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ABSTRACT BOOK

# International Virtual 2023 Medical Research Symposium

## *'Spearheading Responsible Research & Innovation towards Achieving Sustainability'*

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**Organised by:**

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**OC001**

# Mild Cognitive Impairment and Its Associated Factors Amongst the Elderly Attending Government Health Clinics in Kuantan

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**Introduction:** The population of Malaysia is shifting upwards. More Malaysian are becoming elderly and at risk of having dementia. Nevertheless, there is an intermediate clinical state between normal cognition and dementia, without affecting daily functional activities known as mild cognitive impairment. Early detection of mild cognitive impairment (MCI) is of extreme importance as treatment at an early-stage, identification and modification of its risk factors yields encouraging results. **Materials and Methods:** A cross-sectional study involving 328 geriatrics attending primary health care clinics is conducted to measure the prevalence of mild cognitive impairment and its associated factors among them using Malay version of the Elderly Cognitive Assessment Questionnaire, Geriatric Depression Scale and Barthel Index. Multiple logistic regression will be used to assess association and predictors for MCI. **Results:** 77.1% of the geriatrics have MCI with majority have poor comorbid control. The significant predictors for MCI include increasing age ($p$ = 0.004), poor education ($p$ = 0.017) and uncontrolled blood pressure ($p$ <0.001). **Conclusion:** This study proves that the majority of our geriatrics are at risk of developing dementia but underdiagnosed at its early stage. Optimization of blood pressure control is one the important measures to prevent the progression of MCI towards irreversible overt dementia. Active cognitive impairment screening at primary care should be implemented for its early identification to improve the geriatrics' cognition towards later in life.

Keywords: Geriatric; mild cognitive impairment, primary care

**OC002**

# Assessing the Utility of Fibula Length Measurement in Estimating Maximum Femoral Nail Length: A Comparative Analysis with the Standard AO Method

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**Introduction:** Femoral shaft fractures are common in orthopaedics and are typically treated with intramedullary fixation. Precise measurement of nail length and size is crucial, which can be done clinically, radiographically, or with forearm referencing. However, these methods are inadequate for patients with bilateral femoral fractures and concurrent forearm fractures. This study aimed to investigate whether fibula length could serve as a clinical method for estimating maximum femoral nail length. **Materials and Methods:** A total of 140 eligible patients participated in this study. Measurements of their femurs and fibulas were taken using a standard tape measure. Femur length was assessed using the standard AO method, while fibula length was measured from the tip of the fibula head to the tip of the lateral malleolus. The Pearson correlation coefficient (r) was used to determine the correlation between the two measurements. **Results:** Among the 140 patients measured, the mean femoral length was 37.98 cm (SD = 2.72), and the mean fibula length was 37.72 cm (SD = 2.61). Pearson's correlation coefficient analysis indicated a strong positive correlation between femur and fibula length measurements ($r = 0.940$, $p<0.001$). This correlation remained consistent regardless of age, body mass index (BMI), or gender. Both femur and fibula measurements demonstrated high inter-observer and intra-observer reliability. A formula for estimating maximum femoral nail length was derived from the correlation graph: femoral nail length = 1 + (0.98 x fibula length). **Conclusion:** Fibula length is significantly correlated with femoral length and can serve as a reliable clinical method for estimating femoral nail length.

Keywords: Femoral length; femoral shaft fracture; fibula length; intramedullary nail

**OC003**

# Development of Spouse-inclusive Framework for Digital Management of Perinatal Depression and Anxiety

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**Introduction:** Spouse-inclusive intervention has been found effective to improve perinatal mental health, yet it was commonly delivered face-to-face, requires high commitment from spouses as well as healthcare professionals, therefore is not sustainable. While several digital applications demonstrate modest success in reducing the symptoms of depression and anxiety, the spouse's participation in such an approach is limited. Therefore, this study aimed to explore perspectives, preference, and information or educational needs of perinatal women and their spouse regarding spouse-inclusive intervention. **Materials and Methods:** Using a generic qualitative research design, in-depth interviews were conducted with 20 perinatal women (with symptoms of depression and anxiety) and 15 men (spouses) in the obstetrics and gynecology clinics in Sultan Ahmad Shah Medical Centre and Hospital Canselor Tuanku Muhriz. Interview data were analysed using framework analysis. The selected participants in this study were chosen using one of these methods: Edinburgh Postnatal Depression Scale (EPDS) score  12 or Depression Anxiety Stress Scale (DASS) score ≥8 for depression, ≥7 for anxiety. **Results:** Three main themes were identified from the interview which include: (i) adjusting to a new period of life, (ii) dealing with perinatal distress, and (iii) mobilising needs and support. While spouse support was perceived by the perinatal women one of the contributing factors to depression and anxiety, financial constraint was seen by the men (spouses) as the major factor leading to depression and anxiety. Both women and spouses preferred to have a user-friendly online intervention to obtain knowledge on maternal mental health. They expressed their informational needs on communication skills, depression and anxiety cues, self-screening, childcare management, perinatal care, and coping mechanism. **Conclusion:** Perinatal

women (with depression and anxiety) and the spouses acknowledge that mental health apps that include spouses' participation will help in reducing the symptoms that can contribute to depression and anxiety.

Keywords: Anxiety; depression; digital; intervention; perinatal; spouse support

**OC004**

# ICU Liberation (ABCDEF) Bundle Adherence Rate and Associating Factors in Critically Ill Patients

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**Introduction:** The ABCDEF bundle, a multifaceted approach to enhancing patient care in the Intensive Care Unit (ICU), has gained prominence in improving outcomes for critically ill patients in the ICU. This study investigates compliance with the ABCDEF care bundle in our teaching hospital's ICU and identifies factors associated with its implementation. The care bundle comprises six critical elements: awakening and breathing coordination, delirium monitoring and management, early mobility, family engagement, and ventilator liberation. Full adherence to these elements is vital to ensure quality care in the ICU. **Materials and Methods:** The data was collected from in-person observations, electronic health record audits, and comprehensive checklist reviews of ICU charts. Data was collected from all ventilated patients admitted to the ICU in the first 6 days. **Results:** A total of 323 samples were collected for analysis. Our findings revealed that full adherence to the ABCDEF care bundle in our ICU was suboptimal at 13%. This is due to the lack of adherence in two components which are delirium 13.3% and family 78.3%. The other components achieved full adherence. Factors that are significantly associated with adherence were identified as body mass index, non-postoperative patients, observations after 72 hours of admission, and ICU rounds led by specialists. **Conclusion:** This study highlights the need to improve full adherence to the ABCDEF care bundle within our ICU, particularly concerning challenges related to delirium monitoring and management. Additionally, recognizing the impact of factors like BMI and specialist-led rounds on adherence emphasizes the importance of tailored interventions. These findings provide valuable guidance for healthcare professionals and administrators seeking to enhance care and outcomes for ICU patients. In conclusion, this research offers crucial insights to drive improvements in ICU care.

Keywords: ABCDEF care bundle; adherence factors; adherence rate; delirium

**OC005**

# Visual Search Performance of Colour Search Task Between Diabetic Maculopathy with Macular Oedema and Normal Age-Matched Group

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**Introduction:** Visual search performance has become an essential task in daily life**.** Nevertheless, there has yet to be an assessment to gather the data required to compare the visual search performance between diabetic maculopathy with macular oedema (DMO) and normal age-matched (NAM) individuals. **Materials and Methods:** This study included 60 participants (30 DMO and 30 NAM). A total of 60 eyes were analysed. The mean age for the DMO group was 61.2 years, and 61.0 years for the NAM group. This search task had three set sizes (items displayed on screen) (4, 8, 12). The primary outcome measures for the colour search assessment were the mean reaction time (RT) and accuracy. **Results:** The DMO group ($N$ = 30) was associated with a numerically higher RT $M$ = 1741.60 ms ($SD$ = 118.60). By comparison, the NAM group was associated with a lower RT $M$ = 1105.77 ms ($SD$ = 326.05). The independent samples $t$-test demonstrated a statistically significant effect, $t(36.54) = 10.04$, $p = <0.001$. The Mann-Whitney U test was performed to compare the accuracy, and the DMO group's accuracy was statistically significantly lower than the NAM group, $U = 75.50$, $z = -5.70$, $p = <0.001$. A one-way ANOVA was performed to evaluate the relationship between set sizes and RT among the DMO group. There was no significant effect of set size on the RT for the three set sizes [$F(2, 87) = 0.243$, $p = 0.867$]. Kruskal-Wallis H test showed no statistically significant difference in the accuracy between the different set sizes, $\chi^2(2) = 2.852$, $p = 0.240$. **Conclusion:** Visual searching is significantly impaired in those with DMO when tested with a colour search task compared to the standard group.

Keywords: Diabetic maculopathy; macular oedema; reaction time; visual search

**OC006**

# Burden among Malaysian Caregivers of Children With Autism Spectrum Disorder (ASD) and its Associated Factors

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**Introduction:** Caregivers assume a key role in the survival, development, and wholesome growth of children with Autism Spectrum Disorder (ASD). Caregivers of children with ASD may experience burdens related to their well-being and have a poorer physical health and mental health prognosis. It is important to understand the attributes related to the caregiver burden. **Objective:** We conducted a study to assess the level of burden among Malaysian caregivers of children with ASD and the associated sociodemographic factors. **Materials and Methods:** This cross-sectional study involved 356 caregivers recruited from Malaysia online support groups from December 2022 to April 2023. Malaysian caregivers of children with ASD aged 18 and below were included. The Zarit Burden Interview 22 (ZBI 22) was used to assess the level of caregiver burdens. **Results:** About 84.0% of the caregivers were female and 74.2% were Malays. Nearly 82% of caregivers experienced a significant burden with a mean score of 35.38 (SD 16.08). Five statistically significant sociodemographic factors were associated with the caregiver burden- education level, household income, ethnicity, occupation, and medical problems in children with ASD. Caregivers' education level, ethnicity and occupation status were significant in all burden domains and overall burden level except the Financial Burden and Loss of One's Life Burden Domain. Household income and medical problems in children with ASD were significant to Financial Burden domain. Caregiver education level, ethnicity and occupation were statistically significant to Loss of One's Life Burden domain. **Conclusion:** High numbers of Malaysian caregivers in this study had significant burden mainly associated with education level, income, occupation status, ethnicity, and medical problems in their children with ASD. A holistic caregiver support and education programme targeting to improve their well-being should be introduced to caregivers and family members of children with ASD.

Keywords: Autism spectrum disorder; caregiver burden; Zarit Burden Interview

**OC008**

# Prevalence of Female Sexual Dysfunction and its Association with Hormonal Contraception Usage among Postpartum Women in SASMEC@IIUM, Kuantan

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**Introduction:** Hormonal contraception works by altering the hormonal balance of the body to prevent pregnancy. However, the influence of these drugs on female sexual function is not well understood. Despite high prevalence of female sexual dysfunction (FSD) worldwide, there is very limited data concerning sexual dysfunction in postpartum women using contraception, especially the hormonal types. The aim of our study is to determine the prevalence of FSD and its association with hormonal contraception usage among postpartum women in a tertiary care, in our setting is a university hospital in Kuantan, Pahang. **Materials and Methods:** This cross-sectional study was conducted at postnatal clinic of a university hospital in Kuantan, Pahang from March to October 2023. A validated Malay version of Female Sexual Function Index (MVFSFI) was used to assess FSD. A total of 241 women who have given term livebirth within 6 to 12-months were invited to participate in this study, excluding pregnancy and those with underlying chronic medical and psychiatric illness. **Results:** The prevalence of FSD among postpartum women in the university hospital population is 52.5%. The most common reported sexual dysfunction was desire disorder (56.3%), followed by lubrication disorder (33.3%), satisfaction disorder (33.3%), arousal disorder (32.5%), pain disorder (29.4%) and orgasmic disorder (28.6%). Our results showed that religion (aOR= 5.84 95% CI 1.24, 27.58) and timing of resumption of sexual intercourse (aOR= 3.88 95% CI 1.65, 9.13) were associated with female sexual dysfunction with *p*-value <0.05. **Conclusion:** We conclude that the prevalence of FSD among postpartum women in a a tertiary hospital in Kuantan, Pahang is high. There is no significant relationship between hormonal contraception and presence of FSD. It is vital for the healthcare providers to detect FSD during postnatal clinic visits, especially in those who have not resume sexual intercourse after 6-months postpartum.

Keywords: Contraception; female sexual dysfunction; hormonal; postpartum women

**OC009**

# Forecasting COVID-19 Case Outcomes in Malaysia: A Machine Learning Approach

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**Introduction:** COVID-19 is a viral respiratory illness caused by the SARS-CoV-2 virus, which existed in late 2019 and quickly spread around the world, leading to a global pandemic. However, the response to the pandemic has evolved significantly over time. Despites its rapid emergence with new variants, COVID-19 continues to significantly impact healthcare workers worldwide. The survival of COVID-19 patients could be predicted with effective management using a machine learning prediction model. Hence, this study aims to develop a prognostic prediction model for COVID-19 cases using local data. **Materials and Methods:** 418 stage 2 and above COVID-19 patients diagnosed with reverse transcriptase polymerase chain reaction (RT-PCR) were enrolled from Hospital Sungai Buloh. The demographics, clinical features, comorbidities, laboratory parameters and progress of hospitalization were retrospectively reviewed. Categorical and numerical variables were analyzed using the chi-square test and Spearman correlation, respectively. XGBoost machine learning was used to develop the prediction model based on the significant variables and different feature selection techniques. **Results:** Age, chronic cardiac disease, hsTrop I, procalcitonin, D-dimer, APTT, LDH, Fibrinogen, Creatine kinase, ICU admission, duration of ICU admission, intubation status, and stages of COVID-19 were found to be essential features for the survival of COVID-19 patients. The XGBoost model showed accuracy, precision and an F1-score of 97.62%, 97.30% and 98.63%, respectively. **Conclusion:** This study demonstrates the potential for machine learning to forecast the survival of COVID-19 patients effectively. Leveraging data from 418 stage 2 COVID-19 patients in Malaysia, our research identifies crucial prognostic features. Notably, our XGBoost model

exhibits exceptional accuracy and precision, further underscoring its value as a tool for enhancing patient management. These findings offer promising insights into the development of locally relevant prediction models to support healthcare professionals in Malaysia during these challenging times.

Keywords: COVID-19; machine learning; Malaysia; PCT; prognostic; XGBoost

**OC010**

# Prevalence of Biopsy Proven Lupus Nephritis and Outcomes of Their Treatments in Tertiary Center in Kuantan

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**Introduction**: Lupus nephritis (LN) can lead to end stage kidney disease (ESKD) and mortality. Depending on biopsy, induction treatment includes intravenous cyclophosphamide or mycophenolate mofetil with concurrent corticosteroids with the aim to achieve clinical remission at least within 1 year post treatment. This study aims to investigate the prevalence of biopsy proven LN in Hospital Tengku Ampuan Afzan (HTAA) and the outcomes of treatments. **Materials and Methodss:** Retrospective cohort study was conducted among all renal biopsies done in HTAA from 2010 to 2021. Demographic data, clinical presentations, remission status at 1 year and outcomes of treatments were analysed. Cox regression analysis and Kaplan-Meier curve were used respectively to determine the associated risk factors and the rate of progression to ESKD and mortality. **Results:** There was a total of 177 biopsy proven LN patients from 460 biopsies done making the prevalence of biopsy proven LN in HTAA to be 38.5%. Majority of them were Malays (84.7%), females (89.8%) and less than 40-year-old (85.4%). LN class IV was the commonest presentation (37.9%) and only 9.0% of patients required hemodialysis upon presentation. Renal survival rates at 5- and 10-year of treatment were 92.7% and 90.1% respectively and survival rates at 5- and 10-year of treatment were 85.0% and 80.0% respectively. Hemodialysis requirement upon presentation was associated with progression to ESKD (HR: 5.102, 95% CI: 1.645-15.826, P=0.005) meanwhile treatment compliance was associated with mortality (HR:0.153, 95% CI: 0.0041-0.566, P=0.005). Race, age, gender, LN class and remission status at 1 year post treatment were not associated with poor outcomes. **Conclusion:** Prevalence of biopsy proven LN in our study is low compared to other studies. Our study had shown higher renal survival rate at 5- and 10-year and lower survival rate at 5- and 10-year. Hemodialysis requirement upon presentation and treatment compliance were associated with poor outcomes.

Keywords: Chronic kidney disease; end stage kidney disease; lupus nephritis

**OC011**

# Life Threatening Hyperkalemia Leading to Cardiac Arrest following Durian Fruit Consumption: A Case Report

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**Introduction:** Durian is a tropical fruit known for its distinctive odour and rich nutritional content. Although it is generally considered safe for consumption, there have been rare reports of adverse effects associated with durian intake. Severe hyperkalemia is a life-threatening condition that can lead to cardiac arrhythmias and cardiac arrest. We present a case of symptomatic life-threatening hyperkalemia leading to asystolic episode in a patient following the ingestion of durian. **Case Presentation:** A 51-year-old female with comorbidities diabetes, hypertension, dyslipidemia and end stage renal failure, consumed a large quantity of durian. Shortly after ingestion, she developed weakness, palpitations, and profound muscle cramps. On arrival at the Emergency Department, she was found to be in cardiac arrest with pulseless ventricular tachycardia. Cardiopulmonary resuscitation was initiated, and her potassium level was 9.3 mmol/L and urgent treatment with medical therapies were initiated consisted of multiple boluses of calcium gluconate, insulin with dextrose 50%, sodium bicarbonate boluses and salbutamol nebulisers to treat hyperkalemia during resuscitation. Return of spontaneous circulation was achieved after multiple defibrillation attempts and aggressive medical management. She was sent to intensive care for persistant hyperkalaemia despite aggressive medical treatment and initiated with continuous veno-venous haemofiltration. **Discussion:** This case report highlights a rare but potentially life-threatening complication of durian consumption – hyperkalemia leading to cardiac arrest. It serves as a reminder that even commonly consumed foods can have adverse effects, particularly in individuals with predisposing factors or underlying medical conditions. Physicians should be aware of the potential risks associated with durian intake, and patients should be educated on moderation and the need for prompt medical attention if symptoms of hyperkalemia develop.

Keywords: Cardiac arrest; durian, end stage renal failure, hyperkalemia

**OC012**

# Prevalence and Risk Factors for Recurrent Ischemic Stroke at Two Tertiary Hospitals in Kuantan

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**Introduction:** Recurrent strokes are rising globally, especially in Malaysia, and is a major cause of morbidity and mortality. This study examines the prevalence and risk factors of recurrent ischemic stroke in two tertiary hospitals in Kuantan. **Materials and Methodss:** This study is a cross-sectional retrospective study which was conducted on ischemic stroke patients who attended two tertiary hospitals in Kuantan in 2022. **Results:** This study included 532 individuals, 380 with first episode of stroke and 152 with recurrent ischemic stroke. The prevalence of recurrent ischemic stroke is 28.6%. The mean age of recurrent ischemic stroke is 63.33 years and male gender and Malay ethnicity are more predominant. Risk factors that show significant positive association are hypertension ($p < 0.001$, OR 29.940, 95% CI 9.937-90.208), diabetes mellitus ($p < 0.001$, OR 11.089, 95% CI 4.181- 29.409), hyperlipidaemia ($p < 0.001$, OR 3.457, 95% CI 1.924-6.209) and ischemic heart disease ($p < 0.001$, OR 3.102, 95% CI 1.758-5.472). Our study did not reveal any significant correlations between age, gender, race, smoking, family history of stroke, HbA1c level, BMI categories, and compliance to medications with regards to recurrent ischemic stroke. We also examined stroke subtypes and severity in recurrent stroke patients using the Oxfordshire Community Stroke Classification (OCSP) classification and National Institute of Health Stroke Scale (NIHSS) score. Most common stroke subtypes are LACI and PACI. TACI is associated with age, atrial fibrillation and ischemic heart disease. Most patients had moderate stroke. Stroke severity is also associated with age, smoking, ischemic heart disease and atrial fibrillation. **Conclusion:** Our study found a high prevalence of recurrent ischemic stroke and associated risk factors includes hypertension, diabetes mellitus, hyperlipidaemia and ischemic heart disease. Therefore, it is critical to recognize and control these risk factors to reduce the likelihood of recurrent ischemic stroke, and thus reducing morbidity and mortality.

Keywords: Prevalence; Pahang; recurrent ischemic stroke; risk factors

**OC013**

# Enhancing Stroke Survivor Recovery: The Impact of 4 Weeks of Task-specific Exercise, Transcranial Direct Current Stimulation and Their Combination on Serum Brain-Derived Neurotrophic Factor (BDNF)

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**Introduction:** Stroke-induced brain injuries result in the release of various biomarkers. Among these biomarkers, brain-derived neurotrophic factor (BDNF), a crucial neuronal growth factor, plays a key role in promoting neuronal growth and plasticity. Transcranial direct current stimulation (tDCS), a non-invasive brain stimulation method, provides a safe approach for supporting stroke patient rehabilitation and facilitating the reorganization of affected neural circuits. This study investigates the impact of a four-week rehabilitation program, combining task-specific exercises (TSE) and tDCS, on post-stroke serum BDNF levels. **Materials and Methods:** Sixty ambulatory stroke patients were randomly assigned to four groups: (i) control intervention (CI), (ii) combined treatment with task-specific exercise, transcranial direct current stimulation, and control intervention (TSE + tDCS + CI), (iii) task-specific exercises and control intervention (TSE + CI), and (iv) transcranial direct current stimulation and control intervention (tDCS + CI). Serum BDNF levels were assessed using a quantikine ELISA kit. One-way ANOVA was used to determine differences in serum BDNF levels among the groups, and Bonferroni post-hoc tests were used to identify distinct differences between the intervention groups. **Results:** A statistically significant difference in serum BDNF levels was observed among the groups ($F=58.04$, $p=0.001$). The BDNF levels in the TSE + CI group showed a modest increase (23.94 pg/ml) compared to the control group (15.70 pg/ml), although the difference was not statistically significant ($p=1.000$). The combined intervention (TSE + tDCS + CI) emerged as particularly effective in enhancing patients' BDNF levels. **Conclusion:** This study underscores the substantial impact of interventions on the serum BDNF levels of stroke survivors. The combined approach of TSE, tDCS, and CI proves effective in improving BDNF levels, whereas no statistically significant difference in BDNF levels was observed between the TSE group and the control group. These findings offer promise for refining rehabilitation strategies in stroke patients to enhance BDNF-related neuroplasticity.

Keywords: Cerebrovascular accident; neurotropic growth factors; primary motor cortex; serum BDNF; stroke rehabilitation

**OC014**

# Prevalence, Severity and Associated Factors of Diabetic Peripheral Neuropathy among Diabetic Patients at Sultan Ahmad Shah Medical Centre @ IIUM

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**Introduction:** Diabetic peripheral neuropathy (DPN) stands as one of the most debilitating complications of diabetes mellitus with significant morbidity and mortality and affecting patient's quality of life. This study aims to determine the prevalence, assess the severity, and identify associated factors of DPN among diabetic patients at SASMEC @IIUM. **Materials and Methods:** A cross-sectional observational study was conducted involving 411 diabetic patients attending SASMEC @IIUM. Participants underwent a comprehensive evaluation using the modified neuropathy symptoms score (NSS) and monofilament test. Socio-demographic data, clinical characteristics and diabetes profile were collected and analysed. **Results:** The prevalence of DPN based on modified NSS was found to be 60.3%, in contrast to the 20.7% identified by the monofilament test. According to modified NSS, 31.4% of DPN patients had mild symptoms, 34.3% moderate, and 34.3% severe. Significant associated factors for DPN included duration of diabetes, inpatient care setting and proteinuria. **Conclusion:** This study revealed a high prevalence of DPN among diabetic patients in SASMEC @IIUM based on modified NSS. Early detection, regular screenings, and addressing associated risk factors are pivotal in managing and possibly reducing the complications related to DPN. Hence, using the more practical, cost-effective and time-saving modified NSS in routine clinical practice could enhance early diagnosis for timely intervention and improve overall patient outcomes.

Keywords: Diabetic peripheral neuropathy; monofilament; neuropathy symptom score

**OC015**

# Experience of Intraoperative Nerve Monitoring (IONM) in Thyroid Surgery at Sultan Ahmad Shah Medical Centre (SASMEC) @IIUM: An Interim Analysis

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**Introduction:** Permanent recurrent laryngeal nerve injury in the expert hands account for 0.3%. Continuous intraoperative nerve monitoring (IONM) is now the current new standard in thyroid or parathyroid surgery. It is an objective tool and useful adjunct for nerve identification, preservation, and prognostication of function in thyroid and parathyroid surgeries. **Materials and Methods:** This is a retrospective review conducted among patients that undergone thyroid surgery with IONM. All patients underwent general anesthesia without neuromuscular blockade. Electromyogram (EMG) endotracheal tube and/or transcutaneous electromyogram electrode through thyroid cartilage (Taiwan's method) was used. Continuous IONM with EMG data from the vagus nerve was used. Demographic data, pathological findings, comparison of post-operative complication between both methods were recorded. Descriptive analyses were performed. **Results:** A total of 10 cases were involved. 3 cases using solely endotracheal EMG tube. 2 cases using combined endotracheal EMG tube and Taiwan's methods. The other 5 cases using the Taiwan's method. 2 of our patients had hoarseness of voice post-operatively. One showed edematous mobile bilateral vocal cord while the other one had laryngopharyngeal reflux. We found that Taiwan's method is more sensitive to nerve's amplitude and latency compared to EMG endotracheal tube. Rotated EMG endotracheal tube especially after dissecting a large dominant one-sided thyroid nodule may result in reduced its sensitivity. **Conclusion:** IONM is a new standard of care in thyroid surgery, however its interpretation of data needs to be analyzed in the expert hand.

Keywords: Intraoperative nerve monitoring; recurrent laryngeal nerve injury; thyroidectomy

**OC016**

# Recurrent Laryngeal Nerve Injury in Conventional Thyroid Surgery

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**Introduction:** Recurrent laryngeal nerve (RLN) injury in conventional thyroid surgery can happen in 1.5-14% of cases. The outcomes of RLN injury can range from mild hoarseness to upper airway obstruction leading to tracheostomy or intubation. **Materials and Methods:** This is a retrospective review conducted among patients that undergone thyroid surgery in the SASMEC @IIUM from 2018-2022. Demographic data, pathological findings, type of operation and visual identification of nerve were recorded. Factors predisposed to recurrent laryngeal nerve injury were evaluated. Preoperative laryngoscopy was performed on all patients. Descriptive analyses were performed. **Results:** A total of 59 nerves at risk were involved and 16 recurrent laryngeal nerve injuries were recorded. Post-operative laryngoscopy is only done when clinical suspicion of recurrent laryngeal nerve injury arises. Malignancy, size of tumor, reoperation was among the factors identified as the possible risk factors. **Conclusion**: The risk of recurrent laryngeal nerve injury may rise in malignancy, size of tumor and re-operation.

Keywords: Conventional thyroidectomy; recurrent laryngeal nerve injury

**OC017**

# Enhancing Community Engagement for Peripheral Occlusive Artery Disease: Insights from Community Engagement Program in Various Districts of Pahang, Malaysia

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**Introduction:** This study evaluates the impact of peripheral occlusive artery disease (POAD) screening initiatives conducted during community engagement programs across various districts in Pahang, Malaysia. **Materials and Methods:** Our POAD screening initiative took place in Beserah district and Kuantan City Mall. We collected data from program participants, including demographic details, POAD risk factors, and related symptoms via questionnaire adapted from *San Antonio Kidney Peripheral Vascular Disease Screening Questionnaire*. High risk participants defined as participants who have a risk factor of POAD and related symptoms. Data analysis employed robust statistical techniques to explore potential correlations between risk factors and symptoms. Evaluation of the Ankle Brachial Systolic Index (ABSI) was not feasible due to unavailability of appropriate equipment. **Results:** 41 high risk participants were included, all of whom were undergoing screening for the first time. The mean participant age was 56.56 years (±15.857), with a majority of female participants (61%). The study revealed significant comorbidities among the participants with 31.7% reporting diabetes mellitus, 51.2% reporting hypertension, and 26.8% identified as smokers. While no prior history of intermittent claudication, angioplasty, stroke, or ischemic heart disease was reported, 22% of participants exhibited symptoms potentially indicative of POAD which includes intermittent claudication (17%), leg cramps (9.8%), slowed pace of walking (4.9%), unhealed foot wounds (2.4%), and leg fatigue (2.4%). Statistical analysis revealed a higher prevalence of male smokers ($x^2 = 12.008$, $p<0.05$), and a positive correlation between advanced age and the presence of diabetes ($U=102.5$, $p=0.026$). **Conclusion:** Our study demonstrates the feasibility of conducting effective POAD screening among high-risk individuals during community engagement initiatives, facilitating the early detection of POAD symptoms within the population. Further improvements in screening procedures are warranted, including the provision of essential tools such as portable clinical examination couches and Doppler devices for measuring the ABSI.

Keywords: Community engagement; peripheral obstructive artery disease; vascular surgery

**OC018**

# Single Stage Brachio-Basilic Creation is a Good Alternative: Early Experience from a Tertiary Vascular Centre

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**Introduction:** Arteriovenous fistula (AVF) has been accepted as a gold standard mode of repeated vascular access for haemodialysis. We are reporting a case series on our experience in single-stage BBF creation between June to September 2023 in end stage renal failure patients. **Case 1:** A 62-year-old female with protein S deficiency who had multiple vascular access creations complicated with thrombosis. We performed her single-stage BBF (SSBBF) creation with intraoperative heparinization. Post-operatively, audible bruit was recorded, and she was discharged with low molecular heparin injection. **Case 2:** A 38-year-old diabetic female with morbid obesity who had previous AVF creations that many resulted in primary failures. Considering patient comorbid and multiple scars from previous surgery, she underwent the SSBBF creation with palpable thrill recorded postoperatively. The patient was readmitted three weeks postoperative and was treated with a two-week course of antibiotics for surgical site infection of BBF wound. **Case 3:** A 62-year-old female had additional thrombectomy procedure during her SSBBF creation and recorded palpable thrill postoperative. Following six weeks post-operative, the first SSBBF case complicated with thrombosis; the second and third case had their AVF matured, with satisfactory maturity assessment and ready for dialysis. A meta-analysis reported overall maturation rate, 1-year primary patency and complications rate related to two-stage and single-stage is similar while another study showed favorable with SSBBF. Proponent to SSBBF creation are to avoid long waiting time until needle for dialysis, prevention of catheter related infection prior second-stage procedure and cost-effective. Nevertheless, SSBBF creation has learning curve, requires surgeon's familiarization with both BBF procedures for a good outcome. To date, a meta-analysis reveals lacking stratification data on assessment of vein caliber, obesity, catheter dwell time and clear definition of maturity to properly assess advantage of SSBBF creation that warrants clarification in future prospective trial.

Keywords: Brachiobasilic; mature; single-stage; two-stage

**OC019**

# Evaluation of Catheter-Related Bloodstream Infections in End-Stage Renal Failure Patients Awaiting Autologous Arteriovenous Fistula Creation or Corrective Procedures

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**Introduction**: Autologous arteriovenous fistula (AVF) remains the preferred option for repeated vascular access in haemodialysis. However, our local analysis revealed that a significant proportion of end-stage renal failure (ESRF) patients scheduled for AVF creation necessitated temporary central venous catheter (CVC) usage, resulting in heightened risk for bloodstream infections. This study aims to assess the incidence of catheter-related bloodstream infections (CRBSI) among ESRF patients awaiting AVF creation or corrective procedures for dysfunctional AVFs. **Materials and Methodss**: Our analysis focused on patients referred to our vascular clinic for AVF creation or corrective procedures between June 2022 and June 2023. Data collection involved cross-referencing patient records from the clinic logbook with electronic data**. Results**: Of the 25 patients identified as suitable candidates for AVF creation, only 4 (16%) experienced CRBSI during the waiting period. Conversely, among the 10 patients with dysfunctional AVFs awaiting corrective procedures, no CRBSI incidents were reported. Notably, 75% (3/4) of the CRBSI cases were attributed to methicillin-resistant *Staphylococcus aureus*. **Conclusion**: Our results indicate that the current practices within our unit demonstrate an acceptable complication rate concerning the waiting period for AVF creation and corrective procedures for dysfunctional AVFs. These findings underscore the importance of continued vigilance and adherence to infection control measures in the management of ESRF patients awaiting AVF-related interventions.

Keywords: Autologous arteriovenous fistula creation; catheter-related bloodstream infections; dysfunctional fistula; methicillin-resistant *Staphylococcus aureus*

**OC020**

# Experience of Sentinel Axillary Node Biopsy in Early Breast Cancer Patients at SASMEC: An Interim Analysis

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**Introduction:** Sentinel lymph node biopsy (SLNB) is the current trend of axillary staging in early breast cancer. The aim is to reduce the risk of lymphedema as compared to the traditional axillary dissection. Our objective is to review our experience in sentinel lymph node biopsy for early breast cancer at SASMEC. **Materials and Methods:** This is a retrospective review involving early breast cancer patients with clinically negative axillary lymph nodes (T1 T2, cN0) between October 2022 till October 2023 at Sultan Ahmad Shah Medical Centre@IIUM. During SLNB, 3 ml of methylene blue 1% was injected into the peritumoral area. It is followed by frozen section sample to confirm the presence of metastasis. For those with metastasis, we will proceed with axillary lymph node dissection (ALND). **Results:** Sentinel lymph nodes (SN) were identified in 10 patients. Eight patients had negative metastasis on frozen section and SLNB sufficed. Two patients were positive for metastasis and subsequently proceeded with axillary dissection. They were namely one micrometastasis (0.3 mm) and one macrometastasis were detected from the frozen section sample. No serious adverse event was observed. **Conclusion:** Single method sentinel node biopsy in a good hand is sufficient for axillary staging in early breast cancer. In a limited resources center, we can also benefit the patient by reducing the risk of debilitating lymphedema and unnecessary axillary dissection.

Keywords: Early breast cancer; methylene blue dye; sentinel node biopsy

**OC021**

# The Safety of Labour Using Zhang's Criteria Over Friedman's Criteria at Sultan Ahmad Shah Medical Centre @IIUM: A Retrospective Study

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**Introduction:** Defining the exact cervical dilatation that represents active phase of labour remains a challenge as the basis of the current partograph used since 2000 is based on Friedman's work in 1950s. Zhang and colleagues in 2002 revealed that, primigravida in labour progresses more slowly before 6 cm of cervical dilatation and quicker afterwards with higher risk of instrumental and primary caesarean deliveries. **Materials and Methods:** This is a retrospective comparative cross-sectional study conducted in a tertiary hospital in Kuantan, Pahang. Total of 284 term singleton vertex delivery were analysed. Comparison between Friedman's and Zhang's criteria were done with independent t-test for numerical data and Pearson's chi-square for categorical data. **Results:** Out of the 284 deliveries included in this study, 204 fits Friedman's criteria as this is our current local practice, while the rest were Zhang's. Demographically they are homogenous. Majority are Malay ethnic 88.3%. Primiparous in Zhang's criteria 29.4% and 51.3% in Friedman's criteria. Multiparous in Zhang's criteria is 70.6% and Friedman's criteria 48.7%. Overweight 45% and 38.8%, respectively. A total of 77.9% with comorbid in Zhang's criteria meanwhile 87.5% in Friedman's criteria. Meanwhile 93.1% of mothers in Zhang's criteria presented in spontaneous labour in comparison to 51.3% in Friedman's criteria. Total of 60.2% mothers in Zhang's criteria required intrapartum analgesia meanwhile 87.5% in Friedman's criteria. A total of 75.6% primiparous delivered via SVD in Zhang's criteria compared to 68.3% in Friedman's. 95.3% multiparous women in Zhang's criteria delivered SVD compared to 86.4% in Friedman's. Similar proportion of EMLSCS between the two group in both primiparous and multiparous. New-born outcome was similar in both groups in terms of APGAR score at 1 minute and 5 minutes and NICU and SCN admission. **Conclusion:** Zhang's criteria as safe as Friedman's and has better obstetrics outcome and similar neonatal outcome, thus should be adopted.

Keywords: APGAR score; emergency lower segment caesarean section; friedman; partogram; spontaneous vertex delivery; Zhang

**OC022**

# Dual Pathology in Young Female – A Diagnostic Challenge

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**Introduction**: To report an uncommon case of Vogt-Koyanagi-Harada (VKH) disease following *Bartonella henselae* infection in young female. **Materials and Methods**: A case report. **Results**: A 15-year-old Malay female complained of both eye blurring of vision for two months. It was associated with throbbing headache and eye discomfort. Visual acuity in the RE was 6/18 (PH 6/12) and the LE was 6/15 (PH 6/6). Examination of both eyes showed presence of anterior uveitis with bilateral optic disc swelling and partial macular star. The *Bartonella henselae* serology was positive. Patient was diagnosed with bilateral neuroretinitis secondary to Ocular Bartonellosis. She was started with oral azithromycin for six months. Following treatment, patient's symptoms improved with resolution of neuroretinitis. 11 months later, the patient was presented again with RE vision of light perception (LP) while the left eye was 6/15 (PH 6/9). She denied any headache, skin, or ear symptoms. Fundus examination showed bilateral optic disc swelling and retinal hyperpigmentary changes with right exudative macular detachment and choroidal granuloma. The investigations were negative for infective and inflammatory origin. Fundus fluorescein angiography showed minimal pin-point leakage in early phase and moth-eaten appearance in late phase. Hence, the diagnosis of chronic VKH was made. She was started with systemic prednisolone 1mg/kg daily. Following treatment, her vision was improved and currently on tapering dose of steroid. **Conclusion:** Presence of consecutive different ocular pathology in a patient will make the diagnostic process very challenging. High degree of suspicion will ensure correct diagnosis and management to patient.

Keywords: *Bartonella henselae*; cat scratch disease; ocular bartonellosis; vogt-koyanagi harada; VKH

**OC023**

# Outcome of Trans Pars Planar Vitrectomy Surgery for Tractional Retinal Detachment in Sultan Ahmad Shah Medical Centre @ IIUM – A 4 Years Review

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**Introduction:** Tractional Retinal Detachment (TRD) is the separation of the neurosensory retina from the retinal pigment epithelium (RPE) caused by progressive contraction of fibrovascular membranes over the surface of the retina. TRD affecting the macula is one of the major causes of blindness in patients requiring Trans Pars Planar Vitrectomy surgery (TPPV) The aim of the surgery is to achieve anatomical attachment of retina, to maintain existing vision and to prevent further decline in vision. **Objectives:** To review the clinical profile and surgical outcome of TRD patients who underwent TPPV surgery in Sultan Ahmad Shah Medical Centre @ IIUM (SASMEC@IIUM) from 2020 until 2023. **Material and methods:** Retrospective single-centre case series. **Results:** A Total of 27 patients (31 eyes) with a diagnosis of TRD involving macula who underwent TPPV were reviewed. The average age was 51 years old. Sixteen were female. Apart from diabetes mellitus, 96% of patients had other comorbid such as dyslipidemia, hypertension, and renal disease. 81% of patients had poor diabetic control with HbA1c >8%. In terms of eGFR level, majority (37%) patients has eGFR >90. Following TPPV surgery, 68% of the patients showed improvement of more than two lines Snellen chart visual acuity. The remaining patients either had no improvement or worsening of visual acuity. The patients with no improvement in visual acuity are shown to have HbA1c >8%, and their preoperative vision is worse than 6/60 from Snellen Chart. **Conclusion:** This study suggests that most patients with TRD had multiple comorbidities and had end organ damage. Although retinal reattachment is possible, the damage to the photoreceptors may be too much for visual improvement. It is crucial to discuss visual prognosis before any surgical procedures. It is even more important to advocate good diabetic control and early eye screening at the primary level.

Keywords: Advanced diabetic eye disease; tractional retinal detachment; trans pars planar vitrectomy

**OC024**

# Clinical Profile of Retinal Vein Occlusion in Sultan Ahmad Shah Medical Center @ IIUM – 7 Years Review

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**Introduction:** Retinal vein occlusion can be divided into central retinal vein occlusion (CRVO), branch retinal vein occlusion (BRVO) and hemi-vein occlusion (HRVO). It is a threat to vision and can lead to permanent visual disability. This study aims to review the clinical profile of retinal vein occlusion at Sultan Ahmad Shah Medical Centre @ IIUM (SASMEC@IIUM). **Material and methods:** Retrospective case series study from 2017 to 2023. **Results**: A total of 20 patients (22 eyes) were reviewed. Out of 20 patients, 15 patients (75%) were more than 50 years old. There was slight male predominance of the patients (11 male, 9 female). 18 patients (90%) were Malay and two were Chinese. The majority of patients had underlying medical conditions such as hypertension (75%), diabetic mellitus (70%), and dyslipidemia (65%). 12 eyes were diagnosed with CRVO, 8 eyes with BRVO and two eyes with HRVO. The most common presenting symptom was blurring of vision (15 patients). Of all the eyes with CRVO, 67% had vision of Snellen chart 6/60 or worse, compared to BRVO 38% and none for HRVO. Up to 86% of the eyes had macula oedema which caused reduced vision. The mean central retinal thickness (CRT) for CRVO is 600µm, BRVO 434 µm and HRVO 398 µm. Treatment administered included intravitreal anti-vascular endothelial growth factors (Anti-VEGF) - 15 eyes, and combination of intravitreal Anti-VEGF with pan-retinal photocoagulation - 6 eyes. One patient (one eye) was on conservative monitoring. CRVO patients had greatest improvement in visual acuity post treatment with 64% of patients improved two-line or more in Snellen chart. However, CRVO patients show poorer visual outcome compared with BRVO and HRVO, with 42% having visual acuity 6/60 or worse. **Conclusion:** RVO is associated with underlying medical conditions. Early detection, extend of blockage and treatment play a role in the prognosis of retinal vein occlusion.

Keywords: BRVO; CRVO; HRVO; intravitreal anti-VEGF*;* retinal vein occlusion

**OC025**

# Optical Coherence Tomography Characteristics of Diabetic Macular Oedema and its Association with Near Vision among Patients Presented at an East Coast Malaysia Hospital

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**Introduction:** This study mainly aimed to use the European School for Advanced Studies in Ophthalmology (ESASO) classification in identifying the characteristics of diabetic macular oedema (DMO) and describing it into stages. Additionally, to determine the correlation between DMO staging and near vision acuity. **Materials and Methods:** A cross-sectional study was conducted among DMO patients at Ophthalmology Clinic, SASMEC @ IIUM from January 2021 to January 2023. OCT images were analysed and staged according to the ESASO classification termed as "TCED-HFV" by an ophthalmologist. The data was analysed using one-way ANOVA with p-value <0.05 considered statistically significant through IBM SPSS®. **Results:** Total of 89 eyes from 89 patients (42.7% male and 57.3% female) were included in the study with mean age 60.0 (9.1) years old. Majority of patients were Malay (94.4%), mostly with Type 2 DM (97.8%). Durations of DM <10 years (58.4%) was the highest. Through OCT examination, only 3.4% patients have thickness (T) of less than 10% increase above upper normal values. Most patients (64%) have mild cysts (C) and disrupted ellipsoid zone (EZ) and/or external limiting membrane (ELM) (67.4%). Disorganisation of the retinal layer (DRIL) was present in majority of the patients (71.9%) whereas more than half patients (53.9%) had hyperreflective foci (H) of more than 30. Subretinal fluid was absent in most patients (74.2%). More than half (56.2%) patients do not have visible adhesion or traction between vitreous cortex and retina. For the staging, majority of the patients (67.4%) were considered advanced DMO, followed by early DMO (21.3%), severe DMO (7.9%) and atrophic DMO (3.4%). In addition, there was no correlation found between DMO staging and near vision acuity (p = 0.133). **Conclusion:** The ESASO OCT-Based Classification gives standard images for easy daily use. It also provides a comprehensive description of all OCT images and biomarkers.

Keywords: Diabetic macular oedema; ESASO; maculopathy; near vision; OCT

**OC026**

# Incidence of Diabetic Macular Edema among Diabetic Patients Post Cataract Surgeryin Sultan Ahmad Shah Medical Centre @IIUM – 3 Years Review

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**Introduction:** Diabetic retinopathy (DR) is a leading cause of vision loss among individuals with diabetes mellitus. A common comorbidity in DR patients is the development of cataracts, necessitating cataract surgery to restore visual function. However, cataract surgery in DR patients poses challenges due to the potential risk of worsening Diabetic Macular Edema (DME), which can lead to further vision impairment. DME manifests as retinal thickening caused by the accumulation of intraretinal fluid, primarily in the inner and outer plexiform layers of the retina. This study investigates the incidence of DME exacerbation post-cataract surgery and explores associated factors and management approaches. **Materials and Methods:** Retrospective single center case series. **Results:** 474 patients (774 eyes) that underwent cataract surgery between July 2021 till August 2023 were reviewed. 46 eyes (5.9%) developed DME postoperatively. The mean age of patients who developed DME post-operatively was 67 years old. 30 (65.2 %) patients were male and 16 (34.8%) patients were female. 9 eyes were newly diagnosed DME while 37 eyes developed recurrent DME. 41 patients had uncontrolled diabetes with mean HbA1c ranging between 8.5 and 13.8. All 46 eyes were found to have preexisting DR:7 with Mild Non-Proliferative Diabetic Retinopathy (NPDR), 24 with Moderate NPDR, 8 with Severe NPDR and 7 with proliferative retinopathy. 9 patients had intraoperative surgical complication. All 46 patients who developed DME post op were subjected to at least 3 doses of IVAI Ranibizumab 0.5 mg in 0.05 ml. **Conclusion:** This study provides detailed clinical profile including demographic data, incidence of new and recurrent DME as well as risk factors associated with it. Optimum diabetic control is important to reduce the incidence of DME. Patients with preexisting DR and those who had intraoperative surgical complications need to be monitored closely for DME. Early detection and intervention will provide better visual prognosis to patients.

Keywords: Diabetic macular edema; phacoemulsification

**OC027**

# Beyond the Lens: Surgeon Experience and Incidence of Posterior Capsular Rupture (PCR) in the Largest Tertiary Hospital in Pahang

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**Introduction:** Cataract is the most common cause of eye blindness in third world countries and phacoemulsification is the most common eye surgery done in the world. Posterior capsular rupture (PCR) is the most common intraoperative complication. **Materials and Methods:** Retrospective cohort study. **Results:** Cataract patients aged over 18 who underwent phacoemulsification surgery between 1st January 2022 till 31st December 2022 in Hospital Tengku Ampuan Afzan (HTAA), Kuantan were included in this retrospective cohort study. Data was extracted from National Eye Database (NED). Total cases of 1144 were included in this study. A Specialist or Ophthalmologist is a medical professional who has completed their residency program in Master of Ophthalmology and fulfilled the gazettement requirement. A Gazetting Specialist is a medical professional who completed their residency program and is ongoing intensive training before being officially gazetted as an Ophthalmologist. The medical officers who performed the cataract operation were those who had more than 2 years of experience in Ophthalmology. Most surgeries were performed by Specialists accounting for 720 cases (63.3%), 346 cases (30.1%) by Gazetting Specialists, and 78 cases (6.8%) by medical officers. A total of 32 eyes (2.88%) had PCR at surgery in a year. The PCR occurred in 18 cases (2.5%) of Specialists surgical cases, 9 cases (2.61%) by Gazetting Specialists in training and the remaining 5 cases (6.41%) by the medical officers under the supervision of a Specialist. **Conclusion:** There is no significant difference in the incidence of PCR between Specialists and Gazetting Specialists. The selection of cases for Gazetting Specialists predominantly involved uncomplicated cases. Additionally, there was a slightly higher rate of PCR in cases performed by medical officers who were still in their early training stages.

Keywords: Cataract; Ophthalmologist; posterior capsular rupture

**OC028**

# Glycaemic Control and Quality of Life among Older Population with Diabetes in Three Districts of Peninsular MalAYSIA

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**Introduction:** The older population is increasing in numbers worldwide. Most of them have multiple comorbidities including diabetes. Diabetic control in elderly is usually challenging. Their quality of life and socioeconomic condition could affect their disease progress. This study aims to measure the diabetic control and its associated factors, including quality of life among the older population with diabetes in three different districts of Malaysia. **Materials and Methods:** The patients' health and background details were recorded. A validated Malay version of diabetes quality of life questionnaire (DQOL) was used. 485 elderly diabetic patients were recruited based on two proportion formula comprising all clinics in those districts representing urban vs rural area. Data were analyzed using simple and multiple logistic regression for the association. **Results:** Only 30.5% of the patients have good diabetic control of HbA1c $\leq$ 7.5% with patients in Kuala Terengganu district achieved better sugar control ($p < 0.001$). Univariate analysis showed significant association between diabetic control and male gender, ex-smoker, comorbid, insulin treatment, Kuala Terengganu district and quality of life score. However, the only significant diabetic control predictor based on multiple logistic regression is the quality of life of the elderly patients (OR = 1.32, CI 1.047 – 1.224). **Conclusion:** Level of diabetes control in these three districts are poor, concomitant with the poor control of all the non-communicable disease profiles. It is essential to embark on a holistic approach in dealing with the elderly diabetic management by including the quality-of-life assessment. Improvement of the quality of life in those with poor glycaemic control can in fact result in better disease outcomes.

Keywords: Diabetes; elderly; quality of life

**ONC001**

# Comparative Analysis of Colorectal Cancer Cells Responses to Trail Treatment: Investigation into The Role of Interleukins, Potential Regulators and Mechanisms

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**Introduction:** TRAIL resistance has become one of the problems in TRAIL-based therapy, observed in a large majority of cancers, including colorectal cancer (CRC). Recent studies have revealed the role of interleukins and their downstream pathway in driving TRAIL resistance. We investigated the role of interleukin-1 alpha (IL-1α), interleukin-8 (IL-8) and phosphatidylinositol-3 kinase (PI3K) pathway in modulating CRC cell responses to TRAIL. **Materials and Methods:** HT-29 and HCT-116 cells were utilised to establish the TRAIL $IC_{50}$ in this study. The cells were pre-stimulated with IL-1α and IL-8 followed by TRAIL to investigate the effect of these interleukins in TRAIL-induced cell death. Cell viability was determined using an MTT assay. Expression levels of autophagy, apoptosis, TRAIL death and TRAIL decoy receptor genes were measured by RT-qPCR. The role of PI3K in TRAIL resistance was determined using a pharmacological inhibitor, wortmannin. **Results:** Our results showed that HT-29 ($IC_{50}$=N.D) and HCT-116 ($IC_{50}$=44.2 ng/mL) cells exhibited differential sensitivity to TRAIL. HT-29 cell viability was maintained even at the highest concentration of 4000 ng/mL TRAIL while HCT-116 cell viability decreased in a concentration-dependent manner upon TRAIL treatment. IL-1α did not modulate TRAIL-induced cell death in HCT-116 cells while IL-8 significantly increased the cell viability to TRAIL. However, the autophagy, apoptosis, TRAIL death and TRAIL decoy receptors genes were not modulated by IL-8. Inhibition of the PI3K pathway with wortmannin allows HCT-116 cells to regain their sensitivity to TRAIL-induced cell death despite the presence of IL-8. This suggests the PI3K pathway may be activated by IL-8 to promote HCT-116 cell survival against TRAIL. **Conclusion:** This study demonstrated the potential regulatory role of IL-8 and PI3K pathway in modulating CRC cells' sensitivity to TRAIL. Further research is needed to verify their involvement, which may lead to the development of potential strategies for overcoming TRAIL resistance in CRC.

Keywords: Colorectal cancer; interleukin-8, phosphatidylinositol-3 kinase (PI3K); tumour necrosis factor (TNF)-related apoptosis-inducing ligand (TRAIL)

ONC002

# Receptor-like Molecules (VDR and ICAM-1) Genetic Polymorphism is Associated with Dengue Infection in Sabah Population

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**Introduction:** Dengue infection a common infection in tropical countries including Malaysia. In this study, an association between susceptibility of dengue and single genetic polymorphism was investigated. **Materials and Methodss:** The study involves a case-control study. Adults who are aged above 18 years old, diagnosed with dengue and consented to participate were included in this study. DNA from blood was extracted using PrimePrep™ Genomic DNA Extraction Kit (GeNet Bio, Korea) while genotyping was performed by using Fluidigm Genotyping Array. A chi-square test and Fisher exact test were conducted, and the presence of group differences was determined by their p-value. Statistical analysis was performed using strata 6 software. **Results:** There was a total of 382 participants: 297 from Kadazan-Dusun ethnicity and 85 from Bajau ethnicity, composing of 200 male and 182 female. The mean age of study population was 39.00±17.04 years old. Both case and control subjects' genotype distributions met the Hardy-Weinberg equilibrium. The results showed that GG genotype of ICAM-1 SNP (rs 5498) is more frequent among Kadazan-Dusun ethnicity with dengue cases as compared to control of both gender [30 (44.12%) versus 22 (25.00%), p = 0.019 in male; 41 (59.42%) versus 19 (26.39%), p<0.001 in female]. Regarding VDR SNP (rs 2228570_1), the prevalence of the C allele is two times higher in controls than it is in dengue cases among Kadazan-Dusun people [29 (21.32%) versus 18 (10.23%), OR = 2.379, p = 0.007]. **Conclusion:** These results indicate that ICAM-1 and VDR

gene polymorphism have a crucial role in dengue pathogenesis and may have consequences for therapeutic and preventive strategies for Sabah population.

Keywords: Dengue; gene polymorphisms; genotyping; Sabah population

**ONC003**

# Workplace Violence: Exploring the Experience of Workplace Violence among Healthcare Practitioners in Klang Valley

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**Background:** It is well known that the workplace violence among healthcare practitioners is higher than other profession, therefore every healthcare practitioner may experience workplace violence by becoming a victim from assault or interact with other coworkers who have been attacked. Training and education are crucial to minimize the possibility of becoming a victim of workplace attacks. However, there is a limited fundamental knowledge that could support the establishment of such the training and education within Malaysian healthcare setting. **Aims:** This study aimed to explore the experience of workplace violence among healthcare practitioners working in the major hospitals in Klang valley. **Materials and Methodss:** Using a generic qualitative design, data were collected using face to face semi-structured interviews among 18 nurses, seven (7) medical assistants, and two (2) medical doctors. The interviews were transcribed and analysed using framework analysis. **Results:** Three themes were developed from the interview data, namely tolerating with violence culture, understanding multifaceted triggers and causes, and achieving positive organizational change. Most of the incidents recounted by the participants involved verbal violence, only a few responses described physical violence. They described that the most common reasons for workplace violence were congested clinical areas, shortage of staff, long waiting time, and failure in communication. **Conclusion:** Reinforcement of the existing standard guidelines, effective communication courses are recommended as strategies to prevent workplace violence in the hospital setting.

Keywords: Experience; healthcare setting; qualitative research; workplace violence

**ONC004**

# Dosimetry Evaluation Based on Radiation Interaction Probability of *Rhizophora* spp. Bonded with Soy Protein Phantom for Medical Physics Applications

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**Introduction:** Tissue equivalent phantom (TEP) materials are effective tools for medical physics development, optimisation, and performance evaluation. A Malaysian mangrove wood, *Rhizophora* spp. (R.spp) bonded with soy protein phantom, was studied as a potential TEP in medical physics application. The aim of this study is to determine the radiation probability interaction of R. spp bonded with soy protein phantom. **Materials and Methods:** The R.spp bonded with soy protein was evaluated for its elemental composition. Then, the probability of photon interaction was obtained at energy from 1 keV to 50 MeV using a Monte Carlo simulation with EGSnrc PEGS4 (EGSnrc – electron gamma shower by National Research Council, PEGS4 – pre-electron gamma shower 4). The EGSnrc PEGS4 was used to interpolate experimental results and compared with that of water and solid water phantoms. **Results:** The identical curve was observed at three different media; R.spp bonded with soy protein phantom, solid water phantom and water phantom for different photon interaction; photoelectric absorption, Compton scattering and pair production between the energy range of 1 keV to 50 MeV. **Conclusion:** The R.spp bonded with soy protein particleboard phantom was shown to be ideal for use in medical physics dosimetry as TEP material.

Keywords: Medical physics; Monte Carlo; radiation dosimetry; *Rhizophora* spp.; tissue equivalent phantom

**ONC005**

# Directional Cloning of HIV-1 Vpr Gene into Mammalian Expression Vector

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**Introduction:** The viral protein R (Vpr) is expressed by Human Immunodeficiency Virus (HIV) to aid in viral life cycle and manipulate host's machineries. To explore the role of Vpr in HIV-1 viral-host protein network via amber suppression technology, the expression of synthetic non-infectious Vpr protein in mammalian cells can help researchers to understand the molecular events driven by interactions between virus and host proteins. Additionally, the purification of this virus-host protein complex is an important step in researching its function, which can contribute to drug target discovery against HIV infection. **Materials and Methods:** The Vpr gene was amplified via polymerase-chained reaction (PCR) using specifically designed primers to add restriction enzyme sequences for DNA digestion at both N and C-terminal of Vpr gene. Restriction digestions by Not1 and Xho1 were applied to both vector and insert, creating sticky ends, incompatible for self-ligation. The ligation of the vector and insert was using T4 DNA ligase and transformed into DH5 Alpha *E. coli*, and the purified plasmid DNA was sent for Sanger sequencing. **Results:** We demonstrated successful directional cloning of Vpr gene from bacterial expression vector to mammalian expression vector, carrying dual protein tags with the assistance of restriction enzymes and specifically designed primers. The insertion of Vpr gene in the recipient vector was validated via DNA sequencing analysis. **Conclusion:** The plasmid DNA containing HIV-1 Vpr gene with protein tags will increase the efficiency of virus-host protein detection in mammalian cells, making it a promising candidate for downstream experiments. This study serves as a stepping stone in health and medical research, particularly in developing or repurposing antiviral drugs and therapies for HIV infection disease.

Keywords: Mammalian expression system; protein detection; protein tag; recombinant DNA

**ONC006**

# The Current Provision of Post-Stroke Vision Care in Malaysia: A Qualitative Interview among Stroke-care Professionals

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**Introduction:** The inequality in care provision for stroke survivors who have visual problems has been reported in the UK. It revealed that many stroke survivors continue to have unmet needs concerning their visual problems. Post-stroke visual impairment has an incidence of approximately 60% in stroke survivors. **Materials and Methods:** Semi-structured interview study, with purposive sampling and inductive qualitative content analysis was conducted. A total of 8 stroke-care professionals from Teaching University Hospitals in Malaysia were recruited for the interview. Data saturation has been reached after the total number of 8 expert panels. Ethical approval has been obtained from the IIUM Research Ethics Committee following the Declaration of Helsinki. **Results:** All respondents reached a consensus that the care pathway in assessing visual impairment remained unclear and varied from one professional to another. Only gross confrontational visual field test was done at the emergency department and inpatient ward by non-specialist personnel. In outpatient services, rehabilitation focuses mainly on the improvement of bodily function and activity of daily living. Patients were referred to the Ophthalmology Clinic for comprehensive eye assessment only if there were specific visual complaints by the patients. There is also a need for the rehabilitation team to include optometrists and ophthalmologists. **Conclusion:** This study shows that there are some gaps and loopholes in the current provision of post-stroke vision care in Malaysia which require immediate attention. This suggested that a revised and standardized protocol needs to be developed.

Keywords: Post-stroke vision care; stroke; vision

**ONC007**

# Effects of Kelulut Honey on Female Reproductive Function in Letrozole-induced Polycystic Ovary Syndrome Rats

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**Introduction:** Polycystic ovary syndrome (PCOS) is a disorder that affects reproductive, endocrine and metabolic systems. Currently, PCOS medications are associated with non-compliance and adverse effects. Discovering effective and safe nutraceuticals, such as kelulut honey (KH), is essential to provide complementary treatment options for patients with PCOS. Therefore, this study investigated the effects of KH alone and in combination with metformin or clomiphene in alleviating reproductive and metabolic abnormalities in PCOS-induced rats. **Materials and Methods:** Female Sprague-Dawley (SD) rats were given 1 mg/kg/day of letrozole for 21 days to induce PCOS. PCOS rats were then divided into six groups: untreated rats received distilled water, KH (1 g/kg/day), metformin (500 mg/kg/day), clomiphene (2 mg/kg/day), a combination of KH (1 g/kg/day) and metformin (500 mg/kg/day), and a combination of KH (1 g/kg/day) and clomiphene (2 mg/kg/day), orally for 35 days. **Results:** Administration of KH to PCOS rats significantly increased the activities of ovarian antioxidant enzymes, including catalase, superoxide dismutase and glutathione peroxidase, and decreased the serum levels of testosterone and LH ($p < 0.05$ compared with the untreated PCOS group). Additionally, KH increased aromatase enzyme (Cyp19a1), androgen and oestrogen receptors and decreased steroidogenic enzyme (Cyp17a1) mRNA expression and protein distributions in the ovaries. Similarly, KH treatment improved folliculogenesis by decreasing the number of cystic follicles, increasing the number of antral follicles, corpus luteum, and the expression of folliculogenesis-related genes (*Kitlg and Bmp1*). However, KH had no effect on body weight gain, blood glucose, progesterone receptor expression and malondialdehyde levels in ovary and serum levels of insulin, oestradiol, progesterone and FSH. **Conclusion:** This study demonstrates that KH can ameliorate the major abnormalities associated with PCOS in an animal model. These findings may provide the basis for future clinical trials to explore the potential use of KH as a complementary treatment for women with PCOS.

Keywords: Antioxidative; folliculogenesis; kelulut honey; PCOS; sex receptor

**ONC008**

# Spatial Autocorrelation and Hotspot Analysis of Notified HFMD Infections in Pulau Pinang, Malaysia between 2017 And 2022

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**Introduction:** Hand, Foot and Mouth Disease (HFMD) is an epidemic with the potential to become a pandemic. By utilizing spatial autocorrelation and hotspot analysis with appropriate polygon size, deeper understanding of the disease's spatial patterns can be obtained. This can help identify specific geographical areas for preventive measures. Our study aimed to test presence of spatial autocorrelation and hotspots analysis of HFMD infections in Pulau Pinang between 2017-2022. **Materials and Methods:** This was cross sectional study conducted using notified HFMD data and census tracts in Pulau Pinang. We calculated and mapped the incidence of notified HFMD infections at subdistrict level using *tmap* package in R software. By using *spdep* package in R software, we tested for spatial autocorrelation using Moran I-statistic and further decomposed the findings through Local Indicator of Spatial Autocorrelation (LISA) for hotspot identification. **Results:** The incidence of notified HFMD infections in Pulau Pinang was increasing in trend with highest incidence in 2022, followed by 2018. Global-Moran I statistic ranging between 0.21 and 0.38 indicating presence of spatial autocorrelation in all studied years. LISA map showed the high-high (H-H) areas were primarily concentrated along the eastern coast of Penang Island indicating the hotspots region. There was shifting of Low-Low (L-L) regions to High-Low (H-L) region especially in Seberang Perai side indicating growing risk of infections. **Conclusion:** HFMD in Pulau Pinang represents Global and Local autocorrelation across its subdistricts. Preventive efforts should prioritize Bandar Georgetown and Mukim 13 (Paya Terubong) in the Timur Laut District, as well as Mukim 12 (Bayan Lepas) and Mukim 11 (Telok Kumbar) in the Barat Daya District. Attention also should be given to H-L areas such as Subdistrict Mukim 6 in District of Seberang Perai Utara and Mukim 1 in Seberang Perai Tengah that have the potential to evolve into H-H area as population density grows.

Keywords: Getis-Ord Gi* statistic; HFMD; hotspot Analysis; Moran I statistic; spatial autocorrelation

**ONC009**

# Schizophrenia and Apolipoprotein: A 10-Year Bibliometric Analysis

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**Introduction:** Schizophrenia is a chronic and complex mental disorder that significantly impacts one's quality of life. The expansion of proteomic studies over the past decade offers a better understanding of the underlying pathophysiology of schizophrenia and the formulation of a protein targeted therapeutic approach. This study aimed to conduct a bibliometric analysis on the role of apolipoprotein as a biomarker in schizophrenia to provide a summary of its chronicle, present state and to identify potential future research directions. **Materials and Methods:** Publications on the association between schizophrenia and apolipoprotein were retrieved from the Scopus database using the search terms "schizophrenia" and "apolipoprotein". Only original or review articles in English published between 2013 and 2023 were included. The bibliometric analysis was carried out using the R software packages Bibliometrix and Biblioshiny. **Results:** The filtered search identified 89 documents (80 original articles and 9 review articles) that generally showed an increasing trend with an annual growth rate of 10.31 percent. There were 580 authors that contributed to this field, with an average of eight to nine people co-authoring each paper. Altogether, 64 journals contributed to this field, with Neuropsychiatric Disease and Treatment, Frontiers in Psychiatry, and Translational Psychiatry being the three most productive. China leads in scientific production, followed by the Netherlands and the United States. In terms of country collaboration, the United Kingdom and Germany had the highest level of collaboration. The important keywords in the clusters were schizophrenia, biomarkers, proteomics, apolipoprotein E, antipsychotic drugs, bipolar disorder, and obesity. According to the thematic evolution analysis, apolipoprotein E has been frequently discussed and associated with schizophrenia and antipsychotic drugs. **Conclusion:** The association between schizophrenia and apolipoprotein has grown in significance over the past decade. Our findings highlight the potential role of apolipoprotein E in the establishment of schizophrenia and warrant further exploration.

Keywords: Apolipoprotein; bibliometric analysis; biomarkers; schizophrenia

**ONC010**

# The Effect of Mindfulness as the Psychological Intervention on Perceived Stress among Breastfeeding Mothers with Intrauterine Growth Restriction (IUGR) Babies

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**Introduction:** High cortisol level during pregnancy due to psychological stress could cause Intrauterine Growth Restriction (IUGR) towards baby which could affect the baby's neurodevelopment and mental health. However, the epigenetic of the IUGR baby can be altered through breastfeeding and bonding between the mother and baby. Mindfulness intervention should be given to reduce the mother's stress as mothers need to be supported for their children to be optimally breastfed. Hence, the objective of this study was to determine the effectiveness of mindfulness as a psychological intervention to reduce the level of perceived stress among breastfeeding mothers. **Materials and Methods:** This quasi-experimental study investigated the effect of mindfulness on perceived stress with measurement in baseline, pre-test, and post-test on 23 pregnant women with diagnosis of late-onset IUGR babies at Department of Obstetrics and Gynaecology, SASMEC @IIUM. Perceived Stress Scale (PSS) was measured during antenatal period as the baseline and after confinement as the pre-test. Later, a counselling session with mindfulness therapy as the psychological intervention was conducted, followed by another two follow up sessions with intervals of two to three weeks. PSS was measured again after the third counselling session as the post-test. Data collected was then analyzed using Statistical Package for Social Science (SPSS) version 27. **Results:** Based on the analysis of variance (ANOVA), there is no significant reduction in perceived stress following the psychological intervention with the mean score for pre-test (M=17.3, SD=4.9) and post-test (M=15.1, SD=5.8), ($p<0.05$) but still there is slight reduction as compared to the baseline (M=15.9, SD=4.6). **Conclusion:** Mindfulness can be considered as a coping technique to reduce the perceived stress among the breastfeeding mothers and consequently may improve the condition of the IUGR

babies.

Keywords: Breastfeeding; intrauterine growth restriction; mindfulness; perceived stress

**ONC011**

# How MPTP Neurotoxin Mirrors Dopamine Entry into Dopaminergic Neurons: Insights from Molecular Docking Analysis

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**Introduction:** 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) is a neurotoxin capable of inducing parkinsonism in both humans and animals. A key toxic trait is its metabolite, 1-methyl-4-phenylpyridinium ($MPP^+$), which mimics dopamine's entry into dopaminergic neurons due to structural similarity. This allows $MPP^+$ to be transported into the neurons via dopamine transporter (DAT) protein. To visually depict this similarity in their interaction with the DAT protein, we conducted a ligand-protein docking analysis. We also compared this analysis between two species: *Homo sapiens* (human) and *Danio rerio* (zebrafish). **Materials and Methods:** We obtained the 3D structure of DAT proteins from the PDB and UniProt databases. These structures were then processed for docking using the AutoDock Tools program. The 2D structures of the ligands, $MPP^+$ and dopamine, were sourced from the PubChem database and converted into their respective 3D structures using Avogadro software. The protein-ligand docking was carried out using the AutoDock Vina program, and the results were visualized using PyMol and LigPlot+ software. **Results:** $MPP^+$ forms hydrophobic bonds with specific residues in the human DAT protein, while dopamine creates hydrogen and hydrophobic bonds. Both $MPP^+$ and dopamine share seven out of nine binding residues in the DAT interaction, with similar binding affinities at -7.2 and -6.1 kcal/mol, respectively. For zebrafish, $MPP^+$ establishes hydrophobic interactions with nine shared residues from the dopamine-DAT complex. The binding affinity for $MPP^+$-DAT closely mirrors that of dopamine-DAT, at -7.6 kcal/mol and -6.4 kcal/mol, respectively. Importantly, $MPP^+$ binds to the DAT protein in both species at a spatially similar location to dopamine. **Conclusion:** The molecular docking analysis conducted on both human and zebrafish DAT proteins provide evidence that the neurotoxin MPTP exerts its toxic effects on dopaminergic neurons via its metabolite $MPP^+$, which occurs through the mimicry of dopamine structure, enabling $MPP^+$ to bind to the DAT protein and access the neurons.

Keywords: Dopamine; dopaminergic neurons; $MPP^+$; MPTP; molecular docking

**ONC012**

# Effects of Zerumbone on the Invasiveness of MDA-MB-231 Breast Cancer Cells Under Hypoxia

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**Introduction:** Breast cancer is the most prevalent cancer worldwide, accounting for 2.3 million new cases and 685,000 deaths in 2020 alone. Breast cancer mortality is often associated with metastasis, whereby cancer cells spread from the primary tumour site to distant organs. Moreover, tumours often experience hypoxia, or low levels of oxygen, which further enhances metastatic progression and promotes resistance to conventional treatments. Thus, the search for alternative approaches to prevent metastasis remains crucial. One such potential medicament is zerumbone, a phytochemical derived from the wild ginger *Zingiber zerumbet Smith*. However, despite exhibiting various anticancer properties, the influence of zerumbone on breast cancer progression in the presence of hypoxia remains poorly elucidated. Therefore, this study aims to investigate how zerumbone affects the invasiveness of breast cancer cells under hypoxic conditions. **Materials and Methods:** MDA-MB-231 breast cancer cells were subjected to dimethyloxalylglycine (DMOG) in order to mimic hypoxia. MTT (3-[4,5-dimethylthiazol-2-yl]-2,5 diphenyl tetrazolium bromide) assay was performed to determine the cytotoxicity of zerumbone in MDA-MB-231 cells under normoxia and hypoxia. Transwell invasion assay was carried out to compare the effects of zerumbone on the invasiveness of MDA-MB-231 cells under normoxic and hypoxic conditions. **Results:** Considering how hypoxia increases metastasis, MTT assay revealed that the $IC_{20}$ values of zerumbone towards MDA-MB-231 cells were 53 µM and 58 µM under normoxia and hypoxia, respectively. Furthermore, the results of transwell invasion assay for the untreated groups showed a significant increase in cell invasion under hypoxia compared to normoxia ($p = 0.0002$). Nevertheless, treatment with zerumbone significantly reduced the number of invaded cells in both normoxic ($p = 0.0085$) and hypoxic conditions ($p<0.0001$). **Conclusion:** Zerumbone has shown to reduce the invasiveness of MDA-MB-231 cells in the presence of hypoxia, making it a potential anti-metastatic agent that could possibly mitigate the progression of breast cancer.

Keywords: Breast cancer; hypoxia; invasion; metastasis; zerumbone

**ONC013**

# Total Phenolic Contents and Free Radical Scavenging Activity of Selected Edible Flowers Available in Malaysia

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**Introduction**: Edible flowers have recently gained popularity due to their appealing aesthetic as well as the potential health benefits connected with the presence of some bioactive chemicals. They are rich in antioxidants and phytochemical compounds such as flavonoids, tannins, saponins and phenols. Phenolic compounds present in edible flowers are crucial for aiding free radical scavenging. This study was conducted to identify the total phenolic contents and antioxidant activity between *Clitoria ternatea*, *Hibiscus sabdariffa*, *Rosa spp*, *Chrysanthemum morifolium*, *Rosa rugosa* and *Jasminum sambac*. **Materials and Methods:** In this study, 80% methanol was used as a solvent in crude extraction. DPPH assay was used to evaluate the scavenging activity of flowers while the total phenolic compound was determined by using the Folin-Ciocalteu method. A statistical significance of $p<0.05$ was considered to be significant. **Results:** All the flower extracts exhibited a wide range of total phenolic content varying from 2003 ± 18.62 mg GAE/g dry extract to 452 ± 8.06 mg GAE/g dry extract. The antioxidant activity varied from 94.73 ± 0.10% to 5.12 ± 0.51%. From five flower extracts, *R. rugosa* showed the greatest total phenolic content (2003 ± 18.62 mg GAE/g dry extract) and antioxidant assay ($IC_{50}$ = 70.03 ± 0.07 g/mL). Besides, *J. sambac* exhibits the lowest total phenolic content (452 ± 8.06 mg GAE/g dry extract) whereas *C. ternatea* has the lowest antioxidant activity (5.12 ± 0.51%). Positive linear correlations were recorded for total phenolic content and antioxidant activity ($r^2$=0.7531), indicating that phenolic content contributed to the antioxidant capacities of these flowers. **Conclusion:** It can be concluded from this study that phenolic content contributed to the scavenging capacities of these edible flowers. These findings provide support for the use of these edible flowers as possible dietary sources of antioxidants, which may be beneficial in avoiding the progression of various oxidative conditions/

Keywords: Antioxidant; DPPH free radical scavenging activity; edible flowers; total phenolic content

**ONC014**

# Prediction of Iron Deficiency Anaemia using Artificial Intelligence

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**Introduction:** Iron Deficiency Anaemia (IDA) has high prevalence globally as well as in Malaysia. In uncomplicated patients, serum ferritin (SF), red cell indices and red blood cell morphology, provide a sensitive indication of iron deficiency. However, ferritin is an acute-phase protein that becomes elevated in response to inflammation which complicates the diagnosis of IDA. The aim of this study is to predict IDA, anaemia of chronic disease (ACD) and IDA with inflammation using Artificial Intelligence. **Materials and Methodss:** The source of data is from digital records of Sultan Ahmad Shah Medical Centre, spanning six years (2017-2022). Data was analyzed using Google Sheet Appscript. In this study, SF and total iron binding capacity (TIBC) were used for identifying 3 group of subjects with IDA (SF below normal reference), ACD (SF 100 to 200 ug/L, TIBC below normal reference) and IDA with inflammation (SF upper normal limit to 100 ug/L, TIBC below normal reference). The Full Blood Count (FBC) parameters related to the respective subjects were used to train five different types of machine learning and deep learning AI models: Support Vector Classifier, K Nearest Neighbor Classifier, Random Forest Classifier, Gaussian Naive Bayes Classifier and Neural Network classifier, following Cross Industry Standard Process of Data Mining to perform predictive analysis. Serum ferritin was not used in the training. **Results:** Out of all AI models tested, Random Forest Classifier produced the most accurate prediction on all 3 study groups based on FBC parameters, with sensitivity and specificity for IDA (88%,95%), for ACD (88%, 96%), for IDA with inflammation (93%,97%) respectively. **Conclusion:** Our results indicate that AI can give a prediction of IDA in patients with underlying inflammatory conditions by simply using parameters from FBC report. This can effectively assist clinicians with no quick access to serum ferritin and Iron Studies to manage IDA.

Keywords: Anaemia of chronic disease; artificial intelligence; iron deficiency anaemia

**ONC016**

# Antinociceptive Activity of Petroleum Ether Extract of *Muntingia Calabura* Leaves and its Possible Mechanism of Actions

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**Introduction:** *Muntingia calabura* L. (family Elaeocarpaceae), locally known as "Kerukup siam", is a flowering plant that grows easily and widespread in Malaysia. Traditionally, various parts of the plant, for example its leaves, have been used as a source of medicine to relieve pain associated with gastric ulcer, muscle spasm and headaches. Scientifically, the leaves have been reported to possess anti-inflammatory, antipyretic, antinociceptive, antiproliferation and antibacterial activities. The aim of this study was to further evaluate the antinociceptive properties of the *M. calabura* extract using petroleum ether (PEMC). **Materials and Methods:** Five groups of ICR mice (N = 6) were subjected to chemicals (acetic acid-induced abdominal constriction and formalin-induced paw licking test) and thermal (hot plate test) to evaluate the extract's antinociceptive activity. Possible mechanism of PEMC was determined using opioid receptor subtype analysis as well as capsaicin-, glutamate- and bradykinin-induced nociception. The extract (100, 250 and 500 mg/kg) were given 60 min prior to the respective test. Positive control used was either morphine (5 mg/kg) or aspirin (100 mg/kg) while 10% DMSO was used as the negative control. **Results:** Oral administration of PEMC shows a dose-dependent inhibition in both thermal- and chemical-induced nociception. Dose-dependent inhibition was also seen in capsaicin-. glutamate-, and bradykinin-induced paw licking tests. Furthermore, the antinociception caused by PEMC in acetic acid-induced abdominal constriction test was significantly attenuated by intraperitoneal treatment of the opioid receptor antagonists used. **Conclusion:** Based on the result from the thermal- and chemical-induced test, the antinociceptive activity of the semi-purified PEMC extract involved in central and peripheral pain pathways, respectively. The activation of opioid receptors, and the inhibition of TRPV1, glutamate and bradykinin receptors might be the possible mode of action of the extract in exerting its analgesic effect.

Keywords: Antinociceptive activity; *Muntingia calabura*; opioid; petroleum ether extract

**ONC017**

# Effect of Estrogen Replacement Therapy on Depression-associated Neurotransmitters in Perimenopausal Mice

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**Introduction:** Perimenopause becomes a vulnerable window for depression due to its reduced estrogen and autophagy activity. Therefore, the main objective of this study was to investigate the effects of ERT (estrogen replacement therapy) on depression-related neurotransmitters and its related mechanisms in perimenopausal mice. **Materials and Methods:** Natural perimenopausal C57 mice (n=18) were divided into six groups. (1) control group; (2) E2 group (estrogen therapy; (subcutaneous, 0.1 mg/kg every four days)); (3) MPP (estrogen α-receptor inhibitor) + E2; (4) PHTPP (estrogen β-receptor inhibitor) + E2; (5) G15 (estrogen non-nuclear receptor inhibitor) + E2; (6) 3-MA (autophagy activity inhibitors) + E2. After one month of treatment, the serum was analyzed to determine the level of depression-related neurotransmitters 5-HT (5-hydroxytryptamine), DA (dopamine), and ACH (Acetylcholine) using an ELISA kit. **Results:** Estrogen treatment increased the secretion of DA ($p$ <0.05) and ACH ($p$ <0.01) in mice, and the addition of both MPP ($p$ <0.05) and PHTPP ($p$ <0.05) blocked the effects of estrogen. In contrast, G15 and 3-MA only interfered with the secretory effects of estrogen on DA ($P$ <0.01) and ACH ($p$ <0.01), respectively. **Conclusion:** Subcutaneous injection of estrogen increased the secretion of neurotransmitters (DA and ACH) associated with perimenopausal depression, which may be related to estrogen receptors and autophagy levels.

Keywords: Autophagy; depression; estrogen; perimenopause

**ONC018**

# Bibliometric Insights into Schizophrenia and Genetic Variation

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**Introduction:** Schizophrenia is a severe psychiatric disorder that is known for its complexity as well as involves genetic variation. The aim of this study was to explore the trend in the field of genetic variation-related research in schizophrenia from a bibliometric perspective. **Materials and Methods:** Research articles on schizophrenia and genetic variation-related research were obtained from the Scopus database from its inception to October 20, 2023. The search strategy was set as the following using the search terms "Schizophrenia", "genetic variation", "snp" and "cnv". Original articles, reviews, and proceedings were included in the analysis. Using filters, only English articles were selected and used for further analysis. R packages "Bibliometrix" and "Biblioshiny" were used to summarize the main findings, count the occurrences of the top keywords, visualize the collaboration network between countries, and generate a three-field plot. VOSviewer software was applied to conduct keyword co-occurrence analyses. **Results:** A total of 403 publications on schizophrenia and genetic variation were included. Publications were mainly from the USA, UK, and China. The highest number of publications was found in a list of relevant journals. Apart from "schizophrenia" and "genetic variation", the terms "bipolar disorder," "autism," and "GWAS" were also the most frequently used keywords. **Conclusions:** Over the past 17 years, this bibliometric analysis has mapped out an important knowledge structure consisting of countries, institutions, authors, journals, and articles in the research field of schizophrenia and genetic variation. The findings provide not only a comprehensive perspective on the wider landscape of this research topic but also pave the way for potential precision medicine approaches, enabling more targeted therapeutic interventions based on individual genetic profiles.

Keywords: Bibliometric; CNV; genetic variation; schizophrenia; SNP

**ONC019**

# Assessing the Therapeutic Potential of Saffron on Cataracts in Hypercholesterolemic New Zealand White Rabbits

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**Introduction:** Cataract, a leading cause of blindness, is associated with prolonged hypercholesterolemia. Current management is primarily limited to surgical intervention, which may not be accessible to many individuals. Saffron has been recognised for its potential benefits in promoting eye health. However, its specific effects on cataracts remain understudied. This research explores the impact of saffron, administered at varying concentrations, on the development of cataracts in hypercholesterolaemia New Zealand white rabbits (NZWR). **Materials and Methods:** 36 male NZWRs were randomly divided into three main groups: pre-treated group (PT, n=10), and treatment group (TG, n=20) and control group (CG, n=6). PT, TG and CG were subjected to high-cholesterol diets for 4 (PT4, TG4, CG4) and 8 weeks (PT8, TG8, CG8) respectively. TG1 and TG2 were treated orally with saffron aqueous extract (SEE) at concentrations of 50mg/kg/day ($TG4_{50,}$ $TG8_{50}$) and 100mg/kg/day ($TG4_{100,}$ $TG8_{100}$) while CG was given normal saline for 8 weeks. Following completion of the experimental protocol, the NZWRs were euthanised, and their lenses were extracted for histopathological evaluation. **Results:** The PT and CG group exhibited similar cataractous lens changes of grade 2, characterized by anterior epithelium presence, pinkish homogenization, swollen lens fibres and intracellular vacuolization. These cataract changes improved in post-treatment with SEE. In TG1 reduction of vacuoles and pinkish homogenized areas were observed. In TG2, the homogenized areas and vacuolization were no longer present along with uniform layer of anterior epithelium and non-swollen lens fibres indicating significant cataract lesion improvement from Grade 2 to Grade 1. Additionally, cataract lesions show better improvement in $TG4_{100}$ and $TG8_{100}$ compared to $TG4_{50}$ and $TG8_{50}$. **Conclusion:** SEE has demonstrated its effectiveness in improving cataract lesions, with a more pronounced effect at higher doses. This study

highlights saffron's potential in treating cataracts, emphasizing the importance of further research for its full therapeutic potential in managing cataracts.

Keywords: Cataract; histology, hypercholestrolaemia; New Zealand white rabbit; Saffron

**ONC020**

# The Aqueous Extract from *Aquilaria malaccensis* Leaves Exhibits Non-toxic Effects on Maternal Parameters in Pregnant Rats

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**Introduction:** Herbal medicines are popular among pregnant women which approximately 60% of pregnant women in developing countries consume herbs. Due to the lack and only preliminary studies, there is no restriction for natural products consumed by pregnant mothers. A native species of gaharu in Malaysia, *Aquilaria malaccensis*, starts to gain interest among local population as it is reported to exhibit several pharmacological properties. Its leaves are widely commercialized as herbal drink. **Materials and Methods:** Organisation for Economic Cooperation and Development (OECD) guideline 414 was employed as a study design. Female Sprague Dawley rats at the age of 8 weeks were mated with male rats on a one-to-one basis. Twenty rats allocated for each treatment and control group. The pregnant rats were assigned into 3 groups which were daily administered with *A. malaccensis* extract at doses 500, 1000 and 2000 mg/kg, respectively. A control group was given distilled water. The aqueous extract of *A. malaccensis* was administered daily from gestational day 4 until gestational day 19, a day before necropsy. Pregnant rats were euthanised on gestational day 20 to assess the effect of the *A. malaccensis* extract on pregnant rats. **Results:** There was no mortality of pregnant rats during study. No significant changes were observed in treatment groups compared with control group in terms of clinical observation, body weight pattern, food and water intake, relative organ weight, renal and liver profile, and maternal pregnancy-based parameters. The maternal pregnancy-based parameters include pregnancy index, gravid uterine weight, number of resorptions, number of live foetus, number of dead foetus, number of implantation, pre-implantation loss, post-implantation loss, and number of corpora lutea. **Conclusion:** The *A. malaccensis* leaves aqueous extract did not cause significant clinical toxicity effect toward pregnant rats in doses of 500, 1000 and 2000 mg/kg.

Keywords: *Aquilaria malaccensis;* maternal toxicity; Maternal parameters; natural product; pregnancy

**ONC021**

# Parental Knowledge Regarding Childhood Constipation: Questionnaire Development and Validation

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**Introduction:** Childhood constipation is defined as infrequent and difficult bowel movements in a child. It is a common presenting symptom to primary care with most cases attributed to functional constipation. Most cases of childhood constipation benefit from early combined treatments, including education and dietary changes. Poor parental knowledge about childhood constipation could contribute to inappropriate self-management practices. This study aims to develop and validate a tool to measure parental knowledge regarding childhood constipation. **Materials and Methods:** The study will be done in two phases. Phase 1 involves the development and content validation of questionnaire items. Approximately 20 close-ended items will be developed through a literature review. A panel of content experts will assess the relevance and accuracy of each item. The scale content validity index will be determined. Pre-testing will be conducted among 5 to 10 parents to assess the comprehensibility and face validity of the questionnaire. Phase 2 involves the construct validation of the questionnaire among Malaysian adult parents with children aged 0 to 18 years. An estimated 100 respondents will be recruited for exploratory factor analysis to achieve a ratio of 5 participants for each item. An online self-administered questionnaire will be used to collect sociodemographic data from the parents and to administer the newly developed knowledge questionnaire items. Exploratory factor analysis will be used to identify the latent structure of the questionnaire. Internal consistency reliability will be determined using Cronbach alpha coefficient. **Results:** The development and validation of Parental Knowledge Regarding Childhood Constipation Questionnaire is expected to produce a valid and reliable tool to measure parental knowledge regarding childhood constipation. **Conclusion:** The questionnaire will be used for future research on childhood constipation and measure outcomes of parental education programmes for self-management of childhood constipation and its complications.

Keywords: Childhood; constipation; knowledge; parental; validation

**ONC022**

# Food Insecurity, Nutritional Status and Mental Health of Low-Income Pregnant Women in Kota Kinabalu, Sabah

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**Introduction:** Food insecurity, defined as inadequate or insecure access to food due to financial constraints. Women are vulnerable to food insecurity, contributing to poor nutritional status and mental health. However, evidence is still limited, particularly among pregnant women. Therefore, this study aimed to identify the food security status and its association with nutritional status and mental health among low-income pregnant women in Kota Kinabalu, Sabah. **Materials and Methods:** This was a cross sectional study involved 114 pregnant women aged 30.1 $\pm$ 5.2 years. Pregnant women were recruited through multistage sampling. The food security status was assessed using a Malay validated Radimer/Cornell Hunger and Food Insecurity Instrument and the mental health was assessed using a Malay version of Depression Anxiety Stress Scale 21-item (M-DASS-21). **Results:** Majority of pregnant women were Malay/Bumiputera Sabah/Sarawak (89.5%) and 53.5% had completed secondary school. Only 30.7% of pregnant women experienced food secure, with 69.3% reported household food insecurity, 48.2% individual food insecurity, and 28.6% child hunger. While 43.0% of them had excessive gestational weight gain (GWG) rate, 42.1% had inadequate GWG rate. No significant association was found between food security status and gestational weight gain, ($p>0.05$). The prevalence of anemia was 25.4%. Hemoglobin level was associated with food insecurity ($r=-0.212$, $p=0.024$). A total of 12.3%, 28.1% and 4.4% of pregnant women had depression, anxiety, and stress respectively. Individual with food insecure had a higher score of depression, anxiety and stress ($p<0.05$). **Conclusion:** More than half of pregnant women reported experiencing food insecurity. Pregnancy trimester was the risk factor of individual food insecurity of low-income pregnant women. The findings suggest that food insecurity was associated with hemoglobin and mental health among pregnant women. These findings warrant further in-depth study to unravel the incongruities identified.

Keywords: Anemia; food insecure; gestational weight gain; mental health; pregnant women

**ONC023**

# The Effect of Antiretroviral on AIDS Progression among HIV-Infected People in Pahang, Malaysia

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**Introduction**: In Malaysia, the first case of HIV/AIDS was reported in 1986. Since then, it had grown to be a significant public health problem. It has been proven administering ARVs will significantly suppress the viral load, and raising CD4 counts. The purpose of this study was to ascertain the effect of ARV among HIV patients from developing AIDS. **Materials and Methodss:** This is a retrospective cohort study, utilizing secondary data of HIV cases from the National AIDS Registry. The study population were HIV patients diagnosed between January 1, 2011, and December 31, 2020, and registered in the National AIDS Registry in Pahang state. The Kaplan-Meier method was used to determine the probability of an event (AIDS occurrence) over time. To determine prognostic factors and evaluate the impact of ARV on the course of AIDS, the Cox proportional hazard was employed. **Results:** There were 1831 subjects involved in this study with 28.51% (n=522) receiving ARV while another 71.49% (n=1309) was not on treatment. Kaplan-Meier overall analysis showed that as the time increased, the number of events increased, and the probability decreased. Two final models were created using the cox proportional hazard method: model 1 (without CD4 count) and model 2 (with CD4 count). Subjects who received ARV in model 1 had 0.598-time hazard of developing AIDS. In model 2, subjects who received ARV had 0.129 times hazard of developing AIDS. Other identified significant prognostic factors for AIDS progression were age, race, educational attainment, transmission factor and CD4 count at diagnosis. **Conclusion:** ARV has been shown to be effective in postponing the development of HIV infection into AIDS. Age, race, educational attainment, transmission factor, and CD4 count at diagnosis were additional important factors.

Keywords: AIDS; antiretroviral; disease progress; HIV disease

**ONC025**

# Association of Physical Activity with Biochemical Parameters of Multiracial Hemodialysis Patients in Negeri Sembilan and Klang Valley, Malaysia

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**Introduction:** Increased physical activity (PA) poses beneficial effect on biochemical levels in dialysis patients and its relationship with biochemical levels is complex, mediated through various physiological and metabolic pathways. Hence, the study aimed at describing the PA level among multiracial dialysis patients in Malaysia and to determine its association with biochemical parameters among multiracial hemodialysis patients in Malaysia. **Materials and Methods**: A purposive sampling of a cross-sectional study was conducted at few dialysis centers in Klang Valley and Negeri Sembilan. Patients' demographic, clinical, and biochemical data [serum levels of hemoglobin, albumin, creatinine, blood urea nitrogen (BUN), sodium, potassium, calcium, phosphate, and lipid profiles [total cholesterol (TC), low-density lipoprotein (LDL), and triglycerides (TG)] were obtained. Their level of physical activity was assessed using a self-administered General Practice Physical Activity Questionnaire (GPPAQ) (categorizing the respondents into 3 groups of active, moderately inactive and inactive). SPSS version 22 was used to analyze the data, Chi-square and Multivariate Analysis of Variance (MANOVA) was utilized. **Results:** Forty-five hemodialysis patients comprising of 15 Malays, 15 Chinese and 15 Indians participated in this study. The mean age was 52.9 years (SD 12.2) with 28 patients were male (62.2%) and 17(37.8%) were female. Regarding PA, the majority were categorized as inactive (60%) with a third of them were moderately inactive (33.3%). The least belongs to active group (6.7%). None of the Indian respondent was active. Bivariate analysis demonstrated that there was no significant association between ethnicity and PA. Pertaining PA relationship with biochemical parameters, we found PA was statistically associated with creatinine levels ($p= 0.049$; $p<0.05$) and phosphate level ($p=0.034$; $p<0.05$). **Conclusion:** There was no significant association between physical activity levels with ethnicity. However, there was a significant association of physical activity with creatinine and phosphate levels.

Further study is suggested to explain this relationship.

Keywords: Biochemical parameters; hemodialysis; physical activity (PA)

**ONC026**

# Preliminary Study: Development and Characterization of Ointment Formulations for Atopic Dermatitis Skin

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**Introduction:** Atopic dermatitis (AD) has been a common skin condition in the community. Application of topical preparation is the mainstay of the treatment for AD condition which provides synergistic effect with other medication. Topical therapy such as emollient or moisturizer where further formulated with additional of anti-inflammatory agents, or antifungal or antimicrobial agents, when secondary infection happened, is advisable according to the level of AD severity. The objective of this study was to develop and characterize ointment bases formulation for the treatment of AD skin condition. **Materials and Methods:** A simple ointment based was prepared with different concentration of beeswax and soft paraffin which resulted in nine different formulations. The specific amount of beeswax was weighted and melted on hot plate, then, specific amount of soft paraffin was added by geometric dilution method. The ointment mixture was taken off the heat with continuous stir with overhead stirrer at 200rpm until it congealed. Finally, the ointment bases were analysed according to the organoleptic and sensory properties, pH, particle size, polydispersity index (PDI) and zeta potential. **Results:** The analysis result of Formulation 1 to Formulation 3 were significantly different with other formulations. Formulation 5 to Formulation 9 showed most favourable characteristics with pH value ranged between 4.52 to 5.05 which is within the acceptable pH of skin, 4.5 to 6.5. The particle size measured between 0.332 m to 0.405 m, in accordance to PDI measured between 0.42 to 0.47, which lower than 0.5 and illustrated monodisperse and uniform particle size distribution. Zeta potential measured between -32.8mV to -34.7mV showed stable particle dispersion within the range of more than $\pm$30mV. **Conclusion:** Formulation 5 to Formulation 9 showed most favourable particle size dispersion and uniformity for stable ointment formulations as an eczematous skin treatment.

Keywords: Atopic dermatitis; *Benincasa hispida*; beeswax; ointment base; soft paraffin

**ONC027**

# Studies of Communication Etiquette between Medical Doctors and Patients of Different Genders: The Islamic Perspective

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**Introduction:** Practising good communication etiquette between medical doctors and their patients is universally accepted. It is intriguing to investigate the communication etiquette between doctors and patients of different genders as supported by SDG3: Ensure healthy lives and promote well-being for all at all ages. The purpose of the study was to investigate the communication etiquette between medical doctors and patients of different genders from the Islamic perspective by examining previous studies in the last five years. **Objectives**: 1. To identify the Islamic ideals of communication etiquette between doctors and patients of different genders. 2. To provide recommendations of Islamic ideals of the communication etiquette between doctors and patients of different genders in the form of a framework. **Material and methods**: The study was guided by the Preferred Reporting Items for Systematic Review and Meta-analyses (PRISMA) guidelines and was analysed thematically. The databases used were Google Scholar, Emerald Insight, Scopus, Science Direct and Google. From the 292 articles collected, 47 articles fulfilled the criteria. **Results**: The results depicted the themes and codes that underscored Shannon and Weaver's model of communication in light of *Maqasid Shariah* that was applied to frame the ideals of communication in a doctor-patient relationship. A framework was produced for Muslim doctors that proposed the five elements such as preserving religion, life, lineage, wealth, and intellect be implemented. **Conclusion:** The study is significant as there has not been a framework produced to guide the ideals of cross gender communication between doctors and patients which is necessary in instances where only doctors of the opposite gender to patients are present and in light of sexual assault cases.

Keywords: Communication etiquette; doctors; genders; Islam; *Maqasid Shariah*; patients

**PC001**

# The Effectiveness of Online Social Network-Based Intervention for Stress Management among SASMEC's Nursing Staff

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**Introduction:** There is an increasing body of research indicating that nurses are encountering substantial workplace stress, which has emerged as a global concern. In the past decade, there has been significant attention dedicated to the utilisation of online social network-based therapies for stress management among health care personnel. Nevertheless, there is a dearth of data about the efficacy of such interventions, particularly in the context of Malaysia. This study aims to investigate the effectiveness of an online social network-based intervention among nurses towards their level of stress, burnout and job satisfaction pre and post-intervention. **Materials and Methods:** This was an experimental study, without control, investigating pre and post online social network-based intervention effectiveness in reducing nurses stress and burnout, and improving their job satisfaction. A total of forty nurses participated in the intervention, which spanned a duration of eight weeks. The stress levels of nurses were evaluated with the Perceived Stress Scale (PSS-10), whilst the assessment of burnout levels was conducted utilising the Oldenburg Burnout Inventory (OLBI). The measurement of job satisfaction among nurses was conducted utilising the abbreviated version of the Minnesota Satisfaction Questionnaire (MSQ). **Results:** Following the intervention, there was a notable decrease in the level of stress (p-value: <0.01), burnout (p-value: <0.01), and work satisfaction (p-value: <0.01), all of which were statistically significant. **Conclusion:** In summary, the use of online social network-based interventions for stress management shows considerable potential in mitigating stress and burnout among nurses, while simultaneously enhancing job satisfaction.

Keywords: Burnout; job satisfaction; nurses; stress management; workplace stress

**PC002**

# Clinical Profile and Outcomes of Penetrating Keratoplasty in Sultan Ahmad Shah Medical Centre 7 Years Review

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**Introduction:** Penetrating keratoplasty stands as a cornerstone in offering renewed hope to individuals suffering from corneal diseases. Our aim is to review the clinical profile and outcomes of penetrating keratoplasty in Sultan Ahmad Shah Medical Centre Kuantan from 2017 until 2023. **Materials and Methods:** This is a retrospective single-centre case series for patients presented to the Ophthalmology Clinic who underwent penetrating keratoplasty between 2017 until 2023. Demographic data and indications before the operation were analysed. Only patients who had undergone full-thickness corneal transplants were included in the study. **Results:** A total of 16 patients (19 eyes) who underwent penetrating keratoplasty were reviewed. Most of our patients were aged between 20 to 79 years old, with no gender predilection. Majority of them were Malay (81%). The main indication for the keratoplasty was for optical reasons (79%) followed by tectonic (21%). The reasons for corneal transplants included pseudophakic bullous keratoplasty, failed previous transplant, perforating infective keratitis, endothelial dystrophy and keratoconus. All patients presented with legal blindness (<3/60) before surgery. 68% (n=13) showed improvement in vision after 3 months, 16% (n=3) had a worsening vision, 5% (n=1) maintained the same vision and two patients were lost to follow-up. Postoperative complications seen were graft failure, high intraocular pressure and graft rejection. Two patients had undergone repeat penetrating keratoplasty for graft failure. **Conclusion:** Penetrating keratoplasty may contribute to vision improvement. Pseudophakic bullous keratopathy was the main cause of indication of penetrating keratoplasty in our cohort.

Keywords: Corneal diseases; corneal transplant; penetrating keratoplasty

**PC003**

# Profiling the Clinical Characteristics and Bacteriological Spectrum of Hospitalized Hand Infections in a Hand Referral Center

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**Introduction:** Hand infections present a diagnostic and therapeutic challenge for medical professionals due to the intricate nature of hand anatomy and the wide microbiological spectrum involved. There is a limited body of global literature on hand infections, particularly within the Asian continent. We aimed to investigate hand infection patterns in the Kelantanese population, including the bacteriological profiles, injury characteristics, clinical markers, and complications. **Materials and Methods:** Clinical and bacteriological data from Hospital Universiti Sains Malaysia on hand infections over a five-year period were reviewed, considering etiology, comorbidities, involvement extent, clinical presentation, biochemical markers, bacterial profiles, and complications. **Results:** The study included 203 patients, ranging in age from 1 to 92 years. Majority of patients were males (63.5%). Trauma and animal bites were the most common causes of hand infections, constituting approximately 61.1% and 14.8%, respectively. Subcutaneous tissue was the most affected site (53.7%). Zone II was the most frequently involved area (30%), and nearly half of the cases had two or more zones affected. The mean duration of hospital stay was 9.2 days, with a mean duration from presentation to surgery of 2.5 days. The most common diagnosis was abscess (50.2%), followed by cellulitis, tenosynovitis, and necrotizing fasciitis. Microbiological analysis of 119 culture samples revealed that 54.6% were pure *Staphylococcus aureus*, while 26.1% showed mixed growth. Diabetic patients accounted for 48.8% of the population and experienced more complications, including postoperative stiffness, functional limitations, multiple surgeries, and longer hospital stays ($p<0.05$). **Conclusion:** *Staphylococcus aureus* was the main causative agent in hand infections, particularly in diabetics and animal bite-related infections. Trauma and animal bites were the commonest causes. Zone II is the most frequently affected location, with subcutaneous infections being common. Clinical and biochemical parameters were not indicative of severity or aetiology.

Keywords: Bacteriological profiling; diabetic complications; hand infections; infections markers; zone II

**PC004**

# Branch Retinal Vein Occlusion Post-Phacoemulsification Surgery – A Case Report

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**Introduction:** Phacoemulsification surgery is one of the most regularly performed surgical procedures worldwide. The advancement of technology has improved the safety of this operation; however, it is not free from complications. Herein, we report a case of branch retinal vein occlusion (BRVO) post uncomplicated phacoemulsification surgery. **Objective:** To report a case of BRVO in a pseudophakic patient following an uncomplicated phacoemulsification surgery. **Materials and Methods:** Case report. **Results:** A 45-year-old lady, with underlying diabetes mellitus and hypertension was diagnosed with bilateral dense posterior subcapsular cataract and moderate non-proliferative diabetic retinopathy (NPDR). She came for preoperative assessment for left eye cataract surgery. Her best corrected Snellen chart visual acuity (BCVA) was 2/120 in the left eye and 4/120 in the right eye. Fundus examination showed bilateral moderate (NPDR). She underwent uncomplicated left eye phacoemulsification surgery. One week post- surgery, the left eye BCVA was improved to 6/15. Fundus examination revealed widespread flame shaped hemorrhage and cotton wool spot over the superior quadrant of the retina. The superior quadrant of retinal vessels appeared dilated and tortuous with presence of macular oedema. Optical coherence tomography (OCT) of the macula showed central macular thickness (CMT) of 732 µm. A diagnosis of left eye BRVO with macular oedema was made. Patient was subjected to left eye intravitreal anti-vascular endothelial growth factor injection (anti-VEGF) monthly for three times. Post treatment, her left eye BCVA was improved to 6/9. The repeated OCT macula showed improvement of CMT of 389 µm. The patient was planned for another course of anti-VEGF injection. **Conclusion:** BRVO following phacoemulsification surgery was uncommon. Fluctuation of intraocular pressure was presumed to cause compression of the retinal vein, consequently, causing venous stasis and thrombus formation in the vessels. Systemic disease such as diabetes and hypertension increase the risk of developing BRVO.

Keywords: Branch retinal vein occlusion; phacoemulsification surgery

**PC005**

# Modified Sagittal Costoclavicular Catheter – A Novel Regional Anaesthesia Technique for Catheter Securement Targetting the Brachial Plexus

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**Introduction:** Costoclavicular blocks are gaining favourability in upper limb surgeries. A significant advantage is a single-injection technique with a reliable blockade. This block is usually performed from a lateral to medial approach with the ultrasound plane in the transverse position. We describe a modified method using a cephalad to caudate approach in the sagittal plane with catheter placement. **Materials and Methods:** Our case involves a 56-year-old patient scheduled for elective elbow surgery. The ipsilateral arm was abducted with landmarks identified. A high-frequency linear ultrasound probe was positioned at the lateral two-thirds of the clavicle in the sagittal plane to visualise the costoclavicular space. Skin prep was applied, and a 100 mm 22G echogenic needle (SonoLong Echo, Pajunk) was inserted in-plane from cephalad to caudate approach. Once the needle tip entered the fascia beneath the posterior cords, local anaesthetic was injected, and the catheter was placed via needle through catheter technique and secured. No immediate complications were observed, and the patient underwent general anaesthesia for the surgery. **Results:** Intraoperative analgesia provided by the block was adequate, with minimal supplemental analgesia required. Postoperatively, catheter was confirmed in situ via ultrasound, and local anaesthetic infusion started. The patient reported minimal pain scores post-surgery, and the catheter was removed on day two. This modified technique allows a complete view of the cords and facilitates catheter placement. Catheter securement is ensured as it is placed between muscles, preventing easy dislodgement. By enabling a means of continuous analgesia, this helps improve pain management and minimises the use of opioids. Hence facilitating early physiotherapy and subsequently early discharge. **Conclusion:** Our case describes an innovative approach to traditional block methods. This technique may be advantageous for patients for whom conventional techniques may be challenging. Further studies involving this approach are needed to substantiate its efficacy for a broader population.

Keywords: Brachial plexus; continuous catheter; costoclavicular block; regional anaesthesia

**PC006**

# Case Series of Challenging Cervical Fibroid

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**Introduction:** Cervical fibroids make up less than 2% of total fibroids. Management is challenging due to its location, size and surrounding structures. We present case series of small uterus sitting on huge cervical fibroid similized to 'lantern on dome of St. Paul's Cathedral'. **Case-1:** 39-year-old multipara was diagnosed with cervical fibroid during pregnancy. She had preterm labour at 31 weeks needing emergency Caesarean. Huge cervical fibroid was distending the whole lower segment needing baby to be delivered through an upper segment transverse incision. At 2-year follow up she was asymptomatic despite persistent cervical fibroid. **Case-2:** 24-year-old nullipara had compressive symptoms and heavy menses. Clinically, a 24-weeks-size mass extended from the pelvis. Intraoperatively, small uterus was seen sitting on huge anterior and posterior cervical fibroids. She had 2-stage-surgery, anterior cervical myomectomy with massive haemorrhage followed by posterior cervical myomectomy a year later as the fibroid doubled its size causing compressive symptoms. **Case-3:** 54-year-old multipara had acute urinary retention. Clinically, there was large posterior cervical mass. Ultrasound revealed 8x9 cm posterior cervical fibroid with bilateral hydronephrosis. **Case-4:** 54-year-old para 3 with compressive urinary symptoms had 16-weeks-size pelvic mass arising from posterior cervix. Ultrasound showed 13x10x10 cm cervical fibroid. Case-3 and Case-4 had intraoperative 'lantern on dome' appearances. Anticipating surgical difficulties, perioperative ureteric stenting, identification of anatomy and meticulous surgery led to uncomplicated total hysterectomy and bilateral salphingoopherectomy. **Discussion:** Huge cervical fibroids are rare. Altered structural anatomy makes surgery more challenging. Urinary symptoms, clinical, ultrasound and MRI findings might raise index of suspicion, but it is recognizable at laparotomy with uterus sitting on enlarged cervical mass resembling the 'lantern on dome of St. Paul's Cathedral'. Detailed knowledge on anatomy, ureteric stenting and meticulous surgical technique improves surgical outcome.

Keyword: Cervical fibroid; hysterectomy; myomectomy; pregnancy

**PC007**

# Impacted Maxillary Canine In Orthodontic Clinic: A Retrospective Study

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**Introduction:** Maxillary canines are the second most common impacted teeth after the third molars. Often multidisciplinary approaches were required to successfully manage the impacted maxillary canine. This study aims to evaluate the management of impacted maxillary canine cases in the orthodontic clinic. **Materials and Methods:** This retrospective study included 52 impacted maxillary canines which has completed its management from 2016 to 2022. Data on sociodemographic, canine characteristics and treatment for impacted maxillary canine were collected. Data were analysed using SPSS software. **Results:** The mean age of patients at the beginning of the treatment was 15.42 (SD:2.13). 71.2% were female and 65.4% of maxillary canine were buccally impacted. Majority of impacted maxillary canine were surgically corrected by surgical removal (50%) and surgical exposure (26.9%). Only 23.1% of cases required interceptive treatment. There is a significant correlation of management of impacted canine with the patient's age at the beginning of treatment ($p<0.05$), the vertical height of canine crown ($p<0.05$) and the angulation of the impacted maxillary canine ($p<0.05$). **Conclusion:** Surgical removal of impacted maxillary canine is the most performed in our clinic. These findings suggest the need to assess the location of impacted canine in an earlier age.

Keywords: Impacted maxillary canine; management; orthodontics

**PC008**

# Assessment of Pain Control and Patient Satisfaction with Post Operative Acute Pain Management by Primary Team 24 Hours after Discharge from Acute Pain Service

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**Introduction:** Post-operative pain management is a universal clinical challenge in medical practice. Uncontrolled post-operative pain contributes to an increase in morbidity and delays recovery. Primary team continues to provide post-operative pain treatment after patients are discharged from Acute Pain Service (APS). This study aims to assess adequacy of post-operative pain control and patient satisfaction with primary team's post-operative pain management. **Materials and Methods:** A single-center, cross-sectional, retrospective study was conducted at Hospital Kuala Lumpur. Calculated sample size is 384 patients, and employed a convenience sampling method. Patients discharged by APS within 3 post-operative days, fit to give own consent, and above 18 years of age were recruited. Acute pain audit form and Revised American Pain Society Patient Outcome Questionnaire (APS-POQ-R) were used to collect demographic data, surgery, anesthesia, analgesia, pain control and patient satisfaction in the post-operative period. Pain score of 3 indicates adequate pain control, while pain score 4-10 indicates inadequate pain control. **Results:** Primary team post-operative pain control and patient satisfaction were evaluated. Out of 394 patients, 344 patients (87.3%) reported adequate pain control, while 50 patients (12.7%) reported inadequate pain control. 390 patients (99.0%) received multimodal analgesia, while 4 patients (1.0%) did not. Patient satisfaction has mean score of 7.94 out of 10($\pm$1.032), indicating high level of satisfaction. Furthermore, multivariate linear regression analysis shows that female gender is associated with higher patient satisfaction, with coefficient of 0.172(95% CI=0.009 to 0.334), t=2.078, p=0.038. Lower pain score at rest, with coefficient of -0.511(95% CI=-0.621 to -0.401), t=-9.161, p<0.001, and lower pain score during activity, with coefficient of -0.206(95% CI=-0.294 to -0.119), t=-4.644, p<0.001, are also associated with higher patient satisfaction. **Conclusion:** Better pain control is associated with higher patient satisfaction. Although overall satisfaction is high, there is room for improvement in post-operative pain management by primary team in the hospital.

Keywords: Multimodal analgesia; pain score; patient satisfaction; post-operative pain control; primary team

**PC009**

# Petrous Apicitis and Otogenic Internal Jugular Vein Thrombosis Post Cortical Mastoidectomy: Lessons to Learn

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**Introduction:** Petrous apicitis (PA) is a rare and potentially life-threatening condition following otitis media and mastoiditis. Given its rarity and presumed low incidence in the post-antibiotic era, it is often underdiagnosed. Although otogenic lateral sinus thrombosis is widely discussed, not many papers have reported otogenic right internal jugular vein (IJV) thrombosis, specifically in the jugular bulb. **Case Report:** A 50-year-old female presented with severe right otalgia, retro-orbital pain, and abducens nerve palsy, 2 weeks after emergency cortical mastoidectomy was done in another centre for acute on chronic otitis media with mastoiditis and PA. She was discharged 4 days after the surgery with 1 week of oral antibiotic. **Results:** Computed Tomography (CT) Venogram showed erosion of the medial wall of the right jugular fossa and the right occipital condyle. The right internal jugular vein (IJV) appeared distended with focal thrombosis at the proximal part of the right IJV within the jugular bulb. Diagnosis of PA complicated with IJV thrombosis was made and medical therapy was initiated. Her treatment regime includes intravenous Ceftriaxone 2 grams twice daily for 2 weeks, followed by oral Cefuroxime 500 milligrams twice daily for 4 weeks. Warfarin 3 milligrams once daily was concurrently prescribed for 12 weeks. Her symptoms improved remarkably after completion of treatment except for persistent diplopia. **Conclusion:** Advances in radiological assessments coupled with improved antibiotic regime permit more conservative approach in the management of PA. Based on our experience and literature review, we proposed minimum 6 weeks of antibiotic treatment for the management of PA. When concomitant otogenic venous thrombosis is present, selective use of anticoagulant is recommended. If patient clinically worsens or slow to improve with medical therapy, surgical intervention is warranted to reduce disease burden

and hasten restoration of middle ear and mastoid aeration via ventilation tube insertion or mastoidectomy.

Keywords: Gradenigo syndrome; mastoiditis; otitis media; petrous apicitis; venous thrombosis

**PC010**

# Extracranial Meningioma: A Rare Cause of Severe Epistaxis

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**Introduction:** About 20 to 30% of primitive encephalic tumors consist of meningioma. Meninges and arachnoidal cap cells of the brain and spinal cord are common sites for meningioma. Less than 2% of meningiomas present extracranially. The orbit is the common site for extracranial meningiomas, followed by the outer table and scalp, sinonasal cavity, parotid, and parapharyngeal region. Classically, meningiomas are more common in females, except in elderly patients and higher-grade tumors, which tend to affect males more frequently. **Case report:** Here, a 64-year-old woman with a history of craniectomy done 20 years ago for meningioma and left evisceration with radiotherapy 15 years ago for recurrent meningioma, remained well for 15 years. However, she developed multiple episodes of epistaxis for past 1 year requiring multiple blood transfusion. Endoscopic examination revealed a nasal mass in the left nasal cavity. MRI of the brain showed a large extra-axial mass measuring 6.1 x 4.8 x 3.1 cm located in the bilateral ethmoidal sinus and left orbit, causing expansion of the sinus. The mass extended to the left medial cranial fossa and parasellar region, encasing the left cavernous sinus and left internal carotid artery, right orbital apex, and medial wall of the right orbit. Inferiorly, it extended into the left nasal cavity, and superiorly, the mass abutted the left middle cerebral artery. She underwent endoscopic transnasal resection and left craniotomy and tumor debulking to remove the tumor. Histopathology examination revealed meningothelial meningioma (WHO grade I). **Conclusion:** Extracranial meningioma can be one of the differentials for epistaxis. Complete resection of the meningioma remains the standard treatment for tumors that located in surgically accessible areas. For cases involving atypical, anaplastic, recurrent, or benign meningiomas that are not easily accessible through surgery, these patients can be treated with radiotherapy.

Keywords: Epistaxis; extracranial meningioma

**PC011**

# Glycemic Control and its Associated Factors among Type 2 Diabetes Mellitus in a Selected Hospital University at East Coast Malaysia

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**Introduction:** Type 2 diabetes mellitus (T2DM), a prevalent chronic metabolic disorder, is widely observed locally and globally. Patients with poorly controlled diabetes will encounter life-long complications earlier than those with controlled diabetes. Hence, this study aims to determine the prevalence and factors associated with glycemic control in T2DM patients in Sultan Ahmad Shah Medical Centre (SASMEC) at IIUM, a university hospital in Kuantan. **Materials and Methods:** This was a cross-sectional study conducted at the Medical Outpatient Clinic of SASMEC at IIUM, from August to September 2023 involving 205 T2DM patients, selected using a universal sampling method. Data were collected using a self-administered questionnaire for socio-demographic and clinical data. Relevant investigation results were retrieved from the patient's medical record. Descriptive statistics and regression test were performed for data analyses. **Results:** The response rate was 100%. 64.9% of the respondents have poor diabetic control, which was associated with age below 65 years old (p=0.016), Indian ethnicity (p=0.004), longer duration of T2DM (p=0.020), type of diabetic medications used (p<0.001), and knowledge on diabetes (p=0.007). The probability of having poor glycaemic control was 2.3 times more likely among respondents with T2DM for more than 10 years (p=0.025), 5.5 more likely among insulin users (p=0.012), 3.3 more likely in both OGLDs and insulin users (p<0.001) and 0.7 times less likely among those aged 65 and above. **Conclusion:** The prevalence of poorly controlled diabetes was high and significantly associated with age below 65 years old, Indian ethnicity, longer duration of T2DM, medications used, and knowledge on diabetes. Therefore, T2DM with these factors needs to be targeted for early intervention to prevent life-long complications of diabetes.

Keywords: Glycemic control; risk factors; type 2 diabetes mellitus (T2DM); University hospital

**PC012**

# Diagnostic Challenges of Lymphoma Diagnosis: An Unusual Case of Mantle Cell Lymphoma

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**Introduction:** Mantle cell lymphoma (MCL) is a subtype of non-Hodgkin lymphoma. It is a mature B-cell neoplasm derived from the mantle zone of lymphoid follicles and is associated with CCND family rearrangements. Due to its nature, a correct diagnosis of MCL is needed to ensure timely treatment. **Case report:** A 68-year-old woman, with a history of follicular lymphoma from the tonsils, presented to our hospital with a one month history of progressive lethargy. On examination, a large right axillary mass was detected along with hepatomegaly. The blood film showed bicytopenia with leucoerythroblastic film and 17% abnormal lymphoid cells. The marrow aspirate was aparticulate with many abnormal lymphoid cells seen. Immunophenotyping revealed 23% abnormal lymphoid cells gated at bright CD45/low SSC. The lymphoid cells expressed bright CD20, CD5, positive CD19, dim CD200, CD79b, FMC7, CD38, heterogenous CD10 with lambda light chain restriction and negative for TdT and CD34. The trephine biopsy showed clusters of abnormal lymphoid cells. The cells have oval nuclei with small nucleoli. They are immunoreactive for CD20, CD5, Cyclin D, BCL2 with a proliferation index of 30-40%. A diagnosis of mantle cell lymphoma was made based on the IHC and immunophenotyping findings. FISH panel for IGH/CCND1 rearrangement and BCL2 rearrangement were performed however, both were negative. **Discussion:** The difficulty in the diagnosis was whether this is a CD5-positive-FL or MCL. CD-5-positive FL is associated with CD200 and CD43 expression with negative CD10 and a higher propensity for diffuse large B cell lymphoma (DLBCL) transformation. FL typically transforms into DLBCL, and transformation to mantle cell lymphoma has not been reported. This case demonstrated the need for extensive IHC panels and FISH studies complicated lymphoma cases for accurate diagnosis.

Keywords: CD5 positive; follicular lymphoma; mantle cell lymphoma

**PC013**

# The Value of 18F-FDG PET/CT in Erdheim-chester Disease

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A 48-year-old woman was admitted to the hospital, presenting with insipid, repeated fevers, exertional dyspnea, bilateral ankle swelling, and pain. Based on the laboratory workups and outcomes of echocardiography, chest X-ray and CT, bilateral ankle X-ray, and MRI, we performed treatment including anti-infective, diuretic, controlling the heart rate, pericardiocentesis and biopsy (immunohistochemical staining: MC+). However, the symptoms existed, and the diagnosis remained unclear; hence, an 18F-FDG PET/CT study was ordered. PET images show hypermetabolic lesions diffuse in bones, emphasizing the bilateral distal tibiofibular and calcaneus; pulmonary fibrosis, thickening of the pericardium, retroperitoneum, and periaortic and perinephric regions, but there is absent or minimal FDG uptake in these regions. These findings led to the diagnosis of Erdheim-Chester disease (ECD). We then performed biopsies of the left distal tibia and right perirenal fascia to confirm it further. The biopsy samples showed fibrosis associating with representative foamy CD68+ histiocytes diffusely infiltrated in the tibia and scattered infiltrated in the perirenal fascia. ECD is a rare non-Langerhans histiocytic disorder whose aetiology and pathogenesis remain unknown and commonly involves multisystem. The clinical presentation varies; the diagnosis mainly relies on imaging and histological features. 18F-FDG PET/CT shows incomparable superiority in assessing the extent of disease and locating the optimal site for biopsy. Additionally, as a non-invasive examination, it is useful to monitor treatment response for the character that high uptake presents in the region where foamy histiocytes diffusely infiltrated and absent or minimal uptake where foamy histiocytes are absent or scattered infiltrated.

Keywords: ECD; $^{18}$F-FDG PET/CT

**PC014**

# Digital Health Intervention to Mitigate Psychological Distress on Non-Clinical Hospital Staff in Sultan Ahmad Shah Medical Centre

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**Introduction:** The pandemic COVID-19 has led to a mental health crisis among hospital staff, who are physically and mentally exhausted due to ambiguity and unexpected stress. Non-clinical hospital staff were also infected with COVID-19 as they are the ones who implement the daily operations within the hospital. The study aims to administer digital based intervention to reduce the psychological distress on non-clinical SASMEC hospital staff. **Materials and Methods:** This was an experimental study which investigated pre and post digital based intervention in measuring stress, anxiety, depression, and coping strategies. A total of thirty people participated in the intervention, which spanned a duration of eight weeks. The stress, anxiety and depression level were measured using self-rated DASS-21, while the coping strategies were measured using Brief-COPE. The intervention utilized Telegram platform and the contents were shared inside Telegram for each new topic every week. The contents consisted of educational material and videos for eight different topics. All participants needed to read and understand the material given and gave feedback to ensure involvement with the study. **Results:** From this study, 70% participants reported to have stress, 46.7% anxiety and 53.3% depression. Problem-focused coping was the most applied coping strategies among participants (mean 6.01, SD=1.02) while avoidant coping is the least (mean 4.03, SD=0.71). Post intervention, there was improvement with statistically significant in the level of stress ($p$=0.016), anxiety ($p$=0.018), problem-focused coping ($p$=0.011) and avoidant coping ($p$=0.024). There was a reduction in depression levels, although not statistically significant ($p$=0.083). **Conclusion:** The use of digital based interventions shows considerable potential in mitigating stress, anxiety, and depression while simultaneously enhancing coping strategies during COVID-19 era. The results of this study can be utilized to make decisions about the more extensive distribution of digital health intervention to the healthcare system.

Keywords: Anxiety; coping strategies; COVID-19; depression; digital intervention; hospital staff; non-clinical; stress

**PC015**

# A Rare Case of Watershed Infarct Secondary to Thyrotoxic Encephalopathy

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**Introduction:** Ischemic stroke secondary to thyrotoxic encephalopathy is caused by the derangement of thyroid hormone levels that leads to brain ischemia. It is of high significance due to its rarity as a cause of stroke. There is limited evidence found in the literature regarding the pathogenesis of this condition. Our aim is to explore the possible pathogenesis in thyrotoxic patients that may contribute to the stroke. **Case Case Report:** This paper exhibits a 24-year-old female patient with underlying Graves' disease who presented with right-sided hemiparesis, and fever. Clinically, her Medical Research Council (MRC) grading for motor power of the right upper limb was generally grade I, whereas the right lower limb was generally grade II. An initial electrocardiography (ECG) done showed sinus tachycardia without atrial fibrillation. Her thyroid function test revealed hyperthyroidism, and her clinical manifestation was highly suggestive of thyroid storm according to the Burch-Wartofsky Score. Serial computed tomography (CT) Brain scans showed infarction at the left middle cerebral artery (MCA) territory suggesting left watershed infarct at the frontoparietal region, and bilateral cerebellar infarct. She underwent post-stroke inpatient rehabilitation and exhibited improvement in the Modified Barthel Index (MBI). **Conclusion:** This case illustrates the need to review the causes of stroke especially in the younger population, which very rarely can be caused by thyroid storm. Prompt recognition and appropriate management of the causative factor in a stroke case is vital for patient recovery.

Keywords: Cerebral infarct; encephalopathy; hyperthyroidism; stroke; thyroid storm

**PC016**

# Catastrophic Disseminated TB Presented with Extensive Acute Transverse Myelitis

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**Introduction:** Disseminated tuberculosis (TB) is defined as the presence of two or more non-contiguous sites resulting from hematogenous dissemination of *Mycobacterium tuberculosis.* It is life threatening, especially if the diagnosis and treatment are delayed. For CNS manifestation of tuberculosis, it is typically including meningitis that followed by tuberculoma or abscess, and reportedly very rare to cause transverse myelitis. We herein report a rare case of a patient with disseminated TB (lung, spine, and meningitis) that also later presented with extensive acute transverse myelitis. **Case report:** A 34-year-old male with history of disseminated TB involving lung, spine and CNS meningitis diagnosed 1 month prior in private hospital. Posterior instrumentation was done for his TB spine and VP shunt was also inserted last month for hydrocephalus secondary to TB meningitis. Patient was started on anti TB and discharged with patient able to ambulate via walking frame. He then presented to our centre with a new complaint of unable to ambulate for a week. On examination showed reduced bilateral lower limb and right upper limb (0/5) as well as left upper limb (3/5), with downgoing Babinski. MRI of whole spine showed intravertebral collection at T11-T12 vertebra, diffuse dural enhancement with extensive long segment cord oedema from cervicomedullary junction until conus medullaris without evidence of cord compression. **Conclusion:** Acute transverse myelitis although rarely seen with disseminated TB, is a possible catastrophic presentation of this disease.

Keywords: Acute transverse myelitis; disseminated TB

**PC017**

# Pulmonary Hodgkin Lymphoma: A Rare Aetiology of a Cavitary Lung Mass

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**Introduction:** Pulmonary manifestations of Hodgkin lymphoma are relatively rare. Pulmonary involvement of Hodgkin lymphoma can mimic pneumonia, lung carcinoma or metastasis. **Case report:** We report a 25-year-old male who had a cough for 4 months with intermittent haemoptysis, shortness of breath, fever, weight loss, and night sweats. Chest radiograph revealed a mass-like consolidation with cavitation involving the right upper and mid zones. Initially suspected of having pulmonary tuberculosis. CT Thorax demonstrate a heterogenous mass with internal cavitation within the right upper and middle lobes. Multiple small ill-defined solid nodules and cavitary nodules are seen scattered in bilateral lung fields. There were multiple enlarged mediastinal lymph nodes. Staging CT abdomen and pelvis showed no evidence of extrathoracic disease. Histologic type was Classic Hodgkin lymphoma. The patient was then given two cycles of ABVD-based chemotherapy. **Conclusion:** Pulmonary Hodgkin lymphoma is uncommon aetiology of cavitary lung lesions. Its presentations can sometimes mirror those of certain viral and inflammatory aetiologies, making diagnosis difficult. Although cavitation is not uncommon after chemotherapy, they are exceptionally infrequent at the time of diagnostic. Evaluation of imaging appearances with histopathological confirmation is required for early diagnosis and proper patient care.

Keywords: Cavitation; Hodgkin lymphoma; imaging appearances; pulmonary

**PC018**

# Challenges in Distinguishing Retroperitoneal Lymphoma from Radiological Evaluations

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**Introduction:** Lymphomas are neoplasms of the lymphoid system and can manifest in diverse manners. They also exhibit varying behaviours; their multifaceted presentation which essentially depends on the affected organ and their varying levels of aggressiveness pose challenges when arriving at the diagnosis on imaging. **Case report:** In this particular case report, a 79-year-old male initially presented with abdominal pain, altered bowel habit and lower urinary tract symptoms. Upon initial assessment on computed tomography (CT) of the abdomen and pelvis, there was a large retroperitoneal soft tissue mass with the bulk of the tumour seen extending from the lower pole of the left kidney into the left side of the pelvic region, with the impression of renal cell carcinoma (RCC). Ultrasound guided percutaneous biopsy of the pelvic mass was obtained within one week of the imaging. Unfortunately, about one week later, patient developed symptoms of large bowel obstruction which was radiologically evident on CT. The transition point was detected at the rectosigmoid junction due to a circumferential wall thickening at this region. The wall thickening which suggests a potential bowel invasion, raised the possibility of large bowel malignancy as another differential diagnosis. Patient was planned for surgery (transverse colostomy and further definitive surgery deemed necessary) however the biopsy result obtained soon after the repeat imaging confirmed high grade Diffuse Large B-cell Lymphoma (DLBCL), Stage II with International Prognostic Index (IPI) of 3 which was categorized within the high to intermediate risk group. As a result, a radical change of decision was made for reduced dose combination therapy of rituximab, cyclophosphamide, doxorubicin, vincristine and prednisolone (mini-R-CHOP) instead with good radiological response, to date. **Conclusion:** It may be difficult to differentiate retroperitoneal lymphoma from other tumours within the retroperitoneal space, hence correlation with histology is essential in determining the diagnosis.

Keywords: DLBCL; lymphoma; Non-Hodgkin; retroperitoneal

**PC019**

# Disseminated Tuberculosis in an Immunocompetent Young Adult Involving the Middle Ear, Mastoid, Brain, Larynx and Lungs – A Case Report

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**Introduction:** Tuberculosis (TB) infection still poses worldwide public health issues, infecting almost a quarter of world's population. Involvement of multiple organs in disseminated disease is particularly rare and often diagnosed late. **Case Report:** We are reporting a case of disseminated TB infection involving the middle ear, mastoid bone, brain, larynx, and the lungs in an immunocompetent 21-year-old male, likely following reactivation of latent pulmonary TB, 20 years after his initial exposure to maternal pulmonary TB infection. **Results:** Destructive nature of the disease as seen on high-resolution computed tomography (HRCT) of the temporal bone, without clinical signs of aggressive infection supports our diagnosis of tuberculous otomastoiditis. Magnetic Resonance Imaging (MRI) of the brain was suggestive of right sided multiloculated tuberculous intracerebral abscesses with significant cerebral oedema and right uncal herniation. Chest radiograph showed presence of reticulonodular opacities with bronchiectatic changes over bilateral upper zones and calcified nodules over left upper zone indicating chronic lung infection. The diagnosis of disseminated TB was also made based on our intra-operative findings of cheesy material occupying the right mastoid antrum and the middle ear cavity and moth-eaten appearance of the larynx. The diagnosis was further validated by the histopathological and microbiological results of positive Acid-Fast Bacilli, TB polymerase chain reaction and Gene-Xpert for *Mycobacterium tuberculosis*. Patient made excellent recovery after 9 months of anti-TB medications. **Conclusion:** A full-blown disseminated TB in an immunocompetent young adult who had completed the required vaccination is a rare entity. High clinical suspicion and early imagings will expedite delivery of treatment, thus improve prognosis. Although primarily treated with anti-TB medications, some cases may require surgical intervention to obtain tissue to confirm diagnosis, to remove infected sequestrum and when there is clinical evidence of potentially life-threatening complications.

Keywords: Disseminated tuberculosis; laryngeal tuberculosis; tuberculous brain abscess; tuberculous otomastoiditis

**PC020**

# A Case Series on Transient Abnormal Myelopoiesis in Down Syndrome

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**Introduction:** Transient Abnormal Myelopoiesis (TAM) is a myeloproliferative disorder that can develop in 10% to 15% of newborns with Down syndrome. It may present with a high count of blast cells and can resemble congenital leukemia. This series discusses two cases of TAM, both of which achieved sustained remission a few months after their diagnosis. **Case Report:** In the first case, a baby boy with Down syndrome presented with congenital pneumonia at birth, bilateral eye conjunctivitis and an enlarged liver. Blood film showed 34% blast cells, and thrombocytopenia. After a month of stay he was discharged with a normalized blood count and no detectable blast cells in the peripheral blood film. While the second case involved a baby girl with Down syndrome who was treated for congenital pneumonia. Her total white blood cell count was elevated, with 33% blast cells characterized by prominent nucleoli and bluish, blebbing cytoplasm. After a week, her blast cells increased to 80%. Immunophenotyping performed showed 72% of blast cells which displayed heterogenous positivity for CD34, CD33, HLADR, CD61 (in 54% of blast population), CD41a (in 54% of blast population), CD36, CD56, CD123, and CD9 (megakaryocytic phenotype). They were negative for cy MPO, B and T cell markers. She started treatment with low-dose Cytarabine. **Discussion:** Down syndrome is associated with TAM and and myeloid leukemia associated with Down Syndrome (ML-DS). The detection of *exon2/3 GATA1* mutation via sequencing is essential in the diagnosis of both TAM and ML-DS however this test is not readily available at our center. TAM typically resolves within three months. However, close monitoring is essential because multiorgan failure can lead to a mortality rate of up to 20%.

Keywords: Neonates; non-disjunction trisomy 21; transient abnormal myelopoiesis

**PC022**

# Correlation of Type 2 Diabetes Mellitus with Liver Fibrosis on Ultrasound Elastography: A Narrative Review

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**Introduction:** Type 2 diabetes mellitus (DM) patients showed higher prevalence of developing non-alcoholic fatty liver disease which can further progress to liver fibrosis due to repetitive liver injury. This may lead to liver cirrhosis with increased risk for hepatocellular carcinoma. Sonographically, liver fibrosis is quantified using elastography which measures the degree of liver stiffness, from F0-F4 stages. F0-F2 stages are interpreted as insignificant, while F3-F4 are considered as significant liver fibrosis. This article reviews the literature surrounding liver fibrosis as a complication of type 2 DM detected by ultrasound elastography. **Materials and Methods**: A systematic approach was performed using various search engines such as PubMed, Google Scholar and Elsevier between 2018 to 2022. **Results:** We reviewed 16 relevant studies out of 41 articles in our analysis. From these articles, all the studies showed that all type 2 DM patients are prone to develop significant liver fibrosis, hence increased liver-related mortality. Five studies showed the sensitivity and specificity of elastography around 80% in diagnosing different stages of liver fibrosis. Two of the studies (by Kwok et al. (2014) from Hong Kong and Lai et al. (2018) from Malaysia) showed correlation between DM and obesity with liver fibrosis on elastography, whereby 70-87% of these patients had histopathologically-proven liver fibrosis after biopsy. **Conclusion:** Type 2 DM patients are prone to develop significant liver fibrosis. Ultrasound elastography showed excellent diagnostic accuracy to assess the degree of liver fibrosis, potentially eliminating the need for invasive liver biopsy. Hence, liver should be considered as additional macrovascular target end-organ damage potentially affected by type 2 DM. However, future studies are recommended to explore further the effect of different disease control of type 2 DM on the severity of liver fibrosis.

Keywords: Diabetes mellitus type 2; liver elastography; liver fibrosis

**PC023**

# Anterior Displacement of Anus in a Neonate Coupled with Complex Congenital Heart Disease

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**Background:** Regular anal position midway between the vaginal fourchette (scrotum) and the tip of the coccyx. The anterior displacement of anus (ADA) is the shortening of the ano-vulvar distance and consider as an atypical imperforate anus that is not commonly coupled with other congenital anomalies. ADA affects up to 24% of neonates, predominant in girls with a consistent history of constipation that hardly responds to medical treatment. The anal position indexes (API) helps diagnose ADA and decide on the most accurate position of the anus in case ano-rectoplasty is required. **Case Report:** A 39+5 weeks neonate was born via spontaneous vaginal delivery with a history of renal artery dilation in early antenatal scans that resolved in the follow-up scan. Further family history noted that the father has a history of a repaired imperforate anus as a baby and both mother and father are working as clerks at a battery factory. A routine neonatal examination revealed a pink, well-grown, non-dysmorphic neonate other than the anterior displacement of the anus (ADA) with API 0.38 and a sacral dimple. Urethral and anal openings were patent and functional well. The baby was admitted for pathological jaundice and to rule out congenital anomalies such as caudal regression syndrome, spinal dysraphism, renal and other anomalies. Subsequent investigations revealed normal spines, typical renal structure and Doppler; however, the ECHO revealed a 6mm perimembranous ventricular septal defect with a left to right shunt, PDA and hypoplastic aortic arch successfully operated at IJN. **Conclusion:** A thorough newborn screening examination is essential and should include gynaecological, anal patency and anal position. API is the ratio of anus/fourchette/scrotal length distance to the space between the coccyx and fourchette/scrotum. Exclusion of other abnormalities associated with Ano Rectal Malformation is required.

Keywords: Anterior displacement of anus; complex congenital heart disease; the anal position indexes

**PC024**

# Synchronous Bilateral Breast Carcinoma with Discordant Histology

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**Introduction:** Synchronous bilateral breast carcinoma is uncommon and it is even rarer to encounter those with discordant histology. **Case Report:** A 69-year-old woman came for a progress mammogram for follow up of bilateral benign breasts calcifications, three years after her last screening mammogram. She was clinically asymptomatic and apart from age, she had no other risk factor for malignancy. On mammogram, suspicious clustered microcalcifications are seen on the right side and a spiculated mass is seen on the left side. Following histopathological analysis of the mastectomy specimens of these highly suspicious findings in both breasts from mammogram, they were later confirmed to be carcinoma of different histological types – invasive carcinoma and infiltrating lobular carcinoma respectively. **Conclusion:** Triple assessment tools remain as the golden standard in diagnosis, with mammogram still playing a major role in detection of non-palpable masses.

Keywords: Bilateral breast carcinoma; metachronous; synchronous

**PC025**

# Pyocalicosis Mimicking a Large Renal Cyst: A Case Report

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**Introduction:** Pyocalyx occurs when a major renal pelvis becomes dilated i.e., hydrocalyx and pus-filled secondary to infundibulopelvic diminution. Hydrocalyx, despite being a rare occurrence, has been recognized; however, pyocalyx as the presentation of pyonephrosis has rarely been reported. Hydrocalyx becomes clinically important once it becomes complicated e.g infected or filled with pus. Mode of treatment differs based on its cause. **Case Report:** A 62-year-old diabetic woman presented with a history of painful abdominal swelling for three days associated with fever and increased urinary frequency. Clinically, the tender ballotable left kidney was palpable with a positive renal punch. Laboratory investigations showed increased inflammatory markers with evidence of urinary tract infection in her urine sample. A large opacity in the left upper quadrant displacing the bowels was evident on a preliminary radiograph. Initial ultrasound showed a large well-defined cystic lesion with intralesional echogenic debris of indeterminable origin. Computed tomography (CT) scan revealed a large left upper pole cystic lesion with uncertain communication to the non-dilated renal pelvis. Diagnosis of a large cystic renal lesion with a differential of hydrocalyx was given. Cystogram, retrograde pyelogram (RPG), and stenting were performed. No filling defect was observed in the ureter. With an ease to thread the catheter proximally, 1200-ml pus was successfully aspirated. The patient reported an immediate relief of symptoms and disappearance of abdominal mass afterwards. Dynamic renal scintigraphy performed later revealed a non-functioning left kidney. Patient is planned for nephrectomy. **Conclusion:** To diagnose hydrocalyx, an established communication of a cystic mass with the renal pelvis is required. A delayed excretory phase during CT scan or intravenous urography (IVU) may be helpful to confirm the finding. Although imaging was inconclusive in our case, the patient's relief of symptoms and the disappearance of the mass after stenting were sufficient for diagnosis.

Keywords: Cystic renal mass; hydrocalyx; pyocalyx; pyonephrosis

**PC026**

# Analysis of Diagnosis and Treatment Interval of Breast Cancer Patients attending Sultan Ahmad Shah Medical Centre @IIUM

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**Introduction:** Breast cancer is an ongoing issue that is plaguing many women worldwide. Early detection of breast cancer improve survival. In Malaysia, there is scanty data available to evaluate the acceptable time interval of diagnosis and treatment. This study aimed to analyze the diagnosis and treatment time interval of breast cancer patients attending SASMEC@IIUM. **Materials and Methodss:** A total of 87 participants were recruited in this retrospective cross-sectional study, conducted at SASMEC@IIUM, from January 2017 to December 2021. Those with recurrent breast cancer or known to have other cancers were excluded. Patients' data were collected from clinical records and telephone interviews. Waiting times for presentation, referral, assessment, and initial treatment were documented. **Results:** From 87 participants, 99 % were female with a mean age of 57 years old (SD±11 years old). Majority were at the later stage of disease with 27% of patient were in stage III cancer and 30% had metastatic disease. The diagnostic interval was 13 days for stage IV, 14 days for stage III, 24.5 days for stage II and 70.5 days for stage I. In contrast, the treatment interval was 32 days for stage IV, 28 days for stage III, 23 days for stage II and 19 days for stage I. Statistically both diagnosis and treatment interval according to cancer staging was $p = 0.082$ and $p = 0.273$ which were statistically not significant. **Conclusion**: Adherent to standard international level treatment interval will provide the best oncological outcome. Our diagnosis and treatment interval were within the acceptable international standard of 28 days interval for diagnosis and treatment of breast cancer patients.

Keywords: Breast cancer; diagnosis interval; treatment interval; SASMEC

**PC027**

# A Case of Papillary Thyroid Carcinoma with Tracheal Invasion: A Malaysian Experience and Literature Review

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**Introduction:** Papillary thyroid carcinoma (PTC) is a common malignancy originating from the thyroid gland. In rare cases, it can invade the trachea resulting in airway obstruction. Here, we report a case of PTC with tracheal involvement and a literature review on the latest surgical options. **Case Report:** A 56-year-old gentleman presented with an anterior neck swelling of 3 x 3 cm for 3 months. Flexible endoscopy showed irregular mass at subglottic region. Subsequent aspiration for cytology confirmed a diagnosis of PTC. Neck contrast enhanced computed tomography showed an ill-defined lesion in the right thyroid (3.1 x 3.8 x 2.9 cm) with subtle irregularity of adjacent tracheal wall suggestive of infiltration. The findings indicated a clinical staging of cT4aN0M0 (Stage III) with Shin's staging of Stage IV. The patient underwent total thyroidectomy and single stage partial cricoid-tracheal resection with anastomosis. There were no immediate post-operative complications reported. Unfortunately, the patient suffered from pulmonary embolism which eventually resulted in his demise. Subsequent histopathology report confirmed the diagnosis of PTC. **Discussion:** Surgical planning for cases as such may be complicated. The risk of recurrent laryngeal nerve injury is increased as the site of resection is close to the nerve. Multiple intraoperative nerve monitoring systems may be required. Meticulous planning of intraoperative airway management is needed as large intraluminal tumor may interfere with intubation. Generally, extensive tracheal invasion would require radical surgical approaches such as circumferential resection and total laryngectomy. Less extensive cases can be treated with shave excision or window resection. **Conclusion**: PTC with tracheal invasion is an uncommon condition and surgical excision is indicated for cases with high Shin's staging.

Keywords: Extrathyroidal extension; papillary thyroid carcinoma; tracheal invasion; tracheal resection

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**PC028**

# Combination of NKX2.2 and CD99 Immunohistochemical Markers as Alternative Testing for the Diagnosis of Renal Ewing Sarcoma

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**Introduction:** Ewing sarcoma (ES) is a malignant small round cell tumour, commonly affecting the bone and soft tissue in children and young adults. Primary renal ES accounts for <1% of renal mass and is often diagnosed postoperatively. The diagnosis is challenging due to its clinical presentation and radiological findings are indistinguishable from other renal mass. Classically the gold standard for diagnosis is by the detection of ES breakpoint region (EWSR1) rearrangement. However, this molecular testing is laborious, costly, and not readily available in some centers. **Case Report:** We reported a case of a 23-year-old female presented with typical triad symptoms of renal carcinoma which are painless haematuria, right flank pain and abdominal mass. Aggressive features of right renal mass with renal vein thrombosis were revealed on CT renal protocol. In view of absence of venous washout, atypical renal cell carcinoma was considered. Subsequently, right radical nephrectomy was performed. Histopathological examination (HPE) confirms the diagnosis of renal ES based on the morphology of small round blue cells supported by positivity of NKX2.2, CD99 and FLI-1**. Discussion:** To date, multiple studies acknowledge the role of NKX2.2 immunopositivity to diagnose ES and Ewing-Like sarcoma. NKX2.2 is a homeodomain-containing transcription factor that plays a vital role in neuroendocrine/glial differentiation and was demonstrated to be upregulated in ES whilst CD99, a surface glycoprotein encoded by MIC2 gene is highly expressed in most ES cases. Hence, combined usage of CD99 and NKX2.2 has shown a sensitivity and specificity of 93% and 98% respectively, comparable to the molecular testing. Prompt diagnosis can be made thus preventing the delay of subsequent multimodality treatment. In conclusion, various options of diagnostic testing and possible targeted therapy in the future may be improved by understanding the molecular pathway of ES.

Keywords: CD99; immunostaining; NKX2.2; renal ewing sarcoma; small round cell tumors

**PC029**

# Bleeding Gastric Neuroendocrine Tumor: A Challenging Dilemma in Clinical Management

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**Introduction:** Gastric neuroendocrine tumors are rare and have emerged as a potential diagnostic and therapeutic dilemma, particularly when associated with bleeding. This abstract highlights the collaborative effort among gastroenterologists, surgeons, and oncologists in managing and improving patient outcomes. **Case Report:** It presents a case study of a 51-year-old woman with a bleeding gastric neuroendocrine tumor that required a multi-disciplinary approach to treatment. The patient presented to our emergency department with symptoms of lethargy and reduced effort tolerance for 2 weeks. Clinically she appeared pale with a low haemoglobin level of 6.3 g/dl. The gastroenterology team performed an oesophagogastroduodenoscopy, which showed a large gastric tumor in the body of the stomach with blood clots. She was subsequently referred to the surgical team for further treatment. A computed tomography angiography (CTA) scan showed a heterogenous mass with an irregular margin arising from the body of the stomach with suspicious involvement of spleen and pancreas associated with regional lymphadenopathies. She underwent an emergency wedge resection of gastric tumor, splenectomy, distal pancreatectomy, bilateral salpingo-oophorectomy, and biopsy patch over the uterus for bleeding gastric tumor. The histopathology report showed a neuroendocrine tumor, grade 3 with metastasis to lymph nodes, pancreas, and bilateral ovaries. The tumor had infiltrated the serosal layer and 6 out of 10 lymph nodes were involved. The mitotic index was 14/2 $mm^2$ and Ki67 labelling index was 70%. The patient had a stormy recovery with bleeding episodes 10 days post-surgery. Following that she was discharged well and was referred to our oncology colleague for adjuvant chemotherapy.

Keywords: Ki67; neuroendocrine tumor

**PC030**

# Case Report: A Rare Complication of Chylous Ascites Post Left Partial Nephrectomy. The Fourth

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We present a case of a 73-year-old man who underwent an open left partial nephrectomy to remove a left renal cell carcinoma, which was complicated with chylous leakage. This is an uncommon complication, as to our knowledge, this is only the fourth reported case of chylous leakage after this type of surgery. Before that, a retrospective analysis of data conducted by Kim B.S. et al. in 2010 found an incidence of 5.1% (32 out of 622 cases) of chylous ascites after laparoscopic nephrectomy, but no data was collected for nephron sparing surgery cases. Partial nephrectomy is a frequently performed urological procedure aimed at removing renal tumors while preserving the nephrons. Usually, this surgery is reserved for renal masses that are 4 cm or less in size, located in the peripheral renal area, and have a good margin post-operatively. During the procedure, the surgeon must carefully manage major vessels, which can result in immediate or delayed complications that can be difficult to address. In our case, milky-like fluids appeared in the drain output on the fourth day after the surgery. The fluid was sent for triglycerides value testing, which was found to be 202 mg/dl, indicating that it is chyle in characteristic. Although chylous leakage is a rare complication after a partial nephrectomy, it has been reported in other urological surgeries, such as retroperitoneal lymph node dissection for testicular cancer. In this report, we would like to share our first experience in successfully managing chylous leakage after open partial nephrectomy using conservative treatment methods.

Keywords: Chylous; partial nephrectomy; renal cell carcinoma

**PC031**

# Aggressive Renal Cell Carcinoma in a Young Adult. A Case Report

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**Introduction:** Renal cell carcinoma, which originates within the renal cortex, is the commonest type of kidney cancer in adults. We report a case of unusual presentation in a young adult with aggressive poorly differentiated renal cell carcinoma. **Case Report:** 30-year-old lady with no known comorbid, first presented to us with non-specific abdominal discomfort for 3 months, associated with loss of weight and loss of appetite. Otherwise, she had no urinary symptom and systemic review was unremarkable. Family history was negative for malignancy. On abdominal examination, it was slightly distended with mass occupying the whole left side of the abdomen, extending across the midline. The mass was hard, ballotable and not tender. Contrast-enhanced CT thorax, abdomen and pelvis revealed large renal mass (measuring 9.4 cm x 12.2 cm x 16.8 cm), engulfing the inferior vena cava and aorta, with inferior vena cava, renal vein and bilateral femoral vein thrombosis, and multiple liver metastases. Image guided percutaneous biopsy of the left kidney was reported as poorly differentiated carcinoma. She rapidly deteriorated and eventually succumbed to the disease within 3 weeks after presentation. **Discussion:** Renal cell carcinoma accounts for 80% of all primary renal neoplasms. It most often occurs in men in 5$^{th}$ to 7$^{th}$ decades, with 3% to 7% of new cases diagnosed in patients younger than 45 years. More than 80% of the cases diagnosed in young adults are stage 1 (size <7 cm), with only 6.5% being metastatic disease. T1aN0M0 was the most frequent stage, comprises more than half of the cases. Contrary to our patient, who was diagnosed with tumour larger than 9 cm, metastatic disease, and passed away in 4 months from symptom onset. **Conclusion:** Young adult with advanced renal cell carcinoma is rare, and often associated with poor outcome. Early diagnosis and treatment are vital to ensure better outcome and survival rate.

Keywords: Aggressive; renal cell carcinoma; young presentation

**PC032**

# Prevalence and Clinical Characteristic of Wound Care Unit Patients in Hospital Tuanku Fauziah, Perlis a Northernmost Government Hospital of Malaysia: A Retrospective Analysis

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**Introduction:** A chronic wound is a wound that does not heal in an orderly set of stages and in a predictable amount of time. This study aims to describe the prevalence and clinical characteristics of Wound Care Unit patients of Hospital Tuanku Fauziah (HTF) from January 2022 until December 2022 and to determine factors associated with chronic wounds among the patients. **Materials and Methodss:** A retrospective secondary data of total 266 patients were collected from Wound Care Surveillance Database of Wound Care Unit HTF and patient's assessment records. All patients presented with acute wound were analyzed for factors associated with chronic wound. **Results:** Out of 254 patients that presented with acute wound, 77.6% continued follow up as chronic wound and only 22.4% of them discharged with healed wound. Majority of the chronic wound patients were Malay (95.9%). 74.6% were more than 50 years old with mean age of 57 years old. Both genders were almost equally distributed. 50.7% of them were active smoker. 70.6% of them had diabetes mellitus, hypertension (46.7%), CVA (22.8%) and PVD (3.6%). 97.9% presented with single wound. Diabetic wound (43.1%) and pressure wound (23.4%) were the most type of chronic wound. Most of wound were at the lower limb area (58.4%), followed by trunk area (32.5%), upper limb (4.6%), head and neck (4.5%). The median initial wound size was 35.5 $cm^2$ (interquartile range: 46 $cm^2$). Patients with diabetes contributed to higher proportion in chronic wounds (70.6%). Significant associations were found between chronic wound with CVA ($p$=0.012) and initial wound size ($p$=0.029). **Conclusion:** This study identified the prevalence of 77.6 % of chronic wound in Wound Care Unit of HTF. Initial wound size and comorbid of cerebrovascular accident (CVA) and diabetes mellitus as factors significantly associated with chronic wound.

Keywords: Chronic wound; wound care; wound healing

**PC033**

# 2 Case Series – CT Guided Ommaya Reservoir Insertion for Recurrent Craniopharyngioma

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**Introduction:** Craniopharyngioma (CP) is a slow growing tumor arising from embryonic epithelial cell from intra or suprasellar region. Due to its close relation to hypothalamus, surgery may lead to endocrine insufficiency. It has a recurrence rate up to 15% after gross tumor removal (GTR) and high survival rate of 85-96% at 5 year and 63-100% at 10 years. Despite its benign nature, recurrence is not uncommon due to regrowth from remnant tumor cell at the capsule. Surgery is the mainstay of treatment. Insertion of Ommaya reservoir is an option to address the recurrent cystic component of CP, which is the main culprit in symptomatic CP. Radiotherapy and stereotactic injection antineoplastic agent such as bleomycin may help shrink the tumor burden to improve outcome of surgery. **Case series:** We are reporting 2 patients with recurrent adamantinomatous craniopharyngioma who received treatment at our center. Both patients were diagnosed at the age of 17 years old, with presentation of intermittent headache and bitemporal hemianopia. The tumor recurs at 5 months up to 1 year after the surgery. In both cases, they underwent total of 3 surgery; first surgery was transcranial approach, subsequently managed with endoscopic approach before final surgery Ommaya catheter insertion done. Ommaya catheter insertion was guided by intra-operative CT scan to place the catheter precisely inside the cystic tumor cavity. Aim for catheter insertion is to enable repeated cyst drainage until local control is obtained by radiotherapy. Both patients had underwent radiotherapy after the last surgery and tolerate well the treatment without any new neurological deficit. **Conclusion:** Management of craniopharyngioma requiring multi-disciplinary approach involving neurosurgery, otolaryngology, endocrinology, ophthalmology, radiation oncology and neuro-oncology. It also requires multimodality approach from surgical excision (trans cranially or endoscopically), Ommaya catheter insertion and radiotherapy to reduce morbidity and improve quality of life.

Keywords: Craniopharyngioma; endoscopic surgery; ommaya catheter; radiotherapy; transcranial surgery

**PC034**

# Chyle Leak Following Neck Dissection: Lesson Learned

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**Introduction:** Chyle leak is a rare and serious complication that may occurs following head and neck surgery. Although the reported incidence is less that 2.5%, it may cause significant local and systemic problems such as poor wound healing, fistula formation, progression into chylothorax, secondary bacterial infection, hypovolemia and electrolytes disturbances. **Case Report:** We reported two cases of chyle leak following total thyroidectomy and neck dissection, both done for papillary thyroid carcinoma. First patient developed chyle leak and subsequent chylothorax, diagnosed during early postoperative period after we noted milky drainage from her left neck drain. Chest radiograph confirmed the diagnosis and she was treated conservatively with peripheral nutrition support, Medium-Chain Triglyceride oil as well as subcutaneous octreotide. Second patient however had a delayed presentation with neck collection noted during clinic follow up 2 weeks post-surgery. As such, in addition to the above measures employed for first patient, she required percutaneous drainage to drain the collection. Both patients successfully recovered well and does not require any additional surgery. **Conclusion:** Chyle leak and its sequalae of problems can be a challenging postoperative complication to deal with and prevention of the complication is therefore paramount. If such complication however still occur, prompt recognition of its occurrence and institution of correct management is vital in order to prevent further morbidity. This may be achieved by having high index of suspicion and sound understanding of the anatomy, physiology and pathophysiology of the condition.

Keywords: Chyle leak; lateral neck dissection; papillary thyroid carcinoma

**PC035**

# Case Report of Caesarean Related Scar Endometriosis and Literature Review

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**Introduction:** Caesarean related surgical scar endometriosis is a type of extremely rare abdominal wall endometriosis. Slow growing, chronic pain with increasing severity, the women often suffer in silence. Given the latency of symptoms from initial surgery, presentations or referrals are often to others than obstetricians. We present a case of Caesarean scar endometriosis referred from surgical department. **Case Report:** A 43 years old, multiparous lady with last child birth via Caesarean section 10 years prior, presented to surgical department with right inguinal mass. She also reported presence on painful lump over the left edge of her Pfannenstiel scar for past 10 years, some months after her Caesarean section. She has been having chronic cyclical pain and palpable lump during her menses which only became increasingly severe more recently. Examination revealed normal skin colour with palpable 2x3 cm hard nodular swelling with irregular border beneath the left edge of Pfannenstiel scar. Ultrasonography revealed subcutaneous nodule measuring 2.5x 2.7 cm with similar echogenicity to the endometrial lining. Surgical excision of the swelling was performed concurrently with surgery for the huge right inguinal mass (lipoma). Histopathologic examination (HPE) findings of the scar mass confirmed the initial diagnosis of scar endometriosis. **Discussion:** Caesarean section poses highest risk for development of surgical scar endometriosis. Cyclical pain related to menses is highly suggestive of endometriosis. Presence of previous abdominal surgery especially Caesarean section along with pain and subsequent mass should raise the suspicion. Treatment with surgical excision is highly curative with ability to confirm diagnosis through HPE. Nevertheless, prevention is better than cure. Suggested surgical practice is to avoid using the same needle and suture used in uterine closure for rectus and subcutaneous suturing and cleaning of subcutaneous area post rectus closure may reduce the occurrences of scar endometriosis.

Keywords: Abdominal wall endometriosis; caesarean; scar endometriosis

**PC036**

# Evaluating Paediatric Quality of Life after Supracondylar Humerus Fractures

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**Introduction:** The trajectory of recovery in children following injury remains unclear. It is crucial to accurately assess how these injuries affect a child's functional status and overall well-being, and to determine when and if functional outcomes and QOL reach a plateau. This knowledge is essential for healthcare providers and researchers to optimize rehabilitation during periods of improvement, ensuring a more adaptive rehabilitation process once plateaus are attained. The primary objective of this study is to evaluate the quality of life (QOL) in children who have experienced supracondylar fractures of the humerus. **Materials and Methods:** We recruited 40 children who had sustained these fractures and collected demographic data, including details about parents' occupation, educational levels, and household income. Functional outcomes were evaluated using the Mayo Elbow Performance Index (MEPI). QOL was assessed using the Paeds QoL 4.0 Generic core scales at intervals of 6, 12, and 24 weeks. **Results:** QOL in paediatric patients demonstrated a rapid improvement after supracondylar humerus fractures, closely linked to functional outcomes. Children exhibit swift recovery between 6- and 12-weeks post-injury, with only marginal improvements in functional outcomes beyond 12 weeks. It remains uncertain if this signifies a recovery plateau or if further improvements can be expected over extended durations. However, QOL remains below age-matched norms at 24 weeks post-injury, with uncertainties about potential long-term improvements. Interestingly, this study revealed that children of average weight experience better and quicker QOL recovery post-trauma compared to overweight children. Additionally, children with parents of higher educational levels tend to struggle emotionally following the injury, while those from lower-income households cope better with emotional stress. **Conclusion:** Identifying the point at which recovery plateaus and understanding the impact of various factors on QOL will significantly influence the allocation of rehabilitation resources and ongoing family support systems.

Keywords: Elbow injury; functional outcomes; paediatric fractures; quality of life; school-going

**PC037**

# Quality of Life Evaluation in Survivors Following Tumour-Related Hemipelvectomy: A Cross-Sectional Study

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**Introduction:** Understanding and improving the quality of life (QOL) for individuals undergoing complex medical procedures is of paramount importance. Hemipelvectomy, a life-altering surgery, poses unique challenges for patients. This cross-sectional study focuses on assessing the QOL of survivors who have undergone tumour-related hemipelvectomy. By evaluating their QOL, we aim to gain insights that can enhance the care and support provided to these resilient survivors. **Materials and Methods:** We reviewed clinical data from 61 patients who had undergone either external (pelvic amputation) or internal (limb-salvage pelvic resection) hemipelvectomy for musculoskeletal tumours at a single tertiary centre. Clinical variables include types of pelvic resection, amputation, and limb salvage procedure). We recruited survivors with a minimum 6-month follow-up. QOL evaluation was conducted using the European Organisation for Research and Treatment of Cancer Core Quality-of-Life Questionnaire (EORTC QLQ-C30), encompassing functional scales, symptom scales, and global health and QOL scales. **Results:** Sixteen patients met the study criteria, with a response rate of 93.8% (15 out of 16 cases). The mean global health and QOL score for the entire cohort was 81.11 (SD=9.16), with no significant difference between external and internal hemipelvectomy patients. Cognitive and social functioning scores were similar for both groups, while post-internal hemipelvectomy patients exhibited higher role functional scores (p=0.034). External hemipelvectomy patients had higher physical functioning scores but lower emotional functioning scores. **Conclusion:** This study identified that chronic pain, more prevalent in post-internal hemipelvectomy patients, significantly impacts their QOL. Factors affecting patient QOL include limitations in physical, social, and role functioning, particularly among external hemipelvectomy patients. Most patients adapted to their disability, as evident by higher cognitive and emotional scores. Importantly, all patients expressed satisfaction with their treatment outcomes.

Keywords: Hindquarter amputation; limb salvage; musculoskeletal tumours; pelvic resections; quality of life

**PC038**

# Incidence of Pseudophakic Cystoid Macular Oedema Post Cataract Surgery in Sultan Ahmad Shah Medical Centre @ IIUM – 3 Years Review

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**Introduction:** Pseudophakic cystoid macula oedema (PCMO) also referred to as Irvine-Gass syndrome, is a known visually debilitating condition that can develop following cataract surgery, the most performed ophthalmic procedure globally. This condition, characterized by the fluid accumulation within the macula, can lead to noteworthy visual disturbances and brings significant challenge for both patients and clinicians. **Objective:** To investigate the incidence of PCMO, identify the risk factors for developing PCMO and the treatment options in Sultan Ahmad Shah Medical Centre @ IIUM (SASMEC@IIUM) between July 2021 and August 2023. **Materials and Methods:** Retrospective, single-centre case series. **Results:** A total of 474 patients (774 eyes) underwent cataract surgery between July 2021 and August 2023 was reviewed. Total of nine patients (1.16 %) was found to develop PCMO. The average age patient with PCMO was 66 years old. 56% of the patients with PCMO were female and 44% were males. Most of the patients with PCMO were Malay (78%), followed by Chinese (11%) and Indian (11%) respectively. One patient had complicated cataract surgery while the remaining underwent uneventful cataract surgery. The average of central macular thickness in patients with PCMO was 401.67 µm. All patients were treated with topical Nepafenac 0.1%. Seven patients showed resolution of PCMO after three months of treatment. However, two patients showed persistence of PCMO and were subjected for intravitreal anti-vascular endothelial growth factor injection. **Conclusion:** The risk factors of developing PCMO include elderly age group and male gender. The risk of PCMO was small, however, it can lead to significant visual disturbance in patients who underwent cataract surgery. Early detection and prompt intervention ensure better visual prognosis to the patients.

Keywords: Cataract; pseudophakic cystoid macular oedema; risk factors

**PC039**

# A Malicious Klebsiella Endogenous Endophthalmitis

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**Objective:** To report a case of endogenous *Klebsiella pneumoniae* endophthalmitis that was recalcitrant, requiring two vitrectomies. **Case Report:** A 55-year-old Malay lady with uncontrolled Diabetes Mellitus admitted for intraabdominal sepsis secondary to liver abscess. The culture and sensitivity (C&S) from the liver abscess drainage was positive for *Klebsiella pneumoniae*, showing sensitivity to Gentamicin and Bactrim. She was treated with systemic Bactrim by primary team. In ward, she complained of reduced vision in the left eye. The visual acuity of the left eye (LE) was 6/21 and the right eye (RE) was 6/9. Anterior segment examination of the LE showed anterior chamber (AC) inflammation with hypopyon. The posterior segment examination showed presence of vitritis, hyperemic disc and retinitis. Examination of the RE was unremarkable. The diagnosis of left *Klebsiella Pneumoniae* endogenous endophthalmitis was made. Patient underwent immediate vitreous tapping and intravitreal Vancomycin and Ceftazidime. Trans pars planar vitrectomy (TPPV) with intravitreal Vancomycin and Ceftazidime was performed on the next day. The vitreous fluid test was negative for microbes. Post operatively, she was prescribed topical Moxifloxacin 0.5% and systemic Ciprofloxacin. She had resolution of intraocular inflammation with improvement of the LE visual acuity to 6/7.5. Ten weeks later, she had recurrent endophthalmitis with AC inflammation, vitritis, retinitis with retinal abscess and localized retinal detachment nasally. Her vision had dropped to 6/30. She repeated TPPV, intravitreal Vancomycin, Ceftazidime and Amphotericin B injection with silicone oil tamponade. She also received a course of topical Moxifloxacin 0.5% and systemic Bactrim. With aggressive treatment, she had resolution of intraocular inflammation and flat retina. Her LE visual acuity was 6/60 due to cataract. **Conclusion:** Despite aggressive and early treatments, endogenous *Klebsiella pneumoniae* endophthalmitis is associated with poor visual prognosis.

Keywords: *Klebsiella Pneumoniae* endogenous endophthalmitis; retinitis; trans pars planar vitrectomy; vitritis

**PC040**

# Outcome of Treated Macular Hole in Sultan Ahmad Shah Medical Centre @ IIUM – A 3 Years Review

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**Introduction:** Macular hole (MH) is characterized by full-thickness or partial-thickness defect at the centre of macula. Patients suffering from MH will experience rapid deterioration of vision, metamorphopsia and central scotoma. Surgical treatment for MH involves trans pars plana vitrectomy (TPPV) with inner limiting membrane peel and gas tamponade. The goal of treatment is to achieve anatomical closure with reconstruction of macular structure, aiming for functional improvement over time. If left untreated, most eyes undergo further reduction in visual acuity (VA). **Objective:** To review the clinical profile and surgical outcome of patients with MH who underwent TPPV surgery in Sultan Ahmad Shah Medical Centre @ IIUM (SASMEC @ IIUM) from 2021 until 2023. **Materials and Methods:** Retrospective single-centre observational case series. **Results:** A total of 11 patients were diagnosed with MH, however only five patients underwent TPPV surgery. They consist of three patients with stage 2 MH, one patient with stage 3 MH, and one patient with stage 4 MH. The average age of the patients was 63 years old. Three of the patients were male and two were female. All except one patient suffers multiple comorbids including diabetes mellitus, hypertension, and ischaemic heart disease. In terms of visual outcomes post-surgery, most of the patients had improvement in at least more than two lines in Snellen chart VA. Four patients had complete closure of MH while remaining one patient had reductions in MH size. None had reopening of the MH. **Conclusion:** This study provides detailed clinical profile including demographic data, clinical and treatment data of macula hole in SASMEC @IIUM. After successful macula hole surgery, majority of patients achieved anatomical closure with vision improvement. Advocating awareness and early screening among the patients, MH can be detected early thus ensures prompt intervention, promising better visual outcome to the patient and anatomical closure of MH.

Keywords: Macular hole; trans pars plana vitrectomy; vitreomacular interface disorder; visual acuity

**PC041**

# Devastating Ocular Impact in Toxic Epidermal Necrolysis

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**Objective:** To report a severe ocular complication secondary to toxic epidermal necrolysis. **Materials and Methods:** Case report**. Results:** A 43-year-old Malay gentlemen presented to emergency with 2 days history of progressive development of blisters and eruptive body rash after he took paracetamol. The rash begins to develop from upper limbs, trunks and facial region with severe ocular and oral mucosal involvement. On early morning of second day of illness he complains of bilateral ocular pain with difficulty in opening his eyes associated with bilateral eye discharge. First examination by ophthalmology team on day 2 of illness revealed patient has reduced visual activity in both eyes of 6/12. Slit lamp examination shows large central corneal epithelial defect of around 5 mm in both eyes, with pseudomembrane on injected conjunctiva with massive discharge. For the immediate ocular treatment patient was given regular topical dexamethasone 0.1%, topical antibiotics with 0.5% moxifloxacin, and artificial tears as lubricants. Patient was admitted for 22 days and co-managed together with department of internal medicine and oral maxillofacial surgery. Upon discharged the corneal epithelial defect has reduced with no stromal infiltration with no pseudomembrane. Two months' later patient develop inferior corneal thinning in left eye with descematocele. Bandage contact lens was placed on left eye for corneal protection and promotes corneal healing. A week later patient developed left eye corneal perforation at previous site of thinning. Tenon graft harvested from superior conjunctiva was attached with cyanoacrylate glue on the perforated cornea to seal the perforated cornea prior to corneal transplant. **Conclusion:** Toxic epidermal necrolysis can give rise to severe ocular complication and need to be closely monitored for optimization of care.

Keyword: Corneal perforation; corneal epithelial defect; toxic epidermal necrolysis

**PC042**

# Ocular Hornet Injury: A Case Report on Corneal Microperforation and Endophthalmitis

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**Introduction:** The lesser banded hornet (*Vespa affinis indosinensis*) is a common hornet in tropical and subtropical Asia including Malaysia. Its stings can result in local reactions, severe anaphylactic shock, and even death. **Case Report:** We report a rare case of corneal microperforation and endophthalmitis following ocular hornet injury. A 76-year-old farmer was attacked by hornets and suffered multiple stings, including one to his right eye. He developed right eye pain, redness, and visual impairment. Ocular examination revealed right corneal haziness with a retained stinger. Attempts to remove the retained stinger were unsuccessful as the stinger broke and stayed deep in the corneal tissue layer. Corneal microperforation occurred at the site of the retained stinger later and a scleral-patch procedure was performed. Eventually, he developed endophthalmitis despite extensive topical and systemic antibiotics. **Conclusion:** This report highlights the importance of quick and vigilant management to prevent severe complications and preserve vision after hornet sting injury. Retained stinger poses unique challenges which require specialized interventions. There is the need for continuous research and awareness in the management of ocular hornet injury, aiming to establish standardized treatment guidelines and improve patient outcomes.

Keywords: Corneal microperforation; endophthalmitis; hornet stings; lesser banded hornet; *Vespa Affinis Indosinensis*

**PC043**

# The Monthly Eyelid Affair: A Young Women's Battle with Hormone-Triggered Posterior Blepharitis

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**Introduction:** Posterior blepharitis is a common ocular condition characterized by inflammation of the meibomian glands, leading to symptoms such as ocular discomfort, eyelid margin redness, and meibomian gland dysfunction. Although the exact pathophysiology remains unclear, hormonal fluctuations, especially in estrogen and progesterone levels, are thought to be contributory factors. The meibomian gland structure and function are influenced by sex hormones. Cyclical hormonal variations may trigger inflammatory changes in the glands. **Case report:** A 22-year-old woman presented with a six-month history of recurring right lower eyelid margin discomfort, redness, and mild swelling. She reported that these symptoms coincided with her menstrual cycles. She does have allergy to seafood, with an underlying controlled allergic rhinitis under Otorhinolaryngology team follow up. The patient's menstrual cycles were regular, with no other associated symptoms. Clinical examination during the acute episode revealed mild redness and swelling of the left lower eyelid, predominantly concentrated along the posterior margin. There was presence of looping and prominent vessels over right lower eyelid, with irregular mucocutaneous junction and Meibomian gland dysfunction as well as micropapillae. The visual acuity, intraocular pressure, and fundoscopy were unremarkable. A diagnosis of right eye lower lid posterior blepharitis secondary to cyclical hormonal changes was made. Hormonal correlation with the onset of blepharitis episodes was evident via the blood hormone levels. The patient was started on steroid topical eyedrop to control inflammation and oral doxycycline 100mg twice daily to improve oil composition of the meibomian gland. **Conclusion:** This case report highlights the occurrence of posterior blepharitis synchronized with menstrual cycles, shedding light on the potential hormonal influence on this rare presentation. A combination of clinical evaluation, diagnostic workup, and symptom monitoring helped identify the pattern of blepharitis episodes. Further research is needed to explore the hormonal mechanisms involved and potential interventions for this unusual condition.

Keywords: Cyclical posterior blepharitis; meibomian gland

**PC044**

# Misdiagnosis Unveiled: Pathological Myopia Masquerading as Glaucoma Suspect

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**Introduction:** Pathological myopia represents a subgroup of myopia and affect 3% of population. Vision loss related to it is of great significance. **Method:** Case report. **Results:** A 66-year-old Malay woman with underlying uncontrolled Diabetes Mellitus was admitted for painful and progressively worsening of right neck swelling and diagnosed with Klebsiella Pneumonia bacteraemia secondary to right deep neck abscess but endophthalmitis was ruled out. She had high myopes with spectacles power of -8.00 Dioptre and had both eye cataract surgery 4 years back. No sudden vision decline or significant eye-related symptoms reported. No family history of glaucoma and her vision was stable since postoperatively. Visual acuity of right eye (RE) is 6/21 pinhole 6/9 and left eye (LE) 6/30 pinhole 6/24. Relative afferent pupillary defect (RAPD) over the LE is positive grade I. Intraocular pressure was normal for both eyes with angle open grade 4. Following fundus examination, both optic discs looked pale with high cup disc ratio (CDR) of 0.7 RE and 0.9 for LE which marked the suspicious of glaucoma arise and case was referred to Glaucoma Specialist for evaluation. Upon a meticulous review by the Glaucoma team, it was discerned that both eyes exhibit tessellated fundus pattern with marked demarcation line of chorioretinal atrophy at superior, inferior and nasal region. These clinical findings were in alignment of Optical Coherence Tomography (OCT) Retinal Nerve Fibre Layers (RNFL) that revealed thinning of the neural retinal rim (NRR) in the region of superior, inferior and temporally, corresponding with the findings from Humphrey Visual Field (HVF) assessment. Consequently, diagnosis of glaucoma suspect was ruled out and she was treated as Pathological myopia. **Conclusion:** Pathological myopia can mimic glaucoma and requiring thorough evaluation. Accurate diagnosis ensures appropriate treatment and ongoing monitoring.

Keywords: Glaucoma suspect; Ophthalmology; pathological myopia

**PC045**

# Bilateral Poor Visual Recovery One Year after Uncomplicated Cataract Surgeries: Prolonged Irvine Gass Syndrome

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**Introduction:** Visual acuity (VA) improvement is a desired outcome following cataract surgeries. Irvine Gass Syndrome (IGS), also known as pseudophakic cystoid macula oedema (CMO) is one of the most common causes of poor visual recovery post-surgery. Vision impairing IGS affects 2% of patients peaks at 6 weeks post-surgery with spontaneous resolution after 6 months. We aim to report a case of bilateral eye prolonged IGS which was detected at eleven months after uneventful cataract surgeries. **Methods:** Case report. **Result:** A 58-year-old Chinese gentleman with no known systemic comorbid and bilateral eye high myopia, underwent uneventful bilateral cataract surgeries at 4 months interval (OS then OD). Six weeks after his second surgery, best corrected VA (BCVA) was noted to deteriorate to 6/18 OD and 6/15 OS which was attributed to bilateral dense posterior capsule opacity. Hence, bilateral YAG capsulotomies were performed at 6 months post-operatively with coverage of topical steroid for a week. Post laser procedure, BCVA was noted to improve to 6/9.5 OU. Optical coherence tomography (OCT) of the macula was performed and revealed bilateral CMO. Topical nepafenac 0.1% was commenced, however, the CMO did not respond to the topical treatment. His BCVA deteroriated to 6/18 OD, 6/12 OS. At 11 months post-operatively, fundus fluorescein angiography showed petaloid pattern of leakage at macula of both eyes with no evidence of intermediate or posterior uveitis which confirmed the diagnosis of IGS. Bilateral orbital floor triamcinolone injection was performed and clinical improvement was observed after 6 weeks. Bilateral intravitreal steroid implant was given and he is monitored for improvement. **Conclusion:** IGS typically resolves after 6 months, however, prolonged IGS is still possible especially after YAG laser capsulotomy. Patient with poor visual recovery after an uneventful cataract surgery should be investigated thoroughly and prompt treatment is warranted to prevent permanent visual impairment.

Keywords: Cataract; irvine gass syndrome; post cataract; YAG

**PC046**

# Iris Tissue Clogged in the Lumen of Preserflo Microshunt Implant: What To Do?

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**Objective:** To report a case of lumen obstruction by iris tissue after a PreserFlo MicroShunt implantation and its management. **Introduction:** PreserFlo MicroShunt is a minimal invasive glaucoma implant which drains the aqueous from anterior chamber to subconjunctival area. The lumen of the tube is narrow enough to prevent overfiltration, but big enough to avoid being obstructed by sloughed cells or pigment. We aim to report a case of iris tissue clogging the lumen following a PreserFlo MicroShunt implantation and the subsequent laser therapy which restored the function of the shunt. **Materials and Methods:** Case report. **Results:** A 65-year-old man with underlying hypertension, hyperlipidaemia, and ischaemic heart disease was under ophthalmology clinic follow up for bilateral primary open angle glaucoma. Despite on maximal anti-glaucoma medication, his intraocular pressure was suboptimal, hence he was subjected for left eye PreserFlo MicroShunt implantation which was uneventful. At 1 week post-operatively, the intraocular pressure of his left eye was noted to spike up to 30 mmHg and anterior segment examination revealed that lumen of the microshunt was obstructed by the adjacent iris tissue. Neodymium-doped Yttrium Aluminum Garnet (Nd:YAG) and argon laser were performed to unclog the lumen and retract the iris tissue away from the microshunt respectively. Following the procedures, the lumen was free from the iris tissue and the intraocular pressure normalized to 10 mmHg. He continued to be medication-free till date. **Conclusion:** In contrast to surgical reposition, laser therapy can be done in clinic settings and it is an effective and less invasive method to release the iris tissue from clogging the lumen of PreserFlo MicroShunt.

Keywords: Complication; microshunt surgery; PreserFlo

**PC047**

# A Rare Presentation of an Ocular Ischemic Syndrome Complicated by Neovascular Glaucoma in a Patient with Mild Carotid Artery Stenosis

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**Introduction:** Neovascular glaucoma (NVG) is a secondary glaucoma associated with iris and iridocorneal angle rubeosis, connective tissue growth and elevated intraocular pressure (IOP). One of its etiologies is ocular ischemic syndrome (OIS). OIS is characterized by ischemia of anterior and posterior segments of the eye secondary to chronic ocular hypoperfusion, and commonly associated with severe carotid artery stenosis or occlusion. **Materials and Methods:** Case report. **Results:** A 72-year-old gentleman with hypertension, dyslipidemia and ischemic heart disease presented with right eye painless blurred vision with intermittent ipsilateral headache for 6 months. Upon presentation, right eye vision was 6/60 pinhole 6/36 with presence of relative afferent pupillary defect. Anterior segment examination revealed right eye ciliary injection, cornea oedema with anterior chamber cells and fibrin. Right eye IOP was 52 mmHg and gonioscopy showed open angle with rubeosis at the angle. Right eye fundus revealed glaucomatous optic disc with 0.7 cup-to-disc ratio and multiple dot-blot hemorrhages over mid-peripheral retina suggesting of OIS. Left eye examination was unremarkable. Diagnosis was further confirmed by fundus fluorescein angiography which showed marked delay in arterio-venous transit time with profound area of capillary fall-out at peripheral retina. To tackle the ischemic component, pan-retina photocoagulation laser was conducted. Topical and systemic antiglaucoma medications, topical steroid and cycloplegic were commenced. He subsequently required glaucoma drainage device on his right eye to control the IOP. He was investigated for the cause of OIS. Ultrasound carotid doppler and computed tomography angiography of carotid revealed bilateral internal carotid artery atherosclerotic disease with less than 50% stenosis. Double antiplatelet therapy was commenced to reduce risk of cerebrovascular and cardiovascular events. **Conclusion:** OIS occurrence in carotid artery stenosis seems to be independent of the degree of stenosis. Prompt diagnosis and multidisciplinary management are important to prevent sight and life-threatening conditions such as NVG and cerebrovascular accident.

Keywords: Carotid artery stenosis; neovascular glaucoma; ocular ischemic syndrome

**PC048**

# Optic Nerve Schwannoma: A Rare Differential of Optic Nerve Mass that should not be Forgotten

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**Introduction:** Schwannomas are benign nerve sheath tumors that may arise along the peripheral nervous system that originate from Schwann cells. Because optic nerve is myelinated by oligodendrocytes rather than Schwann cells, thus the diagnosis of optic nerve schwannoma is often almost non-exist theoretically. Hence, we herein report a rare case of this optic nerve schwannoma. **Case Report:** A 40-year-old female with history of hyperthyroidism was presented with right eye proptosis for two weeks that preceded by blurring of vision for three months. Physical examination revealed right eye proptosis with neck swelling. Contrast enhanced CT brain/orbit and subsequently MRI orbit were performed and showed an exophytic heterogenous solid cystic enhancing mass at the right intraconal space. It has poor plane with the right optic nerve which appears compressed and displaced superomedially. Patient was initially not keen for surgical excision. On follow up MRI showed enlarging mass thus patient was agreeable for surgery. Due to compression to the optic nerve, initial diagnosis of optic nerve meningioma was made although the solid cystic appearance is not a typical feature. Histopathology however came back, and the lesion was confirmed to be a schwannoma. **Conclusion:** Although rare and almost not possible, the diagnosis of optic nerve shwannoma should not be totally excluded or neglected when the appearance is radiologically suggestive, as there is a rare possibility that it may arises from the sympathetic fibers around the optic nerve.

Keywords: Optic nerve mass; schwannoma; schwann cells

**PC049**

# Pediatric Traumatic Optic Neuropathy: Diagnostic Ambiguities in the Presence of Normal Imaging

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Traumatic optic neuropathy (TON) is an ocular emergency resulting from injury to the optic nerve, typically due to direct or indirect trauma. While TON is well-described in adults, it remains a diagnostic challenge in the pediatric population due to varied clinical presentations and the potential inconclusiveness of imaging studies. We report a case of a 5-year-old girl who presented with right eye pain and reduced visual acuity (2/120) following a blunt trauma. Despite the significant visual impairment and a positive Relative Afferent Pupillary Defect (RAPD) in the affected eye, the optic discs were normal with a cup-to-disc ratio (CDR) of 0.3. Comprehensive ocular examination did not reveal additional pathologies. Notably, computed tomography (CT) brain imaging did not indicate any abnormalities, adding complexity to the diagnostic process. The coexistence of strong clinical indicators of TON with a normal optic disc and inconclusive imaging findings highlight the diagnostic intricacies of pediatric TON. This case underscores the nuances of diagnosing TON in the pediatric population, emphasising the importance of a holistic approach. Synthesising clinical findings becomes especially vital when imaging studies are not corroborative, guiding the formulation of a definitive diagnosis.

Keywords: Blunt trauma; pediatric; relative afferent pupillary defect; traumatic optic neuropathy; TON

**PC050**

# A Rare Case of SARS CoV-2 Messenger RNA Vacccination-associated Anterior Uveitis

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**Introduction:** During the pandemic era of COVID-19, more newly engineered vaccines were introduced to fight against the Coronavirus. Though the vaccine is widely used as a preventative measure for pathogen-specific infection, unfortunately, more incidences of systemic inflammatory responses to the eyes including uveitis were reported. Thus, this paper aims to report a case of vaccine-associated uveitis after immediate SARS CoV-2 Messenger RNA vaccination and to emphasize on early detection and prompt ophthalmic intervention. **Method:** A case report. **Results:** A 77-year-old Chinese male with underlying diabetes mellitus and hypertension and bilateral eye primary open angle glaucoma, presented with right eye redness and discomfort after one day of post-COVID vaccination (Pfizer). Three weeks before vaccination, he had undergone successful minimally invasive glaucoma surgery (MIGS) over both eyes. He had also undergone bilateral trabeculectomy five years ago. On ocular examination, his best corrected visual acuity was 6/24 over the right eye with normal intraocular pressure. There was a sign of mild anterior uveitis evidenced by mild injected conjunctiva and keratic precipitates. There were no cells, flares, fibrin and hypopyon observed. The left eye examination and posterior segment of both eyes were unremarkable. He was treated for right eye mild anterior uveitis. A low dose of topical steroids was started. After one month, his inflammatory symptoms were completely resolved. **Conclusion:** Mild anterior uveitis may have been initiated by the host antibody response following the exposure of vaccine components into the body. Therefore, any patients complaining of eye redness post-vaccination to any primary care should be referred and evaluated for full ocular examination.

Keywords: COVID-19; uveitis; vaccine

**PC051**

# A Child with Near Missed Intraorbital Marble Ball after an Awkward Fall

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**Objective:** To report a case of a foreign body (marble ball) entrapped intra-orbitally through a small lower lid laceration after an awkward fall. **Case report:** A 2-year-old child was referred with a right eye tiny lower lid laceration wound from a primary centre. The child was seen playing with a single ended polyvinylchloride (PVC) shaft containing a small glass marble. She accidently fell awkwardly with her face hitting the vertically straightened up PVC shaft. The panicked mum brought her to Emergency Department. Fortunately no serious head injury happened. However, a small but deep laceration wound was found 2 cm below the right lower eye lid. Ocular examination was unremarkable except for limitation of right eye elevation, hence a right orbital floor fracture was suspected. An urgent Computed Tomography (CT) scan of the orbit revealed a shocking finding of a spherical shaped high attenuation focus measuring 1.6 x 1.6 cm (AP x W) within the right maxillary sinus extending to the inferior orbital cavity with comminuted fractures of the right anterior maxillary sinus, inferior and medial orbital wall. Patient underwent surgical exploration and removal of the foreign body in collaboration with ENT team. The patient recovered well after surgery and a course of antibiotic therapy with excellent vision and intact ocular motility. **Conclusion:** This case initially appeared like a trivial fall with minor lid injury. A thorough history taking, detailed examination and good imaging support had revealed an otherwise easily missed radiolucent foreign body.

Keywords: Intra-orbital foreign body; marble; trauma

**PC052**

# The Eye in Marfan Syndrome

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**Introduction:** Marfan syndrome is a hereditary connective tissue disorder that has long intrigued clinicians due to its multifaceted clinical manifestations. One of the hallmark ocular features of Marfan syndrome is bilateral lens dislocation. This paper aims to report a case of bilateral lens subluxation in Marfan syndrome at a young age. **Method:** A case report. **Result**: A 16-year-old Malay boy with trivial mitral and tricuspid regurgitation presented with a sudden painless blurring of vision in both eyes since childhood. Clinical examination revealed skeletal abnormalities (tall, slender, disproportionate long arms and legs), arachnodactyly, joint hypermobility, scoliosis, and high arched palate, consistent with Marfan syndrome. His unaided visual acuity was right eye 6/120 and left eye 6/18. His intraocular pressure was 12 mmHg in the right eye and 17 mmHg in the left eye. His anterior segments revealed poorly dilated pupils and bilateral lens subluxation to the temporal which split pupils. His posterior segment showed a high cup disc ratio and retinal thinning with no retina tear and break. His subjective refraction was +3.50DS/-0.50DCx180 in both eyes (best-corrected outcome right eye 6/30, left eye 6/18). Biometry examination revealed high axial length with significantly flatter corneal curvature. The removal of the crystalline lens is necessary in this case. Hence, he was planning for bilateral lens extraction and artificial intraocular lens replacement under general anaesthesia. Given his underlying heart condition, he was also referred to the cardiologist for further preoperative evaluation. **Conclusion:** Ophthalmologists also play an important role in managing Marfan syndrome patients. Further evaluations on refraction, intraocular pressure, lens status and fundus examination are necessary. Early referral is important for optical correction to prevent amblyopia and monitoring for potential future ocular complications such as cataracts, glaucoma, and retinal detachment.

Keywords: Ectopia lentis; marfan syndrome; lens dislocation

**PC053**

# Dangerous Crepitus – A Case of Iatrogenic Laryngeal Injury in a Patient With Difficult Airway

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**Introduction:** Laryngeal injury affects about 87% of patients following intubation. It is a known complication, especially in patients with a difficult airway. Multiple attempts during a difficult intubation may result in acute mucosal inflammation and oedema. This subsequently leads to ulceration which then progress to perforation, causing the clinical sign of subcutaneous emphysema. **Case report:** We report the case of a 46-year-old scoliotic gentleman with underlying bronchial asthma who presented to the emergency department of a district hospital with severe exacerbation, complicated with type 2 respiratory failure. Decision for intubation was made to secure the airway prior to tertiary centre transfer. A total of 9 intubation attempts were made using a direct laryngoscope. The final successful attempt was aided by a bougie. Post intubation, crepitus was present from the neck down to clavicle level. A contrasted CT scan of the neck showed extensive subcutaneous emphysema with laryngeal oedema, suggestive of laryngeal injury. The patient underwent tracheostomy and was successfully weaned off the ventilator. He was discharged well after 3 weeks. **Conclusion:** Iatrogenic laryngeal injury can be avoided with proper assessment of the airway. Scoliosis should not be overlooked as a potential difficult airway. Furthermore, the difficult airway algorithm needs to be adhered to. A maximum of 3 endotracheal intubation attempts by a practitioner plus 1 attempt by an experienced senior is allowed, before declaring a failed intubation. A supraglottic airway device can be inserted as an alternative. Lastly, the availability of a video laryngoscope would greatly reduce the risk of failed intubation.

Keywords: Airway management; algorithm; difficult airway; intubation; larynx

**PC054**

# Handgrip Strength as a Predictor of Successful Extubation

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**Introduction:** Few predictors or criteria have been used for decades to predict successful extubation. However, there are none of those criteria that have been validated as the best predictor. The other alternative predictive tool that recently been studied is handgrip strength (HGS). This study aims to determine the best cut-off value of HGS and rapid shallow breathing index (RSBI) that would predict successful extubation. **Methods:** The researchers have recruited 103 participants [N=103] among mechanically ventilated patient in Intensive Care Unit for at least 24 hours using a cross-sectional, convenience sampling technique. The participants were required to perform the HGS test using a Jamar hydraulic hand dynamometer. **Results:** The finding reveal that (i) the best cut-off value of HGS before and after spontaneous breathing trial (SBT) was 3 kg (sensitivity of 65.9% and specificity of 66.7%, 67% sensitivity and 66.7% specificity respectively), (ii) the best RSBI cut-off value was 26.3 breaths/min/L (83.5% sensitivity and 83.2% specificity) and (ii) higher median HGS in successful extubation compared to failed extubation group (8kg vs 0kg). **Conclusion:** This study concludes that HGS is a moderate predictor to guide extubation and may be used as an adjunct with RSBI to predict successful extubation. Lastly, the study provides several recommendations for more potential research in the near future to focus on different geographical study populations and to evaluate the effects of other confounding factors (such as duration of mechanical ventilation and haemoglobin level) on handgrip strength.

Keywords: Handgrip strength; rapid shallow breathing index; successful extubation

**PC055**

# Anaesthetic Management for Tracheal Stenting in Patient with Critical Tracheal Stenosis: A Case Report

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**Introduction:** Tracheal stenosis in patients with thyroid carcinoma is a rare complication, but it can significantly impact both the patient's life and the anaesthetic approach. In this case report, we present the successful tracheal stenting procedure performed on a 57-year-old man with severe tracheal stenosis. This procedure marked the first-ever tracheal stenting conducted at Hospital Sultanah Bahiyah (HSB). Given the presence of stenosis, there is a high risk of failed intubation or ventilation during the induction of anaesthesia, as well as a risk of stent dislodgement with airway manipulation. This case report details the anaesthetic choices and approach that led to a successful procedure without any significant complications. **Case presentation:** The patient, with known papillary thyroid carcinoma and multiple metastases, presented with worsening symptoms. CT scan confirmed stable disease but revealed critical tracheal stenosis measuring approximately 5 mm. The patient underwent tracheal stenting. Total intravenous anaesthesia (TIVA) with TCI propofol and remifentanil was used, with successful endotracheal intubation using microlaryngeal (MLT) tube and jet ventilation. Post-stenting, a Proseal was inserted while waiting for the patient to wake up instead of using the MLT to avoid stent dislodgment. **Discussion:** Tracheal stenting is an effective treatment for relieving symptoms and improving airflow in patients with tracheal stenosis. TIVA was chosen as the anaesthetic technique due to the open-circuit nature of rigid bronchoscopy. Jet ventilation was employed during the procedure, and careful monitoring for complications such as hypoxia and hypotension was performed. The Proseal laryngeal mask airway was utilized for post-procedure management to minimize the risk of accidental dislodgement of the stent. **Conclusion:** Tracheal stenting, performed under TIVA and manual jet ventilation, is a safe and effective treatment option for critical tracheal stenosis.

Keywords: Jet ventilation; rigid bronchoscopy; tracheal stenosis, tracheal stenting

**PC056**

# Perianaesthetic Concerns Related to Lemierre's Syndrome: A Case Report

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**Introduction:** Lemierre's syndrome is a rare but life-threatening condition characterized by septic thrombophlebitis of the internal jugular vein, often precipitated by oropharyngeal infections. We present a challenging case of a patient who requires emergency surgery for deep neck abscess but with incidental findings of thrombosis of multiple cerebral veins. **Case report:** A 66-year-old woman was presented with painful right neck swelling and Klebsiella bacteraemia. Computed tomography of the neck revealed multiloculated deep neck abscesses at right carotid and parapharyngeal spaces with extension adjacent to the right internal jugular vein. There were multiple thromboses noted radiologically at right internal jugular vein, right external jugular vein, right sigmoid sinus, right transverse sinus and right cavernous sinus. Patient was referred to hematologist and was started on intravenous anticoagulant. As the patients' deep neck abscess posed an increasing threat to the airway, the case was posted for urgent incision and drainage. Multidisciplinary discussion was done to determine the correct timing for surgery, while identifying the most ideal time to withhold and restart the anticoagulant due to the high risk of thrombosis. Concern of bleeding was imminence due to the anticoagulant which may results in airway obstruction. Surgery was successfully performed after withholding the anticoagulant and no bleeding was observed during the procedure. The anticoagulant was restarted on the following day and patient was discharged home with oral anticoagulant. **Conclusion:** This case underscores the dilemma of balancing the thrombosis risk and bleeding risk of a patient going for airway surgery which was a common issue related to Lemierre's syndrome. Timely recognition and good perioperative strategy are vital to ensuring positive patient outcomes.

Keywords: Cerebral venous thrombosis; Lemierre's syndrome

**PC057**

# Cut-Throat! – Penetrating Neck Trauma with Open Laryngeal Injury

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**Introduction:** Penetrating neck trauma is rare and has a mortality rate of about 10%. Major neck injuries encompasses both aerodigestive and neurovascular structures. **Case report:** A 38-year-old gentleman presented to the district hospital with a 6 cm laceration wound at Zone 2 of the anterior neck, due to deliberate self-harm. He was hypotensive, tachycardic, tachypnoeic, and hypoxic on arrival. The trachea was exposed with a 2 cm breach of the cricothyroid membrane. There was oozing of blood from the wound with air bubbling through it. Airway was secured through front-of-neck-access (FONA) endotracheal tube (ETT) placement via the wound. IV Ketamine 100 mg was used as premedication. After ETT placement confirmation, IV Rocuronium 100 mg was administered. The ETT was anchored at the neck using suture technique, at 16 cm. Haemostatic suturing of the wound was then done to control bleeding. He was transfused 2 pints of packed RBC prior to tertiary centre transfer as he was in haemorrhagic shock with a Hb of 7.9 g/dL. IV Tranexamic Acid 1g bolus over 10 minutes followed by 1g over 8 hours was also administered. He underwent neck exploration, tracheostomy, thyroid cartilage repair, and direct laryngoscopy by the ENT team. Postoperatively he was weaned of the ventilator, then discharged well after 1 week. **Conclusion:** In this case, a smaller ETT size was chosen to reduce secondary injury. Additionally, ETT is anchored shallower as the placement is via FONA. IV Ketamine was a choice sedation as it doesn't cause respiratory depression, while also having analgesic properties. Paralytic agent was only administered after ETT placement confirmation to avoid airway obstruction caused by muscle relaxation during the procedure. Lastly, the presence of hard signs in penetrating neck injury warrants immediate operative management without imaging, such as in this patient.

Keywords: Airway management; difficult airway; intubation; neck injury; trauma

**PC058**

# Adolescent Nasopharyngeal Carcinoma Mimicking Juvenile Nasopharyngeal Angiofibroma

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We hereby present a 14-year-old teenage male who complained of painless neck swelling. Nasoendoscopy then discovered a huge lobulated angry-looking mass occluding the entire left posterior choana, hence a provisional diagnosis of juvenile nasal angiofibroma (JNA) was made and biopsy was not immediately undertaken. Subsequent computed tomography (CT) demonstrated a large heterogenous mass at the left nasopharyngeal region extending to the oropharynx and posterior choana. Though the left sphenopalatine foramen was not widened, the mass was seen minimally extending into it. Given the patient's age, size and location of the mass, combined clinical and radiological diagnosis concluded JNA as the primary diagnosis and endoscopic excision of the mass was planned. However, he presented about 1 month later in casualty with right nasal epistaxis whereby repeated nasoendoscopy showed a larger mass extending to the right nasopharynx with contact bleeding. The tissue biopsy performed was complicated with significant bleeding, further validating the suspicion of JNA. Histopathological diagnosis otherwise revealed undifferentiated carcinoma. The patient otherwise showed good response to chemoradiation. JNA is a rare benign but locally aggressive vascular tumor of nasopharynx which occurs almost exclusively in pediatric or adolescent population. NPC on the other hand, although rare in children; has a predilection for adolescents. Since the treatment approach for NPC and JNA varies greatly, it is crucial to distinguish between the two conditions on radiological imaging. JNA arises from sphenopalatine foramen though both tend to exhibit some bony changes. An endoscopic endonasal approach with optional pre-operative embolization is the treatment option for JNA as opposed to chemoradiation for NPC. We would like to highlight that age is not a dependent risk factor in any malignancy, particularly NPC. When the clinical manifestations of NPC and JNA are similar, NPC diagnosis requires a high clinical suspicion followed by imaging; regardless of age.

Keywords: Carcinoma; CT PNS; endoscopic approach to juvenile nasopharyngeal angiofibroma; nasopharynx

**PC059**

# Beware! Inappropriate Neck Massage That Leads to Bowing of Vocal Folds

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**Introduction:** Vocal folds bowing is a condition where the vocalis muscle shrink and atrophy and curve inwards. There are many causes that lead to vocal fold bowing such as patient with vocal fold paralysis, sulcus vocalis, those that had previous history of laser surgery or even idiopathic. **Case description:** Here, a 43-year-old woman presented to us with hoarseness that progressively worsen for 1 week duration. Besides, she also complained of having aspiration symptoms when having taking fluid orally. She developed all these symptoms after she went to seek traditional treatment for her headache where neck massage was given as part of her treatment consecutively for 3 days in total. Upon examination, there was no swelling or hematoma over the neck. GRBAS (Grade, Roughness, Breathiness, Asthenia, and Strain) scoring was 2 with main component of roughness and breathiness. Flexible nasopharygolaryngoscopy showed bowing of bilateral arytenoids and vocal cord mobile with presence of phonation gap. Injection laryngoplasty was done for this patient. 0.45 ml of Juverderm was injected into patient's right paraglottic space. Patient's symptoms resolved completely after the procedure and adequate duration of voice rest. **Conclusion:** Inappropriate neck massage over thyroid cartilage region may accidentally injured the laryngeal nerve and lead to bowing of vocal cord. Injection laryngoplasty is useful in treating laryngologic disorder such as vocal cord atrophy, paralysis and paresis.

Keywords: Injection laryngoplasty; neck massage; vocal cord bowing

**PC060**

# Pleva: The Great Masquerader

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**Introduction:** The rare benign dermatosis Pityriasis lichenoides et varioliformis acuta (PLEVA) is mostly found in children and young adults. It has uncertain etiopathogenesis. The largest series of children with pityriasis lichenoides had a median PLEVA onset of 60 months, with a slight male predominance. The hallmark signs of the disease are the presence of acute inflammatory papules and papulovesicles with hemorrhagic or necrotic crusts on the trunk and flexural areas. Recurrence and remittance complicate rash diagnoses, especially in primary care. PLEVA mimics lymphomatoid papulosis, varicella, pityriasis rosea, guttate psoriasis, and secondary syphilis. PLEVA rarely causes febrile ulceronecrotic Mucha-Habermann syndrome (FUMHD), which can be fatal. **Case report:** A 21-year-old man with vitiligo and metabolic syndrome had a one-month vesicular eruption, recurrent erythematous macules, and crusted patches on the trunk, extremities, and scalp. He received systemic and local antibiotics at multiple clinics without improvement. Upon assessment, he appeared well with stable vital signs. There were generalised brownish scales, with patches seen mainly on the trunk and all flexural areas, mixed with newer erythematous macules, papules, and dried-up blisters with necrotic and a few hemorrhagic at the centre of the crust on the skin, especially at the limbs. After a provisional diagnosis of PLEVA, he was referred to a dermatologist for a skin biopsy. Histopathological examination (HPE) of lichenoid dermatitis confirmed PLEVA. The lesions resolved after two months of treatment with oral and topical corticosteroids administered in tapering doses. **Conclusion:** The lack of consensus on PLEVA's classification, etiopathogenesis, diagnosis, and treatment makes it a medical challenge. Clinical suspicion and histopathology confirm the diagnosis.

Keywords: Lichenoid dermatitis; pityriasis lichenoides et varioliformis acuta; primary care.

**PC061**

# Father and Daughter with Thickened Palms and Soles in Primary Care

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**Introduction:** Palmoplantar keratoderma (PPK) is characterised by excessive thickening of the palms and soles. Hereditary PPK is rare with prevalence in Asia estimated at 1 to 3 per 10,000. A careful assessment is needed due to this group of diseases' considerable clinical and genetic variation. **Case report:** We report a 3-year and 6-month-old girl who presented with skin thickening for two years. She has no extracutaneous symptoms. Her father and elder brother have similar dermatological manifestations. On examination, the child appears well, with no syndromic features. Her skin over both palms and soles is dry, coarse, hyperkeratotic, with trans gradient area involving web spaces of feet. There is no pseudo ainhum. The diagnosis of PPK is based on clinical findings. Laboratory investigations are not done. She was prescribed urea 10% LA cream BD and Vaseline as emollient LA QID. The skin thickening subsequently reduced within months. **Conclusion:** Hereditary PPK is a challenging condition to diagnose because it is uncommon, with a variety of presentations and classifications. More importantly, PPK can be associated with many other conditions and could be a feature of other syndromes, which the unknowing physician could miss. A thorough history and careful physical examination are important since patients with syndromic PPK will require a multidisciplinary approach as part of its management. The patient and her parents may be anxious about how the disease progresses. Ensuring life-long compliance with the medication is crucial as recurrence is common after discontinuing treatment.

Keywords: Inherited; keratoderma; palmoplantar keratoderma

**PC062**

# Patient Satisfaction with the Quality of Healthcare Services at Selected Major Outpatient Clinics at Sultan Ahmad Shah Medical Centre Kuantan Pahang

Q2

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**Introduction:** Patient satisfaction is a key factor in determining any gaps or inadequacies in the healthcare provider's services. This study aimed to measure the level of patient satisfaction and its associated factors towards the healthcare service of outpatient clinics in Sultan Ahmad Shah Medical Centre (SASMEC), IIUM, Kuantan, Pahang. **Materials and Methods:** A total of 1050 patients were recruited from internal medicine, paediatrics, surgery, obstetrics and gynaecology, orthopaedics, and psychiatry clinics between February 2021 and February 2022. A questionnaire consists of two parts: one that covers patients' sociodemographic data and the other that assesses the patients' level of satisfaction with the healthcare services using the Malay-validated Short-Form Patient Satisfaction Questionnaire (PSQ-18). **Results:** The mean overall satisfaction level was 3.94 $\pm$ 0.46, with the highest mean scores in the interpersonal manners (4.26 $\pm$ 0.64) and communications (4.26 $\pm$ 0.56) domains. From the multivariate analysis, it was found that those patients in the lower income group (B40) were more satisfied with the quality of the healthcare services (B = 0.172, 95% CI = 0.08, 0.263) compared to the middle-income group. Being a student (B = - 0.202, 95% CI = - 0.296, -0.108) and having a follow-up treatment visit (B = -0.082, 95% CI = - 0.156, - 0.008), were significantly associated with lower satisfaction levels as compared to their counterparts. **Conclusion:** Overall, the patients who attended SASMEC were satisfied with the service provided especially interpersonal and communication. Continuous service improvement is influenced by household income, occupation, and purpose of visit.

Keywords: Healthcare service; patient satisfaction; PSQ-18; SASMEC

**PC063**

# Sedentary Behaviors and Sleep Time of Under Five Children with Normal BMI in Kuantan, Pahang

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**Introduction:** Early childhood is a period of rapid physical and cognitive development in which a child's habits are formed. Sedentary behaviors and inadequate sleeps contributes to the rise in overweight and obesity. This study aims to look into the physical activity (PA), screen time (ST) and sleep time of under-five children. **Methodology:** A cross-sectional study was conducted at eight purposely selected government health clinics in Kuantan, Pahang in 2023. A total of 135 children aged 12 to 60 months with normal BMI for age were randomly selected. An interviewer-guided questionnaire was used to gather the relevant data from the caregivers which were later compared to the World Health Organisation's recommendations. Data was analysed using the IBM SPSS Version 26. **Results:** The mean age was 29.01 ± 14.43 months, with 54% of them were boys. For the caregivers, 51.1% have secondary or lower education and majority (72.6%) were from the B40 group. In term of PA, the mean duration was 120.85 ± 70.49 minutes per day with 68.2% of children had inadequate PA (<180 minutes per day). 94.8% of children were exposed to gadgets with 76.3% of them had used hand phone. The mean ST was 1.7 ± 1.4 hours per day with 43.7% of children had excessive exposure (> 1 hour per day). Regarding sleep, the mean duration was 11.98 ± 1.72 hours per day with only 12.6% of children had inadequate sleep time. **Conclusion:** Young children in this study population has sedentary behaviors (low PA with high ST) with adequate sleep time. Therefore, caregivers and relevant authority must play greater role in ensuring the under 5 children practice an active lifestyle especially on the PA and ST aspect.

Keywords: Sedentary behavior; sleep time; under-five

**PC064**

# Lipid Control and Its Associated Factors among Patients with Type W Diabetes Mellitus attending Government Health Clinics in Kuantan, Pahang

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**Introduction:** Studies have shown that type 2 diabetes mellitus (T2DM) and dyslipidaemia were strong predictors of the likelihood that an individual will develop cardiovascular (CV) disease. The main aim of this study was to ascertain the attainment of the primary target in lipid control specifically LDL-cholesterol (LDL-C) among patients with T2DM in primary care settings based on their individualised CV risk according to the latest local guideline. **Materials and Methods:** This multicentre cross-sectional study was conducted among patients with T2DM attending government health clinics in Kuantan using simple random sampling. The data were collected from the participants' diabetes records. They were also asked to answer two validated questionnaires, International Physical Activity Questionnaire (IPAQ) and Malaysian Medication Adherence Assessment Tool (MyMAAT) to assess for the associated factors. **Results:** A total of 418 participants completed the study. Alarmingly, only 34 (8.1%) achieved the LDL-C target across all CV risk categories. Notably, those who were adherent to lipid-lowering medications and engaged in moderate physical activity were more likely to achieve the lipid target after multiple logistic regression analysis. **Conclusion:** The proportion of lipid control among participants was very low, emphasizing the urgent need for improvement. Promoting the importance of both physical activity and medication adherence is imperative to enhance these outcomes.

Keywords: Lipid control; medication adherence; physical activity; type 2 diabetes mellitus (T2DM)

**PC065**

# A Boy with Inability to Walk; Don't Forget about Scurvy

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**Introduction:** Scurvy or vitamin C deficiency is infrequent in this modem era; thus, it is often not within the list of differential diagnoses. Scurvy can mimic various rheumatological, orthopedic, neurological, and hematological illnesses. **Case presentation:** We report an eight-year-old boy with autism spectrum disorder with picky eating habits presented with lower limb weakness, joint pain, prolonged fever, and constitutional symptoms. Skin examination showed multiple hyperpigmented scars and gingival hyperpigmentation. Thorough history taking supported by the radiographic finding and a low level of ascorbic acid confirmed the diagnosis of scurvy. With Vitamin C supplementation, the patient showed dramatic improvement and gradually recovered. **Discussion:** The broad clinical picture is generally overlooked as other systemic illnesses cause extensive investigation that delays the diagnosis. The inability to walk is a musculoskeletal symptom in children with scurvy. Generalized systemic symptoms are fever, weakness, malaise, and loss of appetite. Hemorrhagic skin lesions and gingival hyperpigmentation are most specific findings in scurvy. Radiographic findings suggestive of scurvy are located in the metaphysis of all long bones. Dietary history is essential in autism spectrum disorder to diagnose nutritional deficiency due to their selective diet preference. **Conclusion:** The suspicion of scurvy is still low in Malaysia; thus, it is always overlooked or misdiagnosed. The diagnosis of scurvy requires thorough history taking, recognition of clinical findings supported by radiographic evidence, and improvement with ascorbic acid supplementation; confirmatory test is by testing serum ascorbic acid level. Scurvy is preventable if taking adequate vitamin Casper requirement.

Keywords: Inability to walk; scurvy

**PNC001**

# Content and Face Validation in Developing a Questionnaire on Knowledge and Perception of Orthopaedic Workplace-based Assessment among Postgraduate Orthopaedic Trainees

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**Introduction:** Malaysia has incorporated workplace-based assessment (WPBA) into orthopaedic postgraduate training in December 2022. Therefore, there is a need to assess users' understanding and perceptions of WPBA to ensure its success. This study was conducted to develop a knowledge and perception questionnaire of WPBA among postgraduate orthopaedic trainees and conduct the face and content validity requirements for questionnaire development. **Materials and Methods:** A 61-item questionnaire was developed and distributed among the I-IV domains. Content and face validations were conducted by 6 experts and 32 postgraduate trainees. **Results:** Each item was validated for representative and relevance criteria for content validation and clarity and comprehension for face validation. The item-level content validity index (I-CVI) and item-level face validity index (I-FVI) were calculated for each item. A scale-level content validity index based on average (S-CVI/Ave) and a scale-level face validity index based on average (S-FVI/Ave) were calculated for each domain. S-CVI/Ave scores for content validity were 0.7 for representativeness and 0.767 for relevance in domain I, 0.9 for representativeness and 0.67 for relevance in domain II, 0.841 for representativeness and 0.811 for relevance in domain III, and 0.857 for representativeness and 0.804 for relevance in domain IV. For face validation, S-FVI/Ave in Domain I were 0.850 for clarity and 0.919 for comprehension. In Domain II, S-FVI/Ave was 0.763 for clarity, while comprehension was 0.73. In Domain III, S-FVI/Ave is 0.807 for clarity and 0.797 for comprehension. In Domain IV, S-FVI/Ave for clarity and comprehension were 0.827 and 0.826, respectively. **Conclusion:** The questionnaire's face and content validity were assessed using structured, scientific methods. The instrument was revised to improve quality, removing items with an I-CVI below 0.83 in representative or relevance criteria and an I-FVI below 0.8 in clarity or comprehension criteria. The final questionnaire retained 28 items.

Keywords: Content validation; face validation; Orthopaedic; knowledge and perception questionnaire; workplace-based assessment

**PNC002**

# The Performance of Ready-to-Use Multiplex Loop-Mediated Isothermal Amplification (LAMP) Assay for Detection of Tick-Borne Diseases

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**Introduction:** Ticks are blood sucking ectoparasite that have the potential to transmit diseases through blood meal. A single tick can harbour several pathogens concurrently. *Borrelia* spp. and *Rickettsia* spp. are the two most common pathogens transmitted to human which causes Lyme diseases and spotted fever group rickettsioses, respectively. Since hard ticks (Acari: Ixodidae) are their main arthropod vectors, a sensitive and specific molecular tool is therefore needed for early detection of these pathogen in tick. The present study aims to demonstrate the stability and efficacy of a developed thermostablised LAMP assay which can be use at field site and point-of-care without cold-chain. **Materials and Methods:** Two sets of gene specific LAMP primer targeting *Borrelia* spp. and *Rickettsia* spp. were designed based on Borrelia *flaB* flagellin gene and Rickettsia 17kDa surface antigen gene, respectively. The designed primers were first verified *in silico* before assay development and optimisation. The reagent was subjected to lyophilisation after addition of sugar stabiliser. The efficacy of the dry-reagent duplex LAMP mix was tested with known copy number of synthetic DNAs after a month of storage at 25˚C and 37˚C. **Results:** The detection limit of the developed assay was found to be at least 1000 gene copies for both *flaB* and 17kDa genes after storage at 37˚C for a month. **Conclusion:** Based on heat stability test conducted at 37˚C, the dry-reagent duplex LAMP mix had an estimated shelf-life of at least 90 days at 25 C and 238 days at 4˚C. Development of the ready-to-use dry-reagent duplex LAMP mix had effectively simplified the molecular detection of tick-borne diseases.

Keywords: Borrelia; LAMP assay; rickettsia; spotted fever group rickettsioses; tick-borne disease

**PNC003**

# Unraveling the Expression of Urokinase-Type Plasminogen Activator Receptor (UPAR) in Hypoxia-induced Breast Cancer

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**Introduction:** Breast cancer poses a significant global threat characterized abnormal cell growth in the breast. As Hypoxia-inducible Factor 1α (HIF-1α) stabilizes in hypoxia, previous studies reported that uPAR levels were elevated as well (Nishi et al., 2016). HIFs are controlled by hydroxylases, enzymes that govern HIF degradation in normoxia. However, they are unable to exert their functions in hypoxia due to oxygen tension, causing HIF stabilization. The dimethyloxalylglycine (DMOG), a hypoxia mimetic agent used to unravel the molecular activities within breast cancer cells in response to oxygen deprivation. **Materials and Methods:** MDA-MB-231 cells were cultured in 6-well plates. Cells for normoxia were maintained in the Dulbecco's Modified Eagle Media (DMEM) with 10% fetal bovine serum (FBS) and 1% penicillin- streptomycin. The cells were subjected to hypoxic conditions with 1 mM DMOG as described in previous studies and incubated at three time points; 6 hours, 24 hours, and 48 hours at 37°C (Hashim et al., 2013). Protein lysates were obtained with RIPA buffer supplemented with protease inhibitor and subjected to Western blot. Primary antibodies: anti-HIF-1α (Abcam), anti-uPAR (Santa Cruz Technology, USA), and anti-β-actin (Abcam). Results were captured by Gel Documentation System and analyzed with ImageJ. **Results:** The HIF-1α expression was significantly increased after 6 hours of DMOG induction, followed by a gradual decrease at 24 and 48 hours. Statistical analysis revealed a significant difference in HIF-1α expression between normoxia and 6-hour DMOG-induced condition. The results indicated no significant difference in uPAR expression between normoxia and hypoxia. **Conclusion:** The study demonstrates the dynamic response of MDA-MB-231 cells to hypoxia. In contrast, uPAR expression remains unchanged upon DMOG exposure. Thus, HIF-1α positively plays a role in a time-dependent regulation in response to hypoxia, while uPAR does not appear to be affected by DMOG induction.

Keywords: Breast cancer; HIF-1α; Hypoxia; uPAR

**PNC004**

# Malay Version of Vaccine Conspiracy Belief Scale (VCBS-M): A Validation Study Among Parents in Kelantan

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**Introduction:** The World Health Organization (WHO) has declared vaccine hesitancy as one of the global health threats in 2019. False belief in vaccine information is one of the causes that lead to parental hesitancy towards vaccination, but the evidence is scarce locally. Therefore, this study aimed to validate the Malay version of Vaccine Conspiracy Belief scale which was originally developed in English language. **Materials and Methods:** A cross-sectional study was carried out among parents who attended government health clinics in Kelantan between April to July 2023. By using systematic random sampling, parents were informed to fill in self-administered 8-item questionnaire of VCBS-M and sociodemographic proforma while waiting their turn at the clinics. The questionnaire was collected immediately after they finished. Confirmatory Factor Analysis (CFA) was used to confirm the latent domain and reliability were determined by composite reliability and test-retest. Data was analysed using IBM SPSS version 26 and Mplus version 8. **Results:** A total of 270 parents participated in this study with the mean age was 32.3 (SD 6.02). Majority were mother (81.9%) and were not pregnant (41.9%) during the data collection. All of the participants were Malay, Muslim and at least having a child. For CFA, VCBS-M showed a good fit index: RMSEA = 0.053 (90% CI 0.021,0.082), CFI = 0.977, TLI = 0.967 and SRMR=0.028. Composite reliability was 0.89 (95% CI 0.87, 0.92) showed a good construct reliability and Intra-class Correlation Coefficient (ICC) of 0.730 (95% CI 0.526, 0.846) demonstrated adequate stability. **Conclusion:** The study revealed that 8-item of VCBS-M has good psychometric properties. The scale is valid and reliable to be used among parents in Malaysian population.

Keywords: Reliability; vaccine conspiracy belief, vaccine hesitancy; validity

**PNC005**

# Mushroom Poisoning: New Record of Neurotoxic *Entoloma Mastoideum* (Entolomataceae, Agaricales) in Sabah (North Borneo), Malaysia

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**Introduction:** *Entoloma* (Fr.) P. Kumm comprises approximately 1,500 species, and it is distributed worldwide. To date, 75 species and 32 species of *Entolomataceae* have been reported in Malaysia and Malaysian Borneo, respectively. *Entoloma mastoideum*, a poisonous mushroom, was recorded for the first time at Kota Marudu (n=2) and Kadamaian (n=22) Sabah. Eighteen cases of mushroom poisoning outbreaks were recorded near the Kota Marudu area. **Materials and Methods:** Twenty-two samples were collected from the Kadamaian primary forest. The specimens were photographed, and the morphological characteristics were determined using a compound and scanning electron microscope (SEM). A phylogenetic tree was constructed using maximum likelihood and Bayesian analysis. Further, the phytochemical profiling of the specimen extract was done via liquid chromatography-mass spectrometry quadrupole time of flight (LCMS-QToF) to highlight the presence of various toxins. **Results:** Morphological characterization and molecular analysis confirmed the species to be *Entoloma mastoideum,* and the presence of this species is a new record for Malaysia. This species is characterized by its broad conical pileus when young and expanding with pronounced conic to the umbonate papilla, flesh-coloured or pinkish, angled

basidiospores. Ninety-nine taxa were investigated, and the phylogenetic analysis showed that the *E. mastoideum* from Sabah is closely related to the *E. mastoideum* of China with a high bootstrap value ( 70 70). LCMS QToF analysis detected the presence of 124 compounds of various metabolites, including known toxins such as hydroxytryptophan, pilocarpine and phenylalanine. **Conclusion:** Identifying *Entoloma mastoideum* as a new record for Malaysia is crucial as it is a poisonous mushroom. It is also essential to study putative members of the *Entolomataceae* family and educate the public on distinguishing edible mushrooms from poisonous ones to avoid misidentifications, leading to toxicities.

Keywords: *Entoloma mastoideum*; neurotoxic; poisonous mushroom; Sabah

**PNC006**

# The Photobiomodulation Effect on L6 Cells Viability and Migration by Different Exposure Duration of 532 nm Low-level Laser

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**Introduction:** Low-level laser has been widely researched and practiced in various medical fields due to its photobiomodulation effects towards diverse types of cells. The effectiveness of photobiomodulation depends on factors such as wavelength, power, and duration of exposure. In this work, we examined the effects of varying exposure durations of 0.1W 532 nm low-level laser light on the viability and migration of L6 rat myoblast cells (CRL-1458) under both direct and indirect irradiation conditions. Exposure times ranged from 30 to 300 seconds. **Materials and Methods:** For direct exposure, L6 cells were directly exposed to 532 nm laser, whereas for indirect exposure the media was first exposed then the cells were added. After laser irradiation, cells are incubated for another 24-hours before proceeding to conduct the assays on cell viability and migration. The viability of cells was measured through MTT assay. In exploring the effect of laser towards the cell migration, scratch assay was done. Real-time imaging was captured and analyzed in ImageJ software. **Results:** Results revealed that direct irradiation significantly improved the cell viability ($p<0.05$) and slightly induced the cell migration compared to indirect irradiation. When irradiated directly for 120s, the rate of migration of the L6 cells increased 14.07% and the area covered increased 16.13% compared to control. When the cells were irradiated directly above 300s, the cells demonstrated significant inhibition ($p<0.05$). **Conclusion:** This work using direct low-level laser irradiation on cells demonstrated a significant effect on cell viability and migration hence it has potential to be utilized as a promising non-invasive approach in muscle repair treatment. This study serves as a foundation on the optimal exposure duration of 532 nm low-level laser for therapeutic use targeted to muscle cells.

Keywords: CRL-1458; green laser; L6 cells, 532 nm laser, low-level laser therapy (LLLT), photobiomodulation

**PNC007**

# Orphometrics Analysis of Os Coxae Virtual Models for Ancestry Estimation in Malaysia

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**Introduction:** Ancestry estimation is one of the four elements for biological identification in forensic anthropology. The goal of this research was to analyse the shape of os coxae for ancestry estimation in the Malaysian population. **Materials and Methods:** The sample consisted of 402 os coxae virtual models created from multislice computed tomography scans. Twenty-five landmarks were applied on each os coxae model to capture its shape. Geometric morphometrics was employed to analyse the landmark data using principal component analysis (PCA) and canonical variate analysis (CVA). Multivariate analysis of variance (MANOVA) was performed to determine differences between groups. Classification of individual model into specific ancestry group and cross-validated classification accuracy were determined by discriminant function analysis (DFA). Morphing of os coxae models was performed to visualise the os coxae shape for each ancestry group. **Results:** Canonical variate analysis yielded two CVs, with CV1 accounted for 65.1%, and CV2 of 34.9%. Procrustes distances between the Malay-Chinese (0.026), Malay-Indian (0.026), and Chinese-Indian (0.035) were significantly different ($p < 0.001$). Scatterplot of the CV1 and CV2 clearly distinguished between the ancestry groups, with only small overlaps between groups. The results of MANOVA for all principal components indicated that the shapes of the os coxae were significantly different among the Malays, Chinese and Indians ($F = 9.91$, $p < 0.001$; Wilk's Lambda = 0.109, partial eta squared = 0.67). Cross-validated DFA correctly classified os coxae models using shape data into specific ancestry with overall accuracy rate of 83%. The highest classification accuracy was in the Chinese (88.1%), followed by the Malays (82.8%) and the Indians (78.4%). **Conclusion:** The results indicate that geometric morphometrics is a valid method to estimate ancestry from os coxae virtual models in Malaysia.

Keywords: Ancestry estimation; forensic anthropology; geometrics morphometrics; os coxae; pelvis; principal component analysis

**PNC008**

# Retinoic Acid Targeting DGAT2 in Non-Alcoholic Fatty Liver Disease Model

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**Introduction:** Nonalcoholic fatty liver disease (NAFLD) is caused by triglyceride (TG) accumulation in the hepatocyte. The initial reversible stage is steatosis, and if left untreated may progress to steatohepatitis, marked by necrosis and inflammation, eventually leading to cirrhosis. Currently, there are no approved therapeutics for NAFLD. Retinoic acid (RA), the active form of vitamin A, has been found to be reduced in individuals with NAFLD and animal models have shown that RA could mitigate TG accumulation in the liver. However, the mechanism of RA's action remains to be determined. Diacylglycerol acyltransferase (DGAT) catalyzes the final step in triglyceride synthesis in the liver. We aimed to evaluate the effect of RA on hepatic expression of DGAT2 in diet induced NAFLD rats. **Materials and Methods:** NAFLD was induced through a high cholesterol diet (HCD). Thirty-six rats were divided into four groups; a control group with a normal diet, HCD group treated with a vehicle, HCD group and a HCD group that received subcutaneous RA twice weekly for four weeks. The percentage of steatosis, ballooning and inflammation of the livers were compared between groups. Immunohistochemistry hepatic DGAT2 expression was determined using Image J software. The findings were analysed using one-way ANOVA followed by the post hoc Scheffe test. **Results:** The administration of RA significantly reduced TG accumulation in the liver. We observed improvement in steatosis ($48.6\pm9.8$ vs $22.1\pm12.4$, $P<0.001$), ballooning, and inflammation in the livers of HCD group receiving RA compared to HCD group. The results also demonstrated a significant ($P<0.0001$) decrease in expression of DGAT2 enzyme in the liver of HCD animals received RA ($12.1\pm1.8$) when compared to animals with HCD only ($21.5\pm1.9$). **Conclusion:** These findings reveal the potential therapeutic efficacy of RA in improving NAFLD possibly via inhibiting DGAT2.

Keywords: DGAT2; diacylglycerol acyltransferase; hepatic steatosis

**PNC009**

# The Cytotoxic Effect of Cananga Odorata (CO) Essential Oil on Skin Cancer is not via TP53 Gene Expression Modulation

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**Introduction:** Skin cancer is one of the most common cancers worldwide. *Cananga odorata* (CO) essential oil (EO) has been reported to have anticancer and antioxidant properties. Hence, it may have the potential to be used as a topical treatment for skin cancer. The aim of this study is to assess the cytotoxic effect of CO EO on skin cancer, the pro-apoptotic *TP53* gene expression, and its protein (p53) secretion. **Materials and Methods:** A431 squamous skin cancer cells and HFF1 fibroblast cells were treated with CO EO at 125, 250, and 500 µg/ml for 24 h. Their morphology was observed at 20-40x magnification. *TP53* gene expression in these cells was examined by real-time PCR. p53 protein secretion in the conditioned media was assessed using western blot. **Results:** CO EO treated A431 cells exhibited loss of cellular margin and higher non-viable cells at all concentrations. Meanwhile, HFF1 cells treated with 125 µg/ml CO EO showed no significant changes. At 250 and 500 µg/ml, there was no significant changes in *TP53* gene expression in A431 cells, but higher p53 protein secretion was observed. **Conclusion:** Our findings suggest that CO EO was cytotoxic to skin cancer at 250 and 500 µg/ml without augmenting *TP53* gene expression. Hence, further investigations into CO EO effect on other apoptotic or anti-proliferative regulatory genes are required to establish its underlying molecular mechanism leading to its cytotoxic effect in skin cancer.

Keywords: Carcinogenesis; flower essences; gene expression regulation; post-transcriptional RNA processing; *ylang ylang*

**PNC010**

# Latent Tuberculosis among Malaysian Healthcare Workers: Prevalence, Risk Factors and Development of A Personalized Risk Prediction Model

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**Introduction:** Healthcare workers (HCWs) are at high risk of developing Latent Tuberculosis Infection (LTBI) worldwide. The aim was to determine the prevalence of LTBI in Sultan Ahmad Shah Medical Centre (SASMEC), Kuantan, Pahang and the factors associated with LTBI among HCWs. The data was used to develop a LTBI risk calculator. **Materials and Methods:** A cross sectional study involving 186 HCWs was conducted. Data from October 2021 until July 2023 was obtained from the Infection Prevention and Control Unit, SASMEC. The relationship between independent variables and dependent variables was analysed using multivariate logistic regression analysis. The Malaysian LTBI risk calculator for HCWs was developed using Python Streamlit and SHAP (SHapley Additive exPlanations) packages. SHAP values were used to analyse impact of given factor changes the prediction model. Individuals tested with tuberculin skin test (TST) or Interferon-Gamma Release Assays (IGRAs) were recruited. **Results:** Prevalence of LTBI among HCWs was 13.9%. For post, only non-clinical site HCWs, had significant association with LTBI workers with prevalence (2.5%, OR = 0.1 (0.005 - 0.6), p = 0.034). HCWs in non-clinical sites had 6% lower risk for LTBI compared to medical officers and staff nurses based on multivariate analysis. Stratified analysis was done for the indication of testing towards LTBI cases in contact with positive HCWs. TST significantly associated with prevalence of LTBI in HCWs (OR = 3.96 (0.95 - 14.54), p = 0.04) and for in contact with positive patients, male had significant association with LTBI (OR = 12.89 (2.02 - 101), p = 0.008). **Conclusion:** These data highlighted

the need for increased implementation of LTBI control measures as the prevalence was low for intermediate burden country but still high compared to others. Future studies are recommended to incorporate the personalised risk development applied in this study.

Keywords: Healthcare; interferon-gamma release tests; latent tuberculosis; Malaysia; tuberculin skin test

**PNC011**

# Evaluation of Toxicity, Antioxidant, Antimicrobial and Antiproliferative Properties of Malaysian Tualang Honey, Kelulut Honey and their Combinations

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**Introduction:** The therapeutic effects of Malaysian Tualang honey have been widely studied. However, relatively limited numbers of studies have been conducted on the Malaysian Kelulut honey. Therefore, the objective of this study was to assess and compare the characterization of volatile components, along with the toxicity, antioxidant, antimicrobial and antiproliferative properties between Malaysian Kelulut honey, Tualang honey and their combinations. **Materials and Methods:** This study used two types of honey produced by three different species; *Apis dorsata*, *Trigona itama*, and *Trigona thoracica*. The volatile components of the honey were characterized using gas chromatography mass-spectrometry. Toxicity was evaluated using brine shrimp lethality assay (BSLA). Antioxidant activities were measured by DPPH and TPC assays. Furthermore, antimicrobial and antiproliferative properties were evaluated using agar well diffusion method and MTT (3-(4,5-dimethylthiazol-2-yl)-2-5-diphenyltetrazolium bromide) assay, respectively. **Results:** From the BSLA, 1000 g/mL of samples showed 3.33% of mortality, which can be concluded as non-toxic. Tualang honey showed the highest phenolic content (51.09 mg GAE/g) and *T. thoracica* honey recorded the highest radical scavenging activity (57.63%). On the other hand, both types of Kelulut honey showed antimicrobial activities (~12.06 mm) against both Gram-negative and Gram-positive bacteria, with no significant differences compared to the positive control. As for the MTT assay, samples with a combination of Tualang and *T. thoracica* honeys at a ratio of 1:1 have shown the highest anti-proliferative effects against both tested cancer cell lines, MCF-7 and MDA-MB-231, with IC50 values of 4.34 and 5.37, respectively. **Conclusion:** This study discovered that Malaysian Kelulut and Tualang honeys have distinct therapeutic properties that are most effective under varying conditions. While some properties are optimized with either type of honey individually, others are enhanced when both are used in combination.

Keywords: Combination; Malaysian kelulut honey; Malaysian tualang honey; therapeutic properties

**PNC012**

# Evaluation of Phenolic Constituents and Free Radical Scavenging Activity in Dry Rhizomes of Selected Species of the Zingiberaceae Family

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**Introduction:** Natural antioxidants can be found in plants and can scavenge reactive oxygen, lower levels of free radicals like nitrite, hydrogen peroxide, and superoxide anion, and decrease the effects of free radicals by donating electrons. Phenolic compounds are among the natural antioxidants that reside in plants. Therefore, assessment of the total phenolic content (TPC) level and scavenging activity in the plants can be useful to find the potential strong natural antioxidant among the Zingiberaceae family plants. *Zingiber officinale Roscoe*, *Zingiber officinale var. rubrum Theilade*, and *Kaempferia parviflora Wall.* belong to the Zingiberaceae family. The species have been associated with multiple health benefits, such as to cure a variety of conditions, including migraines, colds, arthritis, nausea and hypertension. This paper aims to study the total phenolic content and DPPH free radical scavenging activity of the three species from the Zingiberaceae family. The correlation between these parameters was determined. **Materials and Methods:** *Z. officinale Roscoe, Z. officinale var. rubrum Theilade* and *K. parviflora Wall.* rhizomes were extracted using Soxhlet extraction with 80% methanol as the solvent. The phenolic content for each extract was determined by the Folin - Ciocalteu method while 1,1-diphenyl-2-picrylhydrazyl (DPPH) free radical scavenging activity assay was used to determine the scavenging activity for each extract. **Results:** In the present study, *Z. officinale var. rubrum Theilade* has the highest TPC level (1793.16  13.47 mgGAE/g) while *Z. officinale Roscoe* was revealed to have the highest DPPH scavenging activity (82.44  1.45% in 1000  g/mL). *K. parviflora Wall.* was found to have the lowest TPC level and scavenging activity. The TPC and DPPH free radical scavenging activity of the Zingiberaceae family plants were positively correlated with $R^2$=0.95. **Conclusion:** These findings suggest that *Z. officinale Roscoe* and *Z. officinale var. rubrum Theilade* have the potential to be strong natural antioxidants with medicinal benefits.

Keywords: Antioxidant; DPPH free radical scavenging activity; rhizomes; total phenolic content; Zingiberaceae family

**PNC013**

# The Effect of Glucose Concentration and Oxygenation on Fatty Acid-Binding Protein 4 (FABP4) Adipocytes Signalling

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**Introduction:** Fatty acid binding protein 4 (FABP4) acts as adipocyte's paracrine signalling molecule and is highly secreted in obese individuals. Whereas hyperglycaemia and hypoxia are known conditions responsible for the development of obesity-induced insulin resistance (IR) in cell culture model. Exploring the effect of both factors towards progression of IR could suggest FABP4 as a significant marker for metabolic diseases. This study was conducted to determine the effect of varying glucose concentrations in normoxic and hypoxic conditions, which mimic the normal and obese/diabetic condition, towards FABP4 signalling in adipocytes. **Materials and Methods:** Male Wistar rat primary adipocyte cultures were supplemented with normal glucose (NG=5.5 mM/l) and high glucose (HG=17.5mM/l) media. Both groups were monitored either in 37˚C incubator with 21% oxygen (normoxic) or in hypoxic chamber with 2% oxygen, 5% carbon dioxide and 93% nitrogen for 24 hours. The RNA and cell lysate obtained were used for the gene and protein expression study, whereas conditioned medium was collected for protein secretion analysis. Real time-quantitative polymerase chain reaction (RT-qPCR) and western blot were used to analyse these samples, and GraphPad Prism and ImageJ were used to interpret the results (National Institutes of Health, USA). **Results:** *FABP4* gene expression was remarkably downregulated in hypoxic groups, in contrast to its protein. Although FABP4 protein expression showed insignificant differences between the groups, but it followed similar pattern as its secretion, which was highly secreted in hypoxic state. Meanwhile, HG did not show notable effect on its expression and secretion. **Conclusion:** FABP4 signalling in adipocytes is significantly regulated by the level of oxygen as compared to glucose concentration. Hence, it has a potential as marker for meta-inflammatory state. Though its protein expression and secretion did not correspond to its mRNA expression, this could be due to the lack of N-terminal secretory sequence of the molecule.

Keywords: Adipocytes; FABP4; hyperglycaemia; hypoxia; metabolic diseases

**PNC014**

# Enhancing Reading Performance Assessment: A Comparative Analysis of Eye Tracking Technology and Conventional Evaluation Method

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**Introduction:** Reading greatly impacts one's quality of life, making the assessment of reading performance essential and should be considered in clinical practice. The present study aimed to compare reading speed (RS) recorded using eye tracking (Tobii Pro Lab software), with RS obtained through conventional evaluation method. Besides, total fixation duration (TFD) and the number of fixations (NF) obtained from the eye tracking data were analysed as potential indicators for reading performance. **Materials and Methods:** Seventeen healthy individuals (mean age= 29.29±6.36) with normal vision were recruited and asked to read aloud two different text passages. The text passages were selected at random sequences. For conventional evaluation method, the time taken to complete the reading task was manually timed for each participant, while the eye tracking automatically recorded and calculated reading duration, TFD and NF during the reading task. RS was quantified as words per minute (WPM). P-value of 0.05 was set as the level of significance. **Results:** Paired t-test showed insignificant differences in RS measurements between conventional evaluation method and eye tracking recordings (p=0.986). Bland-Altman plot showed good agreement between RS measured using these two methods. Besides, the analysis of fixation data revealed a negative correlation between RS and both TFD (r=-0.515, p=0.035) and NF (r=-0.585, p=0.014), suggesting that participants with higher RS tended to have fewer NF and less TFD. These findings suggest that fixation data could serve as a valuable indicator of reading performance. **Conclusion:** This study highlights the potential of eye tracking as a valuable tool for enhancing the assessment of reading performance. While conventional evaluation method remains relevant due to its cost-effectiveness, the integration of eye tracking technology can improve accuracy and provide valuable insights into reading behavior through the analysis of fixation data, leading to better diagnostic and therapeutic approaches.

Keywords: Eye tracking; fixation duration; reading performance; reading speed

**PNC015**

# The Viability and Migration of Hacat Cells in Response to Different Exposure Duration of 532nm Low-Level Laser

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**Introduction:** In the field of regenerative medicine, the spotlight is on low-level laser therapy (LLLT), which uses non-thermal photons to boost biological activity and promote tissue repair. The optimal duration for LLLT, specifically with a 532 nm green laser, continues to be a subject of ongoing debate, lacking a definitive conclusion. The purpose of this research is to determine the effect of exposure durations ranging from 30 to 300 seconds, using direct and indirect irradiation with a 532 nm green light laser at 0.1W, on the viability and migration of immortalized human keratinocytes (HaCaT cells). **Materials and Methods:** The MTT assay procedure was performed 24 hours after the irradiation to determine cell viability by measuring their ability to convert a yellow tetrazolium salt into a purple formazan dye. A higher absorption of the MTT assay suggests improved cell survival, while a lower absorbance, on the other hand, indicates an inhibitory effect on HaCaT cells. The scratch assay was conducted to observe cell migration in HaCaT cells, which involves creating a 'scratch' on a cell monolayer and monitoring cell movement into the wound area after 48 hours following irradiation. Then, the rate of cell migration was analyzed using ImageJ software for both direct and indirect irradiation. **Results:** The findings show that the 532 nm laser may have a dual effect on HaCaT cells, promoting migration while simultaneously inhibiting cell viability in response to varying exposure durations. Specifically, direct exposure for 90 seconds triggers cell migration but inhibits cell viability. In contrast, indirect irradiation requires a longer exposure time to provide a comparable effect. **Conclusion:** The findings of this study demonstrate the 532 nm laser shows a contrasting influence on HaCaT cell behavior between cell migration and cell viability. These findings emphasized these contrasting effects and their potential implications in regenerative medicine and related fields.

Keywords: Cell migration; cell viability; exposure duration; HaCaT cells; low-level laser, regenerative medicine

**PNC016**

# Preliminary In Silico and In Vitro Analyses of the SARS-CoV-2 Envelope (E) Gene for Amber Suppression Technology

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**Introduction:** The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has emphasized the critical need for a deep understanding of viral biology to develop effective drugs, therapeutics, and vaccines. Scientists began to map all the possible viral structural proteins including the envelope (E) protein which plays a pivotal role in viral assembly and pathogenesis and is a prime target for molecular studies. Therefore, this study aims to perform preliminary *in silico* and *in vitro* analyses of the SARS-CoV-2 E gene, which will be adapted for the amber suppression technology (AST) application to comprehensively analyze its functions in viral-host protein-protein interactions. **Materials and Methods:** An *in silico* analysis of the SARS-CoV-2 E protein complex via the coarse-grained molecular dynamics (CGMD) simulation was performed to gain insights into its structure and function in viral processes. The *in vitro* assays were performed to achieve sufficient propagation of plasmid DNA encoding the SARS-CoV-2 E gene followed by PCR validation, and DNA sequencing analysis of a plasmid vector carrying the E gene. **Results:** In this study, the SARS-CoV-2 E protein monomers have been successfully dimerized by running the CGMD simulations for 20000 ps. The full length of the E gene has been successfully sequenced and several amino acids that potentially play a critical role in the viral-host interactome have been identified. **Conclusion:** In conclusion, our findings underscore the significance of the E protein in viral morphogenesis and host interactions, suggesting its potential as a therapeutic target. While this project serves as a preliminary exploration, it marks the beginning of a promising journey toward a deeper understanding of SARS-CoV-2 and its envelope protein.

Keywords: Amber suppression technology; coarse-grained molecular dynamics simulation; SARS-CoV-2 E protein; viral-host protein-protein interaction

**PNC017**

# Direct and Indirect Effect of 532 nm Low-Level Laser on Viability and Migration of 3T3-L1, Fibroblast Cells

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**Introduction:** The use of lasers in various biomedical applications has gained significant attention due to their ability to modulate cellular functions. The 532 nm laser is known for its potential influence on cellular functions, which makes it a topic of interest in tissue engineering and wound healing. Through direct and indirect exposure, this study examined how the 532 nm low-level laser affects the viability and migration of 3T3-L1, fibroblast cells. **Materials and Methods:** 3T3-L1 cells were directly exposed to a 0.1W of 532 nm laser, whereas for indirect exposure, the media was first exposed to the laser before transferred to the cells. Both techniques employed exposure times of 30, 60, 120, 150, 180, 210, 240, 270, and 300 seconds. The viability of the cells was evaluated using MTT assay and the effect of laser irradiation on cell migration was examined using the scratch assay. After a six-hour incubation post irradiation, real-time imaging was performed and ImageJ was used to analyze the outcomes. **Results:** This research showed that when exposed directly to a 532 nm laser, 3T3-L1 cells promoted cell migration but inhibited cell viability. The 3T3-L1 cells were most significantly inhibited at an exposure of 300s compared to the control ($p<0.0001$). However, it appeared to have the highest rate of migration. In indirect exposure, the results did not significantly differ from the control for both cell viability and migration. **Conclusion:** These findings suggest a dual effect of the 532 nm laser on 3T3-L1 cells, emphasizing the need for further research to understand underlying mechanisms and optimize therapeutic parameters for potential applications in tissue engineering and wound healing.

Keywords: 3T3-L1 cells; 532 nm laser; low-level laser; photobiomodulation

**PNC018**

# Preliminary Screening of Alpha-1 Antitrypsin (A1AT) Phenotype among Healthy Kelantanese

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**Introduction:** Alpha-1 antitrypsin deficiency is a hereditary condition resulting from a SERPINA1 gene mutation that increases susceptibility to emphysema and cirrhosis, thus prompting efforts for early screening. The standard allele is "M," while the allelic variants most frequently linked to pathological conditions are "Z" and "S." **Materials and Methods:** A cross-sectional study was conducted among adults aged 18 to 80 who voluntarily participated between January 2021 and January 2022. A total of 94 healthy control Kelantanese were recruited. Participants with a history of acute or chronic infection, autoimmune disease, or immunocompromised were excluded. AIAT phenotype determination was performed using agarose gel isoelectrofocusing (IEF) SEBIA**.** Statistical analysis was carried out with SPSS version 27. **Results:** The study participants with a mean age of 36.7 (SD±7.7). The most prevalent AIAT phenotype among Kelantanese was PiMM, 94% (n=88) and the PiMX phenotype, 6% (n=6). Other phenotypes such as MS, MZ, S and Z were undetected. **Conclusion:** The findings of this study suggest that the PiMM phenotype exhibits the highest prevalence among the Kelantan population. In contrast, the PiMX phenotype is observed in a relatively small yet significant proportion of people. While AIAT deficiency is under-recognised, its occurrence varies among various populations. Therefore, the use of early screening measures has the potential to impede the advancement of underlying pulmonary conditions and mitigate the occurrence of secondary consequences associated with hepatic diseases.

Keywords: Alpha-1 antitrypsin; A1AT phenotype; healthy population; Kelantanese

**PNC019**

# Cloning of H5N1 NS1 Gene into a CMV Promoter-Regulated Expression Vector for Site-Specific Mapping of Viral-Host Protein Interaction Assay using Amber Suppression Technology

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**Introduction:** With the rise of infectious diseases like H5N1 avian influenza, there is a pressing demand for better antiviral solutions. An innovative molecular tool called amber suppression technology is able to unveil the disease-causing mechanism of H5N1 by studying how viral proteins interact with host proteins, thus help discover drug targets. Building upon this motivation, the study employed directional cloning of the H5N1 NS1 gene into a mammalian expression vector, followed by validation via gene sequencing. **Materials and Methods:** Reactivation of a bacterial clone (BLNS1) containing the pRSETB-NS1 plasmid and plasmid extraction were first performed. The presence of *NS1* gene was validated by *Xho*I and *Eco*RI restriction digestion. A pair of specific primers flanking the *NS1* gene were designed and used for the amplification of the *NS1* gene. The amplicon and expression vector were subjected to *Xho*I and *Not*I restriction digestion. The digested products were gel purified and ligated overnight using T4 ligase at 4°C. The ligation reaction was then introduced into competent bacterial cells by heat shock. Colony-PCR screening followed by Sanger sequencing were employed to validate the construct and sequence accuracy. **Results:** Colony-PCR screening indicated that the NS1 gene was successfully ligated to the recipient mammalian plasmid and the sequencing result confirmed the nucleotide sequence of *NS1*. **Conclusion:** The successful cloning of the *NS1* gene into the recipient mammalian plasmid marks a crucial milestone in this research. The subsequent phase involves NS1 protein expression in a mammalian cell line. This study thus lays the foundation for further exploration of NS1 via the amber suppression technology in unraveling the intricacies of viral-host interactions for the development of novel antiviral therapeutics.

Keywords: Amber suppression technology; antiviral drug targets; H5N1 influenza; NS1; recombinant DNA cloning

**PNC020**

# The Prevalence of Anemia in Pregnancyand its Association with Dietary and Iron Supplement Intake

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**Introduction:** Anemia during pregnancy occurs when a pregnant woman has haemoglobin levels <11.0g/dL, rendering iron-rich diets and/or iron supplementation which if left untreated may impose feto-maternal risks and additional cost to society and the healthcare system. This study aims to determine the prevalence of anemia in pregnancy and its association with dietary and supplement intake. **Materials and Methods:** A cross-sectional study was conducted among 200 antenatal mothers from four health clinics in Perlis representing all four major zones (i.e., north, east, south, west) of Kangar District. **Results:** The prevalence of anemia in pregnancy was 36.5% (*n*=73). Majority of the mothers with anemia were Malays (*n*=71,97.3%) with mean age of 29.9  5.40 years old, had secondary level of education (*n*=35,47.9%), monthly household income of  RM4,849.00 (*n*=67,91.8%), and were unemployed (*n*=38,52.1%). They were mostly primigravida (*n*=21,28.8%) in their third trimester (*n*=51,69.9%), overweight and obese (*n*=45,61.6%), and with a median hemoglobin level of 10.3 (IQR=0.9) g/dL. Mean booking hemoglobin level was 11.4±1.03 g/dL. Generally, they were non-vegetarians (*n*=72,98.6%), ate at least one type of iron-rich food per day (*n*=64,87.7%) and drank one cup of caffeinated drink daily (*n*=38,52.1%) throughout their pregnancy. Adherence to iron supplement was 98.6%. Most took iron supplements, mainly Maltofer (*n*=28,65.1%), daily twice a day (*n*=46,63.0%), before meals (*n*=47,64.4%) and with plain water (*n*=59,80.8%). There was significant association between the mother's frequency of iron supplement intake ($p<0.001$) and type of iron supplement ($p<0.001$), with anemia in pregnancy but it was not associated with daily intake of iron-rich food ($p=0.145$) or caffeinated drinks ($p=0.146$). **Conclusion:** The prevalence of anemia in pregnancy in Perlis was 36.5% and there was significant association between type and frequency of iron supplement intake and anemia in pregnancy.

Keywords: Anemia; dietary supplements; iron; hemoglobin; pregnancy

**PNC021**

# An Empirical Study on the Factors Influencing Healthcare Spending for Human Immunodeficiency Virus (HIV) Infection in Selected Eastern European and Central Asian (EECA) Countries

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**Introduction:** According to UNAIDS 2023, currently, 39 million people are living with Human Immunodeficiency Virus (HIV) globally; among them, about 2 million live in Eastern Europe and Central Asia (EECA). There is still a lack of empirical analysis on the social determinants of HIV expenditure in EECA countries. This study aims to assess the determinants of HIV expenditure in Armenia, Azerbaijan, Belarus, Bulgaria, the Czech Republic, Kazakhstan, Kyrgyzstan, Romania, and Tajikistan. **Materials and Methods:** We assumed that four factors would determine the HIV expenditure, namely, the number of adults living with HIV, the size of Gross National Income PPP, the size of total health expenditure, and the share of government expenditure in total health expenditure. The socioeconomic data on HIV-related information was obtained from the UNAIDS data 2023, World Development Indicators of the World Bank, and World Health Statistics 2023. We used econometric forecasting and modelling tools software EViews version 13 for the statistical analysis. The data were analysed using Pearson's correlation and multiple regression. **Results:** The empirical findings indicated that only two independent variables have a significant relationship. These two variables are positively correlated with healthcare expenditures on HIV. The other two variables had no significant relationship with HIV expenditure. **Conclusion:** The findings of our study have identified two important conclusions: (i) when the countries' number of adults living with HIV is more significant, the amount of HIV expenditure is more extensive, and (ii) when the share of government health expenditure is higher, again, the HIV expenditure is more considerable. Our result would suggest that understanding the relationships between HIV expenditure and socioeconomic conditions would be helpful to government policymakers and donor agencies for better health knowledge to control HIV-related healthcare financing and resource-limited settings in the future.

Keywords: Eastern European Central Asian; HIV expenditure; health expenditure; people living with HIV

**PNC022**

# Hidden Struggles: Decoding the Prevalence of the Unmet Needs in Working Mothers of Children With Epilepsy In Kelantan

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**Introduction:** Unmet needs occur when needs or assistance from others to perform everyday activities are not provided. Epilepsy is a disorder of unprovoked seizure with a range of severities among paediatric and adolescent populations. The unpredictable nature of epilepsy causes severe work-family conflict among working women which may result in higher unmet needs. This study aims to determine the prevalence of unmet needs among working mothers with CWE in Kelantan. **Methods:** A cross-sectional study was conducted between March to June 2023 among biological working mothers aged 18 to 60 years old of CWE attending specialist hospitals in Kelantan. A 35-item validated Malay version of the Family Needs Survey questionnaire was used in this study. The questionnaire had six domains on information, social support, community services, family functioning, explaining to others and financial support. Data were analysed using descriptive statistics. **Results:** Two hundred and four working mothers were involved in the study. Majority of participants were from the nuclear types of family (79.4%), had full-time types of employment (76.0), from formal work sector (63.7%), had permanent job status (80.4%), and from non-government sector (51.5%). The highest unmet needs was community services (81.6%), followed by information (71.9%), social support (53.1%), financial support (43.2%), explaining to others (28.9%), and family functioning (28.4%). **Conclusion:** Overall, the unmet needs for a working mother of CWE could encompass a range of challenges. These included a lack of sufficient support systems, both in terms of childcare and working assistance. Therefore, the finding of this study may assist policymakers at the Human Resources, and Social Community Department to introduce a child-friendly employment policy and flexible working arrangements among working parents or caregivers of children with chronic illnesses.

Keywords: Children; epilepsy; unmet needs; working mothers

**PNC023**

# Translation and Validation of English Version of Screen Dependency Scale (SDS) among Preschool Children

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**IIntroduction:** The Screen Dependency Scale (SDS) is a parent report measure which is used to assess preschool children's dependency towards the screen media. It was developed in the Malaysian community and is in the Malay language. However, the English language is also commonly used in Malaysia, especially in urban settings. Translation of the SDS to English will facilitate broader recruitment of participants. This study aimed to translate the validated original SDS into an English version. **Materials and Methods:** The first phase of this study consisted of forward translation of the SDS from Malay to English, which was done by two language experts, harmonisation by the research team, and back-translated by a third language expert. The back-translated version was compared with the original questionnaire by an expert in the addiction field, followed by face validity and pilot testing. Phase 2 is a cross-sectional study to determine the validity and reliability of the English version of SDS involving 195 parents of preschool children aged 4 to 6 years old. **Results:** All samples were used to perform Exploratory Factor Analysis (EFA) to determine the factorial structure of the SDS. Items with a factor loading of >0.5 show similarities with the original Malay version of SDS. The samples were analysed for Confirmatory Factory Analysis (CFA). Both RMSEA and CFI analysis showed a good fit. The English version of SDS also has excellent internal consistency reliability with the result of Cronbach's Alpha of 0.8. **Conclusion:** The translated English version of SDS is a reliable and valid questionnaire to be used as a screening tool for screening for media dependency among preschool children ages 4 to 6 years old in Malaysia.

Keywords: Pre-school children; questionnaire; screen dependency; translation; validation

**PNC025**

# Reproductive Factors and Osteoporosis Risk in Postmenopausal Women: A Malaysian Perspective

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**Introduction:** Numerous studies have explored the risk factors for osteoporosis in postmenopausal Malaysian women. However, there is lack of comprehensive analysis for definitive conclusions. This systemic review and meta-analysis aimed to establish the relationship between reproductive risk factors and bone density. **Materials and Methods:** We conducted an extensive search of PubMed, Scopus, Medline, EBSCOhost, and WoS databases up to June 2022. We included case-control and cross-sectional studies that reported comparisons, correlations, or regression analyses between variables such as year-since-menopause (YSM), parity, lactation, and osteoporosis. Quality assessment of these studies was performed using an appraisal tool, and the findings were qualitatively summarized. **Results:** The initial search yielded 1052 articles. After title and abstract screening, removal of duplicates, and eligibility assessment based on the inclusion/ exclusion criteria, our analysis encompassed two case-control studies and six cross-sectional studies. Most studies suggested an inverse relationship between YSM and bone mineral density (BMD) in postmenopausal women, albeit with a relatively weak correlation (ranging from -0.17 to -0.439). Two studies indicated that non-osteoporotic postmenopausal women tended to have fewer pregnancies than osteoporotic postmenopausal women, though the relationship was also weak (r = -0.162). However, definitive predictions for osteoporosis based on YSM and parity are challenging due to inconsistent findings and limited data. Regarding lactation, only one study reported significant differences between non-osteoporotic and osteoporotic postmenopausal women, with the latter had a significantly shorter lactation period (39.07 months $\pm$ 23.16) compared to the other (46.30 months $\pm$ 19.75). Intriguingly, lactation could either positively predict bone density (B = 0.036; $p<0.05$) or negatively predict it (B = -0.111; $p<0.05$). **Conclusion:** The association between reproductive factors and osteoporosis, while statistically significant across studies, exhibited a relatively weak correlation. To establish a more conclusive link, further research with more comprehensive adjustments for potential confounding variables is essential.

Keywords: Bone density; menopause; osteoporosis; risk factors

**PNC026**

# Development and Validation of Awareness of Sertu Concept Questionnaire

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**Introduction:** Sertu, an Islamic purification method in Shafie jurisdiction, is rarely considered for cleaning wounds caused by dog or wild boar bites in hospitals. This rarity is due to the lack of clear guidelines and medical-grade clay soap. This study aims to develop and validate the awareness of 'The Concept of Sertu' questionnaire among medical personnel. **Materials and Methods:** An iterative process was conducted in developing the SERTU questionnaire. Informed by the literature, Islamic scholars, experts and target population, a conceptual framework was made to guide the development of the questionnaire. Muslim physicians, science officers and Islamic scholars evaluated the face and content validity. For the content validity 7 experts were reached and the Content validity index was measured. Pilot and field testing in the target group among healthcare workers was conducted to assess the internal consistency using Cronbach alpha. The pilot study was conducted to measure the Sertu awareness among the healthcare workers via Whatsapp blast through IIUM medical fraternity throughout Malaysia. **Results:** The Sertu awareness questionnaire consists of 8 items to measure the domain of awareness. The face validity was sent to 5 respondents with various healthcare backgrounds and correction was made based on the feedback. The questionnaire was then sent for content validity and CVI index was 0.88 overall which is acceptable. The Cronbach alpha was 0.57 (95% CI: 0.46, 0.66) was acceptable and sufficient considering the number of items was less than 10. **Conclusion:** The questionnaire is valid but with acceptable reliability to measure awareness of sertu among medical personnel.

Keywords: Questionnaire; reliability; sertu; shariah-compliant hospital; validation

**PNC027**

# Efficacy Evaluation of Moisturising Spray Formulations in Xerostomia Patients – A Pilot Study

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**Introduction:** Xerostomia is defined as an abstract sensation of oral dryness. This is a common problem in the elderly population with physiologically reduced salivation, removable denture wearers, and with certain types of oral lesions. Oral7® is an immunologically active saliva substitute (IASS) which is formulated with natural enzymes like lactoperoxidase, lysozyme, glucose oxidase and lactoferrin mimics natural saliva. This pilot study aims to evaluate the efficacy of Oral7 Moisturising Spray with IASS formulation in treating xerostomia and patients' perception. **Materials and Methods:** In this randomized double-blind study involving seven patients from Oral Medicine Clinic in Faculty of Dentistry, Universiti Kebangsaan Malaysia, and Oral Medicine Clinic at the Oral Maxillofacial Surgery Department, Hospital Canselor Tuanku Muhriz. The patients were equally allocated into two groups: Oral7® and Brand X. Initially, 14 patients involved in the first round of assessment, however, only seven of the participants from both groups have completed the study phase involving demographical data, Clinical Oral Dryness Score (CODS), unstimulated and stimulated salivary flow test and Product Performance and Attribute Questionnaire (PPAQ). **Results:** There was an increase in unstimulated and stimulated salivary volume and flow rate in Oral7® group with positive feedback from the PPAQ assessment, after a period of 1-month. **Conclusion:** Further modifications from this pilot study should be done such as increasing the number of participants with statistical analysis in obtaining significant finding.

Keywords: Efficacy; mouth spray; xerostomia

**PNC028**

# Enhancing Pandemic Management at a University Faculty: An STPA-based Control Structure Model

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**Introduction**: The COVID-19 pandemic triggered global challenges, prompting governments and institutions to adopt various strategies for containment. In Malaysia, the government enforced Standard Operating Procedures (SOPs) to combat the pandemic. Recognizing the significance of effective pandemic management, this study employed the System Theoretic Process Analysis (STPA) framework to model the control structure within a Malaysian university faculty. This analysis is pivotal for enhancing system effectiveness and ensuring community safety. **Materials and Methods**: To investigate the system, we conducted in-depth interviews with the university faculty's COVID-19 Task Force and performed document analysis. **Results**: The resulting model shed light on how the pandemic was managed by identifying potential hazards, including inadequate physical distancing, overcrowding, presence of symptomatic individuals, and late reporting of positive cases. Potential losses involved the transmission of COVID-19 among staff, students, and visitors; program disruptions, and harm caused by infections. The system constraints highlighted the need for prompt notifications of COVID-19 cases, coordination with the university's hospital and clinic regarding suspected and confirmed cases, and requests for disinfection at potentially contaminated venues. **Conclusion**: We successfully modeled the control structure of the pandemic management system within a university faculty using STPA. This approach revealed potential weaknesses and areas for improvement within the system's control structure. The study's implications extend to future research and provide valuable guidance for enhancing pandemic management across various sectors and levels of governance.

Keywords: Control structure; pandemic management; resilience; system theoretic process analysis (STPA)

**PNC029**

# Using Rasch Analysis for Validation of Knowledge and Perception of Orthopaedic Workplace-Based Assessment among Postgraduate Orthopaedic Trainees' Questionnaire

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**Introduction:** Workplace-based assessment (WPBA) had been formally incorporated into orthopaedic postgraduate training since December 2022. As a new form of assessment, a study to determine the understanding and perception on this form of assessment is required in order to ascertain that WPBA is performing in accordance with expectations. This study aimed to investigate regarding the validity and reliability of a questionnaire on knowledge and perception of WPBA among postgraduate orthopaedic trainees. **Materials and Methods:** The 28-item questionnaire that was developed previously was adapted for this survey. 52 postgraduate orthopaedic trainees were enrolled in this study. The data were sorted and analysed using Rasch measurement model. **Results:** The person reliability index was 0.93 while the separation index was 3.62. The item reliability index was 0.99 while the separation index was 8.32. The overall misfit of items was assessed and the mean infit mean square (MNSQ) was 0.99 and 0.96 for outfits, while those of z-standard (ZSTD) were also acceptable with values of -0.24 and -0.35, respectively. The analysis found several misfitting items with values lower or higher than the accepted range (0.6 to 1.4) and these items were removed. Deletion of misfit items resulted the remaining 17 items to have items and person reliabilities as well as separation index fall above minimum accepted limit. Similarly, fit index value for MNSQ infit and outfit were in acceptable range. **Conclusion:** The validation and reliability test conducted on orthopaedic WPBA knowledge and perception questionnaire was successful with good reliability and validity. Researchers will be able to adopt this quality instrument in their research.

Keywords: Item reliability index; mean infit mean square; Orthopaedic; person reliability index; rasch analysis; workplace-based assessment

**PNC030**

# A Preliminary Study on Tumour Necrosis Factor-Alpha (TNF-α) Level in COVID-19 Patients

**WAN NORLINA WAN AZMAN[1], NORSYUHADAH MUSA[1], TUAN SALWANI TUAN ISMAIL[1], AZIAN HARUN[2], NAJIB MAJDI YAACOB[3], SARINA SULONG[4], SIRAJUDEEN K.N.S[5], MAHAYA CHE MAT[6], HANI AJRINA ZULKEFLEE[7], NOR AMIRAH MOHAMMAD NAZRI[1]***

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**Introduction:** Cytokine storms have a substantial role in developing lung injury, multiorgan dysfunction, and mortality in persons afflicted with COVID-19. Cytokine storms have been associated with various immune-active molecules, such as interleukins and tumour necrosis factor-alpha (TNF-α). Therefore, this cross-sectional study aimed to evaluate the level of tumour necrosis factor-alpha (TNF-α) in COVID-19 severity. **Materials and Methods:** This study involved 188 COVID-19 patients aged 18 to 80 who were hospitalised at Hospital Raja Perempuan Zainab II Kelantan between January 2021 and December 2021. The TNF-α serum levels were analysed using the ELISA method and measured at 450 nm using the SkanIt RE microplate reader. The patients were classified into five clinical stages based on the Annex 2e guidelines published by the Ministry of Health, Malaysia; they were further classified by severity as mild to moderate disease (stages 1-3) or severe to critical illness (stages 4-5). **Results:** The study included a total of 188 COVID-19 patients with a mean (SD) age of 45.52 (16.10) for mild to moderate and 57.14 (13.71) for severe to critical. There is a significant difference between age and gender for both groups (p-value < 0.01) and (p-value = 0.002), respectively. The TNF-α serum levels in the stages 4-5 group are higher as compared to the stages 1-3 group with median (IQR) of 132.63 (108.38) and 116.31 (134.8) respectively, but they were statistically insignificant (p-values = 0.078). **Conclusion:** The levels of TNF-α in the serum of COVID-19 patients in the mild to moderate group and those in the severe to critical group exhibited a statistically insignificant increase. This preliminary study

suggests that TNF-α may be used as a potential immune active marker of severe SARS-COV-2 infections. A larger scale study is required to confirm this.

Keywords: COVID-19; mild to moderate; severe to critical; TNF-Alpha

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# Anti-Diabetic Effects of *Lepidium meyenii* (MACA) and Marine Collagen Peptide (MCP) in Blackbelt® Coffee on Type II Diabetes Mellitus Rat Model

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**Introduction:** The potential use of *Lepidium meyenii* (maca) and marine collagen peptide (MCP) for the treatment of type 2 diabetes mellitus (T2DM) symptoms has piqued researchers' curiosity. However, no research has been conducted to investigate how the combination of these two components may benefit in the treatment of T2DM. The study sought to investigate the potential beneficial effects of combining maca and MCP in Blackbelt® on insulin and blood glucose levels in T2DM rats. **Materials and Methods:** 36 male Sprague Dawley rats with T2DM induced by high-fat diet/streptozocin (40 mg/kg) were used. Metformin (200 mg/kg), maca (13 mg/kg), MCP (264 mg/kg), maca/MCP® (Blackbelt® formulation), and Blackbelt® (132 g/kg) were administered orally to rats for 28 days. Fasting blood glucose (FBG) and serum insulin levels were monitored periodically. **Results:** The FBG levels in every group decreased from week 0 to week 4. However, results revealed that only oral administration of metformin, maca, MCP and Blackbelt® can significantly decrease the FBG levels in T2DM rats ($p < 0.05$). Among them, oral administration of metformin showed the lowest FBG levels at week 4 followed by MCP, Blackbelt®, maca, maca/MCP® (Blackbelt® formulation) and diabetic control group. The findings demonstrated that by week 4, rats given maca, MCP, and Blackbelt® had increased insulin secretion. When compared to the control group, only rats treated with MCP and Blackbelt® exhibited substantial increases in insulin secretion ($p < 0.05$). **Conclusion:** Even though maca/MCP® formulation did not have significant anti-diabetic effects, Blackbelt's® was still capable of lowering blood sugar and increasing the secretion of insulin against high-fat diet/streptozocin-induced diabetes. Blackbelt's® anti-diabetic effect was comparable but not better than metformin.

Keywords: *L. meyenii*; glucose; insulin; T2DM; rRat