits complaining of symptoms suspicious of hyperlactatemia in the year 2006 were subjected to determination of serum lactate levels. Data were collected regarding demographics and medications. Patients with lactate > 2mmol/l were included.

Results: Of the 31 participants screened, 20 patients were included in this study. Sixteen (80 %) were male. The patients on HAART were as follows: AZT + 3TC (20%), AZT + ddi (5%), d4T + ddi (15%), d4T + 3TC (55%), ddi + 3TC (5%). Their symptoms were: weight loss (36%), loss of appetite (10%), lipodystrophy (10%), lethargy (3%), shortness of breath (3%), vomiting (3%) and combination of more than 2 symptoms (35%). The lactate levels were: 2-3 mmol/l (25%), 3-4 mmol/l (20%), 4-5 mmol/l (30%) and >5 mmol/l (25%). Duration for development of hyperlactatemia were: < 1 year (39%), 1-2 years (45%), 2-3 years (3%) and > 3 years (13%). Forty percent had normal lactate levels on repeated testing. Levels were not repeated in 20%, in the remainder 40% tests were repeated but not until the level normalised. This is because the number of repeated tests varied as patients were relatively stable and had difficulty coming for blood tests. Seventy percent of patients required a new HAART regime while 61% had improvement in symptoms.

Conclusions: The main cause for hyperlactatemia was stavudine. Majority of patients complained of weight loss. Hyperlactatemia mostly occurred by 2 years and took about 3 months to normalise. Majority required a change in drug regime with improvement of symptoms.

Keywords: Hyperlactatemia, stavudine, HAART

URINE HYDROXYPROLINE LEVEL IN CHILDREN WITH SPASTIC CEREBRAL PALSY-PRELIMINARY REPORT

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Introduction: Hydroxyproline is a major component of the protein collagen. Hydroxyproline quantification has been used as an indirect measure of collagen in the spastic muscle in children with cerebral palsy (CP) and its level correlates with the severity of spasticity. It has been reported that urine hydroxyproline (UH) excretion is a fairly sensitive indicator of collagen breakdown and can be used at the clinical level to predict collagen changes.

Objective: To compare the UH level in spastic CP children with established normal levels.

Methods: This was a cross sectional comparative study, conducted in University Kebangsaan Malaysia Medical Centre. Children with spastic cerebral palsy (6 to 14 years) who were scheduled for muscle/tendon lengthening as part of the on going management were included in this study. Demographic data and clinical findings were recorded with the standard proforma. Modified Ashworth Score (MAS) was used to grade the spasticity. Urine samples were collected from 7 CP children for analysis.

Results: Total of 7 patients with spastic quadriplegic (n= 1), spastic diplegic (n=6), age- 6-14 years were included in this study. Girls constituted the highest number (n=5). Spasticity was graded as MAS 2-3. A decreasing trend on UH levels was found in CP children (Median=21.039mg/24/m²) in comparison to normal levels (68-169 mg/24/m²).

Conclusion: The reduced UH level may be a result of altered collagen metabolism i.e. collagen accumulation in the contracted muscles and tendons in children with spastic CP. A larger sample analysis is required to correlate the UH level with severity of spasticity.

Keywords: Cerebral palsy, Spasticity, Modified Ashworth Score, Collagen, Urine hydroxyproline

KNOWLEDGE AND ATTITUDES TOWARD PATIENTS' PAIN AMONG NURSES IN UKMMC

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Introduction: Pain is defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage”. Pain is very subjective and its interpretation may be influenced by various biopsychosocial and spiritual factors. Therefore, it is not surprising that that pain is undertreated worldwide. Successful implementation of pain management procedures and guidelines in an institution depends very much on the acceptance of many levels of health care providers. Negative attitudes and poor acceptance of the nursing community may add to the complexity of the barriers in achieving effective pain management.

Aim: The main purpose of this study was to determine the baseline level of knowledge and attitudes regarding pain among nurses working in UKMMC.

Methodology: This was a cross-sectional research design using a modified version of ‘Nurses Knowledge and Attitudes survey Regarding Pain (NKAS). A back to back English to Malay translation were included to enhance participants’ understanding of the questionnaires. A basic demographic data were obtained to further correlate the level of pain knowledge. All participants consented to the study were nurses working in various setting in this hospital. This study was approved by the UKMMC ethic committee.

Results: A total of 566 nurses volunteered to participate in this study, 34 male nurse and 532 female. The RR was 76% with overall mean percentage score was 42.65 ± 10.87 (range: 5-92.5). Only 2.5% of participants obtained score of 80% or greater. Numbers of years working or age have no significant correlation with respondent’s score. Widespread deficit in knowledge and poor attitude were noted among participants particular in case studies section.

Conclusion: The results of this study were consistent with similar studies in other parts of the world. This support the universal concern of poor knowledge and attitudes among nurses’ in regard to management of pain. The results reflected that number of years working and age were no corresponded to the level of knowledge and their attitude. Therefore initiatives should be taken at various levels to enhance the importance of good quality pain management delivery among nurses.

Keywords: knowledge, attitude, nurses, pain, UKMMC

PREVALENCE OF ERECTILE DYSFUNCTION (ED) AMONG DIABETIC MEN ATTENDING A RURAL HEALTH CLINIC IN SELANGOR AND THEIR HELP SEEKING BEHAVIOUR

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Introduction: Erectile dysfunction (ED) can have adverse effect on the quality of life among diabetic men. Various help seeking behaviour pattern among men with ED have been studied to address the issue as diabetic men with ED have greater risk of morbidities and reduced quality of life.

Objectives: To determine the prevalence of ED among diabetic men attending a rural health clinic in Selangor and to identify their pattern of the help seeking behaviour

Methods: A cross-sectional study was conducted over a period of 6 months. All type 2 diabetic men attending the clinic who fit the selection criteria were selected. The respondents were given a set of questionnaires which captured the data on their sociodemographic profile, the International Index of Erectile Function – 5 (IIEF-5) score and the help seeking behaviour (only for those with ED)

Results: A total of 190 respondents were included in the study. The prevalence of erectile dysfunction among the respondents was 88.9%. However, only 48% of the respondents with ED sought help for their problem. The common barriers for not seeking help among men with ED who did not seek help were lack of privacy to discuss regarding ED, felt that it is a common aging process in men and were too embarrassed to discuss about it with the healthcare personnel.

Conclusion: The prevalence of ED among diabetic men was high yet majority did not seek help for their condition. Healthcare personnel should actively identify and manage diabetic men who are at high risk of developing ED and encourage men with ED to seek help.

'DURING THE PAST ONE WEEK, HOW WOULD YOU RATE YOUR APPETITE?' ADEQUACY OF ADAT APPETITE SCORING FOR A MALAYSIAN HEMODIALYSIS POPULATION

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Introduction: Poor appetite indicative of anorexia is associated with mortality and morbidity in dialysis patients. The 5-category *Appetite and Diet Assessment Tool* (ADAT) is commonly used to assess appetite.

Methods: 205 hemodialysis (HD) patients self-rated their appetite as very good, good, fair, poor or very poor as per ADAT. Differences between self-reported ADAT categories against anthropometry, biomarkers, dietary intake and scores for quality of life (SF-36) and nutrition status, bioimpedance analysis and hand grip strength (HG) were evaluated using ANOVA, t-Test and Kruskal-Wallis. Kaplan-Meier analysis tested median differences between the 5-category ADAT and dichotomized appetite (DA) categories (normal or diminished).

Results: Both approaches were consistent for weight ($p < 0.001$), ser.albumin, Malnutrition Inflammation Score ($p < 0.001$) and SF-36 mental score ($p < 0.001$). The 5-category ADAT better related to intake of energy ($p = 0.001$) and protein ($p = 0.004$), whereas only energy intake was significant ($p = 0.016$) with the DA approach. The DA approach better related to body composition measures for mid-arm-circumference ($p < 0.001$) and triceps skinfold ($p = 0.019$), lean tissue index ($p = 0.001$), lean tissue mass ($p < 0.001$) and HG ($p = 0.014$). Median comparisons indicated DA scoring better differentiated weight and body composition whilst only dietary intake was well categorized ($p < 0.001$) by the 5-category ADAT.

Conclusion: The self-administered, single-question ADAT tool, becomes a more simplified and accurate screening tool in appetite assessment by using the 2-category (normal or diminished) versus the 5-category version. Patients reporting diminished appetite are more likely to have depleted lean body mass and warrant nutrition repletion.

Key words: appetite, ADAT, hemodialysis, dichotomized appetite, nutritional status

THE IMPACT OF A STROKE EDUCATION PACKAGE AMONG CAREGIVERS OF POST-STROKE PATIENT AT A TERTIARY HOSPITAL

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Introduction: Stroke is the main cause of major disability with approximately 40,000 Malaysians being disabled every year. It involves the physical and psychological aspects of both patients and their caregivers.

Methods: A pretest and post-test study was conducted to examine the effect of stroke education package on level of knowledge and stress of caregivers of stroke patients. 30 caregivers of post stroke patients were recruited for this study. Both the control and intervention group were given pre-test and post-test within one month interval at their home. A Relative Stress Scale questionnaire was adapted from Sari-Ann Yonaty to measure the knowledge and stress level.

Results: The caregivers of the intervention group experienced high level of knowledge (103.53 ± 0.797) and low level of stress (29.47 ± 0.478) after they received stroke education package. There was no significant difference of pre-test knowledge level between the intervention ($3.023, \pm 0.845$) and control groups ($2.882, \pm 0.530$) with p value > 0.05 . However, there was a significant difference of post-test knowledge level of intervention ($3.982, \pm 0.460$) and control groups ($2.869, \pm 0.446$) with p value < 0.05 . The results showed significant differences in knowledge ($p=0.001$) and stress ($p=0.001$) levels in the intervention group before and after they received stroke education package. There was a weak, negative correlation between pre-post-test on stress level ($r = -0.121, p > 0.005$).

Conclusions: In conclusion, stroke education package had a positive impact on knowledge and stress level among caregivers of stroke patients. A comprehensive delivery of stroke education by a multidisciplinary team which include speech therapy would be ideal.

'LOOK BACK PROGRAM' FOR BLOOD TRANSFUSION SAFETY: MALAYSIAN PERSPECTIVE

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Introduction: 'Look-back' is a program of identifying blood recipients who had previously transfused with blood-components from negative microbial donors whose subsequent donation found positive for a particular microbial marker. Whenever a regular blood donor whose subsequent donation is found positive for HBV, HCV, HIV or Syphilis, then all the past donations of that donor are traced. The corresponding recipients of those blood-products are traced, counselled and tested for the respective infectious agent. The objective of this study was to identify the recipients who may be infected by the blood-products donated during window period. This study also identified the risk and types of transfusion- transmitted- infection.

Methods: This retrospective study on 'Look-back' was undertaken at Universiti Kebangsaan Malaysia Medical Centre from January 2008 to December 2012. Data was collected from the records and analysed.

Results: Total 17 blood-products were identified in this 'Look-back' where 8(47%) were from syphilis, 7(41%) from hepatitis-B and 2(12%) from HIV positive seroconverted donors. There was no hepatitis-C positive seroconversion. One unit was expired and not being used. Of the sixteen recipients, nine were alive and remained uninfected after 6 months from the suspected transfusion. One recipient failed to come despite numerous attempts while 7 recipients were already passed-away due to their underlying disease at the time of 'Look- back'.

Conclusion: This study found the recipients were uninfected. 'Look-back' is a very useful strategy to identify the recipients of any blood-product that is potentially donated during window period and to give necessary management for any seroconverted patients. It is also a good monitoring tool or indicator of the donor screening program. But whatever good a donor screening program, transfusion is not without risk. The most important take home message is that "transfusion should only be given when it is really necessary."

Keywords: Look-back, blood recipient, sero-conversion, transfusion- transmitted-infection.

INTRACYSTIC LESIONS OF THE BREAST: SONOGRAPHIC-PATHOLOGIC CORRELATION. A DESCRIPTIVE STUDY.

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Introduction: To describe the ultrasound findings of intracystic lesions of the breast and its pathologic correlation.

Methods: The ultrasound images of intracystic lesions of the breast and the histopathology reports over a 5-year - period from January 2008 to July 2013 were reviewed. 32 intracystic lesions of the breast were identified and their histology were reviewed. The intracystic lesions were classified into 2 types; Type I: cystic lesions with thick wall/ septa or mixed cystic and solid lesions with at least 50% cystic component. Type II: cysts with mixed cystic and solid component with at least 50% solid component and eccentric cystic foci.

Results: In 32 intracystic lesions of the breast, there were 19 lesions (59.4%) classified as Type I and 13 lesions (40.6%) classified as Type II. Out of 32 intracystic lesions, 10(31.3%) were histopathologically proven to be malignant and 22(68.8%) were benign. 15 (78.9%) of type I lesions and 7(53.8%) of type II lesions were histologically proven to be benign. 4(21.1%) of type I lesions and 6(46.1%) of type II lesions were malignant. Colour doppler assessment was performed for 11 out of the 32 lesions. From this, 8(80%) showed presence of colour flow within the solid component, of which 5(62.5%) were proven to be benign and 3(37.5%) turned out malignant. In conclusion, cystic breast lesions that were classified into Type I and II subtypes, showed a variety of histological diagnoses that ranged from benign to malignant. Therefore, biopsy should be performed in all of these lesions. The presence of vascularity did not distinguish benign from malignant lesions and did not obviate the need for excision or biopsy of the solid projections.

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AUDIOVISUAL DISTRACTION IN REDUCING ANXIETY AMONG CHILDREN ATTENDING FOR INITIAL DENTAL VISIT

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Introduction: Anxiety or fear of dental visit among children has been a major concern for dentists all around the world. Distraction is one of the many non-pharmacological methods used to divert patient's attention from anxiety provoking stimuli. Audiovisual distraction using television is often safe, inexpensive, simple, quick and comfortable to use for both dentist and the child patient. The aim of this study was to evaluate the effectiveness of the television screen when attached to the dental chair as a mode of audiovisual distraction in reducing anxiety and increasing cooperative behaviour among young children attending for initial dental examination to the dental clinic for the first time.

Methods: Sixty patients in the age range of three to six years who were clinically observed to be apprehensive for initial clinical assessment were randomly allocated into two groups. The subjects in the intervention group watched television programme of their choice during dental examination while the subjects in the control group underwent dental examination without exposure to the audiovisual distraction. The children's anxiety and behaviour response to dental examination was assessed using the Venham's Anxiety and Cooperative Behaviour Rating Scale.

Results: Children in the distraction group were more calm and well behaved during the dental examination with statistically significant differences noted in both the anxiety ($p < 0.001$) and behaviour categories ($p < 0.001$) when compared to the non-distraction group.

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DENTAL CARIES, ORAL HYGIENE AND GINGIVAL STATUS IN HAEMOPHILIA PATIENTS REGISTERED WITH NATIONAL BLOOD CENTRE.

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Introduction: This case controlled study aimed to evaluate the existing oral health status in children and adolescents with haemophilia.

Methods: 50 haemophilia patients aged seven to 16 years registered with the National Blood Centre, Kuala Lumpur were recruited into the study. Fifty healthy subjects matched for age were used for comparison. Clinical examination was carried out to determine dental caries experience, oral hygiene status and gingival condition in these two groups.

Result: No significant differences were found in mean caries experience in both primary and secondary dentitions ($p = .86$ and $p = .32$, respectively) between the patient and the control groups. Significantly a higher proportion of haemophilia patients had better oral hygiene status when compared with the controls ($p = .004$). Furthermore, there was a significant difference in the gingival health status ($p = .01$) between the two groups with the haemophilia group having less gingival inflammation.

CYCLIN D1 EXPRESSION IN THYROID NEOPLASM AND ITS CORRELATION WITH CLINICOPATHOLOGICAL FEATURES

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Introduction: Thyroid carcinoma represents the most common malignant endocrine tumours. Although most have good prognosis, a small percentage display poor outcome. Cyclin D1, a key cell cycle protein has been implicated in the tumourigenesis of many malignancies including thyroid carcinomas. This study aims to determine the expression of cyclin D1 in a series of thyroid lesions and to investigate its role in tumour prognostication.

Methods: A total of 130 benign lesions (97 nodular hyperplasia, 11 Hashimoto's thyroiditis and 22 follicular adenomas), 103 papillary carcinomas and 25 follicular carcinomas were studied. Relevant clinicopathological data were retrieved. Cyclin D1 expression by immunohistochemistry was studied in these lesions. Correlation was made with the clinicopathological features.

Results: Cyclin D1 expression was found in 118/130 (90.8%) of benign lesions and 128/128 (100%) of carcinomas. Non-neoplastic thyroid lesions generally showed low grade cyclin D1 expression. In contrast the majority of adenomas showed higher grade cyclin D1 expression. When malignant tumours were compared with benign lesions (including non-neoplastic and adenomas), there were significant difference ($p < 0.000$) between these groups, with malignant tumour (89.8%) expressing high cyclin D1 expression. The papillary carcinoma was more frequently positive than follicular carcinoma ($p = 0.029$). In addition, multifocal tumour is also associated with high cyclin D1 expression ($p = 0.018$).

Conclusions: High cyclin D1 expressions are more commonly observed in malignant thyroid tumours. It is also associated with tumour multifocality.

ORAL HEALTH STATUS IN CHILDREN WITH CHRONIC RENAL FAILURE

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Introduction: This case controlled study aimed to assess oral health status in children with chronic renal failure.

Methods: Thirty two chronic renal failure patients aged six to sixteen years who attended dialysis unit and nephrology clinic, Kuala Lumpur Hospital were recruited in the study. Thirty five systemically healthy children of the same age range were assigned to the control group. Clinical examination was carried out to determine the dental caries experience, oral hygiene status, gingival condition and saliva parameters in both groups.

Results: The differences between the study and control groups in mean caries experience in primary and permanent dentitions ($p=.69$ and $p=.16$, respectively), Simplified Debris ($p=.21$) and Modified Gingival Indices ($p=.22$), salivary pH ($p=.31$) and buffering capacity ($p=.06$) were not statistically significant. However, the differences for Simplified Calculus Index ($p=.001$), Simplified Oral Hygiene Index ($p=.01$) and salivary flow rate (SFR, $p<.0005$) were statistically significant.

EFFECT OF TITANIUM-BASED ALLOYS ON THE VIABILITY OF HUMAN GINGIVAL FIBROBLASTS

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Introduction: Titanium and titanium alloys are used as biomaterials mainly in implantology and orthopaedics. Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia has developed three combinations of β -titanium alloys to improve the properties of currently available titanium alloys. Biocompatibility testing is mandatory for newly developed biomaterials. Hence, the aim of this study is to investigate the biocompatibility of Ti-10Mo-10Cr, Ti-10Cr and Ti-10Mo alloys on human gingival fibroblasts with direct contact.

Methods: All titanium alloy disc samples were exposed to a monolayer culture of human gingival fibroblasts (HGF) for 1, 3 and 7 days. Pure titanium was used as reference material. The absorbance rates of fibroblasts upon methyl thiazol tetrazolium (MTT) assay were used to calculate the cell viability. The viability of HGF for each samples were compared with 2-way ANOVA.

Results: The mean viability rates of fibroblast cell lines showed that all the titanium alloys were generally non-toxic to human gingival fibroblast with survival rates of more than 50% in all samples. All the β -titanium samples showed reduced viability with increased exposure period of the titanium discs. 2-way ANOVA showed that there was a statistically significant difference between fibroblast survival rates and the duration of exposure to titanium alloys ($p=0.002$). The viability of the fibroblasts after exposed to different type of titanium alloys was statistically significant at Day 1 and Day 7 ($p=0.01$).

SALIVARY INFLUENCE IN EARLY CHILDHOOD CARIES AMONG PRESCHOOL CHILDREN OF LOW SOCIOECONOMIC BACKGROUND

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Introduction: Early childhood caries (ECC) is a common infectious and multifactorial disease affecting preschool children worldwide. The aim of this study was to determine caries prevalence in preschool children of low socioeconomic background and to investigate some salivary factors that may contribute toward the occurrence of ECC.

Methods: This is a cross-sectional study based on convenient sampling of 257 pre-school children of 4-5 year-old from a Community Kindergarten located in a low-socio economic housing area. Caries experience was recorded using dmft index and intraoral examination was carried out using a chair-table set up and portable headlight. Based on the dmft recorded, the children were then divided into two groups; ECC (dmft=1 or more) and caries free group (dmft=0). Salivary pH and buffering capacity scores were determined in both groups. Saliva samples from 30 subjects (15 from each group) were taken randomly for microbial profiling.

Results: ECC prevalence was 62.6% with a mean dmft of 3.38 ± 4.23 . Salivary pH was not significantly associated with caries experience (Fisher exact test, $p>0.05$). However, salivary buffering capacity showed a significant result with caries experience (Fisher exact test, $p<0.05$). Presence of *Streptococcus mutans*, *Streptococcus salivarius*, *Streptococcus mitis*, *Aerococcus viridans* and *Lactobacillus* spp was significantly higher in salivary samples of ECC children compared to caries free children.

DURABILITY OF SELF-ADJUSTING FILE (SAF) IN SIMULATED CLINICAL USED

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Introduction: This study aimed to evaluate durability of Self-Adjusting File (SAF) in preparing root canals of different curvatures.

Methods: A total 47 SAF were divided into 5 groups and operated in mesial canals of extracted lower molars with different angle(α) and radius(r) of curvatures: Group A ($\alpha=20-400$, $r<6\text{mm}$), Group B ($\alpha=20-400$, $r>6\text{mm}$), Group C ($\alpha>400$, $r<6\text{mm}$), Group D ($\alpha>400$, $r>6\text{mm}$) and Group E (control) ($\alpha<200$). The file was operated in one canal for maximum of 4 minutes. Every 1 minute the file was removed from the canal and visualized under Dental Operating Microscope to detect any mechanical failures: fracture or deformation. If there was no failure, the operation resumed with the same file in the same canal. After 4 minutes, if the file was still intact, it was operated in the new canal and the procedures continued. If failure detected at any time, the experiment was stopped immediately. The new SAF was used in a new canal and the experiment repeated. The time when the first mechanical changes occurred was recorded and this file was re-assessed under both Stereo Microscope (SM) and Scanning Electron Microscope (SEM) respectively.

Results: SAF operated in Group E (straight canal) had the highest durability of 19 minutes followed by Group D (7.2 minutes), Group C (7.0 minutes), Group B (5.7 minutes) and Group A (4.9 minutes). There was significant difference between Group E and other experimental groups at $P=0.0001$. However, there were no significant differences among the experimental groups ($P>0.05$). Prevalence of file failure occurred most commonly on the middle part. SEM images of fractured surfaces revealed fatigue striations and dimpling patterns.

Conclusion: SAF is more durable to be used in relatively straight canal rather than in canal with moderate and severe curvature.

A HISTOMORPHOMETRIC ANALYSIS OF THE EFFECT OF GELAM (*MELALEUCA CAJUPUT*) HONEY ON ALVEOLAR BONE LOSS AMONG SPRAGUE-DAWLEY RATS

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Introduction: Gelam honey; a Malaysian honey was extensively studied on its anti-inflammatory properties. It may have a role in the inhibition of periodontal inflammation and preventing alveolar bone loss in periodontal disease. The aim of this study, was to determine the effects of Gelam honey on alveolar bone loss in experimental periodontitis model.

Methods: Thirty male Sprague-Dawley rats were randomly divided into four groups: ligated saline (LS), ligated honey (LH), non-ligated saline (NLS) and non-ligated honey (NLH). Silk ligature were placed around the left first mandibular molar to establish periodontitis. The LS and NLS groups were given saline (3g/kg) while LH and NLH groups were given Gelam honey (3g/kg) systemically. At day 15, the rats were sacrificed and alveolar bone level was determined histomorphometrically. Number of osteoclasts was also calculated for all groups.

Results: Histomorphometric analyses showed that alveolar bone resorption was severely induced around the ligated molar in the LS and LH groups. In the ligated groups, there was no difference in alveolar bone loss between the LS and LH group. However, a reduction of osteoclast number by 15.2% between the groups was evident but was not statistically significant ($p>0.05$). In the non-ligated groups, there was reduction of alveolar bone loss in the NLH group compared to NLS group and the number of osteoclasts was 13.2% reduced. These findings suggest that at day 15, Gelam honey administered systemically did not prevent alveolar bone loss in the experimental periodontitis rats but had the potential in reducing osteoclast activity.

COSTS OF NURSING SERVICES BASED ON MALAYSIA DIAGNOSIS RELATED GROUPS (MY-DRG) FOR MEDICAL AND SURGICAL IN PATIENTS CASES IN UNIVERSITY KEBANGSAAN MALAYSIA MEDICAL CENTRE

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Introduction: Compared to other support services such as the laboratory, pharmacy, radiology, and other diagnostic and therapeutic procedures, nursing is a major part of hospital care. Hospitals in Malaysia, especially teaching hospitals, should be aware of the cost and value gained from such services, in order to improve the current reimbursement system. The objective of this study is to determine the unit cost per day of stay and cost per episode of care for nursing services based on MY-DRG using step-down costing methods for medical and surgical wards in UKMMC.

Methods: This is an economic evaluation study and employs descriptive cross-sectional design in order to determine the nursing cost. Data was collected from November to March 2012. Data for two year period (2011 and 2012) consisting of total number of staff nurses and their grades; salary received per year (including allowances); patient days per year; and average length of hospital stay (ALOS) was gathered. Mean cost for nursing services for each MY-DRG Group were imputed and trimming method using L3H3 was applied to handle the outliers.

Results: The top five highest nursing cost components in MY-DRG for medical inpatients were: B-4-13-iii (Other Liver Disease-Severe) (RM 2,144.8±SD1,952.8; 28.6%); C-4-10-iii (Acute Leukemia-severe) (RM1,749.6±SD1,384.7; 18.8%); C-4-11-iii (Lymphoma and Chronic Leukemia-severe) (RM1,585.5±SD1,099.9; 15.5%); J-4-15-iii (Respiratory Infections and Inflammations-severe) (RM1,520.2±SD1,087.2; 16.9%); A-4-10-iii (Septicemia-severe) (RM1,475±SD1,022; 14.1%). While in surgical discipline, the top five highest nursing cost components in MY-DRG were: G-1-11-iii (Ventricular Shunt-major), (RM6,130±SD3,608.7; 25.5%); G-1-10-iii (Craniotomy-major) (RM5,134±SD4,083.4; 18.7%); B-1-10-iii (Pancreas and Liver Operation-major) (RM4,167.6±SD3,115.9; 11.9%); U-1-20-iii (Other Ear, Nose and Throat Procedures-major) (RM3,563.6±SD3,450.9; 5.8%); K-1-40-iii (Other Operation Digestive-major) (RM3,074.9±SD2,807.4; 24.7%).

Conclusion: The cost of nursing components is higher in severity III cases. This result shows that patients in severe III will consume more resources compared to patients in severity I and II.

COMPARISON OF MICROLEAKAGE AND PENETRATION OF WETNESS-TOLERANT AND CONVENTIONAL RESIN-BASED PIT AND FISSURE SEALANTS ON DIFFERENT SURFACE PREPARATIONS

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Introduction: The drawback of the standard traditional resin-based sealant is its moisture sensitivity. Recent development of hydrophilic sealant with wetness-tolerant chemistry was intended to overcome this problem. This study aimed to compare the microleakage and penetration ability between wetness-tolerant (Embrace WetBond[®]) and conventional resin-based sealant (Clinpro[®]) under three different enamel surface preparations.

Methods: One hundred and twenty extracted, caries free premolars were cleaned and randomly divided into six groups of equal numbers. In Group 1 and 2, teeth were prepared according to Clinpro[®] and Embrace WetBond[®] manufacturers' instructions respectively. In Group 3(Clinpro[®]) and 4(Embrace WetBond[®]), teeth were exposed to artificial saliva prior to sealant placement. Meanwhile, in group 5 (Clinpro[®]) and group 6 (Embrace WetBond[®]), bur preparation to the teeth were done. All the teeth were stored in artificial saliva for 1 week at 37°C and then subjected to thermocycling. Nail polish was used to coat the unsealed surface before immersion in 4% methylene blue. Each tooth was embedded into acrylic resin before sectioning at two places, producing 4 sections per teeth. Microleakage and unfilled surface areas were then measured using a 3D optical measurement device (Alicona Infinite Focus).

Results: A significant difference in the microleakage was only noted in the bur prepared enamel surfaces, where Clinpro[®] sealant showed more microleakage than Embrace WetBond[®] ($p < 0.05$). No significant differences were noted between the two sealants in terms of penetration ability with the 3 different enamel surface preparations.

ASSOCIATION BETWEEN CHRONIC PERIODONTITIS AND ERECTILE DYSFUNCTION: A CASE-CONTROL STUDY

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Introduction: Chronic periodontitis (CP) and erectile dysfunction (ED) are a common problem worldwide that affect quality of life. Both of the conditions are associated with endothelial dysfunction and share common risk factors. To date, a limited number of studies done on the association between CP and ED and the results are inconclusive. The study aims to find the association between CP and ED and the relationship between severity of both.

Methods: This study recruited 41 subjects (22 cases and 19 controls), age ranged; 27-59 years old. The International Index of Erectile Function (IIEF-5) was used to assess the presence of ED. Full periodontal examination was conducted in subjects to assess periodontal health status by an examiner blinded to ED status. The questionnaire consisted of basic questions of general health, dental knowledge and habit in written form were answered.

Results: Mean age for ED and non-ED groups were 45.6 ± 12.1 and 35.1 ± 7.6 ($p=0.278$) respectively. Majority of ED subjects having moderate CP (N=11), only one ED subject has no CP. The mean values of clinical attachment level (CAL), percentage of bleeding on probing (BOP) and plaque index (PI) were significantly higher in ED subjects than non-ED subjects ($p < 0.05$). There were statistically significance ($p < 0.05$) when comparing between group of age and diabetes with ED groups. Chronic periodontitis was found out positively associated with ED and ED stages were found out significantly related to CP. In conclusion, we suggested there is a positive association between CP and ED. However, it is not a true association because confounder factors such as oral hygiene, age, diabetes and smoking are not excluded.

**THE COST OF RADIOLOGICAL PROCEDURES FOR MY-DRG AT UNIVERSITI KEBANGSAAN MALAYSIA
MEDICAL CENTRE: APPLYING ACTIVITY BASED COSTING METHODOLOGY**

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Introduction: Universiti Kebangsaan Malaysia Medical Center (UKMMC) has used the recent Malaysian Diagnosis Related Group (MY-DRG) which contains 1220 groups with three levels of severity of diagnosis. In 2011, a total of 25,754 inpatient has been recorded in MY-DRG. 450 inpatients were categorized in discipline of pediatrics with six MY-DRG groups. It is important to know the actual cost of the radiology procedures in discipline of pediatrics. Hence, it is very crucial to determine the actual cost of each procedure in preparation for future autonomous university governance, particularly budgeting.

Methods: A cross sectional study was conducted from January to December 2012 in all units in Department of Radiology. Activity Based Costing (ABC) methodology was used to analyzed the cost of each procedure. Seven cost components were collected for each procedure: (1) staff salary (2) consumables (3) equipment (4) reagents (5) administration (6) maintenance (7) utilities.

Results: The five expensive costs for MY-DRG in pediatrics for radiological procedures have been identified using ABC. The highest mean cost was P-8-8-III (Neonate, birth weight >2499 grams with respiratory distress syndrome & congenital pneumonia-severe) (RM110±89), followed by P-8-17-III (Neonate, birth weight >2499 grams without complex operation -severe) (RM92±88), P-8-14-III (Neonate, birth weight >2499 grams with complex congenital abnormalities –severe)(RM82±69), P-8-8-II (Neonate, birth weight >2499 grams with respiratory distress syndrome & congenital pneumonia-moderate)(74±59) and P-8-8-I (Neonate, birth weight >2499 grams with respiratory distress syndrome & congenital pneumonia-minor) (RM63±39).

Conclusions: An accurate and precise cost per radiological procedure can be determined by using ABC method. This present study is only determined the actual cost for procedures in pediatrics.

GIVING BIRTH EXPERIENCE OF PATIENTS WITH MEDICAL BACKGROUND IN MALAYSIA: A QUALITATIVE STUDY

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Introduction: Experience in labour room is one of the critical periods for a woman in her life. Advance in birth-related health intervention has ensured that giving birth experience became safer and less painful, but unable to ensure satisfactory experience. Our study tried to explore the satisfaction of giving birth experience among patients with medical background. These respondents hypothetically have more advantage of understanding the procedures and quality aspects involved and perhaps will give more meaning to the satisfaction concept.

Methods: The study was conducted among the medical personnel from Department of Community Health, UKM. Sampling was done purposively and a session of focus group discussion was utilized to collect the data.

Results: Seven themes emerged including childbirth experience satisfaction, special "treatment" for doctors, hospitality influence treatment quality, multiple factors influence satisfaction, ranking of the healthcare staffs, improvement for healthcare facilities, and improvement for healthcare staffs.

Discussion: Various level of experiences encountered by respondents during their childbirth had varied from bad to excellent depending on place where the birth took place. Hospitality, quality of treatment, patient privacy with good environment, and good pain management were thought to be important influences for satisfaction towards childbirth experience. Specific questionnaire on childbirth satisfaction can be construct using this study.

CHEK2 p.R180C MUTATION CONFER A MODERATE RISK OF BREAST CANCER IN MALAYSIAN WOMEN

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Introduction: The cell-cycle checkpoint kinase 2 (*CHEK2*) gene encodes a serine/ threonine kinase that functions in the signaling pathways activated by DNA damage, particularly DNA double strand breaks. Defects in *CHEK2* gene have been associated with increase in breast cancer risk. However, the association between *CHEK2* gene mutation and breast cancer risk in Malaysian women still remains unknown. The aim of this study is to identify and characterise *CHEK2* gene mutations among Malaysian patients with high risk breast cancer.

Methodology: A total of 59 high risk breast cancer patients from UKM Medical Centre (UKMMC), Hospital Kuala Lumpur (HKL) and Hospital Putrajaya (HPJ) who are negative for mutations in *BRCA1* and *BRCA2* were included in the study. Ten milliliters of peripheral blood was obtained from each fully informed, consented patient. Isolation of genomic DNA was done using standard protocol. Mutational analysis for all coding regions and intron-exon junctions of the *CHEK2* gene was performed using direct DNA sequencing.

Results: Two potentially pathogenic missense mutations (p.I160M and p.R180C) were identified in two unrelated high risk breast cancer patients at a frequency of 3.4% (2/59). Variant p.I160M was detected in a 43-year-old patient with a family history of breast cancer while variant p.R180C was detected in a 15-year-old breast cancer patient with a history of ovarian cancer. Further investigation on both cases and controls from University Malaya Medical Centre (PPUM) showed p.I160M mutation in 2/878 (0.23%) patients with invasive breast cancer and 1/270 (0.37%) controls ($p=0.688$), whereas p.R180C mutation was found in 4/878 (0.46%) patients with invasive breast cancer and 1/270 (0.37%) controls ($p=0.852$). Functional protein analysis showed that p.R180C mutation is detrimental to the normal function of the protein as a result of DNA damage.

Conclusion: The results of this study indicate that *CHEK2* p.R180C mutation likely to be a pathogenic mutation that confer a moderate risk of breast cancer in Malaysian women.

THE LOCAL EFFECTS OF GELAM HONEY (*MELALEUCA CAJUPUTI*) ON INFLAMMATORY MEDIATORS AMONG PERIODONTITIS RATS.

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Introduction: Periodontitis is an inflammation of structure supporting tooth that can cause tooth loss. Research has shown that Gelam honey has an anti-inflammatory effect and potential for treating inflammatory condition. This study is aimed to determine the local effect of Gelam honey on the inflammatory mediators namely IL-1 β in periodontitis Sprague-Dawley rats.

Methods: Two rats for baseline group, 28 were randomly assigned into 4 groups: NLS (control given saline), NLH (control given 3g/kg Gelam honey), LS (periodontitis given saline) and LH (periodontitis given 3g/kg Gelam honey). Periodontitis was induced at lower left first molar. On day 15, rats were euthanized. The tissue samples were analysed histologically and immunohistochemically at the gingivomucosal and interdental area.

Results: The LS group exhibited significantly higher levels of IL-1 β and the number of inflammatory cells for both gingivomucosal and interdental area than other groups ($p < 0.05$). No significant difference between both observed areas. Gelam honey was found to be able to reduce the level of IL-1 β in periodontitis rats with a total reduction of 81.27%. Therefore, Gelam honey able to reduce IL-1 β locally and has the potential for treating periodontal disease.

AMPLIFICATION AND OVEREXPRESSION OF *HER2* ONCOGENE IN PROSTATE CANCER CASES: EVALUATION BY ARRAY CGH AND IMMUNOHISTOCHEMISTRY TECHNIQUES.

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Introduction: The *HER2* gene amplification and overexpression has been implicated in many tumor types. However, in prostate cancer, its significance has remained unclear.

Aims of study: To determine the *HER2* amplification and overexpression in prostate cancer cases and to observe *HER2* expression in prostate tumor in comparison with benign prostatic hyperplasia.

Materials & Methods: Thirty-six prostate tumors obtained from transurethral resection (TURP) specimens and 10 benign prostatic hyperplasia (BPH) specimens were included in this study. Of 36 cases, eight were organ-confined prostate cancer, five were prostate cancer with capsular invasion, 14 showed metastasis while nine cases had no tumor stage recorded. Specimens were formalin-fixed and paraffin-embedded, retrieved from Department of Pathology, UKM Medical Centre (UKMMC). Array comparative genomic hybridization method was used to detect *HER2* gene amplification on a series of 36 prostate tumors while *HER2* protein expression was evaluated by immunohistochemistry technique.

Results: Forty-six specimens (36 tumors, 10 BPH) were analyzed. *HER2* gene amplification was detected in 31 (86%) cases out of 36 tumors. Of 31 cases, 25.8% was detected in organ-confined prostate cancer, 16.1% of capsular invasion and 32.3% in bone metastasis. IHC results showed no *HER2* protein overexpression in all tumor cases while in 7 (70%) out of 10 BPH specimens, focal membranous staining was noted.

Conclusion: Array CGH technique enabled high resolution detection of copy number changes. Unlike breast carcinoma, the discordance between the expression and amplification rates suggested that expression may be the cause of some other factors rather than true gene amplification.

IDENTIFICATION OF IKZF1(IKAROS) DELETIONS IN CHILDREN WITH B-CELL PROGENITOR ACUTE LYMPHOBLASTIC LEUKAEMIA – A MULTICENTER STUDY IN MALAYSIA

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Introduction: Deletions of IKZF1(also known as Ikaros) are associated with very poor prognosis in children with B-cell progenitor acute lymphoblastic leukaemia (ALL). We performed genomic profiling of 44 ALL samples at diagnosis and/or relapse and 66 ALL samples in remission using Multiplex Ligation-dependent Probe Amplification (MLPA, MRC-Holland).

Methods: Diagnostic bone marrow(BM) was obtained from 44 children with ALL, at UKM Medical Centre and Institut Pediatrik. Sixty-six samples in remission (peripheral blood) were obtained from the cell banking. Genomic DNA was successfully extracted and purified in 110 samples using standard procedures. Genomic sequencing was performed for all IKZF1 coding exons using the MLPA technique and analyses were carried out using a SALSA MLPA reaction mixture which identifies deletions or multiplications of, amongst others, IKZF1.

Results: Of the 110 samples successfully tested, 13(12%) showed abnormalities involving deletions of the 10 different genes available in the SALSA MLPA probe. Three out of 13 IKZF1 deletions were also BCR-ABL positive. Another 10 patients with IKZF1 deletions did not harbour BCR-ABL but 3 were in relapse group, 2 were in high-risk group and 5 were in standard-risk group. The overall survival of patients with IKZF1 deletions was significantly poorer compared to those who did not harbour IKZF1 deletions (p=0.013).

Conclusion: IKZF1 deletions are quite frequent in our population and are associated with high risk features in children with B-cell progenitor ALL. The overall survival was poor in patients with IKZF1 deletions.

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- Semua Tetamu Jemputan
- Semua Penceramah Jemputan
- Semua Fasilitator Jemputan
- Semua Peserta Minggu Penyelidikan Perubatan & Kesihatan ke-15 (MP15)
- Jawatankuasa Penganjur MP15
- Urusetia MP15

Semua pihak lain yang terlibat secara langsung dan tidak langsung dalam menjayakan MP15

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