21ST NATIONAL CONFERENCE ON MEDICAL & HEALTH SCIENCES

TOWARDS 2020 HEALTH STATUS IN THE TIME OF SCARCITY

17th-18th OCTOBER 2016 | SCHOOL OF DENTAL SCIENCES, UNIVERSITI SAINS MALAYSIA

ABSTRACT BOOK

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Message from the Dean

Assalamualaikum warrahmatullah dan salam sejahtera,

The School of Dental Sciences, Universiti Sains Malaysia (USM) is proud to welcome all invited speakers, participants and everyone to the 21st National Conference of Medical and Health Sciences (NCMHS). This year, the School is once again the host of the conference.

This annual conference is a platform for researchers to share with others all breakthrough and discoveries which of benefits to the mankind. The impact of research should be measured not only by high impact factor of publications, but also through the solving of communities' problems.

Our theme for this year is **Towards 2020 Health Status in the Time of Scarcity**. The global economy is in crisis and Malaysia is in the receiving ends. As a result, the government has cut its spending on many sectors, which includes education and scientific endeavors. In such dire times, we must put our minds together and find ways to maintain all the achievements in science so that we are still moving forward.

This is the moment to expand your knowledge, forge collaborations, and utilize all your dedication and skills to uphold sciences and education.

Have a wonderful conference.

Professor Dr Adam Husein
Advisor, 21st NCMHS
Dean, School of Dental Sciences, USM

Message from the Chairperson

Dear friends and colleagues,

The committee welcomes you to the 21st National Conference of Medical and Health Sciences (NCMHS). We are proud to hold this event in Kota Bharu, Kelantan.

The scientific discovery process can be defined as a never-ending search for the truth of how nature works and constitutes, to a significant degree, an on-going critical evaluation of scientific (physical, chemical, biological) data.

Hence, it has become imperative for us, the lecturers, researchers, scientists and clinicians in Malaysia to understand, explore and unfurl the applications of science and harnessing its potentials for the future generations.

On behalf of the 21st NCMHS Organising Committee, I welcome all of you to this event and hope this event will be a very fruitful meeting for all of us.

Dr. Azlina Ahmad
Chairperson, 21st NCMHS

21st NCMHS Programme

Day 1: 17th October 2016 (Monday)

Time	Programme	Venue
8.00 am 8.30 am 8.40 am	Registration Welcoming Speech by Dean, the 21st NCMHS Advisor Officiating Ceremony by Vice Chancellor of USM	DK1, PPSG
9.00 am	**Keynote Lecture I** Chairperson: Prof. Dr. Adam Husein **Mending the Mindset of Researchers in the Turbulent Times** YBhg. Prof. Datuk Dr. Asma Ismail Vice Chancellor of USM	
10.00 am	*Morning Tea*	
10.30 am	**Keynote Lecture II** Chairperson: Prof. Dr. Ahmad Sukari Halim **Towards 2020 Health Status in the Time of Scarcity** YBhg. Prof. Dato' Dr. Mafauzy Mohamed Director of Health Campus, USM	
11.30 am	**Plenary I** Chairperson: Assoc. Prof. Dr. Muzaimi Mustapha **Health Tourism: Opportunities and Challenges** Yang Mulia Tengku Tan Sri (Dr.) Mahaleel Tengku Arif Member, Board of Governors, USM	
12.15 pm	**Plenary II** Chairperson: Assoc. Prof. Dr. T.P. Kannan **Future Dental Research Needs in Malaysia** Dr. Noor Aliyah Ismail Principal Director of Oral Health, Ministry of Health, Malaysia	
1.00 pm	*Lunch Break*	
2.30 pm- 4.30 pm	Free Communication I Basic Sciences Clinical Sciences Health Sciences	DK 1, PPSG DK 2, PPSG Conf. Room
4.30 pm	*Afternoon Tea*	

*DK 1/2 (Dewan Kuliah 1/2) and Conf. Room (Conference Room) are located in Level 2, PPSG (School of Dental Sciences, USM).

Day 2: 18th October 2016 (Tuesday)

Time	Programme	Venue
9.00 am 9.30 am 10.00 am	**Symposium I: To Vaccinate, or Not to Vaccinate?** Chairperson: Assoc. Prof. Siti Hawa Ali **Title 1: Research on Vaccines** Prof. Dr. Norazmi Mohd Nor, USM **Title 2: Paediatric Clinical Experience: Vaccine** Prof. Dr. Zabidi Azhar Mohd Hussin, USM **Title 3: What Community Needs to Know About Vaccine?** Dr. Hj. Suhazeli Abdullah Ketengah Jaya Health Centre, Terengganu	DK1, PPSG
10.30 am	*Morning Tea*	
11.00 am 11.30 am 12.00 pm	**Symposium II: Future Aesthetic Smile: Fantasy to Reality** Chairperson: Assoc. Prof. Dr. Dasmawati Mohamad **Title 1: Paradigm Shifts in Class III Skeletal Adolescent Treatment** Prof. Dr. Rozita Hassan, USM **Title 2: Utilizing Digital Smile Design (DSD) in Failed Dentition** Datin Dr. Kamsiah Gulam Haider Clinical Practice Prosthodontics Sdn. Bhd. **Title 3: Facial Aesthetic in Orthognathic Surgery** Dr. Ramizu Shaari, USM	
12.30 pm	*Lunch Break*	
2.00 pm- 4.00 pm	Free Communication II Basic Sciences Clinical Sciences Health Sciences	DK 1, PPSG DK 2, PPSG Conf. Room
4.30 pm	Awards Presentation	DK1, PPSG
5.00 pm	*Afternoon Tea*	

*DK 1/2 (Dewan Kuliah 1/2) and Conf. Room (Conference Room) are located in Level 2, PPSG (School of Dental Sciences, USM).

List of Invited Speakers in the 21st NCMHS

YBhg. Professor Datuk Dr. Asma Ismail is currently the Vice Chancellor of Universiti Sains Malaysia, effective October 4, 2016. She holds degrees from the University of Nevada, Reno (undergraduate and Ph.D.) and Indiana University Bloomington (M.A.), and an honorary doctor of science from the University of Glasgow.

YBhg. Prof. Datuk started her career as a lecturer in the Department of Medical Microbiology and Parasitology, School of Medical Sciences, Universiti Sains Malaysia in 1986. She was a visiting scientist at University of Tokyo in 1989 and a visiting fellow at the Medical College, St Bartholomew's Hospital in London in 1992. She was promoted to Associate Professor in 1993 and served as Deputy Dean of Administration in 1994. She was promoted to Professor in 2000 and became Deputy Dean of Research in the same year. In 2001, she became the Director for the Centre for Medical Innovations and Technology Development, USM. In 2003, she became the Founding Director, Institute for Research in Molecular Medicine (INFORMM), the first multi-disciplinary cluster based research institute for USM. In May 2008, she held the post of Deputy Vice Chancellor (Research and Innovation), Universiti Sains Malaysia. From Dec 2012 till May 2014, she was the Vice Chancellor of Universiti Sains Islam Malaysia.

YBhg. Prof. Datuk is previously the Director General of Higher Education, Ministry of Higher Education, Malaysia (June 2014-September 2016).

Her research has attained more than RM19 million (USD $5.9 million) in grants in the last five years. Her R&D achievements and research impact are apparent in the publication of her work in more than 89 scientific journals and the filing for 30 patents worldwide (12 granted).

YBhg. Prof. Datuk has served as the World Health Organization's temporary advisor for vaccine and diarrheal diseases since 2002. She is the recipient of 137 national and international awards and recognitions. Honors in her home country include the Malaysian Toray Science and Technology Award and the National Academic Award for Product and Commercialization. She is the first woman vice president for the Academy of Sciences in Malaysia, where she chairs the cluster development committee for Nobel Laureate grants in physiology or medicine. As a member of the Assessment Committee for Research Universities, she was involved in the landmark establishment of Malaysian research institutions.

YBhg. Prof. Datuk is passionate about developing indigenous health technologies and innovations to generate wealth and improve quality of life. She specializes in proteomics and its application in the rapid diagnosis of infectious diseases. Commercialization of TYPHIDOT, a rapid diagnostic test for acute typhoid, has generated sales, publications, and more than 500 jobs worldwide, plus supported local industries in Malaysia.

YBhg. Professor Dato' Dr. Mafauzy Mohamed is currently the Director of Health Campus, Professor of Medicine and Senior Consultant Endocrinologist at Universiti Sains Malaysia, Health Campus in Kelantan, Malaysia. He obtained his M.B.B.S. from the University of Adelaide, Australia in 1980, and his M.R.C.P (UK) in 1985. He also obtained his Masters of Medical Sciences from University of Sheffield in 1987. In 1996, he was admitted as a Fellow of Royal College of Physicians (Edinburgh) and in 2000 he was promoted as full Professor of Medicine.

He has been an External Examiner for several Malaysian universities, at both undergraduate and postgraduate levels, as well as an examiner for the Royal College of Physicians, United Kingdom. Prof Dato' Dr Mafauzy is actively involved in academic research, and has to date obtained over 100 research grants mainly in the field of diabetes, dyslipidemia and thyroid disorders including many clinical trials relating to diabetes and metabolism.

He has been Chief Editor of the Malaysian Journal of Medical Sciences, Journal of ASEAN Federation of Endocrine Societies and Journal of Endocrinology and Metabolism, and has published over 100 papers in national and international journals. He is also currently the Vice-President of the Malaysian Endocrine and Metabolic Society.

He has been an active member of the Malaysian Medical Council since 1996, and currently holds the position of Chairman on the Common Licencing Examination (CLE)/Malaysian Medical Licencing Examination (MMLE) Committee, which is deliberating the feasibility of setting up a common licensing examination for all medical graduates, local & foreign, applying for registration with the MMC.

Apart from clinical practice, teaching and administrative duties, Prof. Mafauzy is also actively involved in research and has to date obtained over 110 research grants mainly in the field of diabetes and thyroid disorders including many clinical trials relating to diabetes and metabolism. He has supervised over 25 postgraduate students and has published over 100 papers in national and international Journals, presented over 100 papers in national and international meetings and has been invited to give over 470 lectures in national and international meetings.

Keynote Lecture II: Towards 2020 Health Status in the Time of Scarcity

Mafauzy Mohamed
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Malaysia's Vision for Healthcare 2020 is to be a nation of healthy individuals, families and communities. Strategic Goals include preventing and reducing burden of disease, enhancing healthcare delivery system and optimizing resources. The healthcare expenditure has been rising steadily over the years and the bulk of the expenditure goes to hospitals. The rates of non-communicable diseases (NCD) (eg. cardiovascular diseases, diabetes, cancer) have also risen over the years and these are the 2 major challenges to achieving the vision. The most common causes of hospitalizations and deaths are related to NCD. The 8 focus areas in the 11th Malaysia Plan (2016-2020) are strengthening primary healthcare, health system delivery & work process re-engineering, human resource & organizational capacity development, infrastructure planning & development, ICT transformation for health, public-private/ interagency collaboration, enhancing healthcare financing mechanism and creating a healthy ecosystem towards healthy lifestyle and disease prevention. To implement these strategies are costly and in the present economic situation is impossible to finance all. The best value for money would be to focus on preventing NCD. The key risk factors are unhealthy diet, physical inactivity and tobacco & alcohol consumption. Simple changes in lifestyles, health policies and legislation go a long way in NCD prevention and control and in achieving Healthcare Vision 2020.

Yang Mulia Tengku Tan Sri (Dr.) Mahaleel Tengku Arif graduated with Honours in Arts (History/ Economics/ Mandarin) from the University of Malaya in 1970 and completed the Malaysia Institute of Management courses in Contract Law and Marketing Management. He has attended courses at Harvard Strategy Development, London School of Economics and the Manchester Business School on Strategy, Strategic Management and Marketing. He was previously on Regional Board of London Business School and now a Distinguished LBS Member.

He has a very diverse career background spanning a period of over 40 years. He first started his career in Nestlé in the Marketing and Sales Department, and then in 1974 he joined Shell Malaysia for 20 years before leaving to serve New Toyo and Mofaz, with his last position as the Group Chief Executive Officer of Proton Holdings Berhad. During his tenure, Proton has managed to manufacture Malaysia's first own designed car, Proton Waja, as well as their own engine, Campro. Over the years, he has gained experience in various industries, including fast moving consumer goods, food, paper packaging, oil, marine, aviation and automotive. He was awarded Malaysia's CEO of the Year in 1999.

He was chosen to represent Malaysia in Asia Pacific Economic Council of 21 countries and also Malaysia's representative in ASEAN Business Council to promote business development in the 10 member economic community.

He was awarded Honorary Doctorates in Engineering from Universiti Teknologi Malaysia and Universiti Malaysia Pahang for his achievements and dedication in the field of automotive engineering.

In sports, he was the Kelantan School badminton Champion and once had won University Malaya half blues colour in badminton. He was Malaysia's Motor Rally Racing Champion in 1989. He is the President of the Badminton Association of Malaysia since 2013.

Dr. Noor Aliyah Ismail is the Principal Director of Oral Health, Ministry of Health Malaysia (MOH). She is a gazetted Dental Public Health Specialist and the Registrar of the Malaysian Dental Council. She obtained her Bachelor of Dental Surgery (BDS) from the prestigious University Malaya, Kuala Lumpur in 1981 and obtained her post-graduate qualification in Dental Public Health, (DDPHRCS) from the Royal College of Surgeons England in 1987.

With 35 years of experience in the dental profession, she started her career as a dental officer in primary oral healthcare and oral maxillofacial specialist clinics, having the advantage of working with 4 different oral maxillofacial surgeons. She then had diverse exposure in academia, the Selangor State Dental Deputy Director's office as well as helming various sections in the Oral Health Division at the ministry.

Dr Aliyah has also had experiences as a researcher, examiner, coordinator and work group member in several national oral health surveys, programme guidelines and protocol. Her latest involvement is the National Oral Health Survey for Preschool Children (NOHPS 2015), Dental Care Pathways for Geriatric Populations in ASEAN Countries (2016) and the National Health and Morbidity Survey 2017: School-Based Oral Health Survey (NHMS 2017: School-Based OHS).

Internationally, she is a Member of the ASEAN Joint Coordinating Committee on Dental Practitioners (AJCCD), Member of the ASEAN Healthcare Sectoral Services Working Group (HSSWG), Member of the Asian Chief Dental Officer's Meet (ACDOM) and Member of the Asia Pacific Advisory Board Meet (APABM). She has also been awarded Distinguished Fellow of Asia and Fellow of the International College of Dentists USA and Co-Chairman for the ICD Asia Pacific Dental Congress 2016.

Plenary II: Future Dental Research Needs in Malaysia

Noor Aliyah I, Yaw SL
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Research is the systematic process for generating new evidence and knowledge towards improving public health. It has a crucial role in improving global health and health equity through evaluation of interventions, empowering people to alter unhealthy behaviours and informing decision-making in health. This is in line with the declaration at the Mexico City Ministerial Summit of Health Ministers in 2004 that *"Health Policy should ultimately be based on reliable evidence derived from high quality research"*. In Malaysia, oral health research is conducted by the public delivery sector, academicians and students in Universities as well as industry players. Dental research needs of various agencies are identified by the agencies themselves. Besides this, future dental research needs are also identified for every five-year country development plan. For the current 11th Malaysia Plan, in line with the Health Research Priority Setting (HRPS) initiative by the National Institute of Health in the Ministry of Health Malaysia, oral health research needs will be identified through the National Oral Health Research Initiative (NOHRI) platform. In addition to this, future dental research needs in Malaysia needs to focus on three other areas namely; strengthening sustainable capacity in research, promoting social capital in research as well as strengthening collaborative efforts with key stakeholders and the translation of research findings into policy and practice. These will go a long way towards promoting health, preventing and controlling diseases, strengthening health systems, and improving equity in health.

Professor Dr. Norazmi Mohd Nor is a Professor of Molecular Immunology at the School of Health Sciences, Universiti Sains Malaysia (USM). He obtained his B.Sc (Hon) from Monash University, Australia and his PhD from Flinders University, Australia. Norazmi is currently the Director, Institute for Research in Molecular Medicine in USM.

Prof. Norazmi's main research activities are in the development of an improved vaccine, therapeutics and diagnostics for tuberculosis (TB). He has secured more than RM15m in research funding as Principal Investigator, including recently, the prestigious international Global Health Innovative Technology (GHIT) Fund to work on TB vaccine development. His team's work in the area of TB vaccine is cited in the Global TB Vaccine Pipeline **http://www.stoptb.org/retooling/**. Together with colleagues from Cuba, Norazmi has initiated a global project to compile writings from renowned experts in the field of TB vaccine development, in a Book entitled "The Art & Science of Tuberculosis Vaccine Development", published by Oxford University Press (Malaysian Branch) that is freely downloadable at **tbvaccine.usm.my/finlay/.**

Prof. Norazmi has research collaborations with several institutions in Mexico, Spain, Chile, Japan and New Zealand. He frequently sits in review panels for research grant proposals and scientific manuscripts for publication in pretigious journals. He is often invited for talks on his research work as well as on various topics in biotechnology and general scientific issues, especially in infectious diseases, to scientists and industry players. Norazmi is also working on the development of halal pharmaceuticals, in particular halal vaccines.

Prof. Norazmi has some experience in the biotechnology industry through his secondment to BiotechCorp a few years ago. This has given Norazmi some knowledge of translating lab research to the market, hence realising the impact of research to the public. Norazmi's scientific contribution to the country was recognized when he was inducted as a Fellow of the Academy of Sciences, Malaysia in 2012.

Symposium I: To Vaccinate, or Not to Vaccinate?

Title 1: Research on Vaccines

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Vaccines are products which, after administration, elicit specific immune responses with prophylactic or therapeutic effect. Since the discovery of modern vaccination over 200 years ago, vaccines have proven to be one of the most successful and cost-effective public health interventions. With the exception of clean, safe drinking water, no treatment rivals immunization in reducing mortality rates. Vaccine use has resulted in the global eradication of smallpox and regional elimination of polio and measles. Vaccines save the lives of over 2-3 million children each year and continue to help curb vaccine-controlled infections in people who are unable to receive vaccination due to impaired immune function. However, there are still many diseases that do not yet have vaccines to control them; and there are some diseases with available vaccines but such vaccines are not effective to prevent transmission of the disease. As such, efforts towards developing new and improved vaccines are continuing, in line with our better understanding of the pathogenesis of various diseases as well as through technological advancements in vaccine research, development and production. Vaccine development is a complex and challenging field. Despite numerous efforts by many scientists, progress in vaccine development has been rather slow. This may be mainly due to the scientific complexities of each disease and the rigorous process in ensuring that the vaccine is highly effective and safe for human consumption. Various necessary regulatory check-points are therefore put in place to ensure that vaccines can enter the market safely. In addition, the issue of costs and public perception need to be managed. In short, vaccine development is both scientifically and socially challenging. This presentation will concentrate on the scientific aspect of vaccine research and development and will include some inputs on the social acceptance of vaccination.

Professor Dr. Zabidi Azhar Mohd Hussin earned his Bachelor of Medicine & Surgery (MBBS) at University of Newcastle Upon-Tyne, England (1985). He received further training specializing in the field of Paediatrics and Child Health at the Northern Area Health Authority from 1986 to 1991. He was later registered with the General Medical Council of UK as a specialist in Paediatrics and was also elected as a Fellow of the Royal College of Paediatrics and Child Health in 1996.

Prof. Dr. Zabidi Azhar Mohd Hussin served as the Dean of School of Medical Sciences in USM from 1999 to 2005. As a certified accreditor for MS ISO 9000, Prof. Dr. Zabidi Azhar Mohd Hussin also performed the duties of an Accreditor for medical school programmes. Currently he is the Professor of Paediatrics at Universiti Sains Malaysia, Kota Bharu, Kelantan.

He was awarded the Pingat Paduka Setia Mahkota Kelantan Yang Amat Terbilang (P.S.K) from His Royal Highness the Sultan of Kelantan in 2008.

Symposium I: To Vaccinate, or Not to Vaccinate?

Title 2: Paediatric Clinical Experience: Vaccine

Zabidi Azhar Mohd Hussin
Professor of Paediatrics and Fellow of the Royal College of Paediatrics and Child Health of UK
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Even though vaccines remain one of the greatest milestone in the history of medical breakthroughs, their acceptance among parents of children have always been fraught with controversies. Many of these controversies could be traced as far back as the early 18th century, when the overwhelming success of vaccines in reducing the incidence of smallpox turned out to be its own victim. Efforts by overexcited governments of Europe to hastily introduce compulsory vaccinations through the various Acts of Law resulted in different forms of opposition, including religious backlash by religious fanatics who claimed that vaccines were introduced to alter the course of God's will. Thankfully, smallpox was successfully abolished, thanks to, in no small part, the contribution from sustained efforts to use this vaccine to prevent this dreadful condition. However similar success stories could not be duplicated in other diseases such as poliomyelitis, measles, mumps, rubella, and dreadful potentially fatal and handicapping diseases caused by haemophilus influenza and pneumococcal. Pockets of unimmunised children in certain communities throughout the world continue to be affected by these infectious diseases and cause small outbreaks which hampered the efforts to curtail these diseases. Paediatricians should play their roles in reminding the community that these vaccine-preventable diseases are still lurking and are always ready to strike vulnerable children, causing unnecessary deaths and even more miserable; the handicapped children and their suffering love ones.

Dr. Hj. Suhazeli bin Abdullah MD USM; MMed UKM (Fam Med). He is born in Kota Bharu, Kelantan. He received his early education at Sekolah Kebangsaan Sultan Ismail Perol and Sultan Ismail College (SIC), Kelantan. He then pursued his medical degree at Universiti Sains Malaysia, Kubang Kerian, Kelantan and later, Master in Family Medicine Specialist in 2004. He then joined Ministry of Health Malaysia at Permaisuri Health Centre, Setiu, Terengganu. Now, he is the Head of Unit and Consultant of Family Medicine in Ketengah Jaya Health Centre, Dungun, Terengganu. He actively delivers lectures on medical issues and jurisprudence. He also writes prolifically on his personal website related to current issues such as vaccines and so on. He has successfully written a book entitled: *Vaksin untuk Bayi Anda: Mitos vs Realiti*. The book was written to meet the requests from his friends who continually enquire the explanation on the controversial issues in vaccine. The main motto of his life is “Hidup Bermanfaat”. More information about him and the other writings can be obtained from the website www.suhazeli.com or fb.com/drsuhazeli

Symposium I: To Vaccinate, or Not to Vaccinate?

Title 3: What Community Needs to Know About Vaccine?

Suhazeli Abdullah
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As a result of the vaccines discovered in the 20th century, parents and many healthcare providers of the 21st century have limited or no experience with the devastating effects of diseases such as polio, smallpox or measles. Fear of disease has shifted to concerns regarding the vaccine safety. Scientific evidence has refuted many of the misconceptions regarding vaccine safety; however, parental refusal of vaccines continues to increase. There are viral messages in social media and alternative media that give a negative impression on vaccine to children as practiced by our country, as well as various other countries today. The negative impression comes in the form of exaggerating the possible side effects of the vaccine exists and by casting doubt on the effectiveness of the vaccine. Negative images are also paraded by providing information that is not balanced, such as by saying that children who were not given the vaccine can be healthier than those who received it. They also questioning the status of halal vaccines and wrongly emphasized the vaccines as being manufactured from non-halal sources. This paper is presented to clear up some confusion regarding vaccination/immunization of children. The speaker does not intend to impose any association or individuals who have opposed the vaccine on their children or their family members to change their views. They actually may not know about the importance of vaccination and might be exposed to misinformation about vaccines.

Professor Dr. Rozita Hassan graduated in Bachelor of Dental Surgery from Universiti Malaya, Kuala Lumpur in 1993. Upon 6 years serving Malaysia Ministry of Health in the area of hospital and community dentistry, she joined School of Dental Sciences, USM as orthodontic training lecturer. In 2004 she earned distinction in Master of Orthodontics from Universiti Malaya and obtained Membership in Orthodontics from Royal College of Surgeon Edinburgh as well as Fellowship of World Federation Orthodontics, USA.

She held the title of Head Orthodontics unit at School of Dental Sciences, USM. Being principle investigator to numerous research grants, she published pioneer local baseline data in craniofacial biology and morphology of Cleft lip and palate, OSA and Thalassemia field. In recent years her professional interests have focused primarily on the fields of craniofacial maturation, skeletal anchorage for adolescent class III malocclusion treatment and acceleration orthodontic tooth movement. She is an active member of Malaysia Orthodontics Association, Academics Medicine Malaysia, Malaysia Dental Association and World Federation of Orthodontics USA.

Symposium II: Future Aesthetic Smile: Fantasy to Reality

Title 1: Paradigm Shifts in Class III Skeletal Adolescent Treatment

Rozita Hassan
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Several fundamental conceptual changes are presently taken place in our profession. These trends signify alterations of traditional emphasis and have emerged gradually over the years. This presentation will discuss the challenging yet exciting intervention of adolescent true class III malocclusion using skeletal anchorage. This clinical discovery will limit the referral for Class III skeletal orthognathic surgery. The used of mini implant as anchorage in orthodontic treatment will be explored and reviewed.

Datin Dr. Kamsiah Gulam Haider is a multidisciplinary dental specialist. Her current interest is in Digital Smile Design (DSD) which is a new field of her specialisation. The DSD technique enables her to be more exact in her approach to cosmetic dentistry. She also practices bone-screw dentistry which combines dental implantology, prosthodontics and orthodontics. In 2003, she did a course in orthodontics by the Academy of Dental Science in Malaysia. She worked part-time in an established orthodontic clinic from 2004-2011. She earns her membership of the International Association for Orthodontists & Implantologists (iAOI) in 2014. She did her mini-residency with the well known expert and bone screw, Dr. Chris Chang in Taiwan. Dr. Kamsiah obtained her dental degree from The University of Malaya in 1987, and became a tutor and lecturer in the Department of Prosthetics, Faculty of Dentistry. She obtained her Masters in Prosthetics and Gerodontology from University of Dundee, Scotland in 1990. She has been a Diplomate of the American Board of Prosthodontics and Implantology (ICOI) since 1997. Dr. Kamsiah was a full time lecturer at the University of Malaya (1990-1995) and an Associate Professor at the International Islamic University (2010-to date) and lectures on prosthetics and gerodontics. Her dental implant journey started in 1990 when she attended the courses by the University of Gothenburg in Sweden and subsequently in 1995 did her sabbatical in Perth, Australia with Dr. Patrick Henry who is a prosthodontist. She practices guided surgery in her implant cases. She also lectures on removable prosthesis, dental implantology, especially on immediate loading in the All-on-4 concept. In 2013, on the introduction of Dr. Patrick Henry, she went to Lisbon, Portugal where she trained with Dr Palo Maló of the world famous Malo Clinic. Dr. Kamsiah has been in private practice since 1996.

Symposium II: Future Aesthetic Smile: Fantasy to Reality

Title 2: Utilizing Digital Smile Design (DSD) in Failed Dentition

Kamsiah Gulam Haider
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By using digital technology, I am able to make my dental practice more precise and efficient for the benefit of my patients. This creates a great patient experience and involvement from the early planning stages. We start by taking the necessary photographs and facial analysis using the DSD concept which is then transferred to a wax up or stereolithographic model; built from data generated from the cone beam computed tomography (CBCT) or as a quick reference in a simple single tooth composite veneer case. In extreme cases involving full mouth rehabilitation with dental implants, the DSD "software" and laboratory work help to produce guided surgery stents and provisional prostheses according to the smile designed for the particular patient. DSD gives me the idea and guides me to the finished outcome that I want.

Dr. Ramizu Shaari is the consultant/senior lecturer at Oral and Maxillofacial Surgery Unit in Hospital USM and School of Dental Sciences, USM Health Campus since 2003 till now. He has obtained his dental degree from the University of Malaya in 1993 and worked in the Ministry of Health from 1994 till 1999. He joined USM as a training lecturer in 1999. He then obtained his Master of Clinical Dentistry (OMFS) in 2003 from the University of Malaya. He had done his craniofacial trauma (AO) attachment at the Oral and Maxillofacial Surgery Department, University Freiburg Hospital in Germany for 2 months in 2006. He then went for 1-year subspecialty training in orthognathic surgery at the Oral and Maxillofacial Surgery Department, Ichikawa General Hospital, Tokyo Dental College, Tokyo, Japan from 2008 till 2009. He had done his sabbatical at Dental Faculty, Umm Al-Qura University, Mecca, Saudi Arabia in 2015. In research, his special interest is in the orthognathic surgery and dental implantology. He is in charge of the orthognathic surgery at Oral and Maxillofacial Unit Hospital USM since 2010 till now. He is also a Visiting Consultant Oral and Maxillofacial Surgeon at KPJ Perdana Specialist Hospital, Kota Bharu, Kelantan.

Symposium II: Future Aesthetic Smile: Fantasy to Reality

Title 3: Facial Aesthetic in Orthognathic Surgery

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Orthognathic surgery is one of the subspecialty in oral and maxillofacial surgery. It is the process in which the dentofacial deformities and malocclusions are corrected with orthodontics and surgical operations of the facial skeleton. This surgery was started in the fifties. It was later modified throughout the sixties and the seventies. Previously, since 2003, in Hospital USM, whenever patient had to undergo this type of operation they are needed to be booked in the intensive care unit (ICU) bed before surgery. Nowadays, with new technique (knowledge), new technology (instrumentation) and more experiences (surgeons, assistant orthodontists, and dental technicians) we can do the operation much faster, less bleeding and safer. These days, the ICU bed is only booked for the severe sleep apnea cases. The main objective of the surgery is to restore the functions of disharmony of upper and lower jaw (mastication, speech and sleep apnea). At the same time, the aesthetic aspect of face will always be considered. If the jaws functions are restored but the facial aesthetic is undesirable, then the post-surgery result is considered as a failure.

Free Communication I, Basic Sciences

Day 1: 17th October 2016, Monday **2.30 pm – 4.30 pm** **Venue: DK 1, PPSG**

TIME	ABSTRACT NO.	PRESENTER	TITLE
2.30 pm-2.40 pm	OB01	Umar Zayyanu Usman	Effects of Malaysian propolis on maternal status and pregnancy outcomes in streptozotocin-induced diabetic female rats
2.40 pm-2.50 pm	OB02	Teh Zhi Hui	Hemicholinium-3 and hexadecyltrimethylammonium bromide inhibition of *Entamoeba histolytica* choline kinase
2.50 pm-3.00 pm	OB03	Wong Weng Kin	Comparative evaluation of IgG-ELISA and IgG4-ELISA for serodiagnosis of amoebic liver abscess
3.00 pm-3.10 pm	OB04	Nur Awanis binti Mohamed Alang	In-vitro study of antibacterial properties of propolis and *Piper betle* towards *Enterococcus faecalis*
3.10 pm-3.20 pm	OB05	Nurul Izzati Hamzan	Comparison of three different intercalating dyes for naked eye visualization of HPV-16 LAMP assays
3.20 pm-3.30 pm	OB06	Ahmad Aizat bin Abdul Aziz	Genetic association of CYP1B1 on risk of recurrence in triple negative breast cancer (TNBC) patients undergoing chemotherapy treatment
3.30 pm-3.40 pm	OB07	Maizatul Akmal binti Othman	Determination of anti-CarP antibodies in rheumatoid arthritis and its association with health assessment questionnaire
3.40 pm-3.50 pm	OB08	Muhammad Hafiznur Yunus	Lateral flow dipstick test (TcRapid) for toxocariasis using recombinant antigens TES-26, TES-30 and TES-120
3.50 pm-4.00 pm	OB09	Jeyasakthy Saniasiaya	Antifungal effect of Malaysian aloe vera leaf extract on selected fungal species of pathogenic otomycosis species in in-vitro culture medium
4.00 pm-4.10 pm	OB10	Hidani Hasim	The role of thalamus in modulating pain behaviour responses in prenatally stressed male rat offspring
4.10 pm-4.20 pm	OB11	Siti Aishah bt Abd Rahman	Effects of bee propolis supplementation on salivary antimicrobial proteins responses following prolonged exercise in recreational runners
4.20 pm-4.30 pm	OB12	Mohd Syafwan bin Mohd Soffian	Antifungal effect of kaffir lime leaf extract on selected fungal species of pathogenic otomycosis in in-vitro culture medium

Free Communication I, Clinical Sciences

Day 1: 17th October 2016, Monday **2.30 pm – 4.30 pm** **Venue: DK 2, PPSG**

TIME	ABSTRACT NO.	PRESENTER	TITLE
2.30 pm-2.40 pm	OC01	Mohd Hazim bin Zulkaflee	Anthropometric study of intercondylar notch width and posterior cruciate ligament length of knee injured patient in Hospital USM
2.40 pm-2.50 pm	OC02	Anas Imran Arshad	Treatment outcomes of complete unilateral cleft lip and palate and regression analysis of associated factors
2.50 pm-3.00 pm	OC03	Fazal Shahid	Estimation of maxillary mandibular canine and premolar widths in mixed dentition: a new-fangled prediction equation via digital dental models
3.00 pm-3.10 pm	OC04	Mohd Fadhli bin Khamis	Morphological variation in dental crowns for human identification
3.10 pm-3.20 pm	OC05	Mushrath Islam	3D CT study of morphological shape and size of sella turcica
3.20 pm-3.30 pm	OC06	Nashid Fareen	Treatment effects of two different appliances on craniofacial morphometry of Class III malocclusion in mixed dentition Malay children
3.30 pm-3.40 pm	OC07	Sanjida Haque	Spectrum of factors for unfavourable dental arch relationship in non-syndromic unilateral cleft lip and palate children
3.40 pm-3.50 pm	OC08	Nik Hisamuddin bin Nik Ab Rahman	The temporal effect of hyperbaric oxygen therapy (HBOT) on chronic diabetic foot ulcer
3.50 pm-4.00 pm	OC09	Shahidatul Adha binti Mohamad	Sneezing and the nightmares: a case report
4.00 pm-4.10 pm	OC10	Azliana Aziz	Young nasopharyngeal carcinoma: a review of 8-year experience in the East Coast Malaysia hospital
4.10 pm-4.20 pm	OC11	Shifat A Nowrin	Craniofacial morphology of Class III malocclusion in relation with genetic mutation
4.20 pm-4.30 pm	OC12	Nor Hasnina bt Mohd Hassan	The effects of tualang honey on bone mineral density as an adjuvant therapy to anastrozole among postmenopausal breast cancer patients

Free Communication I, Health Sciences

Day 1: 17th October 2016, Monday 2.30 pm – 4.30 pm Venue: Conference Room, PPSG

TIME	ABSTRACT NO.	PRESENTER	TITLE
2.30 pm-2.40 pm	OH01	Rozanizam Zakaria	The effectiveness of a cultural-based support group for Malay dementia caregivers in Kelantan, Malaysia: a pre-post intervention study
2.40 pm-2.50 pm	OH02	Muhammad Amrun Haziq bin Abidin	Combined effects of oat bran consumption and brisk walking exercise on immune functions in women aged 40 to 50 years old
2.50 pm-3.00 pm	OH03	Patimah binti Abdul Wahab	Exploring the sense of privacy as barrier to formal health service among the elderly with constipation in Kelantan
3.00 pm-3.10 pm	OH04	Rosnani Zakaria	Prevalence of latent tuberculosis infection and its associated factor among diabetics in a Malaysian regional referral hospital
3.10 pm-3.20 pm	OH05	Afiqah binti Mat Zin	The psychometric properties of the Malay version of Psychosocial Effects of Abnormal Pap Smear Questionnaire (PEAPS-Q): a confirmatory factor analysis
3.20 pm-3.30 pm	OH06	Noor Asma bt Mohamad Noor	Dietary intake pattern of Malay patients with primary glaucoma: a potential modifiable risk factor
3.30 pm-3.40 pm	OH07	Vong Khim Soon	The study of correlation between middle ear volumes and air-bone gap in normal air conduction threshold
3.40 pm-3.50 pm	OH08	Nur Syazwani binti Ibrahim	Effects of prolonged running in the heated and cooled environments on selected physiological parameters and salivary lysozyme responses
3.50 pm-4.00 pm	OH09	Einas Majed Abu Arrah	Assessment of Palestinian community pharmacists' medication knowledge
4.00 pm-4.10 pm	OH10	Farzana Haque	Dental tooth size dimension norms of various populations: an overview

Free Communication II, Basic Sciences

Day 2: 18th October 2016, Tuesday **2.00 pm – 4.00 pm** **Venue: DK 1, PPSG**

TIME	ABSTRACT NO.	PRESENTER	TITLE
2.00 pm-2.10 pm	OB13	Revathi a/p Rajan	Synthesis and characterisation of silica nanoparticles from rice husk for latent fingermark development
2.10 pm-2.20 pm	OB14	Ardhi bin Abdullah	Antifungal effect of *Piper betle* (sireh) leaf extract on selected fungal species of pathogenic otomycosis in in-vitro culture medium
2.20 pm-2.30 pm	OB15	Daruliza Kernain binti Mohd Azman	Functional characterization of interaction between CTCF truncated transcriptional and CTD of Pol II
2.30 pm-2.40 pm	OB16	Mohamad Ezany bin Yusoff	Antibacterial activity of *Euphorbia tirucalli* stem extracts against *Streptococcus mutans*
2.40 pm-2.50 pm	OB17	Muhammad Afiq bin Zaki	Biological characteristics of *Aedes albopictus* (Skuse) in hot spot and non-hot spot areas of dengue outbreak, Subang Jaya Municipality, Malaysia
2.50 pm-3.00 pm	OB18	Murtala Bello Abubakar	CYP3A4*18B and CYP3A5*3 single nucleotide polymorphisms influence anastrozole's pharmacokinetics in postmenopausal breast cancer patients
3.00 pm-3.10 pm	OB19	Najian binti Ibrahim	Effect of perivitelline fluid on the cell cycle regulatory genes in dental pulp stem cells
3.10 pm-3.20 pm	OB20	Raihaniah binti Abd Rahman	Evaluations of bacterial growth and adhesion of *Streptococcus mutans* on different types of tooth coloured restorative materials
3.20 pm-3.30 pm	OB21	Wan Afiqah Syahirah binti Wan Ghazali	Effect of *Clinacanthus nutans* on the cell proliferation of murine macrophage cell line using MTS assay
3.30 pm-3.40 pm	OB22	Siti Nazihahasma binti Hassan	Detection of Miltenberger (Mi.) hybrids antigens among blood donors by polymerase chain reaction
3.40 pm-3.50 pm	OB23	A'attiyyah Ab Alim	Determination of mutagenic activity of *Clinacanthus nutans* extracts using Ames test

Free Communication II, Clinical Sciences

Day 2: 18th October 2016, Tuesday **2.00 pm – 4.00 pm** **Venue: DK 2, PPSG**

TIME	ABSTRACT NO.	PRESENTER	TITLE
2.00 pm-2.10 pm	OC13	Nurul Nadia binti Ismail	The usage of electroconvulsive therapy (ECT) in neurosyphilis of the insane: a case report
2.10 pm-2.20 pm	OC14	Mayyadah Hasan Rhaif Al-Sahlanee	Assessment of uranium concentration in the maternal and umbilical cord blood after delivery in selected places in Iraq
2.20 pm-2.30 pm	OC15	Md. Mashfique Jamil	Association of root resorption and overjet in Malay Class II malocclusion patients
2.30 pm-2.40 pm	OC16	Mohammad Mosharraf Hossain	Cephalometric assessments of Malaysian Malay Class II malocclusion subjects by Ricketts analysis
2.40 pm-2.50 pm	OC17	Lim Soo May	Analgesic effect of *Momordica charantia* supplementation among primary osteoarthritis patients
2.50 pm-3.00 pm	OC18	Roszaharah binti Yaacob	Classification of creases on palm prints based on direction of shift
3.00 pm-3.10 pm	OC19	Wan Fadzlina Wan Muhd Shukeri	Passive warming with a Heat-Band is a cost-effective alternative to a resistive heating blanket for the prevention of inadvertent perioperative hypothermia during gynecological laparotomies
3.10 pm-3.20 pm	OC20	Shamima Easmin Nishi	Relationship between overjet and muscle activity in Class II malocclusion patient using surface electromyography
3.20 pm-3.30 pm	OC21	Asfa Najmi bt Mohamad Yusof	The effect of middle ear volume on hearing improvement post myringoplasty
3.30 pm-3.40 pm	OC22	Zaida binti Zakaria	Effect of tualang honey on safety profiles among postmenopausal breast cancer patients
3.40 pm-3.50 pm	OC23	Nor Hisyam bin Che Ibrahim	Application of harmonic scalpel versus conventional technique in thyroid surgery: a preliminary result of a prospective randomised study

Free Communication II, Health Sciences

Day 2: 18th October 2014, Tuesday 2.00 pm – 4.00 pm Venue: Conference Room, PPSG

TIME	ORAL	PRESENTER	TITLE
2.00 pm-2.10 pm	OH11	Mamun Khan Sujon	Incidence of third molar impaction in non-syndromic 5923 dental patients: a radiographic study
2.10 pm-2.20 pm	OH12	Mohammad Khan	Knowledge and attitude regarding oral care of intubated patients among intensive care unit nurses at a teaching hospital in east coast of Peninsular Malaysia
2.20 pm-2.30 pm	OH13	Mohd. Sufian Ardi bin Abd. Ghani	Children with transfusion dependent thalassaemia (TDT): the study of psychological distress and coping strategies among caretakers
2.30 pm-2.40 pm	OH14	Shaila Zaman	The determination of mental foramen position in 5923 Bangladeshi dental patients
2.40 pm-2.50 pm	OH15	Rafiqul Islam	Morphometric analysis of tooth size and its relationship with body mass index (BMI) in transgender population: a new exposure in dentistry
2.50 pm-3.00 pm	OH16	Muhammad Fuaz Mahfuz	A case series of vertigo in vascular loop syndrome
3.00 pm-3.10 pm	OH17	Zairos Fadiela binti Zainal Abidin	Effect of tualang honey supplementation on quality of life among postmenopausal patients treated for breast cancer
3.10 pm-3.20 pm	OH18	Pravinna Genesan	A comparative study between supraorbital keyhole and pterional approach on anterior circulation aneurysms

Poster Presentations: Basic Sciences

No.	Presenter	Title
PB01	Siti Aisyah Faten bt Mohamed Sa'dom	TaqMan® SNP genotyping assay: an effective SNP genotyping platform
PB02	Ismail bin Abdul Manan	The use of cola carbonated beverage in histopathology tissue processing
PB03	Nur Syuhada Mohd Nafis	Liquid-based cervical cytology smear: the balance of cost effectiveness and performance of Biocytech Path Tezt ® versus Hologic Thin Prep ® Based Processor
PB04	Nur Syuhada binti Ayob	A parametric study of ultrasound beam profiles and image quality for linear array transducer
PB05	Mohamed Qais Abu Bakar	MS-MLPA as a potential alternative method for 15q11-q13 microdeletion syndrome diagnosis
PB06	Nik Mohd Zulfikri Mat Zin	Complex chromosome rearrangements t(2;14;5)(q22;q21;q13) in a child born with syndromic features
PB07	Nur Natasya Syafika binti Mohd Rasidi	Characteristic of B0 and B+ in transfusion dependent Hbe/β-thalassemia patients
PB08	Zulaikha Abu Bakar@Muda	Sex chromosome discordant chimerism with trisomy 18 and normal karyotypes (47,XY,+18/46,XX): a rare case report
PB09	Sarifah binti Hanafi	Association of Xmn1 -158 γG variant with disease severity and HbF levels in HbE/β thalassemia patients
PB10	Noor Huda Ismail	Nanohybrid of dental composite reinforced by zirconia: a pilot study on hardness
PB11	Nor Ain Fatihah binti Azlisham	Coumarin derivative incorporation into glass ionomer cement: its antibacterial properties
PB12	Nur Karyatee binti Kassim	A preliminary study on the type of proteinuria in patient with chronic kidney disease (CKD) stage 2 in Hospital Universiti Sains Malaysia (HUSM)
PB13	Abdul Rauf Abdul Rasam	Geospatial dynamics of tuberculosis risk transmission in the built environment of Shah Alam, Selangor

Poster Presentations: Clinical Sciences

No.	Presenter	Title
PC01	Ninin Sukminingrum	Incidence and associated factors of ventilator associated pneumonia in the intensive care unit, Hospital Universiti Sains Malaysia
PC02	Gyathri Devi Dharmalingam	Rare and atypical sinonasal mass-cystic schwannoma of the maxillary sinus: a case report
PC03	Norain Talib	Asymptomatic supracardiac total anomalous pulmonary venous return (TAPVR) in the adult patient: a case report
PC04	Waheeda Azwa binti Hussein	Factors influencing outcome of strabismus surgery in Hospital Universiti Sains Malaysia (USM): a retrospective record review
PC05	Fazriyati Jamharee	A pattern of decompression illness among scuba divers treated with hyperbaric oxygen therapy at a military recompression facility in peninsular Malaysia
PC06	Najah Kamarudin	Outcome of acute myeloid leukaemia with normal karyotype in Malay patients
PC07	Norizan binti Mustafa	Adherence to initial resuscitation bundle for severe sepsis/septic shock in Hospital Universiti Sains Malaysia
PC08	Sharifah Emilia Tuan Sharif	Transducer-like enhancer of split-1 (TLE-1) immunoreactivity in synovial sarcoma and its association with morphology
PC09	Umi Mardhiyyah bt Mat Ali	Timely combination therapy of skeletal and dental Class II malocclusion with TSAD and mesially impacted mandibular second molars: a case report
PC10	'Awatif Ahmad	Refeeding syndrome: a dangerous encounter in starvation
PC11	Nik Shah Hizan binti Nik Lah	Tualang honey improves background parenchymal enhancement of breast tissue among breast cancer patient treated with anastrozole
PC12	Norlaili binti Zakarai	Pain score measurement at triage of Emergency Department in Hospital Universiti Sains Malaysia (HUSM)
PC13	Nurul Fatihah binti Azman	The association between rs11707125 and rs1568911 with cardiovascular disease on transfusion dependent HbE/Beta thalassemia patient in East Coast Malaysia
PC14	Ramzun Maizan binti Ramli	Fetal biometry assessment of biparietal diameter for Saudi Arabia population and comparison with other countries
PC15	Nabela binti Zakaria	The prevalence of cardiovascular diseases among elderly Malays and Chinese in Kelantan
PC16	Asilah Yusof	Morphometric analysis of the mandibular canal and its relationship with impacted mandibular third molar using cone beam computed tomography (CBCT)

Poster Presentations: Health Sciences

No.	Presenter	Title
PH01	Mohd Najib bin Abdul Ghani	Development and psychometric evaluation of flood disaster management questionnaire (FloodDMQ-BM): exploratory factor analysis and item response theory analysis
PH02	Ooi Foong Kiew	Comparisons of bone speed of sound and physical fitness components between physically and non-physically active young Malays and Yunnan Chinese
PH03	Tuan Salwani bt Tuan Ismail	Determination of optimum vitamin D level for bone health based on bone turn over markers among healthy adults in Kota Bahru
PH04	Haslinda binti Dan	Standardized patients (SPs) used in communication skills assessment: are they authentic or artificial?
PH05	Aida Maziha binti Zainudin	The effect of Islamic mindfulness on nicotine withdrawal symptoms among Muslim men attending Klinik Rawatan Keluarga HUSM
PH06	Norshila Fauzi	Water contamination by heavy metals post-flood event: health implications
PH07	Chen Chee Keong	Effects of honey supplementation during recovery on subsequent running performance and selected physiological parameters in the heat
PH08	Rodziah binti Ali	Self-efficacy for coping and quality of life in women with breast cancer in Hospital Universiti Sains Malaysia
PH09	Nor Ilyani binti Abdullah	Prevalence of depression among community dwelling elderly in Kelantan: a year after flood disaster
PH10	Noraida bt. Mamat @ Mohd Yusuff	The effectiveness of T-shaped toothbrush in plaque removal and maintaining gingival health among children
PH11	Tan Sin Yew	Confirmatory factor analysis of the Malay version of Utrecht Work Engagement Scale
PH12	Esther Rishma Sundram	Dysphonia (voice disorders): its prevalence and risk factors among primary school teachers in Kota Bharu, Kelantan
PH13	Mohamad Zaidi bin Saad	Knowledge, attitude and practice level of dengue fever management among medical officers of Hospital Universiti Sains Malaysia, Kelantan

Oral Presentations: Basic Sciences

OB01

Effects of Malaysian propolis on maternal status and pregnancy outcomes in streptozotocin-induced diabetic female rats

Umar Zayyanu Usman, Ainul Bahiyah Abu Bakar, Mahaneem Mohamed

Department of Physiology, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia.

Introduction: Diabetes mellitus (DM) impairs reproductive function and increases the risk of gestational problems in females. Propolis has been reported to improve reproductive parameters in female rats.

Objective: To investigate whether Malaysian propolis (P) would improve maternal status and pregnancy outcomes in diabetic rats.

Methodology: Forty female Sprague Dawley rats (8-10 week old; 190-220 g) were randomly assigned into five groups (n=8/group), non-DM (0.5 ml/day distilled water), DM (0.5 ml/day distilled water), DM+300P (300 mg/kg/day P), DM+Insulin (5 IU/kg/day insulin) and DM+Combined (300 mg P and insulin 5 IU/kg/day). DM was induced using streptozotocin (60 mg/kg) intraperitoneally while propolis and insulin were given by oral gavage and subcutaneous injection daily, respectively. Some maternal and fetal parameters were recorded.

Results: Maternal food intake, fasting blood glucose, mating period and percentages of pre and post implantation losses were significantly higher while maternal weight gain and number of foetuses were significantly lower in DM group compared to non-DM group. The DM+300P, DM+Insulin and DM+Combined groups had significantly lower total food intake, fasting blood glucose, percentage of post-implantation loss and, significantly higher maternal weight gain and number of foetuses compared to DM group. Mating period and percentage of pre-implantation loss were lower in DM+Combined group compared to DM group. Foetal weight was significantly lower while, foetal blood glucose was significantly higher in DM group compared to non-DM group. However, foetal weight was significantly higher in DM+Combined group while foetal blood glucose was lower in DM+300P, DM+Insulin and DM+Combined groups compared to DM group. No gross malformation was observed in all groups.

Conclusion: This study suggests that Malaysian propolis improves maternal status and pregnancy outcomes in streptozotocin-induced diabetic rats.

OB02

Hemicholinium-3 and hexadecyltrimethylammonium bromide inhibition of *Entamoeba histolytica* choline kinase

Teh Zhi Hui, Lim Boon Huat, See Too Wei Cun, Few Ling Ling

School of Health Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia.

Introduction: The CDP-choline pathway is responsible for the biosynthesis of phosphatidylcholine in *Entamoeba histolytica.* Choline kinase (CK), as the first enzyme in the pathway serves as a target of inhibition for the proliferation of *Entamoeba histolytica*. *E. histolytica* choline kinase (EhCK) was cloned, overexpressed and purified. Three selected inhibitors: hemicholinium-3 (HC-3), hexadecyltrimethylammonium bromide (HDTAB), and 2-amino-1-butanol were tested on purified EhCK *in vitro*. A promising EhCK inhibitor should not inhibit human CK (hCK) and disrupt the biosynthesis of phospholipids. Therefore, the potential EhCK inhibitors identified in this study were also tested against hCKα2 isoform.

Objective: To investigate the inhibition of HC-3, HDTAB and 2-amino-1-butanol on EhCK and hCKα2 isoform.

Methodology: The purified EhCK and hCKα2 was tested *in vitro* against the inhibitors using PK-LDH coupled assay. Kinetic data and IC_{50} values were analysed using GraphPad Prism software.

Results: Only HC-3 and HDTAB were found to inhibit EhCK in a dose-dependent manner with IC_{50} values of 160.1 µM and 52.46 µM, respectively. 2-amino-1-butanol did not exhibit significant inhibition on EhCK. The results showed that both HC-3 and HDTAB were more potent against hCKα2 with IC_{50} values of 1.72 µM and 24.47 µM, respectively.

Conclusion: Results suggest that EhCK and hCKα2 have distinct active site architectures and different family of inhibitors might be required to specifically target EhCK.

OB03

Comparative evaluation of IgG-ELISA and IgG4-ELISA for serodiagnosis of amoebic liver abscess

Wong Weng Kin[1], Rahmah Noordin[2], Zeehaida Mohamed[3], Lim Boon Huat[1,4]

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[4] Department of Medical Microbiology and Parasitology, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia.

Introduction: Diagnosis of amoebic liver abscess (ALA), caused by *Entamoeba histolytica* commonly relies on the triad evidence of clinical symptoms, radiological imaging and amoebic serology. Previous study revealed that anti-amoebic IgG4 contributed more than one third of total anti-amoebic IgG immune response; and extremely high anti-amoebic IgG4 titer was observed in ALA patients with prolonged clinical course.

Objective: The present study was aimed to compare the diagnostic efficacies of dual-antigen IgG- and IgG4-ELISAs utilizing two ALA-specific biomarkers, namely c-terminal of *E. histolytica* 150 kDa Gal/GalNAc Lectin Intermediate Subunit (CL) and pyruvate phosphate dikinase (PPDK) for serodiagnosis of ALA.

Methodology: A total of 51 ALA and 127 control archived serum samples were used for the assay evaluation. CL and PPDK were overexpressed and purified from *E. coli* BL21AI and mixed in 1:1 ratio. For the dual antigen IgG- and IgG4-ELISAs development, the coating antigen concentration, human serum dilution and HRP-conjugated anti-human IgG or IgG4 dilution were optimized. The cut-off value for ELISA was set at mean plus two standard deviations of the 45 healthy control OD_{450} readings.

Results: The sensitivity and specificity of dual antigen IgG-ELISA were 82% and 91%, respectively, while the sensitivity and specificity of dual antigen IgG4-ELISA were 73% and 93%, respectively, for serodiagnosis of ALA.

Conclusion: Dual-antigen IgG-ELISA seemed to be more sensitive for serodiagnosis of ALA than IgG4-ELISA. Further investigation is needed to determine whether those positive by IgG4-ELISA may represent true active infection and/or prolonged clinical course.

OB04

In-vitro study of antibacterial properties of propolis and *Piper betle* towards *Enterococcus faecalis*

Nur Awanis Mohamed Alang, Huwaina Abd. Ghani, Sam'an Malik Masudi, Suharni Mohamad, Rosnani Mamat

School of Dental Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia.

Introduction: *Enterococcus faecalis* is the main microorganism found in root canal treatment failures and its role in endodontic infections remained as a major obstacle in root canal therapy. With the increasing resistance of *E. faecalis* towards calcium hydroxide, a common root canal therapy medicament, consideration of natural products such as propolis and *P. betle* as alternative intracanal medicament is appropriate. This study was carried out to evaluate and compare the antibacterial properties of ethanolic extracts of propolis and *P. betle* against *E. faecalis*.

Objective: To study the antibacterial efficacy of ethanolic extracts of propolis and *P. betle* against *E. faecalis*.

Methodology: The minimum inhibitory concentration (MIC) of ethanolic extracts of propolis and *P. betle* against *E. faecalis* was determined using the microdilution method. The MIC was defined as the lowest concentration at which the colour of resazurin indicator solution changed to pink. Samples from each well that showed no colour change were subcultured onto Mueller-Hinton agar plates. The highest test dilutions that yielded no single bacterial colony were taken as the minimum bactericidal concentration (MBC).

Results: The MIC and MBC for propolis extracts were less than 3.13 mg/ml. Meanwhile, the MIC and MBC for *P. betle* extracts were both 12.5 mg/ml.

Conclusion: Ethanolic extracts of propolis and *P. betle* exhibits antibacterial properties towards *E. faecalis*. The propolis extracts were found to exhibit stronger antibacterial activity than *P. betle* extracts.

OB05

Comparison of three different intercalating dyes for naked eye visualization of HPV-16 LAMP assays

Nurul Izzati Hamzan, Nur Ezzatyhusna Mohamad Khalid, Suharni Mohamad

School of Dental Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia.

Introduction: Loop-mediated isothermal amplification (LAMP) is a gene amplification technique whereby the amplification products are commonly visualized as turbidity by naked eye in the presence of magnesium pyrophosphate precipitation. In this study, HPV-16 LAMP assay has been developed using DNA-intercalating dyes to increase the sensitivity of the assay and reduce the false positive and false negative results.

Objective: To compare the performance of three different intercalating dyes; SYBR Green I, SYBR Safe and Fluorescent Detection Reagent (FDR) in HPV-16 LAMP assay.

Methodology: LAMP reactions were performed in a final volume of 25 µl consisting set of six designed primers, 10X Isothermal Amplification Buffer II, $MgSO_4$, dNTPs, *Bst* polymerase and HPV-16 DNA template for one hour at 70°C and were terminated at 80^{o}C for 5 minutes. For naked eye detection, SYBR Green I and SYBR Safe were diluted in 1:10 of DMSO and was added to the solution after the reaction was completed while FDR was added before the amplification process. LAMP products were also visualized by agarose gel electrophoresis as a control. The sensitivity of the LAMP assay was investigated using serial 10-fold dilutions of the HPV-16 DNA (ATCC 45113D) template.

Results: The use of SYBR Green I, SYBR Safe and FDR resulted in similar color changes from orange to green. All three dyes exhibited similar results in term of sensitivity with the detection limit of 1 pg/ml. The agarose gel results were in accordance with the naked eye detection results.

Conclusion: The performance all three dyes are comparable and can be used for end-point screening applications in HP-16 assay.

OB06

Genetic association of *CYP1B1* on risk of recurrence in triple negative breast cancer (TNBC) patients undergoing chemotherapy treatment

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Introduction: Due to genetic variation, significant interpatient differences in treatment efficacy exist in triple negative breast cancer (TNBC). Identification of TNBC patients with chemosensitivity and recurrence risk is highly crucial to optimize therapy. We hypothesized that, genetic variation in drug metabolizing enzyme *CYP1B1*, could be a potential factor in modulating individual variation in recurrence risk.

Objective: To investigate and associate the genetic polymorphisms, 142C>G, 4326 C>G and 4390 A>G of *CYP1B1* either singly and/or in combinations, with risk of recurrence in TNBC patients.

Methodology: A total of 76 histopathologically confirmed TNBC patients undergoing TAC chemotherapy protocol were included. Peripheral blood was collected, DNA extracted and genotyped employing PCR-RFLP with specific enzymes. Genotype patterns were categorized into 3 groups; homozygous wildtype, heterozygous and homozygous variant. Binary logistic regression analysis was performed to examine the risk association between genotype patterns and recurrence status.

Results: Out of the 3 SNPs studied, homozygous variant of 142GG and 4326GG genotypes of *CYP1B1* showed significantly high risk of recurrence with OR: 5.741 (95% CI: 1.145-28.786, p=0.037) and 7.800 (95% CI: 1.246-48.822, p=0.031) respectively. Combination of 142GG and 4326CC genotypes also showed significantly higher risk with OR: 18.400 (95% CI:1.677-201.682, p=0.017).

Conclusion: Genetic polymorphisms, 142C>G and 4326 C>G of *CYP1B1* could be modulating the development of recurrence in TNBC patients. However, other clinicopathological factors such as stage, histological grade and lymph nodes status need to be taken into consideration.

OB07

Determination of anti-CarP antibodies in rheumatoid arthritis and its association with health assessment questionnaire

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Introduction: The presence of autoantibodies is an important hallmark in rheumatoid arthritis (RA). Recently, anti-carbamylated protein (anti-CarP) antibodies that target post-translationally modified proteins have been detected in RA.

Objective: To determine the levels of anti-CarP antibodies in RA patients and its association with Health Assessment Questionnaire (HAQ).

Methodology: Serum samples were collected from RA patients attending the Rheumatology Clinic at Hospital Universiti Sains Malaysia (HUSM). The presence of anti-CarP antibodies was determined by ELISA in 105 RA patients and 50 healthy controls (HCs). Self-administered questionnaire was conducted in person with RA patients to fulfill the HAQ and its association with anti-CarP antibodies were analyzed using chi square test. We adopted Youden index calculated from receiver operating characteristics (ROC) curve to establish the cut-off to define anti-CarP positivity in RA patients and HCs.

Results: Among the 105 RA patients, 44 patients (41.9%) were positive for anti-CarP antibodies. RA patients display significantly increased levels of anti-CarP antibodies compared with HCs (p=0.0417). The presence of anti-CarP antibodies showed significant difference with HAQ (p=0.0060). We observed higher levels of circulating anti-CarP antibodies in RA patients which could helps to facilitate the diagnosis of RA. The levels of anti-CarP antibodies are associated with HAQ, which might indicate that anti-CarP antibodies were predictive for a more severe disease progression in RA patients.

Conclusion: These anti-CarP antibodies could be a future biomarker for diagnosis of RA patients and could help to measure disability.

OB08

Lateral flow dipstick test (TcRapid) for toxocariasis using recombinant antigens TES-26, TES-30 and TES-120

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Introduction: Toxocariasis is a worldwide parasitic zoonosis, caused by the dog and cat intestinal roundworms, *Toxocara* canis and *T. cati*. Serodiagnosis of toxocariasis is usually performed with commercial IgG-ELISAs which use native Toxocara excretory-secretory (TES) antigens. However, the use of native antigen is laborious, time-consuming, cross-reacts with antibodies to other parasitic nematodes and has limited production capacity. Previously, we have reported that recombinant excretory-secretory proteins of *T.canis*, rTES-26, rTES-30 and rTES-120, are potential diagnostic markers for toxocariasis, hence they may be useful in the development of a new test for toxocariasis.

Objective: To develop and evaluate a lateral flow dipstick test (TcRapid) using recombinant antigens rTES-26, rTES-30, rTES-120 for serodiagnosis of toxocariasis.

Methodology: rTES-26, rTES-30 and rTES-120 were expressed, purified and analysed by Western blots. TcRapid using these antigens was developed and evaluated for serodiagnosis of toxocariasis. Comparison of the diagnostic sensitivity and specificity was performed against a commercial IgG-ELISA, which uses native TES.

Results: The identities of the recombinant antigens were confirmed by MALDI-TOF/TOF. For TcRapid, the optimum protein concentration for rTES-26 and rTES-120 was 3.5mg/mL, and 3.0mg/mL for rTES-30. When compared to the commercial IgG-ELISA, TcRapid showed 85% sensitivity, and 100% specificity. IgG4 detection of tissue nematodes is associated with active infection, thus this can explain the lower sensitivity of TcRapid as compared to the commercial test which detects both active and 'old' infections.

Conclusion: The laboratory prototype of TcRapid showed good potential for prompt and accurate diagnosis of toxocariasis and merits further multicentre validation studies.

OB09

Antifungal effect of Malaysian aloe vera leaf extract on selected fungal species of pathogenic otomycosis species in in-vitro culture medium

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Introduction: Otomycosis or fungal otitis externa is a fungal infection of external auditory canal. Despite a benign condition, eradication of this entity remains a challenge especially to the otorhinolaryngologists. *Aloe barbadensis miller* or Aloe vera has been used for therapeutic purposes since ancient time. Amongst various medicinal properties possesed by Aloe vera, antifungal property is noteworthy.

Objective: This study proposes antifungal effect of Malaysian Aloe vera leaf extract on pathogenic otomycosis species, *Aspergillus niger* and *Candida albicans.*

Methodology: This is a laboratory-controlled prospective pilot study. Powdered form of Aloe vera leaf extracted with ethanol and aqueous was evaporated, freeze dried and subsequently diluted to establish five different concentrations of 50 g/ml, 25 g/ml, 12.5 g/ml, 6.25 g/ml and 3.125 g/ml. Sabaroud Dextrose Agar lawned with tested fungal isolates were inoculated with these extracts. Zone of inhibition followed by minimum inhibitory concentration (MIC) was determined.

Results: For *Aspergillus niger,* zone of inhibition of alcohol and aqueous extract were noted for all groups of concentration except 3.125g/ml. As for *Candida albicans,* no zone of inhibition for both alcohol and aqueous extract were noted. The MIC value of aqueous extract was 5.129g/ml and for alcohol extract was 4.35g/ml for *Aspergillus niger*. MIC for *Candida albicans* was not determined as there was no zone of inhibition.

Conclusion: Antifungal effect of alcohol extract of Malaysian Aloe vera leaf is better as compared to aqueous extract for *Aspergillus niger* (p<0.001). Malaysian Aloe vera has significant antifungal effect towards *Aspergillus niger.*

OB10

The role of thalamus in modulating pain behaviour responses in prenatally stressed male rat offspring

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Introduction: Studies have shown that prenatal stress leads to alteration of pain responses in adult offspring. Various mechanisms have been postulated but no single study has investigated the possible role of thalamus in pain modulation.

Objective: To determine the level of oxidative stress parameters and morphological changes of the thalamus neuron in rat offspring following prenatal stress.

Methodology: Twenty-four Sprague Dawley pregnant rats were divided into three different groups; control, stress and stress treated with antioxidant (Tualang honey, 1.2g/kg) and they were exposed to restrained stress. Two months after parturition, adult male offspring were subjected to formalin test for behavioral testing and were sacrificed following tonic pain stimulation and their thalamus was removed. Malondialdehyde (MDA) and superoxide dismutase (SOD) levels were measured using commercially available kits. Nissl staining was performed to detect the neuronal defect in the thalamus.

Results: There was significant increase in pain behaviour score in stress group compared to stress treated with antioxidant group mostly in phase two (35-60 minutes) post formalin injections. In stress group, MDA level was significantly higher, whereas, for SOD level, there was significant decrease compared to other groups. Moreover, histomorphological observations confirmed that neuronal death occurred in stress group as the arrangement and number of Nissl-positive neuron in the thalamus was significantly diminished compared to the other groups.

Conclusion: These results demonstrate an alteration of oxidative stress parameters level and disorders in the thalamus that may contribute to pain modulation in the prenatally stressed male rat offspring.

OB11

Effects of bee propolis supplementation on salivary antimicrobial proteins responses following prolonged exercise in recreational runners

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Introduction: Bee propolis has been used to fight infections and boost immune function. In vitro and animal studies reported that it poses antioxidant, anti-inflammatory, antiviral, anticarcinogenic, hepatoprotective and immunomodulatory properties. Nevertheless, human study with regards to its effects on immune function especially in athletes is scarce to date.

Objective: To determine the effects of bee propolis supplementation on physiological and mucosal immunity responses following prolonged exercise.

Methodology: Eleven healthy male recreational runners performed two running trials; before supplementation and after 4 weeks of bee propolis supplementation (2 tablets/day). The running trials involved running at 60% VO_{2max} for 90 minutes. Saliva samples were collected pre, post and 1 h post-exercise and were analysed for salivary lysozyme and lactoferrin concentrations and secretion rates.

Results: Two-way ANOVA with repeated measures revealed that there were no significant difference of salivary lysozyme and lactoferrin concentration and also secretion rate between both running trials (p>0.05).

Conclusion: The study found that 4 weeks of bee propolis supplementation did not boost immune function following prolonged exercise. This may be attributed to insufficient supplementation's period and dosage and poor bioavailability of the bee propolis in human body.

OB12

Antifungal effect of kaffir lime leaf extract on selected fungal species of pathogenic otomycosis in in-vitro culture medium

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Introduction: The incidence of otomycosis is increasing due to the widespread use of broad-spectrum antibiotics, steroids and other chemotherapeutic agents. kaffir lime *(Citrus hystrix* DC*)* leaves extracts has potential to act as an antifungal medication but not been studied. This is a pilot study which analyses antifungal properties of kaffir lime leaves towards pathogenic otomycosis, particularly *Candida albicans* and *Aspergillus niger*.

Objective: (1) To determine inhibitory efficacy of different concentration of kaffir lime (*Citrus hystrix*) leaf aqueous and alcohol extracts on *Aspergillus niger* and *Candida albicans*; (2) To compare antifungal activity between aqueous and alcohol extract against *Aspergillus niger* and *Candida albicans.*

Methodology: Kaffir lime leaves extract are produced by using soxhlet extraction method. The fungal isolates were taken from archives of the microbiology laboratory. Zone of inhibition and minimal inhibitory concentration are measured. Independent t-test was applied to compare mean between two groups.

Results: Both *Aspergillus niger* and *Candida albicans* showed sensitivity to aqueous and alcohol kaffir lime leaf extracts. Mean zone of inhibition increase in proportion to extract concentration. Statistically, one-way ANOVA showed significant mean differences between groups of concentration for both aqueous and alcohol extracts.

Conclusion: Zone of inhibition presence for both aqueous and alcohol kaffir lime leaf extracts on *Aspergillus niger* and *Candida albicans.* This herb can be suggested for medical use as ototopical antifungal with low risk of ototoxicity.

OB13

Synthesis and characterisation of silica nanoparticles from rice husk for latent fingermark development

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Introduction: Silicon is widely used in metallurgy, silicone synthesis and also in the semiconductor industry, commonly synthesised from expensive precursors. Rice (*Oryza sativa)* which comes under the family Gramineae, contains high amount of silica in its various parts. Silica synthesised from these agricultural waste sources was found to be useful in the fields of ceramics, electronic, catalysis, pharmaceutics and dental materials.

Objective: This study marked the first time that silica nanoparticles from waste materials were applied in forensics.

Methodology: An attempt was carried out to produce spherical silica nanoparticle powder from rice husk using modified sol gel and reverse microemulsion route for the development of latent fingermark. The sol gel technique was modified to produce precipitate instead of gel to produce powdery silica nanoparticle. In the reverse microemulsion technique, the emulsion constituents were optimised step by step to determine the right constituent that produced silica nanoparticle with narrow size distribution. Silica nanoparticle powders were characterised using Field emission scanning electron microscopy (FESEM), Energy dispersive X-ray (EDX) and Attenuated Total Reflection Fourier transform infrared spectroscopy (ATF-FTIR).

Results: The results of the study demonstrated that silica nanoparticle powders produced through reverse microemulsion technique are smaller as compared to those of produced through modified sol gel route.

Conclusion: In conclusion, silica nanoparticle powders synthesised from rice husk have the potential to be applied for latent fingermark development as they offers better clarity and definition of developed fingermark and lower background interference.

OB14

Antifungal effect of *Piper betle* (sireh) leaf extract on selected fungal species of pathogenic otomycosis in in-vitro culture medium

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Introduction: The incidence of otomycosis is increasing due to the widespread use of broad-spectrum antibiotics, steroids and other chemotherapeutic agents. *Piper betle* leaves extracts have potential to act as an antifungal medication, but it has not yet been studied. This is a pilot study on antifungal properties of *Piper betle* leaves towards pathogenic otomycosis, particularly *Candida albicans* and *Aspergillus niger*.

Objective: (1) To study the antifungal effect of *Piper betle* leaf extracts on *Aspergillus niger* and *Candida albicans*. (2) To determine inhibitory efficacy of different concentration of *Piper betle* leaf aqueous and alcohol extracts on *Aspergillus niger* and *Candida albicans.* (3) To compare antifungal activity between aqueous and alcohol extract against *Aspergillus niger* and *Candida albicans*.

Methodology: This is a laboratory-controlled prospective study. *Piper betle* leaves extract is produced by using a Soxhlet extraction method with two different solvents (aqueous and ethanol 70%). The fungal isolates were taken from the archives of the microbiology laboratory. Zone of inhibition and minimal inhibitory concentration were measured.

Results: Both *Aspergillus niger* and *Candida albicans* showed sensitivity to aqueous and alcohol *Piper betle* leaf extracts. A mean zone of inhibition had increased in proportion to the extract concentration. Statistically, one-way ANOVA showed significant mean differences between groups of concentration for both aqueous and alcohol extracts. Independent t-test was applied to compare mean between two groups.

Conclusion: Zone of inhibition presence for both aqueous and alcohol *Piper betle* leaf extracts on *Aspergillus niger* and *Candida albicans*. This leaf can be suggested for medical use as ototopical antifungal with low risk of ototoxicity and side effects.

OB15

Functional characterization of interaction between CTCF truncated transcriptional and CTD of Pol II

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Introduction: CCCTC-binding factor (CTCF) involves in the regulation of transcription, insulator function, control of imprinting and the X-chromosome inactivation. One of the CTCF protein interacting partners is the large subunit of RNA polymerase II (LS Pol II), the principal enzyme for transcription. Previous studies had shown the interaction between these two proteins occurred at the C-terminal domains (CTD). Two sites within CTCF C-terminal domain were identified and seven candidates CTCF C mutant variants namely 1A, 1B, 1A1B, 2A, 2B, 2A2B and CM-deficient for binding to Pol II CTD were produced.

Objective: To identify motif within CTCF CTD that has critical role for binding to RNA Pol II CTD.

Methodology: The interaction of CTCF C mutant variants to Poll II CTD was characterized via co-immunoprecipitation (Co-IP) and pull-down assay, while the ability of these mutants to induce apoptosis in recurrent glioblastoma multiforme (RGBM) cell line was analysed using Caspase 3/7 Glo assay.

Results: Co-IP showed positive interaction for CTCF wild-type and all the mutant variants in RGBM cell line. EEEE motif was identified as an essential motif for binding to Pol II CTD. The effects of CTCF C mutant variants on cell death by apoptosis assay showed that CTCF complete mutant (CM) induced highest apoptosis percentage in the cell compared to the wild-type CTCF.

Conclusion: EEEE motif was successfully identified as an important motif in CTCF C terminal region critical for Poll II CTD binding. Further investigation is needed to determine the significance of the motif in CTCF and RNA Poll II interaction.

OB16

Antibacterial activity of *Euphorbia tirucalli* stem extracts against *Streptococcus mutans*

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Introduction: *Euphorbia tirucalli* (*Et*) is reported to possess antibacterial activity against various microorganisms. However, the antimicrobial activity of *E. tirucalli* against *Streptococcus mutans,* which is the main etiological agent causing dental caries has not been extensively studied.

Objective: To evaluate the antimicrobial potential of aqueous extract of *E. tirucalli* stem against *S. mutans.*

Methodology: The minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of aqueous extract of *E. tirucalli* stem was determined by using resazurin-based microtiter dilution assay.

Results: The aqueous extract of *E. tirucalli* stem exhibited MIC of 12.5 mg/ml and MBC of 25 mg/ml against *S. mutans*.

Conclusion: The finding of the present study indicated that the aqueous extracts of *E. tirucalli* stem are effective as a *potential source* to combat *S. mutans* in oral cavity.

OB17

Biological characteristics of *Aedes albopictus* (Skuse) in hot spot and non-hot spot areas of dengue outbreak, Subang Jaya Municipality, Malaysia

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Introduction: Dengue fever is a complex disease caused by bites of infected females *Aedes* mosquitoes. The existence of hot spot (HS) area increases in tandem with the escalating rise of dengue cases reported each week. Repeated chemical control applications in HS areas are expected to affect the normal life cycle of the mosquitoes.

Objective: This study was carried out to compare the differences between biological characteristics of *Aedes albopictus* in HS and non-hot spot (NHS) areas.

Methodology: Ovitraps were set up in HS and NHS areas in the municipality of Subang Jaya. Throughout this study, biological characteristics; namely duration of immature stages, gonotrophic cycle, fecundity and longevity were observed from the field collected population under laboratory controlled conditions.

Result: *Aedes albopictus* from HS areas demonstrated shorter duration (6 days) than NHS (10 days) in immature stages. In term of longevity, longer days were observed in HS as compared to NHS with 60 and 36 days of survival respectively. Higher fecundity was generated by *Ae.albopictus* from HS with a mean of 2605 eggs as compared to NHS with only 1140. However, there was no significant difference observed on the gonotrophic cycle in HS and NHS areas.

Conclusion: Overall, our finding indicates that repeated chemical control applications might have affected all biological characteristics of *Ae. Albopictus* in both HS and NHS areas *except* for gonotrophic cycle.

OB18

*CYP3A4*18B* and *CYP3A5*3* single nucleotide polymorphisms influence anastrozole's pharmacokinetics in postmenopausal breast cancer patients

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Introduction: Anastrozole (predominantly metabolized by CYP3A4 and CYP3A5) is one of the first line drugs of choice in the treatment of breast cancer. Despite its superiority to tamoxifen, a significant proportion of patients either experience breast cancer recurrence or develop severe adverse effects following its use.

Objective: This study aims to determine the impact of *CYP3A4* and *CYP3A5* genetic polymorphisms on anastrozole's pharmacokinetics among breast cancer patients.

Methodology: A total of 94 postmenopausal breast cancer women were recruited for this study. Genotyping of *CYP3A4*18A* and *CYP3A5*3* was performed using the conventional polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) while a novel multiplex PCR-RFLP method was used for *CYP3A4*4*, *CYP3A4*18B* and *CYP3A4*22*. Serum anastrozole concentration was determined by a newly developed rapid resolution liquid chromatography (RRLC) method following solid-phase extraction.

Results: Patients homozygous for *CYP3A4*18B* and *CYP3A5*3* had lower and higher serum anastrozole levels (C_{min}), AUC_{0-t} and $AUC_{0-\infty}$ respectively compared to those having the wild types or heterozygous variants. However, no significant difference was observed in anastrozole's $t_{1/2}$ among all the different genotypes of *CYP3A4*18B* and *CYP3A5*3*. Furthermore, no significant difference was observed in anastrozole's C_{min}, $t_{1/2}$, AUC_{0-t} and $AUC_{0-\infty}$ between wild type and variant carriers of *CYP3A4*18A*.

Conclusion: Our findings indicate that *CYP3A4*18B* and *CYP3A5*3* alleles may be important in the individualization of treatment of breast cancer using anastrozole in the future.

OB19

Effect of perivitelline fluid on the cell cycle regulatory genes in dental pulp stem cells

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Introduction: Perivitelline fluid (PVF) from the fertilized eggs of horseshoe crab has been reported to act as a supplement in enhancing many types of cell proliferation and differentiation. Dental pulp stem cells (DPSCs) are one of the best candidates to support regenerative medicine therapies due to their multipotent capabilities, similar to mesenchymal stem cells (MSCs), besides being less invasive in terms of extraction as compared to the classic bone marrow MSCs.

Objective: To analyse the expression of cell cycle regulatory genes in DPSCs treated with PVF.

Methodology: DPSCs were treated with 0.019 mg/ml of PVF for a period of 14 days. Concurrently, another group comprised of untreated DPSCs. The cells were harvested on day 1, 3, 7 and 14. RNA was extracted from the cells and converted to cDNA. Polymerase chain reaction was carried out using specific primers for *PTEN, CDKN2A* and *BCL2L11*. *GAPDH* was used as the house keeping reference gene. Gene expression was analysed using gel electrophoresis and statistical analysis was done using Mann-Whitney test.

Results: There was significant upregulation of *PTEN* and *CDKN2A* on all days in treated groups compared to untreated groups. *BCL2L11* expressed rather weakly on day 3 and 7 followed by absence of expression on day 14 in the treated group as compared to the untreated.

Conclusion: Based on the study, it can be concluded that PVF enhances cell proliferation and inhibits apoptosis of DPSCs.

OB20

Evaluations of bacterial growth and adhesion of *Streptococcus mutans* on different types of tooth coloured restorative materials

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Introduction: Bacterial adhesion to the surface of dental restorative materials is one of the important parameter in the aetiology of secondary caries formation. *GtfB* and *gbpB* genes play a significant factor in early adhesion of *S. mutans* on the tooth surface and are of central significance in biofilm formation in oral cavity.

Objective: To study the effect of the nanofilled and micron-sized materials on the adhesion of *S. mutans* by evaluating the bacterial growth and gene expression analysis.

Methodology: Resin Modified Glass Ionomer Cement (RMGIC); Ketac™ N100 (nanofilled RMGIC, 3M ESPE, USA) and Fuji II™ LC (microfilled RMGIC, GC Corporation, Japan) and composites resin; Filtek™ Z350 (nanofilled composite, 3M ESPE, USA) and Filtek™ Z250 (microhybrid composite, 3M ESPE, USA) were packed in acrylic mould and light-cured then polished with Sof-Lex discs. All the materials were cultured with *S. mutans* and observed under Scanning Electron Microscope (SEM), analyzed for bacterial growth by densitometer and gene expression analysis by using real-time PCR at several incubation times.

Results: Within the same group, nanofilled materials showed less accumulation of *S. mutans* compared to micron-sized materials. RMGIC groups gave a lower *S. mutan's* growth compared to composite resin group at all the incubation times. Nanofilled RMGIC gave significantly lower of expression levels of *gtfB* and *gbpB* genes compared to other materials $p<0.05$.

Conclusion: Nanofilled materials capable in combating the accumulation of *S. mutans* compared to micron-sized materials. Between nanofilled materials, nanofilled of RMGIC has better performance in reducing *S. mutan's* adhesion on the materials compared to nanofilled of composite.

OB21

Effect of *Clinacanthus nutans* on the cell proliferation of murine macrophage cell line using MTS assay

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Introduction: *Clinacanthus nutans* (*C. nutans*) widely grows in the tropical region, mainly in Southeast Asia. Traditionally, *C. nutans* is used as an herbal medicine for treatment of herpes infection, insect and snake bites and also allergic responses. Increasing number of cells is known as cell proliferation that is defined by a balance between cell division and cell loss through cell differentiation or cell death.

Objective: To determine the cell proliferation effect on murine macrophage cell line when treated with *Clinacanthus nutans*.

Methodology: Murine macrophage cell line (J774A.1) from ATCC, USA was used in this study. The measurements of macrophage proliferation were determined using the CellTiter 96®AQ_{ueous} One Solution Cell Proliferation Assay (MTS) assay from Promega (USA). The CellTiter 96®AQ_{ueous} One Solution Cell Proliferation Assay is composed of novel tetrazolium compound (MTS), and an electron coupling reagent, phenazine ethosulfate (PES). The various concentrations of water and ethanol extracts of *C. nutans* (1000, 500, 250, 125, 62.5, 31.25, 15.625 µg/ml) were diluted with Dulbecco's Modified Eagle Medium.

Results: The cell viability percentage for ethanol and water extracts ranged from 141-355% and 85-188% for 250 µg/ml, from 136-258% and 77-178% for 125 µg/ml and from 107-184% and 86-144% for 62.5 µg/ml respectively.

Conclusion: The concentrations 250, 125 and 62.5 µg/ml of both extracts were found to be optimum for further downstream experiments.

OB22

Detection of Miltenberger (Mi.) hybrids antigens among blood donors by polymerase chain reaction

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Introduction: Miltenberger (Mi.) blood group consists of eleven low prevalence antigens and is glycophorin hybrids product of the MNS blood group. They are evolved from homologous gene recombination between *glycophorin A* (*GYPA)* and *glycophorin B (GYPB)* genes. Out of eleven Mi. antigens, GP.Mur distribution was relatively common in Asia.

Objective: To assess the prevalence of Miltenberger blood group polymorphism among healthy donors in Kelantan's population.

Methodology: In this cross-sectional study, one hundred and twenty healthy donors (*N*=120) were randomly selected. Two set of primers were used to detect the presence of four *GYP (B-A-B)* hybrids, GP.Mur, GP.Hop, GP.Bun and GP.HF, and two of *GYP (A-B-A)* hybrids, GP.Vw and GP.Hut. The DNA was extracted from whole blood using NucleoSpin® Blood L (Macherey-Nagel, Duren, Germany). All DNA samples were subjected to polymerase chain reaction (PCR). Twenty out of 120 samples were randomly sequenced for confirmation.

Results: From the 120 donors, majority were Malays (82.5%), followed by Chinese (11.7%), Indians (2.5%) and others (Thai) with 3.3%. All sequenced samples were confirmed to have presence of GP.Mur (*GYP (B-A-B)* hybrid) and GP.Vw (*GYP (A-B-A)* hybrid). The GP.Vw genotype presence with either C>T substitution, TT deletion or no mutation in our population.

Conclusion: The GP.Mur and GP.Vw was commonly presence in our population. Therefore, it is considered as high incidence antigen from the MNS blood group.

OB23

Determination of mutagenic activity of *Clinacanthus nutans* extracts using Ames test

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Introduction: *Clinacanthus nutans* (*C. nutans*) is a perennial herb that has been used traditionally as a treatment of various diseases in Malaysia. There are limited studies on the safety and efficacy of *C. nutans* as herbal medicine.

Objective: To evaluate the mutagenicity effects of ethanolic and aqueous extracts of *Clinacanthus nutans* leaves using Ames test.

Methodology: Four strains of *Salmonella typhimurium* were used in this test (TA98, TA100, TA1535 and TA1537). Five dilutions (5000, 2500, 1250, 625 and 312.5 µg/mL) of ethanol and aqueous extracts of *C. nutans* leaves were exposed to each of the tester strains with and without S9 metabolic activation. The revertant colonies were counted after 48 hours of incubation at 37ºC.

Results: The mutagenicity of ethanol and aqueous extracts of *C. nutans* showed negative results in the absence of S9 in all the tested strains. However, ethanol and aqueous extracts of *C. nutans* showed a mutagenic activity on TA1537 in the presence of S9 in all the concentrations, while all other strains did not exhibit any mutagenic activity.

Conclusion: The present study shows that the ethanol and aqueous extracts of *C. nutans* did not exhibit any mutagenic activity on all the tested strains of *Salmonella typhimurium* except TA1537.

Oral Presentations: Clinical Sciences

OC01

Anthropometric study of intercondylar notch width and posterior cruciate ligament length of knee injured patient in Hospital USM

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Introduction: Intercondylar notch width (ICW) and posterior cruciate ligament (PCL) length are important parameters in anthropometric study of the knee especially when considering appropriate graft length needed during PCL reconstruction procedure.

Objective: To determine the mean value of the ICW and PCL length using magnetic resonance imaging (MRI).

Methodology: The mean ICW and PCL length was measured from 74 knee MRI images of patients with knee injuries from year 2008 to 2015 obtained from Hospital USM Department of Radiology database system using the PACS Universal Viewer software.

Results: The results showed higher mean value of ICW and PCL length in male compared to female patients where the ICW is 22.3 (2.48) in male and 19.5 (1.71) in female while PCL length of male is 39.8 (4.00) and female is 35.9 (3.24) respectively.

Conclusion: The mean value of ICW and PCL length are important to fulfill the knowledge gap in the knee anthropometric study among Malaysian population.

OC02

Treatment outcomes of complete unilateral cleft lip and palate and regression analysis of associated factors

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Introduction: Management of cleft lip and palate involves primary surgical repair of lip and palate. Treatment outcome assessment is imperative to identify the shortcomings of traditional techniques. It assists to modify and improve treatment strategies for achieving cleft defect closure.

Objective: The aim of this study was to assess the treatment outcome of complete unilateral cleft lip and palate (CUCLP) patients using modified Huddart/Bodenham scoring system (MHB) and to determine whether the congenital and postnatal factors affected the treatment outcome.

Methodology: In this retrospective study, 101 pairs of dental models of non-syndromic CUCLP patients were retrieved. Each occlusal relationship from central incisor till first permanent molars was scored except lateral incisor. Sum of ten occlusal relationships in each gave a total occlusion score. Primary outcome was mean total occlusion score.

Results: According to MHB, a mean (SD) total occlusion score of –8.92 (6.89) was determined. Based on treatment outcome, 66 cases were favorable (grade 1, 2, and 3) and 35 cases were unfavorable (grade 4 and 5). Chi square tests were conducted to check differences. Cheiloplasty (p=0.001) and palatoplasty (p<0.001) were statistically significant. Five variables: gender, family history of cleft, cleft side, cheiloplasty, and palatoplasty; were analyzed with a logistic regression model.

Conclusion: According to MHB, CUCLP patients had a fair to poor treatment outcome. Final model indicate that techniques used for cheiloplasty and palatoplasty certainly effect treatment outcomes. Use of recent techniques could lead to better outcomes in future.

OC03

Estimation of maxillary mandibular canine and premolar widths in mixed dentition: a new-fangled prediction equation via digital dental models

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Introduction: Dental malocclusion is an exceptionally normal issue in the worldwide population. If the tooth size and arch dimension are precisely anticipated before the event of malocclusion, then the estimation can be used to eliminate or decrease the seriousness of malocclusions.

Objective: The prime aim of the study was to generate a new prediction equation for the estimation of maxillary mandibular canine and premolar widths from mandibular incisors and first permanent molar widths.

Methodology: A total of 2,340 variables (768 variables for the sum of mandibular incisors and first permanent molar widths and 1572 variables for the maxillary and mandibular canines and premolar widths) were measured. Hirox digital stereomicroscope was used for the fabrication of the digital models and measurements.

Results: Highly positive correlation was found for the estimation of maxillary (Correlation r=0.85994 and determination r^2=0.7395) and mandibular (Correlation r=0.8708 and determination r^2=0.7582) canine and premolar widths. The ICC coefficients were statistically significant, p<0.001 and the values of coefficient were in the range of strong correlation, with average range of 0.009. The linear regression analysis was used for the establishment of prediction equations. The new prediction equations were developed for the estimation for male, female, and both, respectively: Y=18.224+0.540×(SMI+Molars), Y=16.186+0.586×(SMI+Molars), and Y=15.746+0.602×(SMI+Molars) in the maxillary arch and Y=14.444+0.609×(SMI+Molars), Y=19.915+0.481×(SMI+Molars), and Y=16.391+0.564×(SMI+Molars) in the mandibular arch.

Conclusion: These formulas will be helpful for the diagnosis and clinical treatment planning for orthodontic treatment during the mixed dentition stage.

OC04

Morphological variation in dental crowns for human identification

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Introduction: An important aspect of reconstructing identity is to determine the ethnicity of the unknown human remains, as many other parameters depend on ethnicity. Dental morphological variations have been used in anthropology and archaeology for personal characterization and population. The possibility of analyzing morphological data ethnicity estimation was explored.

Objective: The aim was to identify those dental morphology that provide best discrimination and to generate prediction models that fulfil legal requirements and are practical to be used in forensic situations in Malaysia.

Methodology: Four hundred and one dental casts of Mongoloid and Indian were available for analysis using logistic regressions. 13 dental morphologies were scored according to Arizona State University (ASU) systems, Dahlberg's and Townsend's methods.

Results: Mongoloids were characterized by high frequencies of winging, shovelling, and complex occlusal features on the lower molar, whereas Indians showed simpler and more reduced occlusal features of the distal molar teeth (except the upper first molar). The best prediction rates were 78.3% for original sample and 78.9% for the test samples.

Conclusion: In conclusion, dental morphological data are suitable approach to estimate ethnicity in forensic situations in Malaysia.

OC05

3D CT study of morphological shape and size of sella turcica

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Introduction: Sella turcica is a saddle-shaped essential anatomic structure in the midcranial district that houses the pituitary gland. The despondency in saddle is distinguished as pituitary fossa or hypophyseal fossa. Morphologic varieties with the reference point of sella turcica that will help in diagnosing facial skeletal type and evaluation of orthodontic treatment.

Objectives: The purpose of this study was to represent the morphology and measures the size and shape of the sella turcica in Bangladeshi populace and contrast with accessible global information.

Methodology: A sum of 166 (108 males and 58 females) Bangladeshi subjects who went through Computed tomography (CT) scan for reasons other than due to craniofacial surgeries or deformities were investigated. A 3D imaging software (Mimics 11.02 Materialise) was utilized to process the CT images. Morphometric strategies were utilized to evaluate size and shape. The parameters for conventional measurements were three dissimilar sella height (anterior, posterior and median), sella length, diameter and width, where all of them deliberated in relation with Frankfort reference line (FH). Total area of sella turcica also considered.

Results: Non significant gender differences in size of the sella were found. The study found that sella turcica gave three unique shapes, where ovoid was most frequent about (48.1 %), then flat (28.3 %) after that circle (23.4 %).

Conclusion: Sella shape and measurements reported in the present study can be useful in giving reference information in the orthodontic determination, appraisal and treatment arrangement and evaluation of sex particular variety in Bangladeshi subjects.

OC06

Treatment effects of two different appliances on craniofacial morphometry of Class III malocclusion in mixed dentition Malay children

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Introduction: Orthodontic appliances aids treatment outcome by providing certain changes in craniofacial morphometry. Reverse Twin-Block (RTB) and Reverse Pull Face Mask (RPFM) appliances are two frequently used orthodontic appliances in correction of growing Class III malocclusion. But their treatment effect on craniofacial morphometry has neither been explored vividly, nor compared.

Objective: To compare and analyze the craniofacial changes produced by RTB and RPFM in early and late mixed dentition Malay children having Class III malocclusion.

Methodology: Total sample was 190 pre and post-treatment lateral cephalograms of 95 mixed dentition children; both early (8-9years) and late (10-11years) group, 49 patients under RTB and 46 patients under RPFM. Treatment changes were evaluated by Ricketts analysis using CASSOS software, where 71 anatomic landmarks were traced in each cephalogram. Statistical comparison was done by paired and independent t-tests.

Results: Paired t-test affirmed significant changes in Facial axis, Facial angle, MD-plane to FH, Lower facial height, Mandibular arc, Maxillary convexity, U1 to APog, L1 to APog, L1 to APog angle and Upper lip to E-plane measurements in both groups of RPFM; whereas significant changes were exposed only in Facial taper, U1 to APog and Lower lip to E-plane values of early group of RTB. Independent t-test revealed significant changes in U1 to APog, L1 to APog, and U6 to PtV values in RTB. In post-treatment comparison; significant changes were found in L1 to APog and L1 to APog angle values.

Conclusion: RPFM confirmed more favorable craniofacial changes than RTB; particularly in late mixed dentition stage.

OC07

Spectrum of factors for unfavourable dental arch relationship in non-syndromic unilateral cleft lip and palate children

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Introduction: Cleft lip and palate (CLP) is one of the most common birth defects. Multiple factors are believed to be responsible for an unfavorable dental arch relationship (DAR) in CLP.

Objective: The aim of this retrospective study was to evaluate DAR of non-syndromic Bangladeshi unilateral cleft lip and palate (UCLP) children and to explore the spectrum of congenital and postnatal treatment factors that are responsible for unfavorable DAR.

Methodology: Eighty-four dental models were taken before orthodontic treatment and alveolar bone grafting. The mean age was 7.69± 2.46 (mean± SD). All the subjects had primary surgery (cheiloplasty and palatoplasty) at the same hospital. DAR was assessed blindly by five raters using GOSLON Yardstick and EUROCRAN index and by two raters using modified Huddart Bodenham scoring system. Furthermore, all the subjects were divided into two groups; favorable and unfavorable groups based on treatment outcome. Kappa statistics was used to evaluate the intra- and inter-examiner agreements, chi-square was used to assess the associations and logistic regression analysis was used to explore the responsible factors that affect DAR.

Results: Intra- and inter-examiner agreements showed very good agreements among all indices. Using crude and stepwise backward regression analysis, significant association was found between complete UCLP, family history of class III malocclusion, modified Millard technique of cheiloplasty and V-Y pushback palatoplasty were significantly associated with unfavorable DAR.

Conclusion: This multivariate study suggested that DAR of non-syndromic Bangladeshi UCLP children was significantly associated with some of congenital and postnatal treatment factors by using different indices.

OC08

The temporal effect of hyperbaric oxygen therapy (HBOT) on chronic diabetic foot ulcer

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Introduction: We hypothesize that the HBOT group will recover faster compared to the conventional therapy alone.

Objective: To investigate the effect of HBOT on diabetic foot ulcer patients in addition to the standard wound care management.

Methods: Fifty eight diabetic patients with ulcers at Wagner Grade 2 and above were identified for the study. The patients were chosen after being presented and screened at two tertiary centers. Patients received either conventional wound care with additional HBOT at 2.4 ATA for 90 minutes or conventional therapy alone. The progress of wound healing was observed and measured at day 0, 10, 20 and 30 whereas transcutaneous oximetry (tcpO2) procedures were performed at day 0, 15 and 30. The data was analyzed using SPSS software (ver. 20). Follow up visit was done after 30 days of the last treatment to observe the wound condition.

Results: Repeated measures ANOVA analysis with Greenhouse-Geisser correction indicated that the means of wound size over time points (Day 0, 10, 20 and 30) among patients under HBOT group were statistically significantly different [$F(1,61)=30.86$, $p<0.001$)]. The differences among the control group however, were not statistically significant [$F(1,18) = 3.23$, $p = 0.076$)]. There was also a relation between HBOT and robust wound healing (>30%) with CI 7.18, 268.97, $p \leq 0.001$. Robust improvement in the wound condition was seen in 24/29 patients in the HBOT group compared to 5/29 patients in the control group who only received conventional wound management.

Conclusion: HBOT affected the rate of healing in diabetic foot ulcers significantly in terms of wound size reduction when compared to administering the conventional wound care alone.

OC09

Sneezing and the nightmares: a case report

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Introduction: We perform valsalva manoeuvre on a regular basis from a simple squatting, sneezing, coughing and vomiting without realizing the risk of valsalva retinopathy. Despite it rare occurrence, valsalva retinopathy causes sudden visual acuity loss due to retinal haemorrhage typically subhyaloid and premacular origin. We report a case of valsalva retinopathy successfully treated with intravitreal ranibizumab.

Case report: A 32-year-old Malay lady presented with a sudden painless vision loss of her left eye with central scotoma for 4 days duration. Her medical history was unremarkable except for episodes of constipation and sneezing spells prior to onset. Ophthalmic examination showed visual acuity of counting finger in the left eye, and 6/6 in the right eye. Relative apparent pupillary defect was absent. The anterior segment findings were normal bilaterally with normal intraocular pressure. Fundus examination showed presence of premacular haemorrhage extending from supero-temporal subhyaloid haemorrhage in the left eye. The right fundus was normal. Blood pressure, full blood count and coagulation profile were normal. Additional tests for hypercoagulable state and autoimmune diseases were negative. Clinical diagnosis of valsalva retinopathy was made and she was treated with intravitreal ranibizumab. There was a significant resolution of premacular haemorrhage at one month following injection. The left eye visual acuity was restored to premorbid 6/6 at day-70 post treatment.

Conclusions: Ranibizumab has not only shown successfully resolution of subhyaloid haemorrhage but might also reduce the risk of macular scarring or epiretinal membrane formation that arises from the complication of premacular haemorrhage.

OC10

Young nasopharyngeal carcinoma: a review of 8-year experience in the East Coast Malaysia hospital

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Introduction: Even though nasopharyngeal carcinoma (NPC) has bimodal peak distribution, young NPC is a rare occurrence. It accounts for less than 1% of all pediatric cancers.

Objective: To describe the 8-year (2003 till 2010) experience with cases of young NPC at a tertiary centre in East Coast Malaysia Hospital.

Methodology: Medical records of twenty four young NPC cases as confirmed by histopathology and who underwent treatment in a tertiary centre in East Coast Malaysia Hospital between 2003 and 2010 were reviewed retrospectively. We studied NPC incidence observed during that period, focusing on the age and gender distribution and the ethnic background of patients. We also analyzed most prevalent signs and symptoms and staging of the NPC patients at first presentation which include neck swelling, ear symptoms, nasal symptoms and other miscellaneous symptoms.

Results: There was Malay ethnic predominance, with peaked ages between 16 to 20 years old. Most patients were males (70.8%). The main presenting symptoms were neck mass (70.9%), unilateral nasal obstruction (33.3%), epistaxis (29.2%) and other miscellaneous complaints (20.9%) including headache, diplopia and facial paraesthesia. 25% patients had cranial nerve involvements either isolated or combination of cranial nerves 2,3,4,5 or 6. Stage I, II, III and IV patients accounted for 0%, 4.2%, 12.5% and 83.3% respectively. Majority (91.7%) had WHO Type 3 NPC (Undifferentiated carcinoma).

Conclusion: Results from our series are comparable to those reported by other centers. Majority of patients presented late and diagnosed as an advanced stage. The TMN staging served as a relevant prognostic factor.

OC11

Craniofacial morphology of Class III malocclusion in relation with genetic mutation

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Introduction: The etiology of developing class III malocclusion and the role of craniofacial structures in this phenotype is still unclear.

Objective: The purpose of this study was to compare the relation of craniofacial structures of mutation and non mutation group in class III malocclusion of Malaysian Malay families and their three generations.

Methodology: Three generations of Malaysian Malay families with an average age 22.50 (±5.30), 53.50 (±10.06) and 79.20 (±9.35) years of each generation respectively were selected for this study. Cephalometric radiographs of these families were taken for further analysis. All landmarks were positioned, determined and consequently tracings were completed using Romexis software (Planmeca, Finland) to accomplish craniofacial morphology investigation. The statistical comparisons of the mutation and non-mutation group were directed with t test and analysis of variance (ANOVA) was applied to evaluate the values for three generations in class III malocclusion among all measurements.

Results: Current study revealed that in mutation group, there are significant differences in Co-Gn-B and SN-MP variables compare to non-mutation group. However, almost all craniofacial variables show no significant differences among three generations.

Conclusions: This study may suggest that in mutation group mandible is more deviated from cranial base and there are almost no skeletal changes among three generations in case of class III malocclusion.

OC12

The effects of tualang honey on bone mineral density as an adjuvant therapy to anastrozole among postmenopausal breast cancer patients

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Introduction: Besides its potential benefits in breast cancer treatment, anastrazole causes side effects such as bone loss.

Objective: To determine the effects of tualang honey (TH) on bone mineral density (BMD) as assessed by dual energy X-ray absorptiometry (DEXA) scan when used as an adjunct to anastrazole among postmenopausal breast cancer patients.

Methodology: Thirty three patients were recruited from the Oncology Clinic, Hospital USM. The inclusion criteria included postmenopausal women with breast cancer stages I, II, or III, oestrogen receptor (ER) positive and/or progesterone receptor (PgR) positive. The patients were randomized to receive anastrozole (1 mg) alone or anastrazole (1 mg) plus TH (20 g) intervention group. Bone DEXA scan was conducted twice, at baseline (during the first visit) and six months after.

Results: Six-month treatment with anastrozole alone had significantly reduced the median femoral BMD by 2.23% and median lumbar spinal BMD by 2.84% while the T-scores for femoral (−0.40 *vs* −0.50, p = 0.013), lumbar spine (−1.60 *vs* –1.70, p = 0.034) were also significantly decreased when compared to the baseline. However, in the intervention group, there was no significant change in term of both BMD and T-scores: femoral (0.35 *vs.* 0.50, p = 0.286), lumbar spine (−1.05 *vs* –0.95, p = 0.074); indicating that TH could ameliorate bone loss as a result of anastrazole use.

Conclusions: Tualang honey has the potential implication as an adjunct to prevent bone loss among postmenopausal breast cancer women treated with anastrozole.

OC13

The usage of electroconvulsive therapy (ECT) in neurosyphilis of the insane: a case report

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Introduction: Syphilis has been in controlled until the past two decades. The disease reemerged and when left untreated would progress into neurosyphilis. The psychiatric presentations of neurosyphilis of the insane include the schizophrenia like psychosis, mood disturbances and cognitive decline. This paper illustrates the role of electroconvulsive therapy (ECT) in schizophrenia like psychosis secondary to neurosyphilis in a 53-year-old Malay gentleman.

Case report: A male patient was presented to Psychiatry Department in 2010 with psychotic symptoms and was diagnosed with late-onset schizophrenia. Two years later, he presented with acute deterioration of cognition. Thorough investigations were performed revealing positive results of serologic testing for syphilis. MRI showed left temporal gliosis consistent with meningovascular neurosyphilis presentation. His neurosyphilis was treated with IM Benzathine Penicillin. However, the psychotic and mood symptoms remained in relapsing- remitting course. Patient is very sensitive to antipsychotics but responded well with ECT course. His disorganized behavior and cognitive functions improved significantly after a course of maintenance ECT every fortnight contributes to his remission.

Conclusion: Only few studies reported the safety of ECT in organic cases and much fewer studies documented the efficiency of maintenance ECT. Our case demonstrates the role and safety of maintenance ECT in patient with neuropsychiatric sequelae of neurosyphilis. This challenged the hesitancy to use maintenance ECT in organic cases. Our patient did not develop any immediate complications or cognitive deterioration. Therefore, maintenance ECT should be one of the treatment option for recurrence of neuropsychiatric symptoms due to organic cause.

OC14

Assessment of uranium concentration in the maternal and umbilical cord blood after delivery in selected places in Iraq

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Introduction: An increased prevalence of birth defects was reported in Iraq in the post-1991 Gulf War period, which was allegedly attributed to exposures to depleted uranium used in the war.

Objective: To determine the concentrations of uranium radioactivity in maternal blood and umbilical cord blood samples after delivery in hospitals in Baghdad, Dih-Qar and Basrah, Iraq.

Methodology: A total of 100 pregnant women were involved; 53 women delivered with normal and alive infants and another 47 women delivered with abnormal and deformed infants. The CR-39 detector was used to determine the uranium concentrations found in the blood samples of maternal and umbilical cord.

Results: Results showed that the mean uranium concentration for maternal blood samples delivered with abnormal and deformed infants (2.43 ppb) was 2.5 times higher than for maternal blood samples delivered with normal and alive infants (0.97 ppb). For umbilical cord blood samples, the uranium concentration for abnormal and deformed infants (1.99 ppb) was also higher with 2.4 times, compared to normal and alive infants (0.84 ppb). The elder women were found to have greater uranium concentration compared to younger pregnant women. Among the three selected districts, pregnant women in Basrah showed the highest uranium concentration on maternal and umbilical cord blood samples.

Conclusion: High uranium concentrations found in maternal and umbilical cord blood samples have caused the increased rate of mortality on infant and children in Iraq. Thus, precautions and awareness should be taken up seriously in order to improve the health condition and wellbeing of the maternal and children, and thus for future generations in Iraq.

OC15

Association of root resorption and overjet in Malay Class II malocclusion patients

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Introduction: Root resorption is a critical problem in orthodontic treatment but it even occurs in absence of or before treatment.

Objective: To determine the frequency of root resorption before orthodontic treatment and to evaluate the association of root resorption and overjet, and gender demorphism in class II malocclusion patients.

Methodology: The study samples were collected from Radiology Department of Hospital Universiti Sains Malaysia. A total of 24 patients, having class II malocclusion before undergoing orthodontic treatment, 18 were females and 6 were males; their age was 20 ± 4 (Mean ± SD) years. A 4-grade ordinal scale was used to measure root resorption of 288 teeth (12 teeth/patient). Cone Beam Computed Tomography (CBCT) was used to quantify within and among the variances while controlling for gender and severity of malocclusion (overjet) as variates. Overjet divided into three groups based on proclination: normal to mild proclination, moderate proclination and severe proclination.

Result: Statistically significant association was found between root resorption in incisors and overjet (p<0.05); and between root resorption and gender (p<0.05). Severe resorption was found only in four teeth among 288 teeth.

Conclusion: CBCT was effective for detecting even minimal degrees of root resorption before orthodontic treatment and allowed three-dimensional evaluation of dental roots. The highest frequencies and the most significant root resorption occurred in incisors. This study will help the orthodontists for more effective treatment plans and management to avoid any complication.

OC16

Cephalometric assessments of Malaysian Malay Class II malocclusion subjects by Ricketts analysis

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Introduction: Class II malocclusion is a common problem encountered in the orthodontic population. Orthodontic diagnosis is the key factor for conducting a successful orthodontic treatment. It typically includes comparing a patient's cephalometric measurements to standard values.

Objective: This study presents a cephalometric analysis which demonstrates the differentiation over Class II malocclusion with degree of over jet of Malaysian subjects using Ricketts analysis.

Methodology: The study was carried out on 36 standardized lateral cephalomertic radiographs. The subject included 31 females and 5 males. The age of the subjects ranged from 15 to 33 years with a mean age of 19.09. The criteria of selection were class II malocclusion and no history of previous orthodontic treatment. The subjects were taken from HUSM orthodontic clinic archive.

Result: Statistically significant difference was found in both mild to moderate (p< 0.034) and mild to severe (p< 0.017) in U1 to APog. The data also uncovered significant difference between mild and severe in U1-L1 profile (p< 5.44936) and in U6 to PtV (p<9.41282). This study did not find any significant difference in facial axis (XY axis), facial angle, lower facial height. Mean values of cephalometric norms of this study were different than the Ricketts established cephalometric norms.

Conclusion: Our data suggest that Class II malocclusion in Malaysian subjects showed significance difference in over jet with U1 to APog, U1-L1 profile and U6 to PtV.

OC17

Analgesic effect of *Momordica charantia* supplementation among primary osteoarthritis patients

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Introduction: *Momordica charantia* (MC) or bitter melon has been widely reported to have anti-diabetic effects. However, little is known about its analgesic effects in humans. Osteoarthritis is a common problem affecting the joints in the elderly, and its conservative treatment includes the usage of analgesia, which frequently leads to undesirable side effects.

Objective: To determine the effects of MC in reducing pain among primary knee osteoarthritis (OA) patients.

Methodology: Eighteen primary knee OA patients underwent 3 months of *Momordica charantia* (MC) supplementation. Three 500 mg/capsule of MC were taken thrice daily. Rescue analgesia was allowed as needed. Pain and symptoms before and after MC supplementation were assessed using Knee Injury and Osteoarthritis Outcome Score (KOOS) questionnaire, and rescue analgesia intake throughout the period of supplementation was measured using analgesic score.

Results: There were significant improvement in KOOS pain score (p<0.001) and reduction in analgesic score (p<0.001). Other components of KOOS including daily activities (p=0.04), sports and recreational (p=0.002), quality of life (p<0.001) and symptoms (p=0.001) also showed significant improvement. With MC supplementation, there were significant pain reduction, improvement of symptoms, daily activities and quality of life. In addition, it reduced the intake of analgesia. No major side effects were reported.

Conclusion: *Momordica charantia* supplementation offers a safe alternative in reducing pain and improving symptoms among the primary knee OA patients, while reducing the need of analgesia consumption. These beneficial effects can be seen as early as 3 months of supplementation.

OC18

Classification of creases on palm prints based on direction of shift

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Introduction: Creases features on palm print are alternative characteristics for palm print identification. Several studies had reported their feasibility for personal identification. However, study on classification of creases based on direction of shift has never been attempted.

Objective: To classify creases on palm print based on shift directions; right or left.

Methodology: A new method that measured the creases shift to right and left in 2 cm x 2 cm squared at hypothenar region on palm print was used. 53 subjects were selected (16 males and 37 females).

Results: Results demonstrated that there were no similarities between creases shift to right and left. Mean creases shifted to right of 6.5 creases /4 cm² and 9.89 creases/4 cm² were calculated in males and females subjects, respectively. Meanwhile, mean creases shifted to left of 9.25 creases/4cm² in males and mean creases shifted to left of 15.27 creases/4 cm² in females. Results showed that creases shift to left tend to have significantly higher mean creases than creases shift to right for both male and female in the selected region. Furthermore, there was no significant correlation between creases shift to right and creases shift to left (n=53, r=0.255, p=0.065).

Conclusion: Experimental results showed that palm print creases can be classified based on direction of shift to right and left.

OC19

Passive warming with a Heat-Band is a cost-effective alternative to a resistive heating blanket for the prevention of inadvertent perioperative hypothermia during gynecological laparotomies

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Introduction: Inadvertent perioperative hypothermia (IPH) is a common problem, despite advancements in a variety of warming systems. The use of a resistive heating blanket (RHB) is a common but costly approach to patient warming. We have introduced the use of a Heat-Band (HB) in our centre as a cost-effective alternative for patient warming.

Objective: To compare the efficacy of the HB with that of the RHB in preventing IPH during laparotomy for gynecological surgeries.

Methodology: Thirty-two patients who underwent surgeries under combined general-epidural anesthesia, with an expected duration of surgery of 2–4 hours, were randomized to receive either the HB or RHB. The core body temperatures of the two groups were compared at several perioperative times, in addition to the incidence of post-anesthesia shivering, time to extubation and intra-operative blood loss.

Results: The core body temperatures were comparable between the two groups in the pre-operative period, immediately after the induction of anesthesia and skin incision, 1 h after the incision, at the time of complete skin closing, at extubation, upon arrival to the recovery room and 1 h post-operatively. There were no significant between-group differences in the incidence of post-anesthesia shivering, time to extubation and intra-operative blood loss. No device failures or adverse effects of the warmers occurred in either group.

Conclusion: We conclude that the HB is a cost-effective alternative to the RHB in preventing IPH and its complications during anesthesia and surgery of intermediate duration.

OC20

Relationship between overjet and muscle activity in Class II malocclusion patient using surface electromyography

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Introduction: Class II malocclusion appears with proclained upper incisors with a subsequent increase in overjet which exhibits hyperactive muscle function. Thus, masticatory muscle activity can be altered with increased overjet as masticatory process (like chewing, clenching) is correlated with this.

Objective: To assess relationship between the overjet and the muscle activity (the masseter and temporalis muscles) in patient with Class II malocclusion using surface electromyography (sEMG).

Methodology: A total 24 patients having Class II malocclusion undergo the assessment from School of Dental Sciences, Hospital Universiti Sains Malaysia (HUSM). The masticatory muscle (the masseter and temporalis muscles) activity (rest, chew, post chew rest, clench and post clench rest) were assessed by using sEMG and overjet were clinically measured. The results compared to show association between overjet and muscle activity in Class II malocclusion patient.

Results: Statistical analysis of parameters using linear regression test showed a highly significant linear association of right and left masseter with overjet during chewing (p=0.005, B=-.046; 95%CI=-.016, -.076). Right and left temporalis muscle showed a no significant linear association (p>0.005) with overjet during rest, chew and post chew rest. Both masseter and temporalis muscle showed no significant linear association (p>0.005) with overjet during rest, clench and post clench rest.

Conclusion: Class II malocclusion patient with increased overjet group showed no significant association with muscle activities except for masseter muscle on chewing. However, it can be assume that Class II malocclusion patient with increased overjet can affect masticatory muscle function.

OC21

The effect of middle ear volume on hearing improvement post myringoplasty

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Introduction: Chronic suppurative otitis media (CSOM) is a major cause of tympanic membrane (TM) perforation that commonly associated with conductive hearing loss. Some studies showed that the hearing loss depends on middle ear volume as well as size of TM perforation. Myringoplasty is a surgery to repair a perforated TM without ossicular chain reconstruction. Although hearing improvement is not the main aim of surgery, there are factors that contribute to the improvement.

Objectives: To determine the effect of middle ear volume on hearing improvement post myringoplasty. We also evaluated the size of tympanic membrane perforation on hearing gain post operatively.

Methodology: Sixty-eight cases of CSOM who underwent myringoplasty were taken on this prospective study. Size was estimated in percentage for particular area perforated area Hearing improvement post myringoplasty measured by different mean of air-bone gap (ABG) while middle ear volume was calculated from the difference of ear canal volume that was measured by tympanometry.

Results: Air-bone gap was significantly improved after myringoplasty every frequency (p-value<0.05). Two-way ANOVA result showed the middle ear volume does affect ABG improvement (p-value= 0.02). While the size of TM perforation does not affect the hearing outcome (p-value= 0.704).

Conclusion: Hearing improvement depends on middle ear volume. Smaller middle ear volume will show bigger hearing improvement post myringoplasty. While no effect of TM perforation size is seen on hearing improvement.

OC22

Effect of tualang honey on safety profiles among postmenopausal breast cancer patients

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Introduction: Honey has been reported to have biological properties such as antimicrobial, antioxidant and anti-inflammatory properties. It is traditionally used among breast cancer patients in Malaysia with the belief that it can improve the overall health. Previous study has shown that tualang honey is safe to be consumed in healthy postmenopausal women. However, to our knowledge, no study has been reported on the safety profiles of tualang honey among breast cancer patients.

Objective: To determine the effect of tualang honey on the safety profiles among postmenopausal breast cancer patients.

Methodology: Seventy-two postmenopausal breast cancer patients from Oncology Clinic, Universiti Sains Malaysia Hospital with stages I, II, and III, and treated with anastrozole (1 mg/day) were randomly assigned into two groups (n=36/group): (1) control (without honey) and (2) honey (20 g/day of tualang honey for 12 weeks) groups. Blood (5 mL) was obtained at pre- and post-interventions to investigate the differences of the haematological, renal and liver profiles between and within the groups.

Results: At pre intervention, haemoglobin level in the honey group was significantly higher than the control group. No significance differences were found for other biochemical parameters between the two groups at pre- and post-interventions. In the honey group, the white blood cell count, platelet count, and creatinine level were significantly higher following honey supplementation for 12 weeks. Nevertheless, the values were still within the normal ranges.

Conclusion: This study suggests that tualang honey supplementation at 20 g/day for 12 weeks is safe among postmenopausal breast cancer patients.

OC23

Application of harmonic scalpel versus conventional technique in thyroid surgery: a preliminary result of a prospective randomised study

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Introduction: The thyroid gland is one of the most vascularized organ where intensive hemostasis is required during surgery. One of a new equipment to control hemostasis is a harmonic scalpel (HS) which uses mechanical vibration to cut and coagulates structures simultaneously as compared to other conventional techniques (electrocautery, electrothermal bipolar, suture ligation and LigaSure clips).

Objectives: To determine the effectiveness of HS used in thyroid surgery in reducing operative time and postoperative pain. This study also investigates the complications namely hoarseness, hypocalcaemia, blood loss and duration of hospital stay.

Methodology: We did a prospective randomized study on the application of HS versus conventional techniques in thyroid surgery. The patient who were 18 years old and older, and attended the ORL Clinic and indicated for thyroid surgery without any severe medical illness were recruited.

Results: Forty patients were included in this study, 20 patients in the HS group and 20 patients in the conventional group. The female to male ratio is 31:9. The total operation duration for HS group is 4.26 hours as compared to conventional group, 3.43 hours (p= 0.136). The postoperative pain score for total thyroidectomy at 6 hours in harmonic scalpel group is less compared to conventional (3.0 versus 3.5 on VAS). There is minimal difference in rate of hoarseness, hypocalcaemia, blood loss and hospital stay but it is not significant.

Conclusion: There is no significant difference between HS and conventional technique in thyroid surgery. However, HS could be used as an effective adjunct in thyroid surgery by way of reducing postoperative pain.

Oral Presentations: Health Sciences

OH01

The effectiveness of a cultural-based support group for Malay dementia caregivers in Kelantan, Malaysia: a pre-post intervention study

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Introduction: The psychological impact of caregiving responsibility for dementia patients is significant regardless of the cultural background. Most of the current advanced caregivers' interventions, originating from developed western countries, do not necessarily apply to local settings. Hence, there is a need for an effective culturally competent psychological intervention for local caregivers.

Objective: To determine the effectiveness of a cultural-based support group for Malay dementia caregivers in reducing caregivers' psychological burden and improving the quality of life.

Methodology: This was an experimental study, without control, investigating pre and post support group intervention effectiveness in reducing caregiver burden, anxiety and depression, and improving the quality of life. Sixteen caregivers completed the program, which involved six fortnightly support group sessions with duration of 2 hours each, conducted over twelve weeks. Caregivers' psychological burden was objectively assessed using Caregiver Strain Index (CSI) and Hospital Anxiety and Depression Scale (HADS). WHO Quality of Life questionnaire (WHOQOL-BREF) was used to measure the quality of life. The validated Malay versions of the questionnaires were used.

Results: There was a statistically significant reduction in the level of caregiver burden (p=0.001). Measurement of both scores of anxiety and depression comparing pre and post intervention also showed improvement, but statistically were not significant. Assessment of caregivers' quality of life showed significant improvement in the domains of psychological, physical and environmental (all with p<0.05).

Conclusion: Our cultural-based support group is an effective intervention to improve burden, psychological well-being and quality of life among local caregivers of dementia patients.

OH02

Combined effects of oat bran consumption and brisk walking exercise on immune functions in women aged 40 to 50 years old

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Introduction: To date, little is known about combination effects of exercise and oat bran consumption on immune functions in women aged 40 to 50 years old.

Objective: To examine the beneficial effects of combined brisk walking exercise and oat bran consumption on immune functions in women aged 40 to 50 years old.

Methodology: Thirty three women aged 40 to 50 years old were recruited and assigned into three groups (n=11 per group), i.e. sedentary without oat bran consumption control (C), oat bran consumption alone (Ob) and combined oat bran consumption and brisk walking exercise (ObEx) groups. Blood samples were taken before and after experimental period in order to measure total white blood cells, neutrophils, basophils, eosinophils, monocytes, total lymphocytes, total T lymphocytes ($CD3^+$), T helper cells ($CD4^+$), T cytotoxic cells ($CD8^+$) and natural killer cells ($CD16^+$) for determining the level of immune functions.

Results: There were significant (p<0.05) increases in eosinophil (pre-test: 0.20±0.08 10^3/μL; post-test: 0.29±0.16 10^3/μL) and neutrophil (pre-test: 3.37±1.02 10^3/μL; post-test: 4.21±1.01 10^3/μL) counts in post-test compared to pre-test in Ob group. There were also significant (p<0.05) decreases in values of T cytotoxic ($CD8^+$) (pre-test: 623.70±245.58 10^3/μL; post-test: 554.74±220.56 10^3/μL) and natural killer cells ($CD16^+$) (pre-test: 651.45±243.04 10^3/μL; post-test: 559.68±205.82 10^3/μL) in post-test compared to pre-test in ObEx groups.

Conclusion: Consumption of oat bran alone may have potential to be recommended for increasing immune functions in women aged 40 to 50 years old. Nevertheless, future study with larger sample size needs to be carried out to confirm the present study findings.

OH03

Exploring the sense of privacy as barrier to formal health service among the elderly with constipation in Kelantan

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Introduction: Chronic constipation is a common gastrointestinal disorder among the elderly. It has a significant negative impact on health related quality of life which is largely attributable to failure in managing the symptom. While constipation-related privacy issue has been identified in other population, there is limited research on such issue in Malaysia.

Objective: To understand the role of sense privacy as barrier for the constipated elderly to access formal health service.

Methodology: Grounded theory approach is applied as key method in examining and understanding the various experiences of constipation among 46 elderly in Kota Bharu, Kelantan. Data was gathered through semi-structured interviews.

Results: Constant comparison analysis showed that perceived and internalized sense of privacy associated with constipation influenced access to formal health service by delaying or declines the treatment. The elderly perceived constipation was a personal experience and treatment was left to their choice. The reasons for their responds were a norm disorder, less severe condition and will heal on its own. Uncured condition may result in embarrassment and affect self-esteem particularly in women because it reflected impairment in body function and perineal-related care. The elderly identified the key factors to overcome sense of privacy including acceptance of similar experience by other people, humor, social support and understanding of constipation.

Conclusion: There is a need to rectify the misconception about constipation-related privacy issue among the elderly. Beside provision of information about constipation, empathy and focus to the elderly's complaint are important to overcome the key psychological barriers to treatment such as sense of privacy.

OH04

Prevalence of latent tuberculosis infection and its associated factor among diabetics in a Malaysian regional referral hospital

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Introduction: Diabetes mellitus is one of the most important risk factor for having severe tuberculosis and is associated with higher morbidity and mortality. Latent tuberculosis (LTB) is a condition whereby the tuberculous infection is still contained and more amenable to treatment. In determining the prevalence of LTB and its associated factors we can estimated our disease burden and identify diabetic patient who are utmost risk.

Objectives: To determine the prevalence of latent tuberculosis infection among diabetics and factors associated with it.

Methodology: A cross sectional study was conducted at a regional referral hospital in East Coast Malaysia from October 2013 to January 2015. Consented participants underwent tuberculin skin test and reading was done at 72 hours, with a cut-off point of 10mm or more as positive for latent tuberculosis infection.

Results: The response rate for this study was 93.7% with 319 respondents tested with tuberculin skin test for latent tuberculosis infection (LTBI). The prevalence of latent tuberculosis infection among diabetic patients was 11.4%. The only significant factor associated with LTBI is educational level. Other factors studied (age, duration of diabetes, HbA1c result, and diabetes treatment types) showed no significant association with latent tuberculosis infection in diabetic patients.

Conclusion: The prevalence of latent tuberculosis infection in Malaysia was relatively low for an intermediate tuberculosis burden country. However this preliminary evidence provides a baseline data on the reservoir of latent tuberculosis infection among diabetic group in our setting, which is especially important in the issue of tuberculosis chemoprophylaxis for latent tuberculosis infection among diabetics.

OH05

The psychometric properties of the Malay version of Psychosocial Effects of Abnormal Pap Smear Questionnaire (PEAPS-Q): a confirmatory factor analysis

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Introduction: The Psychosocial Effect of Abnormal Pap smear Questionnaire (PEAPS-Q) was used to assess the psychosocial effect of women with abnormal Pap smear result.

Objective: To measure the validity and reliability of PEAPS-Q in Malay language.

Methodology: A total of 218 respondents had participated in this cross-sectional study. Confirmatory construct validity and internal consistency assessments were analyzed using SPSS Amos version 21.0 after the process of translation, content validity, face validity and exploratory factor analysis.

Results: The final model confirmed the original four constructs. It demonstrated acceptable factor loading (0.47–0.96), domain to domain correlation (0.19-0.78) and best fit [Chi-squared/degree of freedom = 2.200, Goodness of Fit Index (GFI) = 0.901, Tucker-Lewis Index (TLI) = 0.936, Comparative Fit Index (CFI) = 0.950, Root Mean square Residual (RMR) = 0.073 and Root Mean Square Error of Approximation (RMSEA) = 0.074]. The Cronbach's α and composite reliability of the domains were excellent which ranged from 0.75 to 0.85 and 0.76 to 0.85, respectively.

Conclusion: The Malay version PEAPS-Q is a valid and reliable instrument to be applied among women in Malaysia setting.

OH06

Dietary intake pattern of Malay patients with primary glaucoma: a potential modifiable risk factor

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Introduction: Glaucoma is a leading cause of irreversible blindness worldwide. Age is the most important non-modifiable risk factor. Intraocular pressure (IOP) is the only modifiable risk factor. Identification of other potential modifiable risk factor may help in the prevention of the disease. Diet may potentially contribute in the development of the disease.

Objective: To evaluate the dietary intake pattern of Malay patients with primary glaucoma and to determine the association of food intake and the risk of primary glaucoma.

Method: A cross sectional study was conducted involving 103 primary glaucoma patients and 107 controls (non-glaucoma). Direct face-to-face interview on the dietary recall of food consumption pattern (habitual food intake) was conducted using food frequency questionnaire. Multiple logistic regression analysis was performed to evaluate the dietary intake pattern as a potential modifiable risk factor for primary glaucoma.

Result: A total of 45 males and 58 females with primary glaucoma were recruited with their mean age of 66.1 (SD=9.5) years old. Non-glaucoma comprising of 46 males and 61 females were also recruited with their mean age of 57.5 (SD=8.5) years old. Consumption of marine fish (X^2=34.95; p<0.001), green leafy vegetables (X^2=20.89; p=0.043), cucumber (X^2=13.79; p=0.048), and dates (X^2=19.02; p=0.032) decreased the risk of developing primary glaucoma by 3.6 folds (95% CI; 1.77, 7.36), 1.9 folds (95% CI; 1.02, 3.50), 1.7 folds (95% CI; 1.00, 2.90), and 0.9 folds (95% CI; 0.76, 0.99) respectively.

Conclusion: Malay patients with primary glaucoma consumed less omega-3 riched food and anti-oxidant from vegetables. Less consumption of marine fish and vegetables increased the risk of developing primary glaucoma.

OH07

The study of correlation between middle ear volumes and air-bone gap in normal air conduction threshold

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Introduction: It is hypothesized that the middle ear (ME) volumes directly contribute to the magnitude of air-bone gap (ABG).

Objective: To determine the correlation between the ME volumes and ABGs in non-pathological ears.

Methodology: Retrospective records review from patients who underwent high resolution computed tomography (HRCT) temporal bone and pure tone audiometry (PTA) within 6 months gap, between 2008 and 2016. Out of 230 patients, only 28 of them have normal hearing threshold were included. ME volumes were measured by three dimensional (3D) reconstruction multi-detector computed tomography (MDCT) of HRCT temporal bone semi-automatically. Air and bone conduction hearing thresholds were tested at typical test frequencies (250 Hz, 500 Hz, 1000 Hz, 2000 Hz and 4000 Hz). The correlations between ME volumes and ABGs were determined by Pearson and Spearman statistical analyses.

Results: The relevant patients' data (13 women and 15 men, mean age = 27.11 ±13.49 years) were successfully retrieved and analysed. The mean ME volume was 4.48 ± 3.07 ml. The mean ABGs were 10.18, 10.71, 9.46, 3.75 and 10.54 dBHL at 250, 500, 1000, 2000 and 4000 Hz frequencies, respectively. The ME volumes were highly correlated with ABGs at 250 Hz (r= -0.6311, p=0.003) and 500 Hz (r= -0.516, p=0.005). No correlation was found between ME volumes and ABGs at other frequencies (p>0.05).

Conclusion: It is common to have abnormally large ABG gaps (>10 dB) at low frequencies in healthy adults due to small middle ear volumes.

OH08

Effects of prolonged running in the heated and cooled environments on selected physiological parameters and salivary lysozyme responses

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Introduction: Exercising in extreme environmental temperature can increase the degree of the physiological responses which can influence the immune function and affect the sports performance. Nevertheless, investigations regarding the effects of exercise on innate mucosal immune secretions, specifically on antimicrobial proteins (AMPs) like lysozyme are scarce.

Objective: To determine the effects of prolonged running in the heated and cooled environments on selected physiological parameters and salivary lysozyme responses among recreational athletes.

Methodology: Thirteen male recreational athletes (age: 20.9±1.3 year-old) performed two separate exercise trials; 90 min running at 60% of their respective maximum oxygen consumption (VO_2max – ml/kg/min). One exercise trial was performed in the heated (31ºC) and in the cooled (18ºC) environments and this sequence was randomised. Recovery period between these two trials was one week. In the both trials, saliva samples, blood samples, heart rate, rate of perceived exertion, skin and tympanic temperature, oxygen consumption, nude body weight, room temperature, and relative humidity were collected. Paired t-test and two-way ANOVA with repeated measures were performed to analyse the data.

Results: Participants' skin temperature, tympanic temperature, body weight changes, heart rate, and plasma volume changes were significantly higher (p<0.05) in the heated trial compared to cooled trial. Nevertheless, there were no significant differences (p>0.05) on salivary lysozyme concentration and secretion rate between both trials and also within each trial.

Conclusion: Heated/cooled environments and prolonged exercise did not affect lysozyme responses among recreational athletes.

OH09

Assessment of Palestinian community pharmacists' medication knowledge

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Introduction: Community pharmacists have an important role and responsibility in monitoring the safety of medicines dispensed with or without a prescription.

Objective: To assess the knowledge of Palestinian community pharmacists in three aspects: general pharmacy practice, safety of drugs during pregnancy and evidence based pharmacotherapy of herbal products.

Methodology: A cross-sectional nationwide survey on community pharmacists was carried out. The medication knowledge was tested by multiple choice questions that were designed for this purpose. All scores were presented as percentage from a total of 100.

Results: Approximately one third of community pharmacists in West-Bank, Palestine took part in the study. The sample composed of 50.6% female pharmacist. The majority of the participants 89.2% had a B.Sc degree while 10.8% had an M.S degree. The community pharmacists have an average score of 68.6±18, 39.9±16 and 51.6±23 in the general pharmacy practice, drug safety during pregnancy and in evidence based herbal pharmacotherapy tests respectively. The total score was significantly and negatively correlated with the number of years since graduation (r= - 0.3; p<0.01). Female pharmacists had significantly better score than male pharmacists in all tests except for drug safety during pregnancy.

Conclusion: Community pharmacists in Palestine lack good medication knowledge which hinders their role in patient counselling in the community pharmacy practice settings. Steps should be taken by the government, universities and pharmaceutical association to improve the community pharmacists' role in healthcare system by providing them with continuous and up-to-date medication knowledge.

OH10

Dental tooth size dimension norms of various populations: an overview

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Introduction: Information concerning tooth size in human populations is of great importance to clinicians in the diagnosis and treatment of malocclusions.

Objectives: The aim of this present study was to do an overview of the dental tooth size measurement for various populations and also to evaluate the various types of measurement methods.

Methodology: Two reviewers independently performed the selection process and the quality of studies was assessed. Studies published until October 2015 was identified in electronic databases: Pubmed, Science direct, Web of Science and MEDLINE using the keywords- tooth size, sexual dimorphism, mesiodistal width. Based on inclusion and exclusion criteria 32 articles were selected for final evaluation.

Results: Tooth size investigated via plaster and digital dental models had been measured via calipers and computers software's. These digital model studies via computer software's provide more accurate and reliable tools for obtaining measurements and carrying out dental analysis. On the other hand, the mesiodistal and buccolingual width of tooth in various populations showed that male have a higher value than female.

Conclusion: The various methods to assess tooth size dimension should be carefully considered and well conducted as part of the clinical assessment of orthodontic treatment, since tooth size dimension could influence the diagnosis and treatment planning of orthodontist.

OH11

Incidence of third molar impaction in non-syndromic 5923 dental patients: a radiographic study

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Introduction: The third molar teeth continue to generate more controversy concerning eruption pattern and pathologic sequel than any other tooth in the oral cavity. Nowadays, approximately 50% of the third molars present some form of anomaly, either they remain un-erupted or partially erupted.

Objective: To evaluate the prevalence and pattern of third molar impaction in terms of gender, angulation of impaction, position of impacted tooth, and level of eruption in a sample of Bangladeshi dental patients.

Methodology: A retrospective study was performed using panoramic radiograph of 5923 patients, who ranged in age from 20 to 50 years old. All radiographs were obtained and analyzed for prevalence of third molar impaction, angulation of impaction, level of eruption. All radiographs were analyzed by Planmeca Romexis® 3.0 software (Planmeca Oy, Helsinki, Finland). Pearson chi-square test was employed.

Results: The prevalence of third molar impaction was 46.20%. Third molar impaction was significantly more prevalent in mandible as compared to maxilla (p <0.05). The most prevalent angular position in the mandible was mesioangular impaction (31.67%) and the most prevalent angular position in the maxilla was distoangular impaction (56.24%). There was no significant difference between the male and female in both maxilla and mandible.

Conclusion: Prevalence of third molar impaction varies in different geographic region. Mesioangular impaction is more common in mandible and distoangular impaction is more common in maxilla than other types of mandibular and maxillary impaction.

OH12

Knowledge and attitude regarding oral care of intubated patients among intensive care unit nurses at a teaching hospital in east coast of Peninsular Malaysia

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Introduction: Intensive care nurses have an obligation to protect critically ill patients against infection such that patient recovery is enhanced.

Objectives: To assess knowledge and attitude of Intensive Care Unit (ICU) nurses regarding oral care for intubated patient.

Methodology: This was a cross-sectional study. A convenience sample of 67 ICU nurses participated in this study from a teaching hospital in East Coast of Peninsular Malaysia.

Results: The majority of nurses (53.7%) have good knowledge level with a mean total knowledge score of 66.1 (S.D. 12.3). More than half of the nurses (62.7%) had satisfactory attitude with a mean total attitude score of 67.6 (S.D. 11.7). Significant association was found between mean knowledge score and the nurses' working experience in ICU. Most nurses knew that oral care of patient should begin immediately after intubation (86.6%). Chlorhexidine was the most commonly used mouthwash (85.1%). Majority of the nurses (89.6%) knew about ventilator-associated pneumonia (VAP). Most of them didn't think that oral pathogen can induce VAP (77.6%) and only few nurses agreed that proper oral care can reduce VAP (17.9%). Some nurses agreed that oral cavity cleaning is difficult (35.4%) and they have lack of equipment for oral care (38.5%), but most of them realised the importance of oral care in intubated patients (83.6%) with use of an oral assessment guideline (86.5%).

Conclusion: The nurses' attitude toward oral care in intubated patients was satisfactory but updating knowledge and attitudes through training program at regular interval is recommended.

OH13

Children with transfusion dependent thalassaemia (TDT): the study of psychological distress and coping strategies among caretakers

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Introduction: Hemoglobin E beta thalassaemia is prevalent in Malaysia. Knowing thalassaemia is a chronic disease it is a lifelong burdens not only to the patient but also to the parent and other caretakers. Psychological distress is manifested in multiple ways and at different level of severity. Therefore coping strategies are developed in order to reduce the stress hence ascertain a high quality of life.

Objectives: (1) To determine mean psychological distress level and brief COPE of caretakers. (2) To compare mean psychological distress level with brief COPE and income status. (3) To identify the association of psychological distress and brief COPE.

Methodology: DASS 21 and brief COPE questionnaires.

Results: Depressive median score was (2.00, IQR 4.00). Anxiety mean score was (3.54, SD 3.54). Stress mean score was (4.25, SD 3.26). The highest mean score for brief COPE was religion (7.00, IQR 2.00). Depressive caretakers had significant score for substance use (4.50, IQR 3.00). Meanwhile anxious caretakers had significant score for denial (5.50, IQR 3.00), substance use (4.00, IQR 4.00) and behavior disengagement (4.00, IQR 3.00). There was no significant difference between psychological distress and income status. Age, gender, education, working and income status were identified to have association with brief COPE.

Conclusion: Majority of caretakers had utilized religion coping, meanwhile substance use, denial and behavioral disengagement were utilized by depressive and anxious caretakers. Scoring for DASS 21 showed no significant different between two groups of income. Brief COPE was associated with age, gender, education, working and income status.

OH14

The determination of mental foramen position in 5923 Bangladeshi dental patients

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Introduction: Accurate position of mental foramen is very important to be determined to avoid any trauma or injury to the mental nerves and vessels during surgical procedures such as implant surgery, periapical surgery and orthognathic surgery. Injured mental bundle may lead to temporary or permanent sensorial, tactile or thermal changes.

Objective: To determine the accurate position of the mental foramen in a sample of Bangladeshi dental patients.

Methodology: A retrospective study was performed on panoramic radiographs of 5923 patients attending two renowned diagnostic center of Dhaka, Bangladesh during the period from February 2014-February 2015. The samples were collected from the archive randomly who ranged in age from 14 to 50 years old. All radiographs were obtained and analyzed for the most accurate position of the mental foramen by Planmeca Romexis® 3.0 software (Planmeca Oy, Helsinki, Finland). Pearson chi-square test was conducted.

Results: The position of the mental foramen was in the line of long axis of 2nd premolar (P4- 58.4%) horizontally and below the root apex level (LC- 71.3%) vertically.

Conclusion: This study could help the clinicians ensuring safe surgeries and anthropologists predicting the position of the mental foramen to be symmetrical and in the line of long axis of second premolar teeth and below the root apex level.

OH15

Morphometric analysis of tooth size and its relationship with body mass index (BMI) in transgender population: a new exposure in dentistry

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Introduction: Sex identity and presentation are popular topics within various fields of research. Research related to tooth size, tooth size discrepancy and relationship with BMI in transgender population is yet to be explored in dentistry.

Objective: To establish normative data on mesiodistal width dimensions associated with BMI and tooth size discrepancy in transgender population.

Material and methods: The data were derived from dental casts of 151 transgender individuals (75 transgender male, 76 transgender female; age group 18-30 years) from Bangladesh. Data were analysed using independent t-test and ANOVA. The mean and standard deviation were calculated for individual tooth size, Bolton's overall and anterior ratios, and BMI separately for transgender males and females.

Results: The mesiodistal widths of the maxillary teeth showed higher variability than the mandibular teeth and the mean value was higher in transgender females than in males and revealed statistically significant differences. Bolton's anterior ratios were found to be 78.05 (±3.67) for male and 78.90 (±4.12) for female. The mean of Bolton's overall tooth ratio for male 91.03(±3.66) and for women was 91.46(±3.91) with no significant differences (p>0.05). No significant differences between BMI and mesiodistal tooth dimensions except for the left first molar tooth in mandible and left lateral incisor tooth in maxilla between overweight and underweight groups (p<0.05).

Conclusion: These findings indicate that population-specific standards are necessary for clinical assessments and for several dental treatment purposes. Moreover, it is appropriate to use transgender norms in a regular dental practice for transgender individuals.

OH16

A case series of vertigo in vascular loop syndrome

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Introduction: Common cause of vertigo such as benign paroxysmal positional vertigo can be diagnosed clinically and treatment such as medical therapy and vestibular rehabilitation usually provide acceptable relief to patients. However, there are some patients with persistent vertigo who do not respond to usual treatment and would require magnetic resonance imaging (MRI) of brain for further evaluation.

Case report: We are reporting a series of four patients (two females and two males) with the median age of 41 years old and were diagnosed to have vascular loop syndrome. Each patient presented with at least three months history of vertigo. Other otological symptoms include reduced hearing as evidenced by the pure tone audiogram and tinnitus. All of these patients were having persistent vertigo despite being treated medically. MRI scans of the brain showed that all patients have anterior inferior cerebral artery loop within the internal audiatory meatus. However, the extension of the loop varies with most of the cases extent more than 50% of the meatus length. There was no any other focal lesion and both internal audiotory meatus are symmetrical without any abnormal widening. Other inner ear structures such as the cochlear, vestibule, semicircular canals, cranial nerves seven and eight were present and normal.

Conclusion: Suspicion of vascular loop syndrome should be considered in patients with persistent vertigo with other otological symptoms that does not resolve with medical therapy. MRI of the brain shows the abnormal loop of anterior inferior cerebral artery within the internal auditory meatus with normal inner ear structure.

OH17

Effect of tualang honey supplementation on quality of life among postmenopausal patients treated for breast cancer

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Introduction: Breast cancer is the most common cancer among women in Malaysia which may affect patients' quality of life. To date, the beneficial effects of honey supplementation on quality of life among breast cancer patients has not been reported.

Objective: To determine the effect of tualang honey on quality of life among postmenopausal patients treated for breast cancer.

Methods: This was an open randomized controlled trial of 72 postmenopausal patients who have completed treatment for breast cancer (chemotherapy, surgery or radiation) which stages I, II and III treated with anastrozole (1 mg/day) at the Oncology Clinic, Hospital Universiti Sains Malaysia. The patients were randomly allocated into two groups (n=36/group) namely control (without honey) and honey (20g/day of tualang honey for 12 weeks) groups. Quality of life was evaluated using a validated *Bahasa Malaysia* version of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30 (EORTC QLQ-C30) at pre- and post-interventions.

Results: At post-intervention, the scores for global health status and functioning scales (physical and social functioning) were significantly higher in honey group compared to the control group which represents a high level of functioning. In honey group, the scores for global health status and functioning scales (physical and cognitive functioning) at post-intervention were significantly higher than at pre-intervention which represents a high quality of life.

Conclusion: This study suggests that tualang honey supplementation (20 g/day) for 12 weeks improves the quality of life among postmenopausal patients treated for breast cancer.

OH18

A comparative study between supraorbital keyhole and pterional approach on anterior circulation aneurysms

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Introduction: Many different conventional approaches, such as frontal and pterional approach are used to access anterior circulation aneurysms. Recently supraorbital approach has been widely applied to the treatment of anterior circulation aneurysm.

Objective: The study was done to evaluate which approach (pterional or supraorbital) has better outcome in terms of residual neck post-clipping, cosmetics satisfaction, scar tenderness, complications and functional outcome.

Methodology: A total of 123 patients were recruited in this study which consists of 82 patients who underwent pterional approach and 41 patients who underwent supraorbital approach. CT angiogram, Modified Ranking Scale, Visual Analog Scale done at 6 months to look for residual aneurysm, functional outcome, scar tenderness and cosmetic satisfaction. Complications data were collected from patients' case notes.

Results: The mean operating time for pterional group was 226 minutes compared to supraorbital group which was 192 minutes (p=0.07). Cosmetic satisfaction was significantly higher (p=0.001) in supraorbital group. There is no significant difference between supraorbital and pterional group scar tenderness (p=0.719), residual aneurysm (p=0.719), functional outcome (p=0.137). There is no significant difference between both group in term of intraoperative and post op complication.

Conclusion: Supraorbital group has better cosmetic outcome and less operating time compared to pterional group.

Poster Presentations: Basic Sciences

PB01

TaqMan® SNP genotyping assay: an effective SNP genotyping platform

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Introduction: Single nucleotide polymorphisms (SNPs) are common DNA sequence variations that have been contributory in elucidating genetic basis of common and complex diseases. High-throughput methods for SNPs genotyping are necessary to perform large-scale association studies. The TaqMan® SNP Genotyping Assay is a single-tube PCR assay that enables SNPs genotyping within a fraction of time and is highly accurate and precise.

Objective: To genotype *MYH3* SNPs using TaqMan® SNP Genotyping Assay and to evaluate the effectiveness of this method as a platform for SNPs genotyping.

Methodology: Genomic DNA was isolated from 1 ml of peripheral blood following the manufacturer's protocol using the GeneAll DNA extraction kit (GeneAll, Korea). SNPs genotyping assays were carried out with made-to-order TaqMan® SNP Genotyping Assay **(**Thermo Fisher Scientific, USA) in 73 healthy controls. Briefly, 2 µl of gDNA scaled to a total volume of 10 µL in 96 well PCR plate was amplified using StepOnePlus™ Real-Time PCR System (Applied Biosystems®, USA) with cycling conditions of; enzyme activation: 95°C for 20 sec, denaturation: 95°C for 3 sec, extension: 60°C for 30 sec for a total of 40 cycles. Genotype calls were assessed with TaqMan® Genotyper™ Software (Applied Biosystems®, USA).

Results: rs17817203, rs2285479, rs1981514, rs34393601, rs2239936, rs2285474, rs2285472, rs2285473 and rs2285477 were genotyped for each assay. The assay' pass rate for the genotyped SNPs were 100% and the average call rate for all SNPs were >99.90%.

Conclusion: TaqMan® SNP Genotyping Assay is a robust, accurate, time efficient and suitable method for performing association analyses.

PB02

The use of cola carbonated beverage in histopathology tissue processing

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Introduction: Calcified tissue and fat are two examples of tissue types that are difficult to process with the usual tissue processing techniques. These two tissues require extra steps in the process before they can be parafinised and sectioned. The conventional method uses 10% nitric acid as a decalcifier, whilst acetone to dissolve fat. These two agents are known to be hazardous to the health on recurrent exposure. Hence safer materials are explored.

Objective: To use an alternative agent such as cola carbonated beverage to decalcify and defat tissues.

Methodology: Vertebrae of a calf and human tibia bone were used for the decalcifying process. They were sliced into 2 pieces each of 5 mm thickness. They are submerged into 10% neutral buffered formalin for two days, followed by 10% nitric acid and cola beverage for 4 days, with solution changed daily. Human breast tissue was used for defat process. It was sliced into 2 pieces of 5 mm thickness and fixed for 24 hours in formalin. Subsequently, the breast tissues were immersed into acetone and cola beverage respectively. All tissues were then process accordingly using the usual method.

Results: Even though, the period required for the decalcification and defat processes are similar, but tissue sectioning process and the H&E stainings on the tissues are more efficient, than those processed using the conventional methods.

Conclusion: It is possible that, cola carbonated beverage may replace nitric acid and acetone as decalcifying and defat agents because of its safety as well as cost effectiveness.

PB03

Liquid-based cervical cytology smear: the balance of cost effectiveness and performance of Biocytech Path Tezt ® versus Hologic Thin Prep ® Based Processor

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Introduction: Liquid based cytology has been widely used to replace conventional smear as it is more convenience for screening and further testing purposes. Both Thin Prep and Path Tezt use a filtration technology in sample processing procedures for liquid based cytology.

Objective: To compare the quality of cervical cytological smear results produced by Path Tezt Liquid Based Processor with a locally produced and more cost effective Thin Prep Processor.

Methodology: Cervical samples were collected at Obstetrics and Gynaecology clinic, Hospital Universiti Sains Malaysia for a Pap test using convenience sampling. Two samples from each subject were preserved in both Path Tezt and Thin Prep preservative solutions. The slides produced from the two different liquid based processors were compared in terms of percentage of the circle covered by epithelial cells, cells distributions, sensitivity and specificity.

Results: The age-range was 21-83 years (mean age 44.1+/- and medial age of 43) from a total of 174 Pap smear subjects. The quality of smears produced by Path Tezt and Thin Prep achieved 89.08% and 92.53% cells adequacy respectively. Path Tezt showed 36.21% (63/174) of homogenous cell distribution, compared to 37.93% (66/174) in Thin Prep. All Path Tezt samples were sensitive to any abnormal cells and have 100% specificity. The discordant rate was 5.74% (10/174) due to inadequate samples.

Conclusion: Although Path Tezt Liquid Based Processor is still new in the cytology industry but the smears performance were found to be comparable, cost effective and revealed almost similar result as Thin Prep Liquid Based Processor.

PB04

A parametric study of ultrasound beam profiles and image quality for linear array transducer

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Introduction: Ultrasound imaging is a popular tool for medical imaging modalities as it uses non-ionizing radiation, non-invasive procedure, provide real-time imaging and cost-effective compared to other modalities. However, ultrasound imaging produces a poor spatial resolution and contrast images that can lead to misdiagnosis.

Objective: This study is done to investigate the influence of ultrasound transducer parameters on beam pattern and image quality.

Methodology: Spatial resolution and contrast were evaluated for ultrasound beam profiles, while image quality are showed by using point targets and cyst phantoms. All simulations were done by using FIELD II simulation program in MATLAB. The parameters studied were number of elements, central frequency and apodization weighting.

Results: Results shows that if the number of elements and central frequency are increased, the main lobe beam width is decreased, thus enhanced the image spatial resolution. However, greater central frequency will reduce the image contrast, due to the side lobes. Apodization weighting is applied to remove the side lobes, thus enhanced the image contrast but slightly reduced the image resolution.

Conclusion: The optimal parameters that produced the best image quality are 64 number of elements, 7.5MHz central frequency and Hanning apodization weighting. Simulation studies provide a better understanding in improving the image and quality of ultrasound beam characteristics.

PB05

MS-MLPA as a potential alternative method for 15q11-q13 microdeletion syndrome diagnosis

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Introduction: Prader-Willi syndrome (PWS) and Angelman syndrome (AS) are clinically distinct complex disorders mapped to chromosome 15q11-q13. Approximately 90% of PWS and 80% of AS cases have deletions in chromosome 15q11-q13, uniparental disomy (UPD) for chromosome 15, imprinting center defects affecting gene expression of this gene. Both disorders are characterized at the molecular level by abnormal methylation of imprinted region at 15q11-q13. Fluorescence in situ hybridization (FISH) technique using PWS/AS probe which is employed for confirmatory diagnosis of 15q11-q13 deletion cannot detect cases resulting from UPD or imprinting centre defects. As the genetics of PWS/AS are so complicated, it is ideal to take more than one test to ascertain whether someone has PWS/AS and what form of it they have.

Objective: To verify the sensitivity and reliability of Methylation Specific–Multiplex Ligation-dependent Probe Amplification (MS-MLPA) as a reliable method for genetic diagnosis for PWS/AS.

Methodology: FISH analysis was carried out using PWS/AS probe (SNRPN/IC) on metaphase chromosomes and interphase nuclei prepared from peripheral blood cultures. MS-MLPA was carried out employing SALSA MS-MLPA probemix ME028-B2 Prader-Willi/Angelman on DNA extracted from the blood samples.

Results: Three samples were analysed employing both FISH and MS-MLPA technique. One sample showed deletion of SNRPN gene in both MS-MLPA and FISH analysis. The other two samples did not show deletion by FISH and MS-MLPA analysis.

Conclusion: MS-MLPA is an accurate, reliable, cost effective and rapid method that can be used as an alternative technique in the screening for individuals with specific features of PWS/AS.

PB06

Complex chromosome rearrangements t(2;14;5)(q22;q21;q13) in a child born with syndromic features

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Introduction: Although common in malignancies, balanced complex translocations are rare events in general population. Balanced complex translocations do not generally reflect any phenotypical evidence, but sometimes may be associated with developmental delay, mental retardation and congenital anomalies. We report one case presented with abnormal features who showed complex chromosome translocation involving chromosome 2, 5 and 14.

Case report: A 3-year-old Malay boy, who presented with microcephaly, hypertelorism, bulbous nose and small for age. Cytogenetic analysis was carried out at Human Genome Centre. Karyotype analysis performed on 31 GTG banded metaphases showed 46, XY, t(2;5;14) (q22;p13;q21) karyotype pattern, involving three way translocations. This abnormal karyotype showed that the segment on chromosome 2 distal to 2q22 has been translocated onto chromosome 14 at band 14q21, the segments on chromosome 14 distal to 14q21 has been translocated onto chromosome 5 at 5p13, and the segment of chromosome 5 distal to 15p13 has been translocated onto chromosome 2 at 2q22. These three way translocations have been confirmed by Fluorescence in-situ Hybridization (FISH) technique using Whole Chromosome Painting (WCP) for chromosome 2, 5 and 14.

Conclusion: Balanced chromosomal translocations are usually harmless rearrangement in carriers. Abnormal phenotypes observed in individuals who harbour apparently balanced chromosome rearrangements are thought to result from disruption of a gene(s) at chromosome breakpoint(s), cryptic genomic imbalance undetected by routine karyotyping or position effect. Parental karyotyping was advised to determine whether the translocation is inherited or *de-novo*.

PB07

Characteristic of B^0 and B^+ in transfusion dependent Hbe/β-thalassemia patients

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Introduction: Hbe/β-thalassemia is a single gene disorder with variable clinical presentations varying from mild to major form of thalassemia. Microcytosis is a common finding in all types of thalassemia. But, still the hematological parameters vary between different types depending on the presentation. In this study our concern is how genotype can affect the laboratory parameters.

Objective: To analyze the hematological parameters and serum ferritin level among Hbe/β-thalassemia carrying different genotype.

Methods: A total of 60 blood samples were collected from transfusion dependent Hbe/β-thalassemia patients. DNA was extracted for multiplex amplification refractory mutation system (MARMS). Laboratory data including Hb level, Hb analysis and serum ferritin had been retrieved from patients' folders.

Results: Among 60 samples analyzed 41 (68.3%) showed Hbe/β^0-thalassemia with CD26/CD41/42 and CD26/IVS1-1(G-T) mutations while 19 (31.7%) of Hbe/β^+-thalassemia showed CD26/IVS1-5 mutation. Thirty-nine (95.1%) cases showed Hb level more than 5 (Hb >5g/dL) in B^0 phenotype while 18 (94.7%) cases showed Hb level more than 5 (Hb >5g/dL) in B^+ phenotype. Hb analysis and serum ferritin level results showed that there was no significant difference as the value obtained in both is more or less the same.

Conclusion: Both mutations are common types seen in transfusion dependent Hbe/β-thalassemia patients. Despite that CD41/42 and IVS1-5 mutations respectively are B^0 and B^+ types of mutations; there is no significant difference between these mutations based on hematological parameters. However, heterogeneity in terms of clinical manifestation was seen. Further studies are required to investigate the modifiers contributing to the disease clinical heterogeneity.

PB08

Sex chromosome discordant chimerism with trisomy 18 and normal karyotypes (47,XY,+18/46,XX): a rare case report

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Introduction: Chimerism is a genetic disorder in which an individual has two distinct cell populations within the body and with 46,XX/46,XY karyotypes. Chimerism has also been reported in cases in which a normal lineage coexists with an abnormal one, each causing a distinct sex chromosome complement. Few chimeras with trisomy 21 and normal karyotype chimeras have been reported. Here, we report one rare case of whole-body chimerism with trisomy 18 and normal karyotype.

Case report: Blood sample of a day old baby boy, youngest among 7 siblings, born to Malay parents (both 40 years old) was sent to Human Genome Centre, USM for cytogenetic analysis to rule out trisomy 18. His clinical features included wide anterior fontanelle, low set ears, underdeveloped left ear, triangular chin, flat occiput, trisomy finger bilaterally, jelly umbilical cord, bilateral rocker bottom feet and presence of male genitalia. Chromosome analysis carried out employing standard cytogenetic procedures on 80 GTG banded metaphases revealed 47,XY,+18[72]/46,XX[8] abnormal karyotype with two distinct genetic cell lines XY and XX in 90:10 ratio. Patient passed away after few days of life.

Conclusion: The present case harbored trisomy 18 in the XY lineage and normal karyotype in XX lineage. The case was reported as ovotesticular disorder of sex development with chimerism involving male Edwards syndrome and normal female karyotypes. To the best of available knowledge, sex chromosome discordant chimerism with abnormal male trisomy 18 and normal female karyotype have not been reported so far, and this case is reported for its rarity and as the first report.

PB09

Association of Xmn1 -158 γG variant with disease severity and HbF levels in HbE/β thalassemia patients

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Introduction: The clinical phenotypes of HbE/β thalassemia patients are very diverse. The secondary ameliorating factor that showed association in milder disease is the increased HbF level due to the presence of a genetic variance called Xmn1-Gγ polymorphism. The presence of Xmn1-Gγ polymorphism under haemopoietic stress in thalassemia is correlated with an increased expression of Gγ-globin gene leading to higher HbF levels.

Objectives: To determine the frequency of Xmn1-Gγ polymorphism and its association with disease severity in transfusion dependent HbE/β thalassemia patients.

Methodology: A total of 58 blood samples were randomly collected from transfusion dependent HbE/β thalassemia patients from various district hospitals of Peninsular Malaysia. Genotyping was conducted with Multiplex Amplification Refractory Mutation System (MARMS) PCR. Patients were classified into mild, moderate and severe according to a validated scoring system. Xmn1-Gγ polymorphism was detected by PCR-RFLP. DNA sequencing was done to confirm the results.

Results: The genotype observed in the patients was homozygosity Xmn1 site (+/+) and heterozygosity Xmn1 (+/-) which were 35(60.3%) and (17)29.3 % respectively. 6(10.3%) showed Xmn1 site (-/-). No significant correlation was observed between polymorphism of Xmn1 -158 -Gγ γg with severity of disease and HbF levels which could be due to the small sample size.

Conclusion: To our knowledge this is the first reported molecular basis of Gγ Xmn1 polymorphism and its association with clinical severity among transfusion dependent HbE/β thalassemia patients in Peninsular Malaysia. However, further analysis is needed to be carried out in more patients.

PB10

Nanohybrid of dental composite reinforced by zirconia: a pilot study on hardness

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Introduction: School of Dental Sciences, USM has developed nanohybrid dental composite using silica purified from rice husk as filler. At present, the mechanical properties of this product such as hardness and flexural strength are not at par with the existing commercial product. Zirconia has been used to reinforce nanosilica particle to achieve the superior mechanical strength dental composite.

Objective: To evaluate the effect of zirconia on hardness of the experimental nanohybrid dental composite.

Methodology: The experimental nanohybrid composites were fabricated with a filler/matrix ratio of 50/50. The resin matrix was a copolymer of 60% Bis-GMA and 40% TEDGMA, as well as additional 0.5 wt% Camphorquinone (CQ) and 0.5 wt% dimethylamino ethyl methacrylate (DMAEMA). The filler was composed of rice husk purified nanosilica reinforced with zirconia (ZrO_2) of 1 wt% (Group A), 2 wt% (Group B) and 3 wt% (Group C). Ten disc specimens (5 mm in diameter, 2 mm thick) were prepared from each group, and tested for Vicker's hardness. Data were analyzed using one-way analysis of variance (ANOVA) and Tukey test ($p=0.05$).

Results: We observed a significant increase in Vicker's hardness number (VHN) values with increased percentage of zirconia reinforcement from 1 wt% to 3 wt%, which were 34.9 (2.1), 38.8 (2.7), and 39.7 (2.0) respectively.

Conclusion: This data gave us an initial clue of the potential role of zirconia on mechanical properties of our dental composite resins, especially the hardness.

PB11

Coumarin derivative incorporation into glass ionomer cement: its antibacterial properties

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Introduction: Incorporating glass ionomer cement (GIC) with antibacterial agent is an approach to enhance its antibacterial properties in reducing dental caries. In this study, an antibacterial agent of coumarin derivative, hydrazinyl thiosemicarbazide, was incorporated into GIC to improve its antibacterial properties.

Objective: To study the antibacterial activity of the hydrazinyl thiosemicarbazide incorporation into GIC against cariogenic microorganism, *Streptococcus sanguinis.*

Methodology: Two commercial GIC were used in this study, Fuji II LC and Fuji VII (GC Tokyo, Japan). Hydrazinyl thiosemicarbazide was incorporated into both GIC at weight fractions of 1% and 2%. Pure Fuji II LC and Fuji VII were used as controls group. The antibacterial activity of all groups was assessed via agar well diffusion and macrodilution method against *Streptococcus sanguinis* (ATCC 10556). The inhibition zones and optical density (OD) of each group were measured after 24 hours incubation. All data were subjected to one-way analysis (ANOVA) with Bonferroni *post-hoc* at significant difference $p<0.05$.

Results: The antibacterial activity of the incorporated materials was dependent on the weight fraction of the hydrazinyl thiosemicarbazide added. Statistically, the inhibition zone of Fuji II LC at the weight fraction of 1% and 2% significantly increased while Fuji VII is insignificant compared to the control GIC. The OD values of bacteria growth for both Fuji II LC and Fuji VII showed better inhibition at both weight fractions.

Conclusion: These findings showed that the incorporation of hyrazinyl thiosemicarbazide in GIC effectively showed good antibacterial properties.

PB12

A preliminary study on the type of proteinuria in patient with chronic kidney disease (CKD) stage 2 in Hospital Universiti Sains Malaysia (HUSM)

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Introduction: Proteinuria is a sign of chronic kidney disease (CKD) which can occur as a result of disruptions of the glomerular, tubular dysfunction or both. It has been used as a predictor of progressive kidney failure in patients with type 2 diabetes.

Objective: To determine the type of proteinuria in patient with CKD stage 2.

Methods: This was a cross-sectional study of patient with CKD stage 2 based on estimated glomerular filtration rate (EGFR) with proteinuria in HUSM over a 6-month period in 2015. In this study, 24-hour urine protein samples were measured using a turbidimetric method on Olympus AU 680. The qualitative analysis for proteinuria typing was obtained by using Hydragel Urine Profile (immunofixation) on automated Sebia analyzer.

Results: A total of 28 eligible cases were included. The patients' mean (SD) age was 45 (14). The foremost attributable causes of proteinuria were hypertension (43%), multiple myeloma (21%) and autoimmune (14%). The median (IQR) value of urinary protein was 0.3 (1.34) g/24H. A mixed type pattern was found in 9 samples (32%) followed by glomerular pattern, 8 samples (29%). Overflow and tubular patterns were found in 7 (25%) and 4 (14%) samples respectively. The glomerular type has a higher median (IQR) value of urinary protein of 1.91(4.49) g/24H compared to other groups of proteinuria.

Conclusion: Proteinuria typing is important in the determination of the underlying renal pathology in patient with CKD stage 2. This useful information is also essential for prompt treatment as anti-proteinuria therapy may reduce the progression of CKD.

PB13

Geospatial dynamics of tuberculosis risk transmission in the built environment of Shah Alam, Selangor

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Introduction: An appropriate understanding of a disease dynamic is an important knowledge to determine influential risk factors and accurate modelling in a particular area. Risk factors of built environment are theoretically related to the likelihood of tuberculosis (TB) transmission such as urban land use, housing and industrial surrounding. However, in reality, this bioecological transmission is a complex process and therefore needs empirical evidence from multidisciplinary fields and localised perspectives.

Objective: To examine the causal relationship between the disease and the selected built environments using a geospatial approach in the central areas of Shah Alam, Selangor.

Methodology: A geographical information system (GIS)-multicriteria analysis (MCA) was used to compute the weight value for each point of notified TB cases in 2014, and then the points were interpolated deterministically using Inverse Distance Weighted (IDW) technique to create the surface prediction of TB risk mapping.

Results: The 34.59 per cent of the areas were potentially infected conditions, especially in some central zone of the areas. Interestingly, these exposure areas were also closely located to the industrial zones and predominantly concentrated by the current cases in 2015. The infection intensity of the disease would increase to the neighbouring areas because of the contagious environment and high-risk group mobility.

Conclusion: Industrial workplace and urban housing segregation are possible risk factors for TB transmission in the area and hence, the state authorities are suggested to evaluate critically the spatial effects of the factors for a sustainable physical planning and tuberculosis case management.

Poster Presentations: Clinical Sciences

PC01

Incidence and associated factors of ventilator associated pneumonia in the intensive care unit, Hospital Universiti Sains Malaysia

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Introduction: Ventilator-associated pneumonia (VAP) is pneumonia that develops 48 hours or longer after mechanical ventilation is given by means of endotracheal tube (ETT) or tracheostomy.

Objective: To describe the incidence, mortality, survival rate, associated factors and characteristics of VAP patients from all patients admitted to Intensive Care Unit of HUSM in 2013. This study also determines type of microorganism findings from ETT sample.

Methodology: A cross-sectional study was conducted on 297 medical records and ETT results of adult age ≥18 year-old who were admitted to ICU in 2013. Based on the records, patients were categorized into "VAP patient" and "Non-VAP patient". SPSS version 22 was used to analyses the results. Independent's *t* test was used to compare the numerical variables, while chi-square test or Fisher's exact test was used to compare the categorical variables for the VAP group and non-VAP group.

Result: A total of 297 medical records were traced for this study. The incidence of VAP for ICU patient was 34.68%. The mortality and survival rate of VAP patient were 43.69% and 56.31% respectively. VAP is significantly associated with several factors including age, underlying diseases, duration of mechanical ventilation, causes of intubation, procedures that underwent by VAP patients. The most common microorganism is Acinetobacter sp. The significant associated factors of VAP were age, patient with respiratory failure, surgical history, tracheostomy, bronchoscopy, tube thoracoscopy, enteral feeding and reintubation.

Conclusion: The incidence of VAP in ICU HUSM in 2013 was considerably high, as well as mortality rate.

PC02

Rare and atypical sinonasal mass-cystic schwannoma of the maxillary sinus: a case report

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Introduction: Although 25-45% of all schwannomas are reported to occur in the head and neck region, nasal cavity and paranasal sinus involvement is rare.

Case report: Herein we present a cystic schwannoma of the maxillary sinus of a 48-year-old, otherwise healthy female patient. The patient presented with progressive left cheek numbness and swelling for 6 months. Cone beam CT revealed erosion of the posterior wall of the left maxillary sinus with thickened antral lining. CT contrast of the paranasal sinus shows erosion of the posterior wall of the left maxillary sinus by an ill-defined heterogenous mass. The lesion causes bowing and thining of the left posteromedial wall of the maxillary sinus and left anterolateral wall of the sphenoid sinus as well. T2 weighted magnetic resonance (MR) images showed hyperintense, well demarcated and lobulated cystic mass of the left posterior wall of the maxillary sinus. The lesion revealed low to intermediate signal intensities on T1 weighted MR images. After Gd-DTPA injection, the mass demonstrated heterogeneous, moderate enhancement and the cystic areas were not enhanced. This was followed by incisional biopsy of left maxillary sinus and HPE revealed ancient schwannoma of the left maxillary sinus. Patient is planned for surgery.

Conclusions: Radiological features of a very rare sinonasal mass on cross-sectional images were presented; enabling the radiologists to discuss the differentials, to correlate them histopathologically and to familiarize the atypical radiological patterns in order to make more confident and prompt diagnosis.

PC03

Asymptomatic supracardiac total anomalous pulmonary venous return (TAPVR) in the adult patient: a case report

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Introduction: Total anomalous pulmonary venous return (TAPVR) is congenital heart defect characterized by the failure of the four pulmonary veins make a normal connection to the left atrium causing persistent communication between the pulmonary veins and systemic veins. The occurrence is 0.05 to 0.09 per 1000 live births and accounting for approximately 1.5% of children with congenital heart disease. TAPVR in a new-born may present with varying symptoms including cyanosis, dyspnoea, hypotension and acidosis. Therefore, TAPVR survival into adulthood is extremely rare.

Case report: We are reporting a 33-year-old woman who was noted to have heart murmur during regular antenatal check-up. Echocardiogram revealed large atrial septal defect. Chest radiograph shows classical "Snowman appearance" of supracardiac TAPVR. CT cardiac shows anomalous vertical vein draining all the pulmonary veins into the superior vena cava via innominate vein. Her pregnancy was spontaneously miscarried at 10 weeks period of amenorrhea. She is planned for her surgery.

Conclusions: Radiological features of a rare TAPVR on radiological findings were presented; enabling the radiologists to discuss the differentials and to familiarize the atypical radiological patterns in order to make more confident and prompt diagnosis.

PC04

Factors influencing outcome of strabismus surgery in Hospital Universiti Sains Malaysia (USM): a retrospective record review

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Introduction: Strabismus has psychosocial and functional impact on patients' quality of life. Therefore surgery is necessary to improve the eye alignment and cosmetic appearance. However, strabismus surgery is often a challenging skill to achieve optimal post-operative outcome due to variable factors.

Objective: To determine factors associated with a successful outcome of strabismus surgery.

Methodology: This was a retrospective, cross-sectional study of 105 patients with strabismus who were operated upon in the eye clinic of HUSM Kelantan from 2011 to 2015. Data collected from case files included patient demographics, type of deviation, preoperative and postoperative magnitude of deviation, type of surgery, presence of refractive errors as well as presence of amblyopia. The outcome was magnitude of eye deviation at 6 weeks and 6 months after strabismus surgery. Success was defined as a postoperative deviation of less than 10 prism dioptres. Data was analysed using Pearson's chi-squared test.

Results: Age at surgery was significantly associated with a successful outcome at 6 weeks post-operation (X^2 = 23.62, p= 0.02). Amblyopia and refractive error (spherical equivalent) were significantly associated with a successful outcome at 6 months post operation (X^2 = 106.34, p<0.001 and X^2 = 156.60, p=0.02).

Conclusion: Age at surgery, refractive error and amblyopia were associated with a successful outcome of strabismus surgery. Therefore, early referral is necessary; refractive error and amblyopia should be addressed aggressively before the surgery.

PC05

A pattern of decompression illness among scuba divers treated with hyperbaric oxygen therapy at a military recompression facility in peninsular Malaysia

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Introduction: Diving related illness is a public health concern, as there is an increasing number of divers worldwide. This paper describes the pattern of decompression illness treated in a military hospital-based recompression chamber facility in Peninsular Malaysia from year 2000 until 2010.

Objective: To determine the pattern of decompression illness patients treated with Hyperbaric Oxygen Therapy (HBOT) in Hospital Angkatan Tentera (HAT) Lumut, Perak

Methodology: A retrospective descriptive study was carried out to utilize secondary data from HAT Lumut from 1st January 2000 to 31st December 2010. A total of 96 cases were included in this study with an average of 10 cases per year.

Results: Most of the divers were recreational divers (43.0%), non-smokers (56.3%), no previous medical illness (85.4%), dived with compressed air (78.0%), had less than 5 years diving experience (56.3%), non-instructor (75.0%), and had body mass index between 18.5 to 24.9 kg/m^2 (59.4%). Quarter of the divers dived to less than 10 meters depth, 35.4% went for a single dive and 71.9% performed safety stops. Majority of the patients had symptoms started within 12 hours after surfacing (85.4%) and had neurological manifestation (61.5%). Only 16.7% of the time, HBOT commenced within 6 hours from the onset of symptoms with 93.8% from this group had complete recovery. Overall, 76.0% of patients had full recovery.

Conclusion: Medical surveillance as well as legislations related to diving in Malaysia are essential to reduce SCUBA mortality and morbidity of DCI in the future.

PC06

Outcome of acute myeloid leukaemia with normal karyotype in Malay patients

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Introduction: Acute myeloid leukaemia (AML) patients with a normal karyotype carry an intermediate prognosis. This group of patients is characterized by a notable heterogeneity in the clinical response to treatment. Some of them showed good response to treatment while others responded poorly.

Objective: To determine the survival rate of AML patients with normal karyotype.

Methodology: Record of 20 patients with normal karyotype AML were retrieved from Haematology Patient Management Information System (HPIS) Hospital USM from January 2011 until July 2016. Clinical, laboratory and survival data were evaluated.

Results: The mean age of all patients was 34.1 ± 18.49 years old. Out of 20 patients, 55% survived more than a year with mean survival rate was 1105.82 ± 513.92 days. Mean total white blood cell counts were lower in those survived more than a year and marrow status in all of these patients were in remission after first induction.

Discussion: AML with normal karyotype was classified as intermediate risk. The one year survival rate of AML patients with normal karyotype was 55% comparable with other studies. Younger age and lower total white blood cell counts were both contributing factors to better survival rates in these patients.

Conclusion: A preliminary study, more analysis is required to determine the effect of clinical factors on survival rate. Further studies on elucidating the genetic make-up of these patients are in progress.

PC07

Adherence to initial resuscitation bundle for severe sepsis/septic shock in Hospital Universiti Sains Malaysia

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Introduction: Initial Resuscitation Bundle (IRB) treatment protocol reduces mortality in patients with severe sepsis / septic shock. It is a goal-directed therapy to be completed within first six hours of treatment.

Objective: This study evaluated the adherence to IRB and its associated factors in patients with severe sepsis/septic shock in Emergency Department, Hospital Universiti Sains Malaysia (EDHUSM).

Methodology: This was a prospective cohort study of 102 patients presenting to EDHUSM from 15th November 2014 to 15th May 2015. All eligible patients how were in severe sepsis / septic shock that triggers the initiation of the IRB were included. Completion of IRB protocol and patient outcome were obtained from patient's record.

Results: The results from 102 patients showed a total of 27 patients had completed the Initial Resuscitation Bundle which reflecting the adherence to the Bundle. The three types of sepsis when the patients presented to EDHUSM were identified to be the patient-specific factors associated with adherence to the bundle. Those factors were sepsis-induced tissue hypoperfusion, severe sepsis and septic shock. The patient with sepsis-induced tissue hypoperfusion had the most significant association with adherence to the bundle after adjusted with other types of sepsis and gender. This group of patient had 4.80 times higher chance for adherence to the bundle as compared to patient who were not in sepsis-induced tissue hypoperfusion state (p= 0.010).

Conclusions: Adherence to the IRB at EDHUSM was only 26.5%. Sepsis-induced tissue hypoperfusion found to be the most significant associated factor of adherence to IRB.

PC08

Transducer-like enhancer of split-1 (TLE-1) immunoreactivity in synovial sarcoma and its association with morphology

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Introduction: Synovial sarcoma (SS) is a malignant soft tissue tumour of uncertain histogenesis which is defined by the translocation t(X;18) that produces the fusion oncogenes SYT-SSX. However, the emergence of TLE-1 as a new immunohistochemical (IHC) marker in diagnosing SS especially in the limited molecular facilities has offered an alternative to the pathologists in differentiating SS from other histologic mimics.

Objective: To study the expression of TLE-1 immunohistochemistry in SS and its mimickers.

Methodology: A total of 33 histopathologically diagnosed as SS and its differentials were subjected to TLE-1 IHC staining and graded from 0 to 3+. The histomorphological features and other available IHC stains were examined microscopically.

Results: Out of 33 cases,TLE-1 was expressed in 22/26 cases (84.6%) of SS which were graded as 1+ (4/26), 2+(7/26) and 3+(11/26) .Two out of 7 histologic mimickers (28.6%) were positive for TLE-1(grade 2+). Among other IHC markers, only EMA showed significant positivity in synovial sarcoma. All cases (100%) were negative for CD34. The consistent histo-morphological features observed in this study included mild nuclear pleomorphism with blue spindled and fusiform cells, alternating tumour cellularity, and thick ropy stromal collagen.

Conclusion: TLE-1 was found to be immunoreactive in both SS and its mimickers. However, most of the SS cases were strongly positive (grade 3+) as compared to its mimickers. Though it is not a stand-alone marker, it could still be served as an added diagnostic value with combination of certain morphological features and other IHC markers namely EMA and CD34.

PC09

Timely combination therapy of skeletal and dental Class II malocclusion with TSAD and mesially impacted mandibular second molars: a case report

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Introduction: Early intervention of maxillary constriction with myofunctional appliance can eliminate the need for tedious and expensive treatment of surgical expansion of maxillary segment. Combination therapy is a mix of orthopedic and fixed appliances with minimum pre-requisite patient compliance in a single-stage towards more predictable results. Studies found comparable treatment outcomes of non-surgical to surgical cases, only if the former is carried out promptly.

Case report: A 14-year-old Chinese boy presented with skeletal Class II with incompetent lips, severe Class II malocclusion and severe crowding complicated with both sides mesio-angular impacted of mandibular second molars. Growth modification using functional appliance for skeletal Class II correction with maxillary arch expansion and correction of mandibular plane angle by intrusion of maxillary molars. Extraction of lower first premolars and second molars on both sides was carried out in conjunction with fixed orthodontic alignment and to facilitate of spontaneous eruption of lower third molar. Midline correction was followed by space closure, finishing and detailing.Alignment of upper arch after maxillary expansion done without any extraction. Anterior maxillary was retracted using Temporary Skeletal Anchorage Devices (TSAD). In lower arch first molars were mesially protracted by class II elastics. Third molars spontaneously erupted in the extraction space of second molar. Midline corrected with good facial profile and competent lips.

Conclusion: Timely execution of expert treatment plan can bring cost effective and time saving results with minimum loss. By proper counseling, patient compliance and confidence can be boosted which could have a positive effect on the treatment outcome.

PC10

Refeeding syndrome: a dangerous encounter in starvation

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Introduction: Refeeding syndrome is a syndrome characterized by clinical findings with biochemical abnormalities occur as a result of reinstitution of nutrition to patient who are starved, severely malnourished or metabolically stressed. It is associated with significant morbidity and mortality. Although the hallmark of biochemical abnormality is hypophosphatemia, other metabolic consequences should also be considered. Treatment is aimed at correcting biochemical deficiencies and cautious in calculating calories requirement.

Case report: We present a case of 35-year-old lady who had exploratory laparotomy with total abdominal hysterectomy with bilateral salphingo-oopherectomy and omentectomy performed. Patient was referred to surgical team for prolonged ileus with electrolyte imbalance. She was kept nil by mouth for 2 weeks duration without any nutritional support. Total parenteral nutrition with 20kcal/kg was started and was stepped up to 100% calories intake. Daily biochemical results noted persistent hypokalaemia, hypophosphataemia and hypomagnesemia despite daily correction. Total calorie was recalculated and commencement of low calorie intake was initiated with proper correction and electrolytes monitoring. Improvement in electrolyte parameters was achieved after few days.

Conclusion: Refeeding syndrome remains an important cause of morbidity and mortality in severe malnourished patients. Reinstitution of nutrition should be carefully calculated and delivered to avoid this. The key treatment is slow introduction of adequate energy requirement with correction of life threatening laboratory abnormalities.

PC11

Tualang honey improves background parenchymal enhancement of breast tissue among breast cancer patient treated with anastrozole

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Introduction: Adjuvant treatments with anastrozole or letrozole are not only associated with side effects but also cause a decrease in background parenchymal enhancement (BPE) among postmenopausal breast cancer survivors. Tualang honey (TH) is reported to ameliorate the toxic effects of carcinogens.

Objective: To investigate if TH influences BPE during breast magnetic resonance imaging (MRI) in postmenopausal breast cancer patients treated with anastrozole.

Methodology: Patients (n=22) were from Oncology Clinic, Hospital USM. They were divided into two groups: A control (1 mg/day anastrozole) and the intervention groups (1 mg/day anastrozole + 20 mg/day TH). Postmenopausal women with unilateral breast cancer stages I, II, or III, oestrogen receptor (ER) positive and/or progesterone receptor (PgR) positive who received anastrozole as treatment for or less than a year were included. The BPE of contralateral breast before and 6 months after treatment was compared side by side using a sign test.

Results: A decrease in BPE was noted in 10% of women (p=0.317) on anastrozole treatment, resulted in a category change of BPE from moderate to mild. TH supplementation cause a decrease in BPE in 42% (p=0.034) of the patients. BPE decreased by one category of assessment in four women and by two categories of assessment in one woman.

Conclusions: Tualang honey improves the BPE of breast tissue among breast cancer patient treated with anastrozole which its medicinal values.

PC12

Pain score measurement at triage of Emergency Department in Hospital Universiti Sains Malaysia (HUSM)

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Introduction: Documentation of pain score (PS) is important at the triage level of an Emergency Department (ED) to ensure early adequate pain control at the appropriate treatment area in a timely manner.

Objective: To determine the level of adherence to PS documentation and its associated factors at the triage of ED in Hospital Universiti Sains Malaysia (HUSM).

Methodology: This was a cross sectional study of a six months period from July 2014 until December 2014. A total of 334 patients presented with pain at the triage were studied. Information extracted from triage documentation were patient demographics, staff designation, shift of the day, triage codes, patient vital signs and body sites of pain.

Results: Only 94 (28.1%) patients had their PS documented. Nurses were 4 times more likely to adhere to PS documentation (95% CI: 2.11, 7.03, p<0.001). When number of patient increased by 1, triage staffs had 1 time less likely to document PS (95% CI: 0.96, 0.99, p<0.001). When systolic BP of patient increased by 1mm/Hg, PS had about 1 time less likely to be documented (95% CI: 0.976, 0.99 p=0.004). PS of the abdomen (95% CI: 2.17, 8.44, p<0.001) and back (95% CI: 1.43, 9.71, p-value = 0.007) pain has 4 times more likely compared to other body sites to be measured.

Conclusion: There was poor adherence to triage PS documentation at ED HUSM. Factors affecting the adherence included staff designation, number of patients per shift, SBP, and pain body sites.

PC13

The association between rs11707125 and rs1568911 with cardiovascular disease on transfusion dependent HbE/Beta thalassemia patient in East Coast Malaysia

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Introduction: Thalassemia is monogenic hematological disease. Hemoglobin E-beta thalassemia (Hb E/β-thalassemia), is a compound heterozygous mutation of the beta globin gene. About 1.42 million single nucleotide polymorphisms (SNPs) distributed throughout the genome. In Genome Wide Association Studies (GWAS), hundreds and thousands SNPs tested for association with diseases.

Objective: To determine the association of the rs 11707125 and rs 1568911 with transfusion dependent HbE/β-thalassemia patients.

Methodology: Forty HbE/β-thalassemia patients were recruited in this study. Six ml of the blood was withdrawn from each subject. DNA was extracted and 50ng/µl was used for SNPs genotyping using Affymetrix microarray SNP 6. Data analysis was carried out using Affymetrix Genotyping Console, PLINK 1.07 and SNP Nexus software.

Results: The preliminary result showed almost all transfusion dependent HbE/β-thalassemia patients were exhibited with rs11707125 and rs1568911 located at chromosome 3 and chromosome 7 respectively. Only one patient did not have rs1568911. Both SNPs rs11707125 and rs1568911 were associated with cardiovascular disease.

Conclusion: We postulate both rs11707125 and rs1568911 have important role as tertiary modifier that contributed to cardiac complication. Further studies are on-going to obtain more data on these SNPs and other genetic determinants in Malay HbE/beta thalassemia patient. Because of cardiovascular disease is important cause of mortality and morbidity in thalassemia patient, the assessment of cardiovascular must be done annually to prevent its complication.

PC14

Fetal biometry assessment of biparietal diameter for Saudi Arabia population and comparison with other countries

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Introduction: Fetal biometry assessment has been known as an important method in determining the fetal growth in order to estimate the gestational age (GA) and fetus weight. It also plays an important role in predicting the intrauterine growth retardation risk, particularly in high risk case and to detect any fetal abnormality.

Objective: To develop a new reference range of biparietal diameter (BPD) based on Saudi Arabia population.

Methodology: A number of 2075 pregnant women who attended antenatal check up in 2013-2015 at Department of Obstetrics and Gynecology, Hospital Maternity and Children of Dammam, Saudi Arabia, were involved in this study. The data were recorded from 12^{th} to 40^{th} weeks of GA. The BPD was measured using Sony Corporation 1-7-1 Konan Minator-K.

Results: Higher BPD growth rate was found in second trimester (12^{th} to 25^{th} weeks of GA) with 2.90 mm/week compared to third trimester (26^{th} to 40^{th} weeks of GA) with only 1.68 mm/week; proved rapid growth of fetus head in second trimester. Further analysis on maternal age, number of gravid and gender of fetus were found no significant impact on the BPD values ($p \geq 0.05$). The BPD value of this study shows no significant difference with the BPD values of USA, Norway, Australia, Zimbabwe, India, China and Malaysia.

Conclusion: This new BPD values are highly recommended to be used by the medical practitioner as the reference range of fetus biometry for Saudi Arabia population, in regards to provide a better healthcare and well being of the maternal and fetuses.

PC15

The prevalence of cardiovascular diseases among elderly Malays and Chinese in Kelantan

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Introduction: The prevalence of cardiovascular disease (CVD) is increasing among elder people in Malaysia and is known to be the first principal cause of death.

Objective: To determine the influence of factors of age, ethnicity, gender and body mass index (BMI) on parameters of blood pressure (BP), glucose (GL), total cholesterol (TC), haemoglobin (HB), and uric acid (UA) in blood, on elderly Malays and Chinese in Kelantan.

Methodology: A cross-sectional study was done in Kota Bharu, Kelantan, involving 315 respondents aged ≥50 years old, comprising 179 Malays and 136 Chinese (127 males and 188 females). The measurements were done by portable blood test equipment. The prevalence of hypertension (PHT), hyperglycaemia (PHG), hypercholesterolemia (PHC), anemia (PHA) and hyperuricemia (PHU) were assessed with the presence of the selected factors.

Results: The respondents aged ≥60 years old had higher PHT, PHU, PHG and PHA but lower PHC than the 50-59 year-old respondents. The Malay respondents had greater values for all these parameters compared to the Chinese. By gender, the female respondents only showed lower count in PHT than the males. Respondents with normal BMI had lower PHT, PHG and PHU, but higher PHC and PHA compared to the overweight/obese respondents. Significantly positive correlations (p<0.05) found were between GL and mean arterial pressure (MAP), GL and systolic BP, GL and UA, and, diastolic BP and HB. Negatively significant correlations (p<0.05) were seen between TC and HB, and, TC and UA.

Conclusion: Having an early indication about this study towards the respondents and community as a whole, and improving socioeconomic environment hinder the prevalence of cardiovascular diseases.

PC16

Morphometric analysis of the mandibular canal and its relationship with impacted mandibular third molar using cone beam computed tomography (CBCT)

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Introduction: The extraction of impacted mandibular third molars is the commonest dentoalveolar surgery with risk of several complications. Correct localization of mandibular canal is essential to avoid injuries to the inferior alveolar neurovascular bundle during oral surgical procedures.

Objective: To determine the linear dimension of the mandibular canal and its linear distance with impacted mandibular third molar using cone beam computed tomography (CBCT) in Malaysian population.

Methodology: CBCT images of 90 subjects aged 18 years and above were taken with Planmeca Promax 3D with standard exposure protocols. Images were reconstructed using Planmeca Romexis 2.9.2 software. The anatomical position of the mandibular canal in relation to the impacted mandibular third molar was morphometrically measured.

Results: Sixty percent (n=54) of the impacted mandibular third molars were left-sided and difference between sexes and sides of impaction was significant (p=0.010). The mean (SD) for vertical diameter of the canal proximal to the tooth was 2.9 mm (0.93 mm) while the linear distance between the canal and tooth was -0.7 mm (2.33 mm). The mean (SD) of the depth of impaction of the tooth in Malaysian population was 8.9 mm (4.51 mm). There was no statistical difference between sexes for these three measurements.

Conclusion: The mandibular canal should be considered during surgical removal of impacted mandibular third molar due to its close proximity. However, due to the variability of the depth of impaction, radiographic assessment preferably CBCT, should ideally be performed for every patient before surgical removal of impacted mandibular third molar.

Poster Presentations: Health Sciences

PH01

Development and psychometric evaluation of flood disaster management questionnaire (FloodDMQ-BM): exploratory factor analysis and item response theory analysis

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Introduction: There is no validated tool to measure the knowledge, attitude and practice of flood disaster management among healthcare providers involved in the response phase of a flood disaster in Malaysia.

Objectives: To develop and validate a questionnaire in Bahasa Malaysia (FloodDMQ-BM) to measure the level of knowledge, attitude and practice of flood disaster management among healthcare providers.

Methodology: The questionnaire was developed based on four domains: standard operating procedure, transportation, alert system and communication. Psychometric analyses were tested on healthcare providers involved in patient management during flood disaster in Kelantan. The hypothetical concept of the items in attitude and practice sections was assessed using Exploratory Factor Analysis (EFA) and internal consistency reliability. The knowledge section was analysed using 2-parameter logistic model of Item Response Theory.

Results: 36 items were generated for FloodDMQ-BM.For both the attitude and practice items, the EFA have good factor loading (>0.5) and satisfactory internal consistency of 0.925 and 0.935 respectively. The remaining items in the knowledge section have good marginal fit and adequate Root Mean Square Error of Approximation of 0.08. All the remaining items have good standardized loading (>0.3) and marginal reliability of 0.623.

Conclusion: The results suggested that the FloodDMQ-BM has valid and reliable psychometric properties.

PH02

Comparisons of bone speed of sound and physical fitness components between physically and non-physically active young Malays and Yunnan Chinese

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Introduction: To date, information on the comparison of bone health status and physical fitness components in Malays and Yunnan Chinese are limited.

Objective: To compare quantitative ultrasound (QUS) measurements of bone speed of sound (SOS) and T-score, back and leg strength, hand grip strength and explosive jump power between physically active and non-physically active young Malays and Yunnan Chinese.

Methodology: A total of 132 young males aged 18-25 years were recruited and assigned into four groups, i.e. non-physically active Malay (NPAM) (n=33), physically active Malay (PAM) (n=33), non-physically active Yunnan Chinese (NPAYC) (n=33), and physically active Yunnan Chinese (PAYC) (n=33) groups. Non-physically active participants were not involved in any competitive sports or exercised less than two times per week prior to the study period. Bone SOS and physical fitness components of the participants were measured.

Results: In non-physically active participants, there were statistically significant (p<0.05) higher values of tibia SOS and T-score in NPAM group compared to NPAYC group. PAM group exhibited statistically significant (p<0.05) higher back and leg strength compared to PAYC group. Both PAM and PAYC groups showed greater (p<0.05) hand grip strength in dominant hand compared to their non-active counterparts. PAYC have higher standing long jump and vertical jump power compared to PAM.

Conclusions: Bone health status in non-physically active young Malays and Yunnan Chinese were different. Additionally, muscular strength and power were different among physically active young Malays and Yunnan Chinese. These results indicated that bone health status and muscular fitness may be influenced by race and region.

PH03

Determination of optimum vitamin D level for bone health based on bone turn over markers among healthy adults in Kota Bahru

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Introduction: There is no optimum level or threshold that has been clearly established to define whether there is adequate storage of vitamin D in the body for general bone health.

Objective: To determine the optimum level of vitamin D for maintenance of healthy skeleton based on bone remodeling process.

Methodology: This is a cross sectional study involved healthy adult population in Kota Bharu, Malaysia, aged 18-50 years. Level of serum vitamin D 25(OH) D, serum parathyroid hormone (PTH), serum C-terminal telopeptide of type 1 collagen (*CTX*) and total Procollagen I Intact N-Terminal (P1NP) were measured among 120 (64 males, 56 females) healthy adults that had been randomly selected from 4 sub districts.

Results: The mean of vitamin D concentration in this study was 23.50 nmol/L and there was significant difference of vitamin D between gender (26.81±8.3nmol/L and 19.72±7.68 nmol/L males and females respectively). More than 50% of female subjects had vitamin D level less than 20nmol/L, while only 20.3% of male subjects had vitamin D below 20nmol/L. Based on LOESS plot, the serum CTX showed no increment at vitamin D level of 35nmol/L. Serum total P1NP was seen to be plateau when the vitamin D was around 20 nmol/L. Similarly, at 20 nmol/L there was a step decreased of PTH level.

Conclusion: The mean of vitamin D level among general healthy population in Kota Bharu was 23.50nmol/L. Based on bone turn over markers, the vitamin D level between 20 nmol/L to 35 nmol/L is considered sufficient to maintain healthy skeleton.

PH04

Standardized patients (SPs) used in communication skills assessment: are they authentic or artificial?

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Introduction: The standardized patients (SPs) are extensively used in medical curriculum throughout the world especially for assessing the physician-patient communication skills. Indeed the authenticity of the SPs role play is extremely important to ensure the students encounter with real experience and gain the meaningful and effective learning.

Objective: To evaluate the authenticity of the SPs used in the communication skills assessment.

Methodology: A cross-sectional study was conducted. The performance of 6 (six) SPs participated in communication skills assessment were video recorded. 58 students of the undergraduate medical programme from the pre-clinical and clinical phase participated as assessor reviewed the video and rated the SPs performances using a validated instrument.

Results: A total of 348 completed checklists were collected and analyzed. The findings showed that the group of SP performance was positively authentic. An average general mark was 6.9 (range 6.3 to 7.4) and average total items mean scores was 30.0. There was no significant difference in average total items mean scores between different groups of assessor (p>0.05).

Conclusion: The results of the study were important in view of feedback provision and training strategies.

PH05

The effect of Islamic mindfulness on nicotine withdrawal symptoms among Muslim men attending Klinik Rawatan Keluarga HUSM

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Introduction: Nicotine craving and withdrawal symptoms are associated with higher relapsed. Mindfulness is a mind-body approach that can help someone change the way he think about experiences. Study had shown mindfulness-based interventions significantly reduce nicotine withdrawal score. Al-Quran recitation has proven to reduce anxiety among athletes before tournament, reduces pulse rate and heart rate among patient awaiting cardiac operation.

Objectives: To compare the change in withdrawal score among intervention and control group at Week 4, to compare the change in carbon monoxide (CO) level between groups at Week 4. To compare the change in cigarette consumption at Week 12.

Methodology: 50 smokers from KRK HUSM randomized to control and intervention group. They were taught different way to cope with smoking urge i.e. 12M vs Quran recitation. They met at four consecutive weeks to fill withdrawal scale and counseling sessions. CO level was tested at baseline and Week 4. At Week 12, number of cigarette consumed taken.

Results: There was statistically significant change in craving among groups at Week4 with p-value 0.005. There change in CO level was not statistically significant. There was statistically significant change in the number of cigarette at Week 12. Statistically significant change in craving was comparable with study by Shahab. Change in CO level was not significant as both group showed reduction from baseline. Significant change in number of cigarette was comparable with study by Bowen-Marlat and Brewer.

Conclusion: Islamic mindfulness results statistically significant change in craving at Week4 and reduction of cigarette consumption at Week12 among smokers attempted to quit smoking.

PH06

Water contamination by heavy metals post-flood event: health implications

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Introduction: Major flood that hit Kelantan in December 2014 may cause contamination by heavy metal. Contamination of drinking water sources poses a risk to human health.

Objective: To determine the presence of heavy metal in drinking water sources from three villages affected by major flood and their relationship with hematological parameters.

Methodology: This study was conducted in Tumpat district, five months post-flood. Water samples from 27 household (wells and pipe water) and 103 blood samples were collected from healthy adults. Blood samples were tested for full blood count (FBC) and lymphocytes subset analysis using CD markers by flow cytometry. Presence of heavy metals in the blood and water samples (cadmium, mercury, plumbum and arsenic) were tested by using Perkin Elmer PinAAcle 900Z and FIMS100 (Waltham, US).

Results: Arsenic was detected from one well and no heavy metals were detected from the pipe water. Heavy metals were detected in 34% of subjects. Mercury was detected among anaemic and non-anaemic subject groups, but there was no statistical relationship between the two groups (p=0.057). Other heavy metals were present only among non-anaemic subjects. Mercury positive group showed a significant different in cluster of differentiation 3 (CD3) (p=0.050) and cluster of differentiation 4 (CD4) (p=0.047) respectively. The presence of mercury and other heavy metals in the blood samples may be from other sources like food intake and may indirectly affect immune markers.

Conclusion: Heavy metals were detected in subjects' blood samples post-flood event but below the harmful levels. The clinical significance between blood level of mercury and immune system requires further investigation.

PH07

Effects of honey supplementation during recovery on subsequent running performance and selected physiological parameters in the heat

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Introduction: The studies on the effectiveness of honey drink compared to sports drink as a recovery aid is currently lacking.

Objective: To investigate the effectiveness of honey drink compared to commercially available sports drink as a post-exercise recovery aid on subsequent running performance and selected physiological parameters in the heat.

Methodology: Ten male recreational athletes participated in the randomized cross-over study. Participants were required to run for 1 hour in a glycogen-depletion phase (Run-1), followed by a rehydration phase for 2 hour, and subsequently a 20 min time trial performance (Run-2). During Run-1, participants ran on the treadmill in the heat (31°C) at 70% of their maximal oxygen consumption (VO_{2max}). During rehydration phase, participants drank either honey drink (H) or sports drink (S) or plain water (W) with amounts equivalent to 150% of body weight loss (2010-2055 mL). Subsequently, a 20-minute running time trial was performed. Selected physiological parameters were collected during the trials.

Results: H and S drinks elicited an improved running performance compared to the W trial. However, statistical significance in running performance ($p<0.05$) was only observed in the H trial and there was no significant difference between H and S trials. There were also no significant differences in body weight changes, oxygen uptake, heart rate, rate of perceived exertion and tympanic temperature in all the three trials.

Conclusion: Honey drink consumed during the recovery phase after a prolonged run elicited enhanced subsequent running performance. Thus, honey drink has the potential to be used for rehydration purposes in athletes who train and compete in the heat.

PH08

Self-efficacy for coping and quality of life in women with breast cancer in Hospital Universiti Sains Malaysia

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Introduction: Breast cancer is the second most common cancer in the world and the commonest cancer in Malaysia. High level of self-efficacy for coping in breast cancer survivors has a positive effect on health behaviors, symptom control, compliance with cancer treatment, as well as on quality of life (QoL).

Objective: This study aims to determine the self-efficacy for coping scores, the subscales (global, functional and symptoms) of QoL and its correlation with self-efficacy for coping in breast cancer women.

Methodology: This is a cross sectional study involving 168 breast cancer women. The universal sampling method was applied. A questionnaires used to obtain the socio-demographic, clinical characteristics, Malay version of Brief Cancer Behavior inventory (CBI-B) to assess self-efficacy for coping and Malay version of European Organization for Research and Treatment of Cancer (EORTC) questionnaire (QLQ-C30 and QLQ-BR23) to assess the QoL.

Results: The mean age was 51.4(SD 10.8) and majority were malay (91.7%). The mean score of self-efficacy for coping was 83.67 which was moderate. The mean global QoL score was 59.9 (95% CI 56.7, 63.0). From QoL functional scale, the physical functioning showed the lowest mean score 75.4 (95% CI 72.2, 78.5). The global QoL (r=0.407 p<0.001), and functioning QoL subscales (r ranged from 0.191 to 0.308, p<0.05) had significant positive correlation with self-efficacy for coping.

Conclusion: The self-efficacy for coping mean score was moderate and global QoL mean score was slightly below average in this study. The functional QoL had a significant positive correlation with self-efficacy for coping.

PH09

Prevalence of depression among community dwelling elderly in Kelantan: a year after flood disaster

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Introduction: In 2014 flood disaster, the prevalence of elderly depression was reported high in two districts of Kelantan, Kuala Krai and Tumpat with 41.3% and 15% respectively. After a year, community has recovered and the activities were back to normal, hence, the psychological impact on elderly warrants reexamination.

Objective: To determine the prevalence of depression among community dwelling elderly in Kelantan a year after flood disaster and the associated socio-demographic factors.

Methodology: A cross sectional study was conducted in 10 districts in Kelantan from April to August 2016. Multistage random sampling was used to recruit community dwelling elderly aged 60 and above. Those who were too ill and severe cognitive impairment were excluded. A total of 414 elderly were interviewed with the Malay Geriatric Depression Scale-15 (M-GDS-15) to detect depression and a semistructured performa. Data were analyzed using simple and multiple logistic regression.

Results: The prevalence of elderly depression was 28.7% with higher prevalence in female (33.3%) than male (23.6%). Elder elderly (aged 75 and above) was found to have 23% higher odds compared to younger elderly (aged less than 75) (95%CI:1.22,3.84, p=0.008). The depression are associated with marital status as being a widow, previous occupations, types of residence and previous history of chronic illness.

Conclusion: The high depression prevalence in this study indicates that elderly are emotionally susceptible even after the community has recovered from the disaster. Therefore, there is a need to detect early signs of depression and incorporate awareness on elderly emotional health in primary care services.

PH10

The effectiveness of T-shaped toothbrush in plaque removal and maintaining gingival health among children

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Introduction: Dental caries and gingivitis are common oral health problems affecting schoolchildren worldwide. Children routinely present with inadequate oral hygiene due to reduced compliance and poor dexterity of tooth brushing which is fundamental to achieving good oral health.

Objective: To evaluate the effectiveness of a T-shaped manual toothbrush in removing plaque and maintaining gingival health when compared to a conventional manual toothbrush in 8 to 10-year-old children.

Methodology: A total of 110 qualifying schoolchildren aged 8 to 10 years were enrolled into this single blind parallel randomized controlled trial study. The children were randomly assigned to two toothbrush groups. At baseline, clinical examination for caries status, gingival score and plaque score was done. Each child received detailed toothbrushing instructions and were asked to use the brush for a period of 3 months. Review was done at 2 weeks, 1 month and 3 months for clinical recording of gingival and plaque scores. Feedback on the use of the T-shaped toothbrush was obtained at the end of the study.

Results: There were statistically significant reductions in mean gingival and plaque scores at each visit when compared to baseline for both toothbrushes (p<0.05). However, there were no statistically significant differences between two toothbrushes at each visit (p>0.05). Majority of participants gave a positive feedback regarding the T-shaped toothbrush.

Conclusion: Both the T-shaped and conventional toothbrushes had similar efficacy in removing plaque and improving gingival health among 8-10-year-old children. T-shaped toothbrush is an alternative to the conventional toothbrush for oral hygiene in children.

PH11

Confirmatory factor analysis of the Malay version of Utrecht Work Engagement Scale

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Introduction: Work engagement is the opposite of burnout. Contrary to those who suffer from burnout, engaged employees have a sense of energetic and effective connection with their work activities and are able to deal well with the demands of their job. The Utrecht Work Engagement Scale (UWES) is a self-administered questionnaire which consists of three factors: vigor, dedication and absorption. There are a total of 17 items, each with seven Likert scale.

Objective: To validate the Malay version of UWES among primary school teachers in Kota Bharu, Kelantan.

Methodology: This was a cross sectional study on 345 primary school teachers in Kota Bharu. The instructions of UWES were first translated to the Malay language using forward and backward translation method. Confirmatory factor analysis (CFA) was applied using robust Maximum Likelihood estimator to find validity evidence of the model due to violation of multivariate normality assumption. The analysis was done using R version 3.3.0.

Results: The full model, consisted of 17 items and three factors fit the data well with χ^2 *p*-value <0.001 (fit indices: CFI=0.933, TLI=0.921, RMSEA=0.084 (90%CI: 0.076, 0.092), SRMR=0.032). The factors also have good reliability with range between 0.93 and 0.95.

Conclusion: The final model not only fit the data well but also has good validity evidence and reliability of the construct.

PH12

Dysphonia (voice disorders): its prevalence and risk factors among primary school teachers in Kota Bharu, Kelantan

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Introduction: Occupational voice users are individuals who rely on their voice as their main tool at work. This group such as teachers, singers, lawyers and telemarketers are at risk for developing dysphonia. Vocal abuse or excessive vocal load can lead to symptoms of voice soreness, hoarseness, weakness, sorethroat and aphonia affecting job functioning and performance.

Objective: To determine the prevalence of dysphonia among primary school teachers in Kota Bharu and to identify its risk factors.

Methodology: This cross sectional study evaluated 331 teachers from eight primary schools that were randomly sampled. A questionnaire which included the translated and validated Malay-Voice Handicap Index 10 (m-VHI-10) as well as sociodemographic and occupational characteristics was distributed and self-administered. Participants with a m-VHI-10 score of 12 or more were classified as having dysphonia.

Results: The prevalence of dysphonia among primary school teachers was 7.9 percent. This study identified two risk factors that were hours of teaching per week [OR: 1.04 (95% CI 1.01, 1.08) *p*=0.028], where the average teaching hours per week was 15.24 (8.44) and having more than four children [OR: 2.38 (95% CI 1.03, 5.51) *p*=0.042].

Conclusion: The prevalence of dysphonia among primary school teachers in Kota Bharu was relatively low as compared to other countries. However, it is imperative that awareness and interventional efforts are channeled towards this established occupational health problem in order to prevent an escalation in the magnitude of this disorder.

PH13

Knowledge, attitude and practice level of dengue fever management among medical officers of Hospital Universiti Sains Malaysia, Kelantan

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Introduction: Dengue fever is a major arbovirus-borne disease in Malaysia. Measurement of the level of knowledge, attitude and practice (KAP) regarding dengue fever among medical officers (MOs) in Malaysia is important to detect and manage dengue fever appropriately.

Objective: To determine the level of KAP of dengue management among MOs of various clinical departments in Hospital Universiti Sains Malaysia (HUSM), Kelantan.

Methodology: A cross-sectional study was conducted among 85 MOs from various clinical departments in HUSM from March 2016 until April 2016.

Result: The majority of MOs (79%, n=67) in HUSM had moderate knowledge while only 7% (n=6) was categorized as having excellent knowledge. Sixty-six percent (n=56) of the MOs were categorized as having excellent attitude while the remainder 29 medical officers had moderate attitude. The majority (86%,n=73) of the MOs had excellent practice of dengue management. There was no significant correlation between knowledge and attitude (R^2=0.062, F(1,84)=0.272, *p*=0.603) or practice (R2=0.041, F(1,83)=0.330, *p*=0.567). There was significant correlation between level of knowledge and department (R^2=0.771, F(1,84)= 3.807, *p*=0.05). There was no significant correlation between level of attitude and practice with department.

Conclusion: In general, the levels of KAP were good among the MOs in HUSM. We found that only level of knowledge had significant correlation with department. The level of knowledge was also not translated into good practice and attitude. Duration of service and education did not affect the level of KAP practice towards dengue fever management.

List of Participants

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