Med & Health Nov 2021; 16(3) (Suppl): 1-109 https://doi.org/10.17576/MH.2021.s1603

Annual Scientific Congress for the Malaysian Society of Anaesthesiologists & College of Anaesthesiologists

'MyAnaesthesia 2021: Dawn of a New Era'

6-8th August 2021

Malaysian Society of Anaesthesiologists & College of Anaesthesiologists, AMM

An Evaluation of Post-Operative Pain Control in Hepatectomy Patients of University Malaya Medical Centre (UMMC)

MA CHOO, PS LOH

Department of Anaesthesiology and Intensive Care, University of Malaya, Kuala Lumpur, Malaysia

Objective: To compare the efficacy of a new practice using intrathecal morphine (ITM) to different analgesic methods post- hepatectomy in UMMC.

Methods: Retrospective data concerning post-operative analgesia was collected and analyzed for elective hepatectomies over 4.5 years, specifically pain scores at post-operative day (POD) 1 and 2 (at rest and upon movement) plus total amount of morphine required for 48-hours.

Results: From January 2015 until October 2019, forty-five patients underwent elective hepatectomy (36 open and 9 laparoscopy). Five common analgesic techniques were identified: i) Patient controlled analgesia morphine (PCAM) (51.11%); ii) ITM plus PCAM combination (20.0%); iii) ITM alone (6.67%); iv) PCA fentanyl (PCAF) (6.67%) and v) epidural analgesia (EA) infusion (6.67%). Pain scores at rest on POD1 was statistically significant between the types of analgesia for both open and laparoscopy (p=0.015 and 0.039, respectively). Although a single superior analgesic technique could not be identified, our results showed a significant difference between PCAM, ITM/PCAM combination and ITM only vs EA alone. EA was less efficient because of higher pain scores post-operatively (p=0.037, 0.018 and 0.034, respectively). There was no significant difference between total morphine within 48 hours among the techniques for both open and laparoscopy. However, intra-operative morphine dosage was significantly less in the ITM/PCAM group vs PCAM alone (p = 0.001). No complications were seen in ITM group.

Conclusion: Overall, various analgesic methods post-hepatectomy in UMMC provided excellent pain relief although none can be concluded significantly as superior with the small sample size. Results suggest that pre-incisional ITM/PCAM combination may be non-inferior to other analgesic methods and epidural alone is not effective if dose adjustment becomes an issue. Further studies are needed to determine the efficacy and appropriate dosage of ITM that significantly reduces pain scores and post-operative opioid use compared to other older modes of analgesia.

The Use of Cerebral Oximetry in Surgery: A Systematic Review and Meta-analysis of Randomized Controlled Trials

ZHEN ZHE WONG[1], XIN HUI CHIONG[2], SOOK HUI CHAW[3], NOORJAHAN HANEEM BINTI MD HASHIM[3], MOHD FITRY BIN ZAINAL ABIDIN[3], SITI NADZRAH BINTI YUNUS[3], THIRUSELVI SUBRAMANIAM[1], KA TING NG[3*]

[1]School of Medicine, International Medical University, Kuala Lumpur, Malaysia.
[2]School of Medicine, University of Aberdeen, United Kingdom.
[3]Department of Anesthesiology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia.

Objectives: Patients undergoing surgery may experience episodes of cerebral hypoxia from cerebral desaturation events intraoperatively. Surgical patients with cerebral desaturation had higher risk of developing postoperative neurological complications. The evidence use of cerebral oximetry during surgery to minimize postoperative neurological complications remains uncertain in the literature. The primary objective of this systematic review and meta-analysis was to examine the use of cerebral oximetry on the occurrence of postoperative cognitive decline in adults undergoing surgery.

Methods: Databases of Ovid MEDLINE, Ovid EMBASE and CENTRAL were systematically searched from their inception until October 2020 for randomized controlled trials comparing intraoperative cerebral oximetry with either blinded or no cerebral oximetry in adults (ages ≥18 years) undergoing surgery. Observational studies, case reports and case series were excluded.

Results: A total of seventeen studies (n=2120 patients) were included for quantitative meta-analysis. Patients who were randomized to cerebral oximetry monitoring were associated with a lower incidence of postoperative cognitive decline (studies=7, n=969, odds ratio 0.23, 95% CI 0.11-0.48, p=0.0001; evidence=very low). However, no significant differences were observed in the incidence of postoperative delirium (studies=5, n=716, odds ratio 0.81, 95% CI 0.53-1.25, p=0.35; evidence=high) and postoperative stroke (studies=7, n=1087, odds ratio 0.72, 95% CI 0.30-1.69, p=0.45; evidence=moderate).

Conclusions: Given the low certainty of evidence and substantial heterogeneity, our meta-analysis neither supports nor opposes the use of cerebral oximetry in the reduction of postoperative complications in adults undergoing surgery. More studies with standardized assessment tools for postoperative cognitive dysfunction and delirium are warranted to improve the certainty of evidence and homogeneity.

The Use of Bispectral Index (BIS) Monitoring in Elderly Undergoing Surgery: A Systematic Review and Meta-analysis of Randomized Controlled Trials

WEI ZHUEN CHEW[1], WAN YI TEOH[2], NAVEENAA SIVANESAN[3], PUI SAN LOH[4], INA ISMIARTI SHARIFFUDDIN[4], LIAN KAH TI[5], KA TING NG[4*]

[1]Faculty of Medicine, University of Glasgow, University Ave, Glasgow G12 8QQ.
[2]Faculty of Medicine, University of Liverpool, Liverpool L69 3BX, United Kingdom.
[3]Faculty of Medicine, University of Leeds, Woodhouse, Leeds LS2 9JT.
[4]Department of Anaesthesiology, Faculty of Medicine, University of Malaya, Jalan Universiti, Kuala Lumpur, Malaysia.
[5]Department of Anaesthesia, National University Hospital, Singapore.

Objectives: Postoperative delirium (POD) remains a major concern in the elderly after surgery. The use of Bispectral index (BIS) guided titration of anesthesia is believed to reduce the incidence of POD. However, many published studies have shown conflicting findings. Thus, the primary aim of this systematic review and meta-analysis was to examine the effect of BIS on the incidence of POD in elderly undergoing surgery.

Methods: EMBASE, MEDLINE, and CENTRAL were systematically searched for randomized controlled trials comparing BIS and control (usual care or blinded BIS) from their inception until September 2020. Observational studies, case report, case series and editorials were excluded.

Results: Ten trials (n=3891 patients) were included for quantitative meta-analysis. In comparison to the control group, there was no significant difference in the incidence of POD in elderly randomized to BIS-guided titration of anesthesia (studies=5, n=3433, Odd ratio (OR) 0.71, 95% confidence interval (CI) 0.47-1.08, I^2= 76%, p=0.11, certainty of evidence=very low). However, our review demonstrated that elderly with BIS-titrated anesthesia were significantly associated with lower incidence of postoperative cognitive dysfunction (studies=3, n=2049, OR 0.64, 95%CI 0.46-0.88, p=0.006), shorter extubation time (studies=3, sample size=1010, Mean difference (MD) -3.38, 95% CI -4.38--2.39, p<0.00001), shorter time to eye opening (studies=4, n=1052, MD -2.17, 95% CI -4.21--0.14, p=0.04) and shorter time to discharge from postoperative anesthesia care unit (studies=4, n=1080, MD -10.77, 95% CI -11.31--10.23, p<0.00001).

Conclusions: In this meta-analysis of 10 RCTs (3891 patients), our review showed BIS-titrated anesthesia did not reduce the incidence of POD, but it reduced

incidence of postoperative cognitive dysfunction. However, given the substantial degree of heterogeneity and low level of evidence, future adequately trials are warranted with a standardized regime of anesthesia and assessment tools for POD or cognitive dysfunction to minimize degree of heterogeneity.

Effect of Prone versus Supine Ventilation in Intubated COVID-19 Patients: A Systematic Review and Meta-analysis

EE XIN CHUA[1], ZHEN ZHE WONG[2], MOHD SHAHNAZ HASAN[1], RAFIDAH BINTI ATAN[1], NOR' AZIM BIN MOHD YUNOS[1], HING WA YIP[1], WAN YI TEOH[3], MOHAMMED F. ABOSAMAK[4], KA TING NG[1]

[1]Department of Anesthesiology, Faculty of Medicine, University of Malaya, Jalan Universiti, Kuala Lumpur, Malaysia.
[2]School of Medicine, International Medical University, Kuala Lumpur, Malaysia.
[3]Faculty of Medicine, University of Liverpool, Liverpool L69 3BX, United Kingdom.
[4]Department of Anesthesia and Intensive Care Medicine, Faculty of Medicine, Tanta University, Egypt.

Objectives: Prone ventilation is believed to improve oxygenation parameters in patients with severe coronavirus disease 2019 (COVID-19). However, the efficacy and safety profiles of prone ventilation among intubated COVID-19 patients remain unclear. The primary objective of this systematic review was to examine the effect of prone ventilation on the ratio of arterial partial pressure of oxygen to fraction of inspired oxygen (PaO_2/FiO_2) in intubated COVID-19 patients.

Methods: Databases of MEDLINE, EMBASE and CENTRAL were systematically searched for any clinical trials or observational studies comparing prone versus supine position of ventilation in intubated COVID-19 patients from their inception until March 2021. Case reports and case series were excluded.

Results: A total of 11 studies (n=606 patients) were included for quantitative meta-analysis. Prone ventilation improved PaO_2/FiO_2 ratio (studies=8, n=579, mean difference 46.75, 95%CI 33.35-60.15, p<0.00001; evidence=very low) and peripheral oxygen saturation (studies=3, n=432, mean difference 1.67, 95%CI 1.08-2.26, p<0.00001; evidence=low), both of which were statistically significant in intubated COVID-19 patients. However, no significant differences were observed in the arterial partial pressure of carbon dioxide (studies=5, n=396, mean difference 2.45, 95%CI -2.39-7.30, p = 0.32; evidence=very low), mortality rate (studies=1, n=215, odds ratio 0.66, 95%CI 0.32-1.33, p=0.24; evidence=very low) and number of patients discharged alive (studies=1, n=43, odds ratio 1.49, 95%CI 0.72-3.08, p=0.28; evidence=very low). However, none of the studies investigated the adverse events of both supine and prone ventilation in COVID-19 patients.

Conclusions: This meta-analysis demonstrated that prone ventilation improved PaO_2/FiO_2 ratio and SpO_2 in intubated COVID-19 patients. More randomized controlled trials are warranted to examine the adverse events of prone ventilation, and to improve the certainty of evidence and its homogeneity.

Predicting Haemoglobin Level within 6 Hours and After 24 Hours After a Caesarean Section: Are There Such Formulas to Calculate Them?

MA, NAZHAN AFEEF[1], A SAEDAH[2], AM LAILA[2]

[1]Department of Anaesthesiology and Intensive Care, Kulliyyah of Medicine, International Islamic University Malaysia, Jalan Sultan Haji Ahmad Shah, 25200 Bandar Indera Mahkota, Kuantan, Pahang, Malaysia
[2]Jabatan Anestesiologi, Pusat Pengajian Sains Perubatan, Kampus Kesihatan, Universiti Sains Malaysia,Jalan Raja Perempuan Zainab II, Kubang Kerian, 16150, Kota Bharu, Kelantan, Malaysia

Background: We measured Haemoglobin (Hb) levels within 6 hours and after 24 hours in 134 Caesarean Section cases in Hospital Universiti Sains Malaysia in 2017.

Methods: All blood loss from participants were measured gravimetrically and calculated after dry weights from the disposables and collecting bottles are excluded. Hb levels pre-CS followed by Hb within 6 hours and 24 hours post CS were taken. Data were tested by Multiple Linear Regressions where $P < 0.05$ is considered significant.

Results: Percentage blood loss, intraoperative fluid administration and patient previous scars were strong predictors for Delta Hb within 6 hours post CS and with exclusion of previous scar in Delta Hb after 24 hours post CS with $P < 0.05$.

Formula for Delta Hb within 6 hours post CS = 0.869 + (-0.055 x Percentage Blood Loss (%)) + (-0.001 x Fluid given intraoperatively (mls) + (0.205 x Previous scars (*n*))
Formula for Delta Hb after 24 hours post CS = 0.631 + (-0.086 x Percentage Blood Loss (%)) + (-0.001 x Fluid given intraoperatively (mls)

Confounders excluded are Body Mass Index (BMI), duration of surgery, total blood volume, estimated liquor, balance fluid given intraoperatively and after 24 hours, and parity.

Conclusions: It is possible to estimate blood loss within 6 hours and after 24 hours after CS. The benefits will include maintaining normal Hb level and assessing need for transfusion for post CS.

Does Epidural During Labor Lead to Chronic Low Backpain? A Malaysian Retrospective Cohort Study

MUHAMAD RAFIQI HEHSAN[1,2], WAN FADZLINA WAN MUHD SHUKERI[1], SHAMSUL KAMARULJAN HASSAN[1], MOHD ZULFAKAR MAZLAN[1], HOO PEK SUNG[3]

[1]Department of Anesthesiology and Intensive Care, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia
[2]Faculty of Medicine and Health Sciences, Islamic Science University of Malaysia, Bandar Baru Nilai, 71800, Nilai, Negeri Sembilan, Malaysia
[3]Department of Obstetrics and Gynecology, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia

Objectives: The question as to whether epidural analgesia during labor can cause subsequent chronic low backpain has become a concern of late but this association has not been tested locally and remains controversial. The objective of this retrospective cohort study was to determine whether epidural analgesia during labor was associated with low backpain six months after delivery.

Methods: We contacted 200 nulliparous women who had delivered their first baby by normal vaginal delivery via telephone at six months after delivery. One-hundred women had received epidural analgesia for labor and 100 had not. The women were asked to quantify their backpain (yes/no, numeric rating score, and impairment of daily function). Differences between the epidural and the non-epidural groups were tested by using independent t-test and Chi-squared test, and logistic regression was used to control for confounding factors.

Results: The baseline demographic and obstetric characteristics between the two groups were similar except in terms of body mass index, employment status and duration of labor. The prevalence of new onset low backpain at six months after delivery was significantly higher in women who had received epidural analgesia during labor than those who had not (28% versus 9%, P = 0.001). However, there was no different between the two groups on numeric rating score or level of impairment of daily function, with the pain being moderate in severity and the functional impairment being minimal in both groups. The adjusted odds ratio of low back pain at six months (epidural versus non-epidural) was 8.1 (95% confidence interval 2.7 to 24.0, P <0.001).

Conclusion: This retrospective cohort study demonstrated an association between epidural analgesia during labor and chronic low backpain which may not be causal but suggested that a randomized controlled study is warranted.

Evaluation of Cardiac Operative Risk and Outcome Using European System for Cardiac Operative Risk Evaluation II (*Euro*SCORE II) in Coronary Artery Bypass Graft Surgery

MOHAMMAD NIZAM MOKHTAR, FARAH HANIM ABDULLAH, MOHD RAMZISHAM ABDUL RAHMAN, JOANNA SU MIN OOI

Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

Objective: The aim of the study was to assess the validity of *Euro*SCORE II in predicting a 30-day in-hospital mortality with the observed mortality in cardiac surgical patients Universiti Kebangsaan Malaysia Medical Centre (UKMMC).

Methods: This was a retrospective study whereby records of all patients who have undergone coronary artery bypass graft (CABG) surgery for 6 years from 1st January 2011 to 31st December 2016 in UKMMC were reviewed. A total of 190 patients who underwent isolated elective CABG surgery on cardiopulmonary bypass with cardioplegia were included. Comparison between the output of *Euro*SCORE II obtained and patients actual outcome post-operatively were analysed. A 30-day mortality was taken as the primary outcome (hospital mortality or death within 30 days post-operatively).

Results: The actual in-hospital mortality rate was 6.8%. In comparison, predicted mortality rate by the median *Euro*SCORE II was 1.23. *Euro*SCORE II over predicted in the low and moderate risk group and under predicted in the high-risk group. Receiving operating characteristics (ROC) curve analysis showed an excellent discriminatory power with area under curve (AUC) of 0.844 (95% CI 0.705 - 0.983, $p<0.001$) between the survivors and non-survivors. The Hosmer-Lemeshow goodness-of-fit test showed no difference between expected and observed mortality according to *Euro*SCORE II model (p value = 0.768) thus indicating good calibration of this model in predicting the overall in-hospital mortality.

Conclusion: This single-centre retrospective study of validation showed that the overall observed mortality was under-predicted by *EuroS*CORE II. However, the *Euro*SCORE II demonstrated a good calibration with an excellent discriminatory power in predicting 30 days in-hospital mortality risk among patients undergoing CABG surgery.

Evaluation of Flexible Tip Bougie in Simulated Difficult Intubation on Manikin Using Video Laryngoscope: Comparison with Portex Single-use and Frova Intubating Introducers

TY KUAN, ROZILAH @ ABDUL HADI MOHAMED

International Islamic University Malaysia, Kuantan, Malaysia

Objective: Video laryngoscope improves laryngeal view, but this does not warrant successful intubation. A situation of 'I can see the vocal cords but cannot intubate' will be encountered. Therefore, it comes the role of bougie. Flexible Tip bougie (FTB) is a new bougie where the tip can be flexed anteriorly or posteriorly as the unique feature.

Methods: This randomized cross-over manikin study was conducted to compare the success rate of intubation, intubation time and ease-of-use score of different bougies and determine the relationships between experience of work and percentage of glottic opening (POGO) score, intubation time and ease-of-use score. 42 medical officers from Department of Anaesthesiology were instructed to perform intubation with GlideScope under simulated difficult airway condition (Cormack Lehane grade 3A). 3 types of bougie were used in random order: FTB, Portex single-use (Portex) and Frova intubating (Frova) introducers.

Results: The success rate of intubation was highest with FTB (100%) and followed by Frova (78.6%) then Portex (50%). The differences were significant (p-value <0.001). The median intubation time was shortest with FTB (16.08s, interquartile range [IQR]: 6.13), followed by Frova (18.25s, IQR: 18.07) and Portex (19.39s, IQR: 37.60). However, the differences were not significant (p-value =0.449). FTB had the lowest mean ease-of-use score (16.67, standard deviation [SD]: 21.86), followed by Frova (50.59, SD: 29.98) and Portex (69.64, SD: 32.45). The differences were significant (p-value <0.001). There was no correlation between experience of work and POGO score (r=0.069, p-value =0.662), intubation time (rs=-0.159, p-value =0.123) and ease-of-use score (r=0.002, p-value =0.985).

Conclusion: The FTB is more efficient in achieving successful intubation and easier to use, together with GlideScope during difficult intubation scenario. However, type of bougie does not have significant effect on intubation time and experience of work is not significantly related to POGO score, intubation time and ease-of-use score.

Development and Validation of Estimates of Glomerular Filtration Rate Equation from Plasma Creatinine in the Malaysian Setting

AZRINA MD RALIB[1], FARAH NADIAH MOHD HANAFIAH[1], IQBALMUNAWWIR ABD RASHID[1], FATIMAH DZAHARUDIN[2], MOHAMAD SHAHRIR ABD RAHIM[1]

[1]Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia
[2]Kulliyyah of Engineering, International Islamic University Malaysia, Kuantan, Pahang, Malaysia

Objectives: Accurate assessment of GFR in perioperative and intensive care patients is very important for diagnostic and therapeutic intervention. Clinically, GFR is estimated from plasma creatinine using equations such as Cockcroft Gault (CG), Modification of Diet in Renal Disease (MDRD) and Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equations. However, these were developed in the Western population. There was no equation that has been developed specifically in our population.We developed a new equation based on the radioisotope clearance using the gold standard of ^{99m}Tc-DTPA clearance. We then performed an internal validation by comparing the bias and accuracy of the new equation compared to the CG, MDRD and CKD EPI equations with the gold standard of ^{99m}Tc-DTPA clearance.

Methods: This was a cross sectional study using the existing record of patients that was referred for ^{99m}Tc-DTPA scan at the Nuclear Medicine Centre, International Islamic University Malaysia. The study has been approved by IIUM Ethics Committee. As this is a retrospective study utilizing routinely collected data, the ethics committee has waived the need for informed consent.

Results: Data of 187 patients was analysed from January 2016 to March 2021. Of these, 94 were randomized to the development cohort, and 93 to the validation cohort. A new equation of eGFR was determined as $16.637*0.9935^{Age} * (SCr/23.473)^{-0.45159}$. In the validation cohort, both CKD-EPI and the new equation had the highest correlation to measured GFR with correlation coefficient of 0.81 ($p<0.0001$). However, the new equation had the least bias and was the most precise (mean bias of -3.58 ± 12.01).

Conclusion: The new equation which was developed specifically using our local data population was the most accurate with less bias compared to the other equation. Further study validating this equation in the perioperative and intensive care population is needed.

Single Dose Intravenous Iron Isomaltoside in Combination with Oral Iron vs Oral Iron Monotherapy in Patients with Anemia After Postpartum Hemorrhage: A Single Blinded, Randomised Controlled, Pilot Trial

SWARNALATHA NAIR, CAROLYN YIM CW, KEVIN NG WS, DORIS NG SW

University of Malaya, Kuala Lumpur, Malaysia

Objectives: The superiority of iv iron has been well established clinically, but its' use clinically for women with postpartum haemorrhage is still limited. Current guidelines for postpartum anemia management recommend that iv iron be considered only after a failed trial of oral iron. This pilot study aims to assess feasibility of single dose intravenous iron isomaltoside in combination with oral iron versus oral iron monotherapy in correcting haemoglobin deficit, replenishing iron stores and improving clinical symptoms in women with post-partum anaemia after postpartum haemorrhage and compare the rate of adverse outcomes.

Methods: This is a single centre, prospective, single-blinded, randomized controlled, pilot trial carried out in UMMC from August to October 2020. Eligible women with haemoglobin ≤10 g/dl after postpartum haemorrhage were recruited. They were then randomised and blinded to either receive iv iron isomaltoside 1000 mg or normal saline 100 ml over ≥20 minutes. Oral iberet-folic 500 was started in both arms 5 days after intervention. At 6 weeks postpartum, repeat full blood count and serum iron levels were done, and participants were given the Multidimensional Fatigue Inventory questionnaire. Rate of adverse events and requirements for blood transfusion after recruitment were assessed.

Results: A total of 12 women were recruited for analysis, with 6 in each arm of intervention. Mean haemoglobin level at 6 weeks in the iv iron group was 12.88 g/dl vs 11.56 g/dl in the standard care showing a 1.32 g/dl difference between groups. Serum ferritin increased significantly in the iv iron isomaltoside group but showed an average reduction in the oral iron only group, with values at 6weeks postpartum being 238.9 vs 43 ng/ml in the standard care group. Serum iron levels also were higher in the group that received iv iron isomaltoside (12.75 vs 10.55 µmol/L), with an average increment of 7.15 µmol/L. There was statistically significant higher MFI reduced activity score in the oral iron group. No adverse events were reported. No participants required blood transfusion after intervention. Our pilot data has showed promising outcomes with mean haemoglobin level in the iv iron group

being 1.32 g/dl higher than the standard care group that received oral iron only, and also statistically significant increase in ferritin levels in women receiving iv iron isomaltoside group. MFI reduced activity score was statistically significantly higher in the oral iron monotherapy group. The other components of MFI score did not show statistically significant differences. No adverse events were reported in the pilot study group, with no requirements of blood transfusion after recruitment.

Conclusion: The result of this study ensures that is feasible to conduct a larger trial with comparable groups and has potential to generate statistically significant results.

Serial Evaluation of Sequential Organ Failure Assessment Score in Predicting 1-Year Mortality in Critically Ill Patients

NOR AZURA BINTI SAID@AHMAD, AZRINA MD RALIB, FARAH NADIAH MOHD HANAFIAH, MOHD BASRI MAT NOR

Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia

Objective: Mortality in the Intensive Care Unit (ICU) is strongly associated with severity and progression of organ failure. The Sequential Organ Failure Assessment (SOFA) score is a validated scoring system to evaluate and quantify organ failure in critically ill patient. SOFA score has a strong association with ICU and in-hospital mortality. However, to the best of our knowledge, the associations of SOFA score and 1-year mortality was not well established. In addition, intensive care is a dynamic environment where patients' general condition can change rapidly in either direction. Therefore, it is important to evaluate the serial changes of SOFA score on 1-year mortality. We evaluated the predictive utility of daily and serial SOFA scores with 1-year mortality in critically ill patients.

Methods: This was a cross-sectional study using the existing record of patients admitted to ICU of Sultan Ahmad Shah Medical Centre from the 1st June 2017 to the 30th May 2018. The study has been approved by IIUM Ethics Committee. Data was collected from patients' daily clinical charts and medical records. SOFA score on day-1 until day-3 and on discharge were recorded and subsequently delta SOFA was calculated.

Results: Of the 120 patients analysed, 61 (51%) died within 1 year. All daily SOFA scores predicted 1-year mortality, of which, SOFA score on discharge performed best with AUC of 0.81 (0.73 to 0.89). Of the serial data, delta SOFA Day-3 to discharge performed best with 0.67 (0.57 to 0.77). Cardiovascular and renal were the most significant individual component of SOFA score that contributed to 1-year mortality.

Conclusion: The study showed that serial SOFA score is important predictor for 1-year mortality in critically ill patients. Among the individual components of SOFA score, cardiovascular and renal were the most significant component that contributed to 1-year mortality.

Effectiveness of Magnesium Sulphate 30 mg/kg in Obtunding Fentanyl-induced Cough during General Anaesthesia Induction: A Double-blind Randomised Clinical Trial

CHEONG AI CHEAH, AZLINA MASDAR, SITI NIDZWANI MOHAMAD MAHDI, ALIZA MOHAMAD YUSOF, MUHAMMAD MAAYA

Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Objective: Fentanyl-induced cough is common during the induction of general anaesthesia. This unpleasant cough may increase the intraocular, intracranial, and intraabdominal pressures. We hypothesised that 30 mg/kg of intravenous magnesium sulphate effectively obtunded 2 µg/kg fentanyl-induced cough.

Methods: A total of 140 patients scheduled for general anaesthesia, aged between 18 to 70 years old with American Society of Anesthesiologists (ASA) physical status I were randomised into two groups. Group I patients received 30 mg/kg intravenous magnesium sulphate whereas, group II patients received normal saline. A syringe containing either magnesium sulphate or saline was infused intravenously over 15 minutes before fentanyl bolus delivery of 2 µg/kg, given over 3 seconds. The incidence and severity of cough were recorded. Haemodymanic status, in terms of the patients' mean arterial pressure and heart rate were also monitored at 5 minutes intervals during the infusion.

Results: One patient (1.4%) in Group I and eight patients (11.4%) in Group II had fentanyl-induced cough. Group I had significantly lower incidence ($p = 0.003$) and severity ($p = 0.037$) of the cough. There was no significant difference regarding the heamodynamic status between the two groups during the infusion of both solutions.

Conclusion: Intravenous magnesium sulphate 30 mg/kg effectively obtunded fentanyl-induced cough during the induction of general anaesthesia.

Anaesthetic Documentation: Are We Recording It Right? Analysing Completeness of Recording of Pre-Anaesthetic Documentation in a Teaching Hospital

SL TAN, JEYAGANESH V, JASEEMUDDEEN A BAKER

University of Malaya, Kuala Lumpur, Malaysia

Objective: Anaesthetic documentation, which is an essential part of patients' medical record to guide anaesthetic management and patient care, are often found incomplete. This clinical audit of anaesthetic documentation is to assess the adequacy of documentation in a teaching hospital to highlight the importance of proper and complete documentation. The audit also assesses the availability of the Anaesthetic Consent Form as an important co-document, which carries medico-legal implications. We intend to highlight that proper pre-operative anaesthetic documentation is as vital as intra-operative documentation, and to suggest ways of improving the recording system.

Methods: This is a retrospective blinded observational single-operator study in a teaching hospital – University Malaya Medical Centre, Kuala Lumpur, Malaysia. We collected pre-operative records of patients who received an anaesthetic (general, regional, and anaesthetist-administered sedation) in a month via the hospital's online Electronic Medical Record system. The records analysis used SPSS following a scoring system designed to objectively assess the adequacy of records studied based on AAGBI and ANZCA recommendations.

Results: A total of 1,063 anaesthetic records for July 2017 were collected and reviewed, of which 657 (61.8%) were for elective cases and 406 (38.2%) for emergency cases. None of the anaesthetic records was complete. Parameters registering high completion rates were pre-operative diagnosis, pre-operative procedures, date of operation, patient's name, hospital registration and identification card numbers, age, gender, medical status and assessment, respiratory examination findings, and consent. Differences between completion rates for elective or emergency operations are notable. Mallampati score, the most critical assessment of airways, was only 68.96% documented.

Conclusions: The documentation of pre-anaesthetic review is way below standard. Emphasising the importance of this document in assisting patient care, whether for current or future use, to anaesthetic trainees is necessary. Conducting regular audits and introducing modern electronic-based documentation systems may improve the practice.

Association Between Time of Admission to Intensive Care Unit and Intensive Care Unit Mortality in Putrajaya Hospital: A Retrospective Observational Study

NOR HANANI MOHD NOAH[1], AIZAD AZAHAR[2]

[1]*Hospital Sultan Haji Ahmad Shah (Temerloh), Pahang, Malaysia*
[2]*Universiti Putra Malaysia, Selangor, Malaysia*

Objective: Patients admitted into Intensive Care Unit (ICU) are generally very ill and can be admitted at any time. The study aims to investigate the effect of ICU admission time on ICU mortality in Putrajaya Hospital (HPJ).

Methods: Medical records of patients admitted to ICU from 1st January 2017 to 30th June 2018 were reviewed. Patients were grouped into either weekend or weekday based on the time and day of admission. Weekday admissions were further divided into office hour and night admission.

Results: A total of 494 patients were included in the study. There was no correlation between time of ICU admission and ICU mortality. In addition, ICU admission time did not affect the length of ICU stay. Age, gender and type of admission were not correlated with ICU mortality. However, Sequential Organ Failure Assessment (SOFA) score was a strong predictor of mortality (HR 1.375 [CI 1.25-1.52], $p<0.001$).

Conclusion: Weekend ICU admission was not associated with higher ICU mortality or longer ICU stay. The only strong predictor of mortality was the SOFA score.

Gastric Antrum Ultrasonography Measurement in Healthy Adults at 1 and 2-hours Fasting Time After Ingesting Glucose-loaded Clear Fluids

NORHAFIZA MAT ARIF[1], SYARIFAH NOOR NAZIHAH SAYED MASRI[2], NUR YAZMIN YAACOB[3] , YEOH CHIH NIE[2], SITI NIDZWANI MAHDI[2], AZARINAH IZAHAM[2]

[1]Department of Anaesthesiology & Intensive Care, Hospital Ampang, Selangor, Malaysia
[2]Department of Anaesthesiology & Intensive Care, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia
[3]Department of Radiology, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Objective: Pre-operative gastric ultrasonography is one of the tools to determine gastric content and volume to individualize perioperative aspiration risks. On average, 100 ml or 1.5 ml/kg are common in fasting individuals without increasing the risks for perioperative aspiration. We aimed to compare gastric volume estimation in healthy fasting adults at different time interval after consuming lychee flavored beverage (0.58 kcal/ml).

Methods: A total of 255 volunteers fasted for 8 hours prior to intervention, and baseline cross-sectional area (CSA) of gastric antrum was measured via ultrasonography. All volunteers were given 250 ml lychee flavored beverage (0.58 kcal/ml). In Group 1, a repeated ultrasound assessment of gastric content was obtained an hour after drinking 250 ml lychee flavored beverage while for Group 2, the ultrasound assessment of gastric content was carried out after 2 hours.

Results: Median of residual gastric volume per body weight after fasting for Group 1 was 1.3 (1.0 - 1.8) which was significantly higher than median of residual gastric volume in Group 2, with 1.1 (0.8 - 1.4) (p=0.001).

Conclusion: The residual gastric volume at 1-hour interval after ingesting glucose-loaded clear fluid in healthy adult volunteers is less than 1.5 ml/kg, which is low risk for aspiration.

Ultrasonographic Method as Confirmatory Test For Feeding Tube Placement In Mechanically Ventilated Patients

YH SAW, NUR FARIZA RAMLY, EDRE MOHAMMAD AIDID, NAJIBAH SYAKIRAH AB RAHMAN, KY SOO

International Islamic University Malaysia, Kuantan, Malaysia

Objective: Nasogastric feeding tube placement is common procedure in intensive care units (ICU). Although the incidence of misplacement is rare but it is dreadful for the patients. This study objective is to estimate the accuracy of ultrasonography method in confirming feeding tube placement.

Methods: 80 ICU patients were included, feeding tube placement will be assessed by ultrasonography through 3 points. First point, visualization of feeding tube in cervical esophagus at left anterolateral of neck. Second point, visualization of feeding tube at sub-xiphoid or left upper abdominal quadrant. Third point, injection of only air and look for dynamic fogging using color Doppler flow. Presence of feeding tube in any sonographic assessment points consider in-situ. Final confirmation will be assessed using chest X-ray (CXR). Time for each method will be recorded.

Results: Total 78 patient's feeding tube placement were in-situ, confirmed by chest X-ray. Sensitivity, specificity of cervical esophagus assessment was 68%/0%, sub-xiphoid 31%/100%, and dynamic fogging 97%/100% respectively. Combination of cervical esophagus assessment with sub-xiphoid or dynamic fogging does improve sensitivity up to 100%, but adversely affect specificity down to 0%. Combination of Sub-xiphoid and dynamic fogging yield 100% sensitivity and 100% specificity. Accuracy of each ultrasound method were not affected by gender or body mass index (BMI). Entire sonographic procedure took 3 minutes (± 0.8) while chest X-Ray took 61 minutes (± 87).

Conclusions: Sub-xiphoid and dynamic fogging sonography assessment were valuable in confirming placement of feeding tube in-situ, however cervical esophagus assessment can be helpful in identify feeding tube pass through esophagus but not final in-situ placement. Sonography methods carry the potential to be reliable alternative method in feeding tube placement, however larger studies are required to strengthen evidence.

Effects of Call Duty on Cognitive and Psychomotor Function Among Anaesthesia Trainee in A Tertiary Teaching Hospital

HMA IDALINA, AR RAHA, WM WAN RAHIZA, I AZARINAH, MN NADIA, M MUHAMMAD.

Universiti Kebangsaan Malaysia, Cheras, Kuala Lumpur, Malaysia.

Objective: To evaluate the effects of call-duties on cognitive and psychomotor function.

Methods: Thirty-six anaesthesia trainees who were on 16-hour call-duties were recruited. They were subjected to computer-based reaction time programmes which are the Simple Reaction Time (SRT), and Complex Reaction Time (CRT) tests, before and after call-duties in the operating theatre (OT) and intensive care unit (ICU). These tests assessed cognitive and psychomotor functions. Reaction time and accuracy were compared.

Results: The Covid-19 pandemic caused relocation of six trainees who dropped out with incomplete assessment tests. The remaining data of 30 trainees were analysed. Majority were female (63.3%), aged 33 (63.3%), and scheduled for postgraduate final examinations within 6 months (40%). After both call-duties, the mean speed of SRT and CRT was delayed compared to baseline (OT: SRT, P=0.001 & CRT, P=0.001 and ICU: SRT, P<0.001 & CRT, P=0.002). Moreover, a considerable number of trainees had deterioration >15% in SRT and CRT (OT: 53.3% & 40.0% and ICU: 46.8% & 50.0%, respectively), post-call duty. Mean accuracy of CRT after ICU call-duty declined (P=0.025), however mean accuracy of SRT was comparable before and after ICU (P=not measurable as standard deviation was similar before and after calls) and OT call-duty (SRT, P=0.184 & CRT, P=0.171). The percentage of participants with Stanford Sleepiness Scale 3 and above before call-duties, increased from 20.0% to 68.3% following both call-duties. The median number of rests was twice, and mean duration of rest was similar during both call-duties (4.15 hours vs 3.63 hours, p=0.23). There was no correlation between delayed SRT and CRT speed, with the sleepiness scale or the call-duty condition.

Conclusion: Following 16-hour call-duties in OT and ICU, cognitive and psychomotor function among anaesthesia trainees declined significantly.

An Observational Study on The Demand and Utilisation of Critical Care Beds in A Tertiary Teaching Hospital

Z SHAHROLIZA[1], AR RAHA[2], I AZARINAH[2], MN NADIA[2], B MARYAM[2], MZ JAAFAR[2]

[1]Hospital Alor Setar, Kedah, Malaysia,
[2]Hospital Canselor Tuanku Mukhrz (HCTM), Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

Objective: The General Intensive Care Unit (GICU) in our institution receives all critically ill patients, while the Post Anaesthesia Care Unit (PACU) is limited to postoperative critically ill patients. This study observed the demand and utilisation of these critical care beds.

Methods: We recorded referrals, admissions, discharges and mortalities to GICU and PACU from 1st January until 30th June 2019. The referring units, reasons for admission and, APACHE II and SOFA scores were also documented.

Results: Total GICU admissions were 405, with median bed occupancy rate (BOR) of 94.0% [95% CI: 88.0-94.0%]. Mean patient age was 53.9 ± 18.4 years, of which 39.5% were female and 60.5% male patients. Referring units were the medical (43.9%), general surgery (30.1%), neurosurgery (14.8%), orthopaedic (7.7%), obstetrics and gynaecology (1.5%), otorhinolaryngology (1.7%) and interventional radiology (0.3%). Reasons for admission included postoperative or close monitoring, haemodynamic and/or respiratory support, and cerebral protection. Mean APACHE II score was 20.0 ± 9.5, and mean SOFA score, 7.19 ± 4.2. Mean length of ICU stay was 7.41 ± 8.6 days, with mode of 2 days and median of 4 [95% CI: 4-5] days. The minimum length of ICU stay was 1 day, with a maximum of 93 days. Of the admissions, 54.1% of were transferred to the ward, 20.7% were transferred to other critical care areas or high dependency units, and the documented mortality was 25.2%. There was a significant relationship between mortality; and APACHE (p=0.000), and SOFA scores (p=0.000). In PACU, total admission was 285, median BOR was 50.0% [95% CI: 25.0-50.0%], with no mortality recorded. Based on the Poisson distribution formula, the estimated number of beds required to meet 99% demand in GICU with maximum occupancy of 16 beds, and PACU with maximum occupancy of 2 beds, were 29 and 7 beds respectively.

Conclusion: The demand and utilisation of critical care beds were operating above the optimum BOR, where the estimated optimum number is near double the present available beds.

Factors Affecting De-escalation Practices of Antimicrobial Use in Critical Care

UJDORA GOH[1], WAN RAHIZA WAN MAT[2], LAU CHEE LAN[3], RAHA ABDUL RAHMAN[2]

[1]Department of Anaesthesiology & Intensive Care, Sabah Woman & Children Hospital, Kota Kinabalu, Sabah, Malaysia
[2]Department of Anaesthesiology & Intensive Care, HCTM, UKM Medical Center, Kuala Lumpur, Malaysia
[3]Pharmacy Department, HCTM, UKM Medical Center, Kuala Lumpur, Malaysia.

Objectives: We evaluated antimicrobial de-escalation practice in a 17-bedded mixed surgical and medical Intensive Care Unit (ICU).

Methods: This was a prospective observational study. Over one year period, patients who were expected to stay in the ICU for more than 48 hours, with unidentified bacterial infections and initiated empirical antimicrobial therapy were included. We excluded patients who had fixed antibiotic protocols and previously been included this study for another infection. Data of patient characteristics, infection profile, treatment regime, and outcome were collected following institutional ethics committee approval.

Results: Antimicrobials were started empirically in 228 patients where 137 patients' empirical antimicrobial agents were continued. De-escalation of antimicrobial therapy was done in 20 patients, and 71 patients had their antimicrobials therapy escalated. In the de-escalated group, levels of procalcitonin (PCT) declined following empirical therapy (median [IQR]: Day 0, 100.0 µg/L, [85.0-100.0] vs. Day 3, 6.3 µg/L, [0.52-51.9], P = 0.102) with positive microbiological results present in 17 patients. However, de-escalation was not practiced in 46 patients despite microbiological positive result as PCT did not reduce remarkedly after 3 days of empirical antimicrobials (median [interquartile range]: Day 0, 23.50 [7.1-52.5] µg/L vs. Day 3, 17.60 [1.0-100.0] µg/L, P= >0.05). Duration of antimicrobial therapy was comparable in both groups (De-escalated, mean 11.0 days ± 3.0 days vs, Continued, mean 10.5 days ± 4.2 days, P=0.676). No increased infection-related ICU mortality rate in de-escalated groups were observed (6 patients vs. 37 patients, P = 0.791).

Conclusion: Decisions for de-escalation of empirical antimicrobial therapy in our institution were subjected to the availability of positive microbiological cultures and significant reduction of PCT levels following empirical antimicrobial therapy. No difference in duration of therapy and infection related ICU mortality were observed with antimicrobial de-escalation practice.

Validation of Malay Language Translated Questionnaire on Adult Intensive Care Unit Nurses' Perception and Involvement in End-of-Life Care

LEE JIA HANG[1], WAN RAHIZA WAN MAT[1], ISMAIL TAN[2], LOW HSUEH JING[1], JAAFAR MD ZIN[1], SITI NIDZWANI MOHAMAD MAHDI[1]

[1]Department of Anaesthesiology & Intensive Care, HCTM, UKM Medical Center, Kuala Lumpur, Malaysia
[2]Department of Anaesthesia and Intensive Care, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Objective: To validate a Malay language translated questionnaire on end-of-life care to be used among nurses practicing in critical care areas.

Methods: With permission, the validated English language questionnaire by Anderson and colleagues for their study, underwent forward and backward translations by four experts. The finalised Malay language questionnaire was pilot tested on 30 subjects and revised accordingly. The validation of the revised questionnaire was carried out on 250 study population. The study population were doctors and nurses who were not working in the critical care areas at two different institutions. The reliability of the translated questionnaire was checked. Cronbach alpha value of at least 0.70 suggests adequate internal consistency. The validity of the questionnaire was explored using Confirmatory Factor Analysis (CFA) and model fit tests were run to achieve fit test specific cut off values by yielding the Akaike Information Criteria (AIC), Bayesian Information Criteria, Chi-Square statistics (χ^2/df), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker Lewis Index (TLI) and Standardised Root Mean Square Residual (SRMR). The CFAs were run repeatedly with iterative item reductions until acceptable goodness of fit for the model was achieved.

Results: All domains of the translated questionnaire showed reasonable to excellent reliability (Cronbach Alpha 0.687 to 0.922). Multiple CFAs were run and 13 out of 46 items were excluded, and the final model fit improved substantially with the indices were within the acceptable threshold of good or reasonably fit, cut off values are in brackets [χ^2/df 1.635 (≤2.0), RMSEA 0.050 (<0.05), SRMR 0.059 (≤0.08), CFI 0.911 (0.90-0.94), TLI 0.900 (0.90-0.94), AIC 13024, BIC 13334].

Conclusions: The psychometric properties of the final model indicated the Malay language translated questionnaire is reliable and valid to investigate nurses' perspective and involvement in end-of-life care.

Bilateral Mastectomy: Dispute of PCA Morphine vs Bilateral Erector Spinae Plane Catheters-Exploring Best Analgesic Management for Breast Cancer Surgery

DURGALAKSHMI NAIDU, WONG SHEE VEN, MOHAMED ASRI BIN MOHAMED ZAINI, NURAIMAN BINTI IMAM SUPAAT, NAWAL WAFA BINTI ABD RASHID, NUR ASIFA BINTI MOHD NASARUDDIN, ARIFF OSMAN, MUHAMAD RASYDAN BIN ABDUL GHANI

Sultan Ahmad Shah Medical Centre, International Islamic University of Malaysia, Kuantan, Pahang, Malaysia

Objectives: Surgical resection of the primary tumour with axillary dissection is a mainstream of breast cancer treatment. Many patients report moderate-to-severe pain post-operatively. Acute post-surgical pain can cause chronic pain, and persistent use and over-prescription of opioids. The erector spinae plane block (ESPB) sufficiently blocks unilateral multi-dermatomal sensation from T1 to L3 and is a novel regional anaesthetic technique for effective analgesia after mastectomy, minimising opioid use.

Methods: We study the analgesic efficacy of bilateral ESPB with continuous infusions with a bilateral rectus sheath block (RSB) in a patient undergoing bilateral mastectomy and left axillary clearance for left invasive breast carcinoma and right breast ductal carcinoma-in-situ, and incisional hernia repair. We discuss recommendations and best analgesic management after mastectomy.

Results: The patient underwent ESPB using 20 ml of 0.2% Ropivacaine with catheter insertion bilaterally, and bilateral RSB with 20 ml of 0.2% Ropivacaine after the induction of general anaesthesia. Post-operatively, she was extubated, did not require intensive care, required no rescue opioids, had good pain control, and successful early mobilisation. Post-operative PCA Morphine usage was only for 24 hours.

Conclusions: Regional anaesthesia for breast surgery reduces postoperative pain and opioid requirements, and, may be continued postoperatively using catheter techniques. The best analgesic technique for this patient could be PCA morphine alone, however, the combination of ESPB with continuous infusions, RSB and PCA morphine, provided excellent analgesia and allowed our patient to be discharged to the ward despite prolonged surgical hours. Patient experienced analgesic satisfaction, better night sleep, early ambulation, and recovery. Although the gold

standard of analgesic techniques for bilateral mastectomy is bilateral Paravertebral Block, bilateral ESPB was performed as it is common in our centre. Despite the paucity of evidence, in the best hands, bilateral ESPB provided superior analgesia, as depicted in this case.

Comparing Postoperative Sore Throat (POST) Following Intubation using Macintosh Laryngoscope versus C-MAC® Video Laryngoscope

KHOO BOO HOOI, YEOH CHIH NIE, LEE CHOON YEE, NADIA MD NOR, RAHA ABDUL RAHMAN

Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Objective: Postoperative sore throat (POST) is a common complication with incidence of 30-90% when intubation was done using conventional Macintosh laryngoscope. Although POST is usually self-limiting and with no long-term morbidity, it can lead to patient's discomfort and dissatisfaction in the postoperative period. The objective of this study was to compare the incidence of POST following intubation using Macintosh laryngoscope versus C-MAC® video laryngoscope (VL) at various time intervals post anaesthesia.

Methods: This prospective randomised controlled study comprised of 128 patients with ASA I and II status patients who underwent elective surgery under general anaesthesia in UKMMC. All recruited patients have normal airway and divided randomly into Group 1 that used Macintosh laryngoscope and Group 2 that used C-MAC® VL during intubation. Patients were evaluated for sore throat, hoarseness of voice, dysphagia and coughing at recovery, 6 hours, 12 hours, and 24 hours after intubation. Severity of POST was assessed using numerical rating scale (NRS).

Results: Incidence of POST was found to be higher in the Macintosh laryngoscope group (61.9%) compared to C-MAC® VL group (47.9%) although the difference was not statistically significant. Median pain score to assess the severity of POST were low in both groups at all time intervals and comparable in both groups. There were also no significant differences seen in incidence of postoperative hoarseness of voice, coughing and dysphagia.

Conclusion: Incidence of POST following intubation using C-MAC® VL compared to conventional Macintosh laryngoscope were comparable. Severity of POST was generally low in both groups.

Perioperative Analgesic Modality and Effectiveness in Paediatric Patients Who Have Undergone Common Major Urology Surgery-A Two Years Retrospective Study

TAN YUN TEEN, YEOH CHIH NIE, NADIA MD NOR, AHMAD FAIRUZ SHOKRI,AZLINA MASDAR, NURHAFIIZHOH ABDUL HAMID

Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Objective: Perioperative paediatric pain management in major urology surgery is always challenging. Currently general anaesthesia is combined with either regional anaesthetic technique or systemic morphine infusion for perioperative pain relief. The objective of this study is to compare and evaluate the effectiveness of both modalities in major paediatric urology surgery and their associated complications.

Method: This retrospective single centre study involved 88 children, aged between 3 months and 12 years with ASA I or II status, who had undergone major urology surgery in Hospital Sultanah Bahiyah under general anaesthesia. Data collected were divided into patients who received morphine (Group A) or given regional blocks (Group B) for postoperative analgesia. Primary outcome measured was the amount of rescue intraoperative fentanyl given in either group signifying inadequacy of pain control. The secondary outcomes were pain scores in both groups using median Face, Leg, Activity, Cry, Consolability (FLACC) score, intraoperative and postoperative non opioid analgesia requirement as well as their associated complications.

Result: Intraoperative rescue fentanyl requirement in both groups were not statistically significant. However, intraoperative non opioid intravenous analgesia and postoperative rescue fentanyl requirement were significantly higher in Group A as compared to Group B ($p<0.001$). The median FLACC pain scores in Group A were higher than Group B post-surgery ($p<0.001$). Common complications in Group A were vomiting (38.6%) while peri-catheter leak occurred in Group B with the incidence of 6.81%. There were no serious complications such as respiratory depression or hemodynamic alteration in both groups.

Conclusion: While systemic morphine and regional anaesthetic techniques are both effective in providing perioperative analgesia in paediatric major urology surgery, regional anaesthesia may be desirable due to lesser opioid related side effects.

The Role of Non-invasive Ventilation in Post Coronary Artery Bypass Grafting Surgery

USHA RANI RAMASAMI[1], AHMAD FAIRUZ ABDUL SHOKRI[1], NG SIEW PENG[2], JOANNA OOI SU MIN[1]

[1]Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia
[2]Hospital Pulau Pinang, Pulau Pinang, Malaysia

Introduction: Cardiac surgery is often accompanied by significant post-operative pulmonary complications (PPC) and the role of non-invasive ventilation (NIV) remains controversial. This study evaluated the use of NIV in managing PPC and acute respiratory failure following coronary artery bypass graft (CABG) surgery.

Methods: Data of patients who underwent isolated CABG with cardiopulmonary bypass were retrospectively reviewed and categorised into the NIV and non-NIV group. Risk factors and patient outcome were analysed.

Results: Among the 171 cases reviewed, 56 (32.7%) required NIV post-extubation for various reasons. Atelectasis (64.3%) was the main indication, followed by pneumonia (14.3%) and pleural effusion (14.3%). The time from extubation to application of NIV was 6.3 hours [interquartile range (IQR), 0.3-23.6 hours] with a median duration of NIV use of 33 hours (IQR, 16.0 - 60.7 hours). All patients were successfully weaned off and none required re-intubation. The independent risk factors for NIV requirement were post-operative atelectasis (AOR 63.75, 95% CI 7.32-555.39; $p<0.001$), acute kidney injury KDIGO stage 1 (AOR 4.69, 95% CI 1.24-17.73; $p=0.023$), high STOPBANG score (AOR 0.01, 95% CI 0.00-0.67; $p=0.030$), lower PaO_2/FiO_2 upon arrival to Cardiothoracic Intensive Care Unit, (CICU) (AOR 0.99, 95% CI 0.99-1.00; $p=0.037$) and a higher number of packed cell transfusion (AOR 1.35, 95% CI 1.01-1.81; $p=0.040$). Although the length of CICU stay [3.7 days (IQR, 2.9-4.8 days) versus 2.0 days (IQR, 1.9-2.9 days), $p<0.001$] and hospital stay [8 days (IQR, 6-10 days) versus 6 days (IQR, 6-8 days), $p<0.001$] was longer, the rate of hospital readmission within 30-days post-operation was significantly lower in the NIV group [(10.7%) versus (31.3%), $p=0.003$].

Conclusion: NIV is beneficial for post-operative CABG patients with PPC as it improved oxygenation and avoided the need for reintubation with a lower hospital readmission rate.

Does Intravenous Ondansetron Reduces the Incidence of Post-spinal Shivering in Obstetric Population? A Double Blind, Prospective Randomised, Control Study

TX TEOH, JAUHARATUNNUR ISHAK, SM LIM, CHAW SH, CAROLYN CW YIM

Department of Anaesthesiology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

Objective: Caesarean section under subarachnoid block (SAB) is often associated with shivering. Although shivering may have beneficial thermoregulatory effect, perioperative shivering is an unfavourable event as it places the body under increased physiological stress. Ondansetron, a 5-HT3 antagonist is a commonly used antiemetic during pregnancy and perioperatively to treat post-operative nausea and vomiting (PONV). Previous studies showed promising results on reducing post-spinal shivering. The objective of this study is to establish the efficacy of IV Ondansetron 4 mg in reducing the incidence of post-spinal shivering in our local population.

Methods: In this double-blind study, 120 patients of MRCOG grade 2-4 LSCS under subarachnoid block (SAB) were recruited and randomised equally into Group O (received IV Ondansetron 4 mg/2mls) and Group P (received IV NaCl 0.9% 2 mls) before SAB. Shivering assessment were performed immediately after SAB and every 30 minutes and severity graded on scale of 0-4, 4 being generalized vigorous shivering. Patients with shivering grade 3-4 was treated with IV pethidine and total dose required documented. Body temperature trend throughout the duration in the operation theatre (OT) was recorded while the OT temperature maintained constant at a range of 16-22ºC. Incidence of PONV throughout operation and postoperatively was also documented.

Results: Group O has a statistically significant lower incidence of post-spinal shivering compared to Group P (16, 26.7% vs 30, 50%; P=0.009). Group O required less IV pethidine for shivering treatment. Group O also reported a statistically significant lower incidence of PONV compared to Group P. The body temperature trend throughout the duration in OT does not show statistical difference between Group O and Group P at various time point.

Conclusion: IV Ondansetron 4 mg is effective in preventing post-spinal shivering in parturient and reduces the need of IV pethidine to treat post-spinal shivering. IV Ondansetron 4mg is also effective in preventing PONV for parturient.

Evaluation of Antimicrobial Stewardship Program in the General Intensive Care Unit of a Teaching Hospital

ILYANA MOHD ZUHUDI[1], WAN RAHIZA WAN MAT[2], LAU CHEE LAN[3], RAMLIZA RAMLI[4], PETRICK PERIYASAMY[5], RAHA ABDUL RAHMAN[2]

[1]Department of Anaesthesiology & Intensive Care, Ampang Hospital, Selangor, Malaysia
[2]Department of Anaesthesiology & Intensive Care, HCTM, UKM Medical Center, Kuala Lumpur, Malaysia
[3]Pharmacy Department, HCTM, UKM Medical Center, Kuala Lumpur, Malaysia.
[4]Department of Medicla Microbiology and Immunology, HCTM, UKM Medical Center, Kuala Lumpur, Malaysia.
[5]Department of Medicine, HCTM, UKM Medical Center, Kuala Lumpur, Malaysia.

Objective: To evaluate the impact of antimicrobial stewardship (AMS) program in the general intensive care unit (GICU) of our institution.

Methods: In this retrospective study, medical records of 90 patients aged >18 years in the year(s) before, were compared to that of 90 medical records after implementation of AMS program. The demographic and clinical data of patients, antimicrobial consumption, clinical outcomes including length of GICU stay and mechanical ventilation, readmission to GICU, all-cause and infection-related mortality, antimicrobial complications, re-initiation, and antimicrobial resistance incidence were compared. Antimicrobial consumption was expressed as the Defined Daily Dose (DDD) per 1000 patient-days for each prescribed antimicrobial. Antimicrobial resistance was determined by the presence of resistant organism in microbiological reports after initiation of antimicrobials.

Results: After the AMS program, the overall DDD per 1000 patient-days decreased by 15.29% and the days of therapy per 1000 patient-days decreased by 9.10%. The length of GICU stay in days (Pre-AMS 5 vs. Post-AMS 18.5, P<0.0001) and duration of mechanical ventilation in days (Pre-AMS 4 vs. Post-AMS 18, P<0.0001) were longer, incidence of re-initiation of antimicrobial therapy were higher (pre-AMS n=4 vs. Post-AMS n=29, P<0.0001), and incidence of antimicrobial resistance were significantly increased after AMS program (Pre-AMS n=4 vs. Post-AMS n=34, P<0.0001). All-cause mortality at 7 days of GICU stay was significantly reduced following AMS program application (pre-AMS, n=17 vs. post-AMS, n= 6, P = 0.014). No significant differences were observed in all-cause (P = 0.523) and infection-related (P = 0.589) mortalities at 30 days of GICU admission.

Conclusion: Implementation of the AMS program reduced antimicrobial consumption and increased 7-days survival rate. The AMS program was not associated with increased in mortality rates at 30 days after GICU admission.

Effectiveness of Different Combinations of Oral Paracetamol, Celecoxib and Tramadol as Pre-emptive Analgesia in Day Care Surgery

LING HENG WEI[1], NADIA MD NOR[2], MUHAMMAD MAAYA[2], WAN RAHIZA WAN MAT[2], SITI NIDZWANI MOHAMAD MAHDI[2]

[1]*Hospital Miri, Sarawak, Malaysia*
[2]*Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia*

Objective: Multimodal pre-emptive analgesia is highly desirable in day care surgery. This study aimed to compare the effectiveness of different oral analgesic combinations as pre-emptive analgesia in day care surgery.

Methods: Eighty-five patients aged 18 to 65 years old with the American Society of Anaesthesiologists physical status I or II scheduled for day care surgery were recruited for the study following institutional ethics approval. They were randomised to receive either combination of oral paracetamol 1 g and oral tramadol 50 mg (Group A, n=28), oral paracetamol 1 g and oral celecoxib 200 mg (Group B, n=28) or oral celecoxib 200 mg and oral tramadol 50 mg (Group C, n=29) 2 hours prior to induction of anaesthesia. Rescue analgesia with intravenous fentanyl was given intraoperatively, up to 4 hours postoperatively. Oral paracetamol 1 g, 6-hourly was prescribed for 3 days for all patients upon discharged. Pain score was assessed at various time intervals up to 24 hours postoperatively using numeric rating scale (NRS). Other parameters recorded were intra- and postoperative rescue fentanyl requirement and side effects related to the analgesics.

Results: There was no significant difference in the pain score between all the three groups at various time intervals up to 24 hours postoperatively (median $\pm$ IQR ranging from 1 $\pm$ 1 to 2 $\pm$ 1). The requirement for rescue fentanyl was comparable among the groups (median $\pm$ IQR: A: 50 $\pm$ 0, B: 50 $\pm$ 13, C: 62.5 $\pm$ 50 µg, p= 0.12). The incidence of nausea was highest in Group C (21%), followed by Group A (4%) and none in Group B up to 15 minutes postoperatively; however, it was not statistically significant between the groups.

Conclusion: The three different oral analgesic combinations provided good pain relief with comparable effectiveness as pre-emptive analgesia in day care surgery.

Effect of Self-efficacy on Pain-related Disability Among Chronic Pain Patients

CH TAN[1], M ABDUL HADI[1], AR NAJIBAH SYAKIRAH[1], KY SOO[1], AS MAZLILA MEOR[2]

[1]*International Islamic University Malaysia, Kuantan, Malaysia*
[2]*Hospital Selayang, Batu Caves, Malaysia*

Introduction: Self-efficacy is the confidence regarding ability to carry out certain daily activities despite the pain. The extent of self-efficacy contributes to reduction of pain-related disability among chronic pain of different causes has not been well studied. Aim of this study was to determine the extent of self-efficacy in mediating the relationship between pain intensity and pain-related disability among chronic pain patients.

Methods: A retrospective cross-sectional study involving secondary data extraction from 330 chronic pain patients who visited Pain Management Clinic in Hospital Selayang. Demographic and clinical data including site of pain, Numerical Pain Rating Scale (NPRS) score to assess pain intensity, Pain Self-efficacy Questionnaire (PSEQ) score to assess self-efficacy and Modified Roland Morris Disability Questionnaire (RMDQ) score to assess pain-related disability were extracted. Pearson correlation test was used to examine relationship among pain intensity, self-efficacy, and disability. Multiple regression analysis was conducted to test the mediational hypothesis.

Results: Self-efficacy was strongly negatively correlated with disability ($r=-0.505$, $p<0.0001$). Pain intensity was moderately positively correlated with disability ($r=0.307$, $p<0.0001$). Higher pain intensity was associated with lower self-efficacy level ($r=-0.211$, $p<0.0001$). Coefficient for the relationship between pain intensity and disability decreased ($\beta=0.31$ to 0.21) when self-efficacy was added and remained statistically significant ($p<0.0001$). Model of mediation was supported ($F(2,327)=69.064$; $p<0.0001$), accounting for 29.3% of the explained variance in pain-related disability.

Conclusion: Self-efficacy partially mediates the relationship between pain intensity and pain-related disability whereby improved self-efficacy is associated with reduced disability among chronic pain patients. Our findings indicate that self-efficacy enhancing strategy may be potential intervention in chronic pain management to reduce disability in addition to pain relief for better quality of life.

Preoperative Autologous Blood Donation and Intravenous Iron Therapy in Cardiac Surgery During COVID-19 Pandemic: UiTM Experience

ISQANDAR ADNAN[1], MSH MANSOR[1], NA BAHRIN[1], ZAWIAH KASSIM[1], KARIS MISIRAN[1], MR ADLI AZAM[2], ABID AMIR[2], TMS TUAN KOB[2], NH ISHAK[1]

[1]Department of Anaesthesiology and Intensive Care (Cardiothoracic Anaesthesia and Critical Care Unit), Faculty of Medicine, Universiti Teknologi MARA (UiTM), Selangor, Malaysia.
[2]Department of Surgery (Cardiovascular and Thoracic Surgery Unit), Faculty of Medicine, Universiti Teknologi MARA (UiTM), Selangor, Malaysia.

Objective: COVID-19 pandemic has brought health services to a standstill with disruptions in allogeneic blood supply globally. Preoperative Autologous Blood Donation (PABD) and Intravenous Iron Therapy (IIT) are perioperative blood conservation strategies that reduce allogeneic blood transfusion. However, these are not routinely practised in Malaysia in view of the lack of expertise and resources.

Methods: We compared cardiac surgery requiring cardiopulmonary bypass (CPB) patients during the Movement Control Order (MCO) (April 2020-September 2020) upon introduction of PABD and IIT (Group 1) versus patients from the same cohort prior to MCO before implementation of PABD and IIT (Group 2) (October 2019-March 2020) in our hospital. Preoperatively, iron deficit was calculated using Ganzoni Formula and IIT administered, aiming a target Hb of 15 g/dL. Intravenous iron sucrose 7 mg/kg was administered in two or three divided doses every alternate day (200 mg/day with a maximum cumulative dose of 400 or 600 mg) one (1) week before surgery. PABD was performed as per protocol in our Cardiac Intensive Care Unit.

Results: Group 1 (26 patients) and Group 2 (34 patients) were compared and analysed. We found that the percentage of patients requiring perioperative allogeneic blood transfusion was significantly lower (34.6%) in Group 1 compared to Group 2 (64.7%) ($P<0.05$). No significant differences were observed: for the length of hospitalisation with ten days in Group 1 and 11 days in Group 2 ($P=0.83$); for preoperative haematocrit, the level was 39.1% and 40.8%, respectively ($P=0.15$); and for chest re-open, the rate was 11.5% and 8.8%, respectively ($P=0.53$).

Conclusions: In this comparative cross-sectional study, both PABD and IIT led to lower perioperative allogeneic blood transfusion rates in cardiac surgery requiring CPB. PABD can be safely offered in selective cardiac surgery cohort. Meanwhile, IIT can be advocated as part of the perioperative blood conservation strategy in other non-cardiac surgery cohorts.

Amylmetacresol and Dichlorobenzyl Alcohol (AMC/DCBA) with Lignocaine Lozenges Reduces the Incidence of Postoperative Sore Throat (POST) Following Use of a Supraglottic Airway Device (SAD): A Double-blinded, Randomized Controlled Trial

SEBASTIAN SUNDARAJ[1], INA ISMIARTI SHARIFFUDDIN[2], SOOK HUI CHAW[2], ANURADHA RAGUNATHAN[2], WAN AIZAT WAN ZAKARIA[2], KEVIN WEI SHAN NG[2], SHAIRIL RAHAYU RUSLAN[2]

[1]Hospital Tengku Ampuan Afzan, Kuantan, Malaysia
[2]University of Malaya, Kuala Lumpur, Malaysia

Objectives: Postoperative sore throat (POST) is recognized to be among the top undesirable events experienced following general anaesthesia (GA) and it has been reported to occur in up to 62% of patients. POST following GA, specifically using a supraglottic airway device (SAD) has an incidence of up to 49% with symptoms lasting up to 48 hours and it is comparable with the use of endotracheal tubes. Amylmetacresol and dichlorobenzyl alcohol (AMC/DCBA) lozenges (Strepsils®) in its standard preparation, has been shown to reduce POST. We investigated the preoperative use of a lignocaine containing AMC/DCBA lozenges (Strepsils® Max Plus) to reduce the incidence and intensity of POST following GA using a SAD.

Methods: This prospective, double-blinded, randomized controlled trial enrolled eighty-eight adults receiving GA using a SAD for elective surgery lasting less than two hours. Patients were randomized to receive either Strepsils® Max Plus (Strepsils-LA group) or a placebo prior to induction of GA. We measured the incidence and intensity of sore throat, dysphagia and dysphonia using a Verbal Rating Scale at 30 minutes (early) and at 24 hours (late) after removal of the SAD.

Results: Patients in the Strepsils-LA group had significantly lower incidence of early (14.9% vs. 37.8%; P = 0.016) and overall sore throat (27.7% vs. 56.8%; P = 0.007), with a lower early intensity score, mean (standard deviation): 0.17 (0.43) vs. 0.49 (0.69), P = 0.016. Although the incidence of dysphagia was lower (23.4% vs. 48.6%; P = 0.016), the occurrence of dysphonia was higher in the Strepsils-LA group. Strepsils® Max Plus has a relative risk reduction of 50% and number-needed-to-treat of four in reducing POST.

Conclusion: The preoperative administration of AMC/DCBA with lignocaine lozenges (Strepsils® Max Plus) is a simple and safe method to reduce POST in patients receiving GA using a SAD.

Fascia Iliaca Block as an Adjunct to PCA Morphine for Postoperative Analgesia in Unilateral Total Hip Arthroplasty in Hospital Kuala Lumpur

ALLISON YEOH[1 2] , AZRIN AZIDIN[1], AZRINA RALIB[2]

[1]Department of Anaesthesia and Intensive Care, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia
[2]Department of Anaesthesiology and Critical Care, Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia

Objective: A significant subgroups of patients suffer from moderate or severe pain after total hip arthroplasty (THA). Adequate postoperative pain control is crucial for early ambulation and delayed rehabilitation is associated with several complications. Thus, post-operative pain after THA is a major concern for surgeons and patients. Several analgesic methods have been used, however optimal strategy is still under debate. To evaluate the effectiveness and safety of fascia iliaca block (FIB) as an adjunct to patient controlled analgesia (PCA) morphine for postoperative analgesia in patients who underwent unilateral THA surgery.

Methods: This was a retrospective observational study where data is extracted from records of patients who underwent THA in Hospital Kuala Lumpur from January 2018 - December 2020. PCA morphine requirement and pain score at 24 hours were recorded and subsequently comparison between group of patient on PCA morphine receiving FIB and those on PCA morphine only was calculated.

Results: Results were interpreted in the first 24 hours postoperatively based on a sample of 70 patients, with 33 receiving FIB (FIB group) and 37 receiving no FIB (non-FIB group). There was no difference in PCA morphine usage between the FIB and non FIB group (mean 15, SD 24) (p=0.591). There was also no difference in pain score between both groups (mean 2.15, SD 1.23) (p=0.255). Nonetheless, satisfaction level was significantly higher (p=0.083) at 10% level of significance in the FIB group. Finally, both group of patients did not record any significant side effects and complications.

Conclusion: FIB has shown to give significant higher satisfaction postoperative pain control and is statistically proven to be a safe method. Thus, it can still be consider as an adjunct to PCA morphine in our practice.

Estimates of Glomerular Filtration Rate: Comparison of Different Creatinine Based Equations

FARAH NADIA MOHD HANAFIAH[1], AZRINA MD RALIB[1], MOHAMAD SHAHRIR ABD RAHIM[2]

[1]Department of Anaesthesiology and Intensive Care, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.
[2]Department of Radiology, International Islamic University Malaysia, Kuantan, Pahang, Malaysia

Objective: Kidney disease is a worldwide health concern with an increasing number of patients and increasing mortality in the past 10 years. The Kidney Disease Improving Global Outcomes (KDIGO) guideline advocates the use of estimated glomerular filtration rate equation (eGFR) to estimate renal function. We evaluated the performance of Cockroft Gault (CG), Modified Diet of Renal Disease (MDRD) and Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equations to measured GFR 99mTc-DTPA considering BMI and age group.

Methods: This is a cross sectional study using the existing record of patients that as referred for 99mTc-DTPA scan at the Breast Centre of International Islamic University Malaysia. The record was taken from patients visiting the center from January 2016 to December 2019. The inclusion criteria include age more than 18 years old and not pregnant.

Results: A total of 126 patients' data was collected. All estimated GFR were analyzed in relation to measured GFR by 99m Tc-DTPA scan. The mean measured GFR by 99mTc-DTPA scan was 42.2 $\pm$ 20.38 ml/min, these was lower than that estimated by CG, MDRD and CKD-EPI equations (53.81 $\pm$ 36.11, 53.65 $\pm$ 34.24 and 53.28 $\pm$ 32.9 ml/min, respectively). CKD-EPI had the highest correlation of 0.72, least bias (mean bias of 11.08 $\pm$ 23.08) and was more precise (r2 of 0.4) as compared to MDRD and CG. In patients younger than 65 years old, CKD-EPI had the highest correlation however MDRD had the least bias and highest accuracy. In terms of BMI, CKD-EPI had the least bias and highest accuracy for BMI more than 30 and with highest correlation for all classes of BMI.

Conclusion: By comparing estimated GFR to measured GFR, CKD-EPI has the best estimation of GFR considering the effect of BMI, age and different stages of chronic kidney disease.

The Prevalence, Risk Factors and Outcomes of Frailty in Elderly Critically Ill Patients

NUR KHAIRUNNISA ABDUL AZIZ[1], AZRINA MD RALIB[1], MOHD BASRI MAT NOR[1], FOONG KIT WENG[2]

[1]Department of Anaesthesiology and Intensive Care, Kulliyyah of Medicine, IIUM, Kuantan, Malaysia
[2]Department of Anaesthesiology and Intensive Care, Hospital Raja Permaisuri Bainun, Ipoh, Malaysia

Objective: Frailty is a multidimensional syndrome of loss of physiologic and cognitive reserves resulting in increased vulnerability to adverse outcomes. Despite increasing interest regarding frailty in critically ill patients, no such studies have been conducted in Malaysia. This research sought to determine the prevalence, risk factors, outcomes of frailty in the Intensive Care Units (ICUs) using the Clinical Frailty Scale (CFS) and Modified Frailty Index (MFI), and to assess the applicability of these frailty screening tools in guiding ICU admission of elderly patients. The risk factors include age, sex, ethnicity, marital status, level of education and living arrangement, whereas the outcomes include ICU length of stay (LOS), hospital LOS, Simplified Acute Physiology Score II, source of transfer to ICU, vasoactive therapy, mechanical ventilation, renal replacement therapy, blood transfusion, tracheostomy, surgery, cardiopulmonary resuscitation, limitation of therapy, self-extubation, reintubation, nosocomial infection, and mortality

Methods: This is a two centre, prospective observational study conducted in Sultan Ahmad Shah Medical Centre @ IIUM and Hospital Raja Permaisuri Bainun. Inclusion criteria were ICU patients ≥60 years old, and patients admitted >24 hours in ICU.

Results: 30 out of 58 (51.7%) of our patients were frail. Modified Frailty Index (MFI) was significantly higher in frail patients determined by the CFS. No significant risk factors and outcomes of frailty were detected. Mechanically ventilated patients were 7.735 times more likely to be frail and patients with nosocomial infection were 6.685 times more likely to be frail compared to patients who were not inflicted with the corresponding outcomes.

Conclusion: Around half of the elderly critically ill patients were frail and significant association between the Clinical Frailty Scale (CFS) and MFI was established. Mechanical ventilation and nosocomial infection were significantly associated with frailty. None of the risk factors and outcomes studied were related to frailty.

Validation and Cultural Adaptation of the Malay Version of Postoperative Quality of Recovery Scale in Malaysian Context

NOOR IFTITAH AR[1], NOORJAHAN H MD HASHIM[1], SHARON TAI[1], ANAND K[1], KEVIN WS NG[1], ABIDIN MFZ[1], S JAAFAR[2]

[1]Department of Anaesthesia, University of Malaya, Kuala Lumpur, Malaysia
[2]Department of Linguistics, University of Malaya, Kuala Lumpur, Malaysia

Objective: Postoperative Quality of Recovery Scale (PQRS) is a recovery assessment tool which contains 6 domains; physiological, nociceptive, emotive, activities of daily living, cognition, and overall patient satisfaction to achieve recovery. The primary objective of our study is to validate and culturally adapt the Malay and English versions of PQRS in preoperative bilingual patients in University Malaya Medical Centre (UMMC).

Methods: We performed this study in three stages. In stage 1, we assessed content validity of the English version by panel of six experts and evaluated its convergent validity, comparing the respective domains in PQRS with the well-established 40-items Quality of Recovery Score (QoR-40) and Montreal Cognitive Assessment (MoCA) in 50 preoperative patients. In stage 2, 2 independent translators translated the English version to Malay, and 2 other independent translators back-translated it. After harmonizing the Malay version, correlation between the 2 versions were tested among 68 bilingual healthcare providers. Finally, the Malay PQRS was tested for reliability, agreement, face validity and feasibility in targeted population.

Results: Item and scale level content validity indices were 0.83 and 0.954 respectively, showing the domains in PQRS are relevant to recovery and representative of PQRS concept. We use spearman correlation coefficients and prove PQRS are measuring the same construct as QoR-40 and MoCA. At second stage, correlations between the Malay and English version PQRS were good, r = 0.717. At third stage, most domains had rated via intraclass coefficient, between good to excellent reliability. 76% of patients were found to have 'recovered' in all domains. At correlation testing, there were no significant difference between ethnicity and education level in the cognitive domains and all respondents were able to complete the questionnaires. Face validity and feasibility was proven via 100% positive feedbacks from respondents.

Conclusion: We concluded that PQRS questionnaires are culturally adapted and validated in UMMC.

Efficacy of Ultrasound Guided Single Dose Rectus Sheath Block Compared to Local Wound Infiltration as Postoperative Supplemental Analgesia

CC JEE[1], I NOOR AIRINI[2], ANM KAMIL[3]

[1]*Hospital Sibu, Sarawak, Malaysia*
[2]*Universiti Putra Malaysia, Selangor, Malaysia*
[3]*Hospital Kuala Lumpur, Kuala Lumpur, Malaysia*

Objective: Ultrasound guided rectus sheath block aims to block the ventral rami of the 7th to 12th thoracolumbar nerves. This randomized controlled study was aimed to compare the differences in patient controlled analgesia (PCA) morphine consumption in mg kg^{-1}, visual analogue score (VAS) for post-operative pain assessment at recovery bay (1st hour) 6th, 12th, 24th hour and patient satisfaction score at 24th hour between the two different patient groups receiving either bilateral ultrasound guided rectus sheath block or surgical wound local anaesthetic infiltration as postoperative supplement of general anesthesia on patients undergoing midline laparotomy surgeries.

Methods: After MREC approval, 32 (ASA I–II) adult patients were recruited in this prospective randomized controlled study. The LA group (n = 16) patients received standardized general anesthesia plus surgical wound local anaesthetic (0.375% ropivacaine) infiltration postoperatively. In the RSB group (n = 16), patients received standardized general anaesthesia plus a bilateral ultrasound guided single dose rectus sheath block with 0.375% ropivacaine prior to reversal of general anaesthesia.

Results: Mann Whitney test was used due to non-normality of the variables. There was statistical significance in VAS scores between the groups at 1st hour postoperative time point in which RSB group: median (interquartile range) is 2.0 (0.0, 4.0) compared to LA group S: 2.0 (1.0, 4.0), Mann Whitney U = 77.50, p = 0.046. No significance of patient satisfaction score at 24th hour and PCA morphine use in morphine equivalents kg^{-1} (mg kg^{-1}) at 1st, 6th, 12th and 24th hour but a trend to significance at 1st hour with median(range) of 0.05 (0.00, 0.12) in RSB group compared to LA group: 0.11 (0.00, 0.38), p = 0.131.

Conclusion: Ultrasound guided single dose bilateral rectus sheath block reduces VAS and can be used as postoperative supplemental analgesia for midline laparotomy surgeries although statistically significant only in early postoperative period.

Comparison of Visibility and Successful Block between Echoplex+ and Stimuplex® Ultraline 360° Echogenic Needles during Ultrasound-Guided Supraclavicular Brachial Plexus Block for Upper Limb Surgery

SUKI I, WAN MOHD NAZARUDDIN WH, MOHD ZULFAKAR M, LAILA AM, CHONG SE, RHENDRA HARDY MZ

Department of Anaesthesiology and Intensive Care, School of Medical Sciences, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia

Objective: Needle visibility is an important factor in the success of ultrasound-guided supraclavicular brachial plexus block (USG SCBPB). This study aimed to compare needle visibility, block performance duration and block success of two echogenic needles, the Echoplex+® and the Stimuplex® Ultraline 360°.

Methods: Seventy patients scheduled for upper limb surgery under USG SCBPB were randomised into two groups: Group E (n = 35) was blocked using an Echoplex+® needle and Group S (n = 35) was blocked using a Stimuplex® Ultraline 360° needle. The needle visibility, block performance duration and block success were recorded.

Results: Needle visibility was comparable between the groups, with a higher percentage of good visibility in Group S than in Group E (65.7% vs 45.7%; p = 0.241). The medians of the block performance duration (11.0 [IQR 6] vs. 10.0 [IQR 4]; p = 0.278) and the percentages of adequate blocks (88.6% vs 88.6%; p = 0.565) were also comparable between Group E and Group S.

Conclusions: The Echoplex+® and the Stimuplex® Ultraline 360°, were comparable in needle visibility, block performance duration and block success during USG SCBPB. Hence, both were equally effective for the performance of the block.

Timing of Antibiotics Prophylaxis and Surgical Site Infections (SSI)

HUEY NEE NG, MING HAN LING, SIU MIN LIM, ZAINAL ABIDIN MF

University Malaya Medical Centre, Kuala Lumpur, Malaysia

Objectives: To assess the efficacy and the compliance of timely antibiotic administration prior to surgery in reducing incidence of post-operative SSI.

Methods: An observational before & after study was performed in a tertiary referral centre, UMMC. Patients (n=113) who received antibiotic prophylaxis based on existing protocols with timing of administration subjected to knowledge and experience of the individual anesthetist/trainee served as a control group, whereas patients (n=132) in the quality improvement group were targeted to receive antibiotics within 60 minutes of skin incision. All orthopedic cases involving implant insertions/removals from the semi-emergency trauma list were eligible for this study. Sample groups were limited to cases with pre-existing infection and those receiving regular antibiotics prior to surgery. Comparisons were analyzed with an independent sample T test and Chi square test for incidence of SSI.

Results: The primary outcome was SSI after preoperative surgical antibiotic prophylaxis comparing different timing intervals. There was no significant difference in incidence of SSI for different timings of prophylactic antibiotic (P = 0.889, 95% C.I.: 0.296 - 4.078) in <30 mins vs >60 mins group. Studies comparing different timing within 60 mins interval revealed a contradictive result. Patient groups who received antibiotic prophylaxis within 60 mins (but more than 30 mins) demonstrated zero incidence of SSI (N = 100, 0% SSI, p = 0.027). There was a significant improvement in compliance of timely prophylactic antibiotic administration in the Phase 2 post educational group within 60 mins (13.9% vs 26.9%, p = .000). Although not statistically compelling, patients in the post education group had almost 60% reduction in incidence of SSI.

Conclusions: Administration of antibiotics prophylaxis within 30-60 mins prior to skin incision is associated with lower incidence of SSI. The impact of implementation of awareness in effective timely antibiotic administration prior to surgery could be substantial.

Post Intubation Sore Throat: Nebulised Magnesium Sulphate versus Magnesium Sulphate Gargle

SM THAM[1], MN NADIA[2], MZ JAAFAR[2], HJ LOW[2]

[1]Hospital Queen Elizabeth, Kota Kinabalu, Malaysia
[2]Hospital Canselor Tuanku Muhriz, UniversityKebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Objective: Comparing nebulised versus gargled magnesium sulphate ($MgSO_4$) in reducing post intubation sore throat (PIST).

Method: One hundred and eight American Society of Anesthesiologists I or II patients, for surgery < 3 hours duration under general anaesthesia, were randomised into 3 groups. Group A received nebulised $MgSO_4$ and normal saline (NS) gargle, Group B, nebulised NS and $MgSO_4$ gargle, and Group C (control), nebulised NS and NS gargle. The nebulised and gargled study drugs were administered in the receiving bay, and before anaesthesia induction respectively. Haemodynamic parameters were recorded before and after study drug administration, and post intubation. The presence and severity of sore throat was assessed at 2, 4 and 24 hours post extubation.

Results: Overall PIST incidence was 65.74%; 19.4% and 77.7% in the nebulised and gargled $MgSO_4$ groups, and 97.2% amongst control. Incidence of PIST was lower in the nebulised $MgSO_4$ than control group, $p<0.001$. Incidence of no PIST was higher at 2 and 4 hours amongst patients nebulised; than the gargled $MgSO_4$ (p=0.001, p=0.002), and control (p=0.000, p=0.000) groups. More patients had no PIST in the gargled $MgSO_4$ than control group (p=0.02). Moderate PIST was higher in the gargled than nebulised $MgSO_4$ group at 2 hours; and higher in control, than nebulised (p=0.007) and gargled $MgSO_4$ (p=0.003) groups at 2 and 4 hours. Patients given nebulised or gargled $MgSO_4$ had no severe PIST, in contrast to nearly 40% among controls at 2 hours. Median PIST score was lower in nebulised and gargled $MgSO_4$ groups; and lower in nebulised than gargled $MgSO_4$ groups at 2 and 4 hours. At 24 hours, there was no PIST amongst nebulised (p=0.005) and gargled (p=0.009) MgSO4 patients, compared to control.

Conclusion: Nebulised $MgSO_4$ was more effective than gargled $MgSO_4$ in reducing the incidence and severity of PIST, without haemodynamic compromise.

A Study on the Impact of Working with Aerosol Generating Procedures and the Mental Health of Healthcare Workers in a Large Tertiary Centre using the DASS-21 Questionnaire

SC TAY, KEVIN WS NG, INA ISMIARTI SHARIFFUDDIN, NOOR IFTITAH AR, YX FOONG

University of Malaya, Kuala Lumpur, Malaysia

Objective: The early stages of the COVID-19 pandemic brought about a period of uncertainty to the healthcare community. Healthcare workers (HCW) working with aerosol generating procedures (AGP) were at the highest risks for infections, and as such we designed the study to look at its impact on the mental health workers in our institution.

Methods: This study was carried out from June – October 2020. All staff members who were caring for COVID-19 patients were invited to participate. The validated DASS-21 questionnaire was used to the determine the mental health status of the healthcare workers. The respondents were also asked on specific concerns with regards to the pandemic.

Results: There were a total of 301 respondents (40.5% doctors). The overall incidence of depression, anxiety and stress were 23.9%, 39.5% and 17.3%, respectively. However, doctors reported significantly higher rates of depression and stress as compared to the nursing staff. When compared, ICU nursing staff had a significantly higher rates of depression, anxiety and stress compared to their counterparts in the operating theatre. Alarmingly, 26.1% of ICU staff reported having severe and extremely severe anxiety, with an odds ratio of 4.25 (95% CI 1.70-10.6 5, p = 0.002). The study also found that the majority of staff were concerned with the depletion of PPE and infecting their family members, while 68.1% of nurses were concerned about stigmatization of working with COVID-19.

Conclusion: This study was done at the initial wave of COVID-19 pandemic and shows that there were moderate levels of depression, anxiety and stress amongst healthcare workers. Interventions such as knowledge improvement and redistribution of staffing has been carried out to address these issues. The mental health status of the HCWs should be prioritized and evaluated often to ensure that they would not suffer from burnout as they battle the pandemic.

Radial Artery Cannulation: Is Visual Imaging Superior to Tactile Palpation?

FATIMA AK[1], NADIA MN[2], RAHA AR[2], SK CHEAH[2], TS TAN[2], NIK ROWINA NM[1]

[1]*Hospital Serdang, Kajang, Selangor, Malaysia*
[2]*Hospital Tuanku Muhriz, UKM Medical Centre, Kuala Lumpur, Malaysia*

Objective: We compared radial artery cannulation techniques between ultrasound guided and artery palpation, in terms of number of attempts, and time taken to successful first attempt cannulation.

Methodology: This prospective randomised clinical study, recruited ASA I and II patients for elective or emergency surgery. They were randomised to Group I (ultrasound-guided) or Group II (palpation). The Mindray DC 70 US machine with image depth set at 2 cm was used for Group I. Duration for successful cannulation was from placement of the 6-14 MHz linear ultrasound probe in Group I, and from palpation of the radial pulse in Group II, until successful cannulation. A single cannulation attempt was defined as a single skin stab with unlimited number of subcutaneous needle redirections. A maximum of three cannulation attempts was allowed.

Results: Data of 122 patients were analysed. Eight patients who required more than 3 cannulation attempts were dropped out; two from Group I and six from Group II. We found higher success rate in first attempt arterial cannulation in Group I (95.3%), than Group II (77.6%), p=0.004. However, the time taken for successful first attempt arterial cannulation was not significantly different, with median of 40.0[30.00-72.00] versus 45.0[35-86] seconds in groups I and II respectively, p=0.224.

Conclusion: Ultrasound guided arterial cannulation was superior to the palpation technique in success rate at first attempt cannulation, with the former potentially avoiding complications associated with multiple attempts. However, the time taken for successful first attempt cannulation was comparable, hence suggesting no advantage of either technique in situations of urgent arterial cannulation.

Systemic Inflammatory Response Syndrome in Moderate and Severe Traumatic Brain Injury Patients: Can C-Reactive Protein Help to Predict Outcome?

AR ZIRWATUL ALIA[1], MR EMILIA[2], AH HUWAIDA[3], CY LIU[1]

[1]Department of Anaesthesiology and Critical Care, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Malaysia
[2]MSU Medical Centre, University Drive, Off Persiaran Olahraga, Seksyen 13, 40100 Shah Alam, Selangor.
[3]Hospital Sungai Buloh, Selangor, Malaysia

Objective: Traumatic brain injury (TBI) can cause neuroinflammation and initiate systemic inflammatory response syndrome (SIRS) which can cause secondary insult or further tissue damage. In SIRS, serum C-reactive protein (CRP) will be released as inflammatory biomarker. This study aimed to determine the incidence and outcome of SIRS in moderate to severe TBI patients and to assess serum CRP as predictor of outcome after TBI.

Methods: We designed a single centre prospective cohort study of adult with moderate to severe TBI in a tertiary neurotrauma centre. Patients with immunosuppression, susceptibility to infection and proven infection were excluded. Patients' demographic data, SIRS score, SIRS criteria and serum CRP were collected and analysed in relation to their outcome.

Results: We analysed 98 patients and found the incidence of SIRS was 64.3% in our subjects. SIRS positive patients on admission were associated significantly with non-favourable outcome (P=0.008). The relative risk of non-favourable outcome was 1.7 higher in SIRS score of 2 (P=0.004) as compared to another score. Further multivariate analysis showed that serum CRP of Day 1 with threshold of 5 mg/dL (*P*=0.020) and Day 2 of 13.57 mg/dL (*P*=0.001) had the ability of being the independent predictor of non-favourable outcome.

Conclusion: We have demonstrated high incidence of SIRS positive patients in moderate to severe TBI patients and they were significantly associated with non-favourable outcome. Serum CRP could be added as baseline investigation upon admission of TBI patients as to help predict their outcome.

Portable Oximetry Monitoring in Parturients for Caesarean Delivery Under Regional Anaesthesia Pre- and Post-Intrathecal Morphine (ITM): A Pilot Study in a Tertiary Level Maternity Centre

XY SARAH-MONG[1], ML LEE[1], CY WANG[2], J VEERAKUMARAN[2]

[1]Department of Anesthesiology and Intensive Care, Hospital Pulau Pinang, Pulau Pinang, Malaysia
[2]Department of Anesthesiology and Intensive Care, University of Malaya, Kuala Lumpur, Malaysia

Objective: Intrathecal morphine (ITM) provides effective analgesia post-caesarean delivery. The co-administration of ITM with local anaesthetic during spinal anaesthesia has been widely adopted as part of the multimodal approach in reducing systemic opioid usage thus optimizing pain management and enhancing postpartum recovery after caesarean delivery. However, concerns still present, particularly the risk of delayed respiratory depression. In this pilot prospective observational study, we investigated the oxygen desaturation index (ODI) in parturients post-caesarean delivery who were given a standard dose of 0.1 mg ITM during spinal anaesthesia compared to their baseline pre-operative values. The main objective is to ascertain whether there is any difference in ODI in parturients pre- and post- ITM during their sleep and to determine risk factors for desaturation post ITM if present.

Methods: We recruited 30 ASA physical status I and II, term parturients with BMI less than 40 planned for elective caesarean delivery under spinal anaesthesia with ITM. Data on ODI were collected during patients' sleep (11 pm to 6 am) at baseline (night before planned surgery), on post-operative day 1 and post-operative day 2. ODI was recorded using a wristwatch-sized portable oximeter (Pulsox 300i, Minolta, Ramsey, NJ) and analysed using RESMED software.

Results: There were no significant difference in ODI measured in subjects given 0.1 mg ITM in post-operative day 1 and post-operative day 2 compared to baseline. The median ODI was 2.9, 5.3, 4.2 at baseline, post-operative day 1 and post-operative day 2. There were no significant differences in ODI, heart rate and oxygen saturation between obese (BMI 30<40) vs non-obese patients (BMI<30).

Conclusion: This pilot study shows that low dose ITM may be administered in healthy parturients for caesarean delivery without causing respiratory depression. However, a larger trial investigating the safety of ITM in high risk parturients is warranted.

Will the STOP-BANG Questionnaire Improve the Rate of Detection of Obstructive Sleep Apnoea Patients by Medical Officers In The Anaesthetic Clinic – A Blinded Observational Study

ZALINA AR[1], AZLIN D[2], SUHAIMI J[1], NISHANTH GP[1]

[1]Hospital Putrajaya, Wilayah Persekutuan Putrajaya, Malaysia
[2]Institut Kanser Negara, Wilayah Persekutuan Putrajaya, Malaysia

Objectives: Obstructive Sleep Apnoea (OSA) is a highly prevalent sleep disorder that causes a complete cessation or significant decrease in airflow during sleep, resulting in disruption of normal sleep architecture. This causes significant perioperative cardiorespiratory complications, and it is imperative that patients at risk of OSA are identified, investigated and treated prior to surgery in order to improve post-operative outcomes. This study's primary objective is to evaluate whether the implementation of a self-reported STOP-BANG questionnaire can improve the detection rate of OSA by Medical Officers in the Anaesthetic Clinic.

Methods: 212 patients due for pre-operative review in the Anaesthetic Clinic were randomly selected and given an internationally validated STOP-BANG questionnaire. Patients were subsequently assessed in the Anaesthetic Clinic by Medical Officers, who determined whether they had high risk of OSA. Each patient's case was also discussed with the Specialist Anaesthesiologists, who determined the risk of OSA and the need for further investigation prior to surgery. Medical Officers and Specialists were blinded to the results of the questionnaire throughout the process.

Results: The study found that the self-reported STOP BANG questionnaire had a sensitivity of 99%, specificity of 57% and accuracy of 83% when compared to the OSA risk assessment by Specialist Anaesthesiologists which was deemed to be the gold standard test. In comparison, the assessment by Medical Officers in the Anaesthetic Clinic had a sensitivity of 98%, specificity of 96% and accuracy of 97% when compared to the OSA risk assessment by Specialist Anaesthesiologists.

Conclusion: The primary conclusion reached was that the accuracy of the risk assessment of OSA by Medical Officers in the Anaesthetic Clinic is significantly higher than the self-reported STOP-BANG questionnaire, and the implementation of the self-reported questionnaire will not significantly improve the rate of detection of OSA in the Anaesthetic Clinic.

Association between Intraoperative Remifentanil Dosage and Postoperative Hyperalgesia in Scoliosis Surgery: A Retrospective Study

NORASHEKEEN ABDUL RAZAK, HW YIP, CC NG, ZY LEE, M. SHAHNAZ HASAN

Department of Anaesthesiology, University of Malaya, Kuala Lumpur, Malaysia

Objectives: The liberal use of remifentanil in spinal fusion surgery had been associated with an increased incidence of postoperative hyperalgesia. However, the current evidence is inconclusive, and the relationship remains controversial. We tested the hypothesis that a higher dose of remifentanil infusion in scoliosis surgery is associated with the development of postoperative hyperalgesia, manifesting clinically as greater postoperative morphine consumption and pain scores.

Methods: This is a retrospective study of 97 patients with adolescent idiopathic scoliosis (AIS) who underwent posterior spinal fusion surgery from March 2019 until June 2020 at a single centre. Anaesthesia was maintained using a target-controlled infusion of remifentanil in combination with volatile anaesthetic desflurane in 92 patients, while 5 patients received it as part of total intravenous anaesthesia. Intravenous boluses of ketamine, paracetamol, and fentanyl were administered as multimodal analgesia. All patients received patient-controlled analgesia (PCA) morphine postoperatively. Pain scores at rest and on movement, using numerical rating score (NRS) were recorded every six hours for 48 hours. The cumulative six-hourly morphine consumption, up to 48 hours, was calculated as the sum of PCA morphine per kg body weight.

Results: We did not find any significant differences in the pain score and cumulative PCA morphine consumption between the low dose [<0.215 mcg/kg/min, (n=41)] and high dose [(>0.215 mcg/kg/min, (n=56)] remifentanil group. The mean remifentanil infusion duration was 134.9 $\pm$ 22.0 and 123.4 $\pm$ 23.7 minutes respectively.

Conclusion: Intraoperative use of remifentanil as an adjuvant in AIS patients undergoing posterior spinal fusion surgery was not associated with postoperative hyperalgesia.

Placebo versus Nocebo: Effects on Pain and Anxiety During Local Anaesthetic Skin Infiltration in Parturient Undergoing Elective Caesarean Delivery

W.H. KAN, R. TEO, M. MAAYA, A. IZAHAM, H.J. LOW, S.K. CHEAH

Department of Anesthesiology & Intensive Care, Hospital Canselor Tuanku Muhriz, Kuala Lumpur, Malaysia.

Objective: This study compared placebo and nocebo effect on pain and anxiety score during local anaesthetic (LA) skin infiltration in parturient undergoing caesarean delivery under regional anaesthesia (RA). A secondary objective was to determine if education level and previous RA experience affect pain and anxiety score.

Methods: 76 parturient were randomised into the Placebo (P) or Nocebo (N) group. Baseline Amsterdam Preoperative Anxiety and Information Scale ($APAIS^0$) were obtained. Standardised scripts describing the LA skin infiltration were used during the pre-anaesthetic review. N group were explained with words like "pain, sting, worst" while "numb, comfort, tolerable" were used in the P group. The same scripts will be repeated before skin infiltration during the RA procedure. On the day of surgery, a second ($APAIS^1$) was obtained upon arrival to the theatre. Pain score using the numerical rating scale (NRS) was assessed after LA infiltration.

Results: NRS pain score experienced by the P group were significantly lower compared to N group (3.0 [2.0-5.0] vs 5.0 [2.8-6.0], p=0.009). P group also reported significantly less anxiety ($APAIS^1$) in comparison to the N group. (18.2 $\pm$ 4.3 vs 21.1 $\pm$ 4.7, p=0.007). There was no association between education level (p=0.121, p=0.178) and previous RA (p=0.414, 0.612) on LA infiltration pain and preoperative anxiety in both the P and N group.

Conclusion: Parturient exhibit higher preoperative anxiety and experienced higher NRS pain score during LA infiltration when nocebo words were used. Adopting a comforting approach during invasive procedure improves patients' experience.

Comparing the Association of Different Frailty Screening Tools with Postoperative Delirium

JL CHEONG[1], MAHMOUD DANAEE[2], INA ISMIARTI SHARIFFUDDIN[1], TEANG SOON CHEN[1], KHOR HUI MIN[3], LOH PUI SAN [1]

[1]Department of Anaesthesiology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[3]Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

Objection: This study examined two entities in geriatric syndrome that are frequently encountered in surgical patients-postoperative delirium (POD) and frailty. The association between preoperative frailty assessment and risk of developing POD has not been clearly shown. Therefore, our main objective was to compare the predictive validity for two common frailty screening tools among many in the literature - Fried Frailty Index (FFI) and Groningen Frailty Index (GFI) towards POD in elderly surgical patients.

Methods: 447 patients 65 years old, admitted for semi-emergency and elective surgery in University Malaya Medical Centre were recruited over 6 months in 2019. Preoperative frailty was identified using FFI and GFI while POD was diagnosed using Cognitive Assessment Method and 4-Abbreviated Test. Area under Receiver Operating Characteristic (AUROC) and test reliability for sensitivity and specificity of FFI and GFI towards POD was analyzed. The association was then examined using hierarchical binary logistic regression in two separate multivariate models and adjusted with other significant univariate preoperative risk factors with p-values 0.05.

Results: Fifty patients (11.2%) with mean age of 76.8 $\pm$ 7.5 years developed POD. Both tools demonstrated similar AUROC towards POD (FFI: 70.7%; GFI: 71.9%). Sensitivity and specificity for development of POD were FFI: 48.0% and 81.9%, GFI: 80.0% and 47.6%. Univariate analysis showed that both tools were independently associated with POD [FFI: Odds ratio (OR)=4.17, 95% Confidence Interval (CI) = 2.26-7.67, p<0.001; GFI: OR = 3.64, CI = 1.77-7.47, p<0.001]. In hierarchical binary logistic regression, the association of FFI and GFI was attenuated by the presence of ADL dependency, malnutrition, depression, and poor cognition [FFI: OR = 1.29, CI = 0.59-2.82, p = 0.135; GFI: OR = 1.19, CI = 0.79-4.58, p = 0.502].

Conclusion: Both frailty screening tools were predictive towards POD but the predictive validity was diminished after accounting for the presence of ADL dependency, malnutrition, depression and poor cognition. In a two-step approach, GFI was the better screening tool with higher sensitivity for development of POD.

The Association between Body Mass Index and Outcome After Coronary Artery Bypass Grafting Operations in Serdang Hospital: A Retrospective Observational Study

ZAYYID MOKHTAR[1], SH CHAW[2], SALLY HASBOLAH[3]

[1] Hospital Serdang, Selangor, Malaysia
[2]Department of Anaesthesiology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

Objectives: The goal of this retrospective study is to analyse the association between body mass index (BMI) and the outcomes following coronary artery bypass graft operations (CABG).

Methods: The study population (N = 1137) was adult patients who had undergone isolated coronary artery bypass grafting operations since 1st January 2015 until 31st August 2020. The patients were allocated into 4 groups according to body mass index as follows: underweight (BMI <18.5), normal weight (BMI 18.5 to 24.9), overweight (BMI 25.0 to 29.9), obese (BMI 30.0 to 34.9 and BMI >34.9). We included patients with BMI >34.9 into obese group because we have small number of morbidly obese patient in this study (N = 49).

Results: Obese patient was found to be significant associated factor of 30-day mortality (p=0.029). Obese patient was found to be significant associated factor of sternal wound infection (p=0.001). Underweight patient was found to be significant associated factor of reoperation (p=0.018). Underweight patient was 5.06 times higher odds to have reoperation compared to patients with normal BMI. Underweight patient was found to be significant associated factor of coronary intensive care unit (CICU) stay (p=0.040). Underweight patient stays 3.48 days longer in CICU compared to patients with normal BMI.

Conclusion: Both underweight and obesity patients had higher rate of adverse outcomes after CABG. Obesity is associated with increased risk of mortality and wound infection; while underweight is associated with more reoperation and longer CICU stay but not with an increased mortality.

Anaesthetic Drug Wastage in Operating Theatre: A Quality Improvement Project

NH IZUMI S, KT NG, ILI SJA, NADZRAH SY, NH MD HASHIM, II SHARIFFUDDIN

Department of Anaesthesiology, University of Malaya, Kuala Lumpur, Malaysia

Objective: Improper planning of anaesthetic care and the practice of preparing emergency drugs (eg: Atropine) can lead to drug wastage, which impose economic burden to healthcare institutes. The primary aim of this study was to improve efficiency of anaesthetic practice and reduce preventable drug wastage without compromising the quality and safety of patient care.

Methods: This prospective observational study with the intention for quality improvement was conducted over the duration of 12 weeks in a tertiary teaching hospital. Pre-intervention data regarding the amount of medications ordered for operation theatre use was collected. All anaesthetic care providers were given a set of questionnaires to explore their understanding regarding drug wastage and medication error. Several interventions including new workflow, staff briefing, training, education and posters were designed and introduced to anaesthesia providers, nurses and personnel over the period of 1 month. After the period of intervention, the amount of medications ordered for operation theatre was collected and analysed.

Results: A total of 1980 surgical cases were conducted during the study period. A significant reduction of medication ordering and drug wastage were demonstrated in the post intervention period. Drugs that were wasted most were Atropine, followed by Ephedrine, Adrenaline, Phenylephrine, Propofol, Suxamethonium and Rocuronium. Our analysis showed that there was a wastage reduction of 80% for Rocuronium (RM1480 saving), 75% for Suxamethonium (RM660 saving), 75% for Atropine (RM225 saving), 60% for Phenylephrine (RM684 saving) and 50% for Ephedrine (RM130 saving). Pre-intervention questionnaires showed that 75% of our staffs have more than 5 years of working experience. 50-90% of them were unaware regarding the cost of routinely use medications.

Conclusion: In conclusion, the implemented interventions were significant in the reduction of drug wastage. However, a regular constant briefing on the implementation is required to keep all new anaesthesia trainee updated in this teaching hospital.

"Easy Warmer": An Innovative Thermal Blanket to Reduce The Incidence of Intraoperative Hypothermia

ELYA FARHANA AR, M. AZIZIROHIM A, PAUZIAH Y, ZAYUAH MS, NOOFIDAH R, RAHIMAH H

Hospital Sultan Haji Ahmad Shah (HoSHAS), Temerloh, Pahang

Objective: Hypothermia is a known intraoperative complication which can cause tremendous side effects that predispose patients to haemodynamic instability, hypoxemia, coagulopathy, delay awakening and tissue injury. These complications also caused prolonged hospital stay which leads to increased hospital expenses and bed shortage. Therefore, "Easy-warmer" was invented to prevent intraoperative hypothermia in order to reduce related complications, reduced hospitalization, and increase hospital profit with more efficient bed management. "Easy Warmer" [myIPO/T-247/1/1/klt.6(1)(5)] is a reusable thermal blanket developed by Department of Anaesthesia, HoSHAS to reduce the incidence of intraoperative hypothermia.

Methods: "Easy Warmer" is composed of recycled thin fibre 100% cotton and super soft non-woven fabric sewed with cotton thread into multiple air pocket. It is available in two designs which are total body wrap and blanket. Observational study using "Easy Warmer" was done in HoSHAS for adult patients intraoperatively between 1st January 2019 until 28th January 2019 to look for the incidence of hypothermia. In this study, "Easy Warmer" was wrapped around the patient's body according to body part intraoperatively and temperature was observed throughout operation.

Results: "Easy warmer" significantly reduced hypothermia and conserved heat passively by 2% in majority of patient.

Conclusion: "Easy warmer" is effective in reducing the incidence of intraoperative hypothermia in view of its insulation, heat entrapment/conservation and water resistant properties. Other advantages of using "Easy Warmer" are easy applicable with simple disinfectant method, save space, low cost and environmental friendly.

Pre-oxygenation in Obese Patients: Facemask versus Facemask With Nasal Prong

NF HAMZAH[1], N MD NOR[2], M MAAYA[2], SNN SAYED MASRI[2], R TEO[2], A MASDAR[2]

[1]*Hospital Kluang, Johor, Malaysia*
[2]*Hospital Canselor Tuanku Muhriz, UKM Medical Centre, Kuala Lumpur, Malaysia*

Objective: Adequate pre-oxygenation before anaesthesia induction in obese patients who are predisposed to rapid oxygen desaturation during apnoea, allows a period of safe apnoea. We compared the efficacy between two pre-oxygenation techniques, facemask versus facemask with nasal prong, based on the time taken for expired end-tidal oxygen (F_EO_2) to reach 0.8 ($T_{0.8}$) from commencement of pre-oxygenation (T_0), and time before oxygen desaturation to 95% ($T_{95\%}$), following apnoea (T_A).

Methods: This prospective randomised study recruited 36 American Society of Anesthesiologists I and II surgical patients, aged ≥18 years, with body mass index ≥30 kg/m^2, requiring general anaesthesia with endotracheal intubation. They were randomised to be pre-oxygenated via facemask with oxygen flow of 12 L/min, or via facemask with oxygen flow of 7 L/min overlying nasal prongs with oxygen flow at 5 L/min. Once F_EO_2 of 0.8 was achieved, induction of anaesthesia proceeded with intravenous (IV) fentanyl and propofol. Upon loss of patient consciousness, cricoid pressure was applied, and IV rocuronium 1.2 mg/kg of the adjusted body weight was administered, following which patients were left apnoeic with no manual ventilation prior to tracheal intubation. During this apnoeic period before laryngoscopy, oxygen delivery was discontinued in both groups, and anaesthesia maintained with target-controlled infusion propofol. Oxygen saturation and F_EO_2 were recorded at T_0, $T_{0.8}$, and at T_A following completion of rocuronium administration.

Results: Pre-oxygenation with facemask and nasal prong resulted in a shorter $T_{0.8}$ compared to facemask alone (48.61 s $\pm$ 23.3 vs. 77.72 s $\pm$ 26.15), $p = 0.001$. There was no difference in $T_{95\%}$ between the groups.

Conclusion: Duration of pre-oxygenation to adequate end tidal oxygen fraction in obese patients was hastened with concurrent delivery of oxygen via facemask and nasal prong. However the time before oxygen desaturation occurred remained comparable in both groups.

The Feasibility and Benefits of Preoperative Whey Protein-Infused Carbohydrate Loading in Elderly with Hip Fractures Undergoing Surgery: A Pilot Study

KS YAP[1], TERENCE IW ONG[2], HM KHOR[2], PS LOH[1]

[1]Department of Anaesthesiology, University Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia
[2]Department of Medicine, Faculty of Medicine, University Malaya, Kuala Lumpur, Malaysia

Objectives: Preoperative carbohydrate loading in Enhanced Recovery After Surgery (ERAS) is an independent predictor of postoperative outcomes. By reducing the impact of surgical stress response, fasting-induced insulin resistance is modulated. As a clear fluid, consuming whey protein-infused carbohydrate is safe up to 2 hours preoperatively. Widely practiced in abdominal surgeries, its implementation in hip fracture surgeries is yet to be recognized. To identify the feasibility of preoperative carbohydrate loading in hip fracture surgery and assess its clinical effects.

Methods: Randomized controlled, open labelled trial in patients 65 years old without diabetes mellitus, has hip fracture were recruited in UMMC between November 2020 and May 2021. Carbohydrate loading (Resource-Nestle®) with 100 g on the day before surgery and 50 g up to 2 hours preoperatively versus standard preoperative fasting.

Results: Thirty ASA 1-3 patients (carbohydrate loading and control, n=15 each), mean age 79 years (SD ± 8.5), mean body mass index 23.8 (SD ± 3.5 kg/m^2) were recruited. Analysis for feasibility of carbohydrate loading (n=15) demonstrated attrition rate of 20%, n=3 (one participant completed the drinks but operation was postponed, and two patients were not served the third drink by ward staff). Otherwise, patients were 100% compliant with no adverse events reported. 26 randomized participants were analyzed for secondary outcomes (intervention n=12, control n=14). There was no significant difference among groups in the postoperative nausea and vomiting, pain score, fatigue level and muscle strength assessed at 24-48 hours postoperatively.

Conclusion: COVID-19 pandemic had interrupted recruitment resulting in a small number of participants. Nevertheless, this study demonstrated that implementation of preoperative carbohydrate loading is feasible for hip fracture surgeries without complications but requires careful coordination among surgical, anaesthetic and nursing teams. An adequately powered randomized controlled study is needed to examine the full benefits of preoperative carbohydrate loading in this group of patients.

Postoperative Length of Stay in Major Upper Gastrointestinal Surgery Patients Before and After the Implementation of Enhanced Recovery After Surgery (ERAS) Protocol on Intraoperative Haemodynamic Monitoring

AINI SAFIRA CAR[1], NOOR AIRINI I[2], ZEZY LINA O[3], TA LIM[4]

[1, 3]Hospital Sungai Buloh, Selangor, Malaysia
[2, 4]Universiti Putra Malaysia, Selangor, Malaysia

Objective: Enhanced recovery after surgery (ERAS) encompasses aspects from preoperative, intraoperative and postoperative care to reduce postoperative complications and length of stay. It has been implemented intraoperatively by the Department of Anaesthesia, Hospital Sungai Buloh, for oesophagectomy and gastrectomy since February 2017. The main objective of this study was to compare the postoperative length of stay in the intensive care unit or recovery room before and following implementation of the ERAS protocol on intraoperative haemodynamic stability in oesophagectomy and gastrectomy. Secondary objectives included comparing the overall postoperative length of stay in hospital and assessing whether application of the ERAS protocol affected serum lactate levels taken within 48 hours after operation.

Methods: Data from patients who underwent oesophagectomy or gastrectomy between 2016 and 2018 was traced using the electronic Hospital Information System (eHIS).

Results: 161 records were analysed (52 operations without ERAS and 109 with ERAS implementation). 94 patients were admitted to ICU whereas 67 patients were observed in recovery room postoperatively. Length of stay in ICU was significantly different between the non-ERAS and ERAS groups (mean 98.7 hours vs 42.3 hours respectively; $p=0.012$). Overall hospital stay was longer in the non-ERAS group (mean 21.1 days vs. 16.2 days; $p<0.001$). A higher percentage of patients in the ERAS group suffered acute kidney injury (14.1% vs 4.3%). There was no significant difference in recovery room stay (2.7 hours vs. 3.5 hours, $p=0.328$) or postoperative serum lactate levels ($p=0.324$).

Conclusion: This study showed a reduction in postoperative length of stay in ICU and overall hospital stay for patients who underwent major upper gastrointestinal surgery with ERAS implementation despite having a higher risk of developing AKI. Length of stay in recovery room and postoperative serum lactate concentration were not different between the two groups.

Evaluation of Sublingual Ultrasound Assessment and Other Clinical Predictors of Difficult Intubation Among Obese Patients

JA LOW, M BUDIMAN, CHEAH SK, A IZAHAM

Department of Anaesthesiology & Intensive Care, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Objective: Difficult intubation among obese patients is a big challenge to anaesthesiologists. Ultrasound assessment has been proposed to be a useful tool. Hence, this study was aimed to evaluate sublingual ultrasound assessment as compared to other airway assessment tests in predicting difficult intubation in obese patients.

Methods: A total of 127 obese patients (BMI >30 kg/m^2) underwent tracheal intubation under general anaesthesia were recruited in this prospective double-blinded study. Airway examinations include modified Mallampati class (MMC), thyromental distance (TMD), neck circumference (NC), NC/TMD ratio and sublingual airway ultrasound assessment were carried out. Sublingual ultrasound assessment was done by placing a probe below patient's tongue and the visibility of hyoid bone was recorded. Prediction of difficult intubation in this study was determined by invisibility of hyoid bone from sublingual ultrasound, NC ≥37 cm, TMD <6 cm, MMC III-IV and NC/TMD ≥5. Intubation was conducted by anaesthetist in-charge and the conduct of anaesthesia was standardized. Airway management followed Difficulty Airway Society guidelines on the management of unanticipated difficult intubation in adults. The Intubation Difficulty Scale (IDS) was documented to classify patients into easy (IDS <5) and difficult (IDS ≥5) intubation groups.

Results: Incidence of difficult intubation was 11.1%. Sublingual ultrasound assessment manifested a high sensitivity of 92.9%, specificity of 93.8% and positive likelihood ratio (14.9) in predicting difficult intubation. Odd ratio for sublingual ultrasound was 196.857 with wide confidence interval 22.409-1729.329. Other screening tests showed poor to moderate sensitivity and moderate to fair specificity. The area under the receiver operating characteristic (ROC) curve for NC was better (77.6%) with cut-off point of 39.75 cm (odd ratio 19.644, $P = 0.005$).

Conclusion: Sublingual ultrasound offered a high diagnostic value in predicting difficult intubation among obese patients compared to conventional airway assessment.

Haemodynamic Response Post Induction of Anaesthesia: Comparing Different Ratios of Ketamine-Propofol Admixtures (Ketofol)

HS HOONG[1], N MD NOR[2], SN MOHD MAHDI[2], M BUDIMAN[2], TS TAN[2]

[1]Hospital Lahad Datu, Sabah, Malaysia
[2]Hospital Canselor Tuanku Muhriz, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Objective: Ketamine and propofol combination (ketofol) is postulated to have opposing cardiovascular effects. Anaesthesia induction with ketofol 1:2 ratio had resulted in reduced incidence of hypotension. We compared haemodynamic responses following anesthesia induction with lower ketofol ratios of 1:1 versus 1:2.

Methods: Ninety-three American Society of Anesthesiologists I and II patients, aged 18-70 years, for elective surgery under general anaesthesia, were randomised into three groups. Ketofol was prepared with ketamine 10 mg/ml and propofol 1%, in a single syringe comprising 15 ml drug volume. The study groups were Group P (control): propofol 150 mg (15 ml), Group KP1(1:1): ketamine 70 mg (7 ml) + propofol 70 mg (7 ml) + 1 ml saline 0.9%, and Group KP2 (1:2): ketamine 50 mg (5 ml) + propofol 100 mg (10 ml). The test drug was titrated until loss of eyelash reflex/ verbal response. Following anaesthesia induction and adequate muscle relaxation, endotracheal intubation was performed. Heart rate, systolic, diastolic and mean arterial blood pressure (SBP, DBP, MAP), were documented at baseline, and every minute thereafter over 15 minutes post induction. Drug volume administered and ketamine side effects were noted.

Results: Significant differences between groups P and KP1, and groups P and KP2 were seen in percentage change of SBP, DBP and MAP from baseline ($p<0.05$), where these changes were comparable between both ketofol groups. SBP and MAP remained within 20% in Group KP1 but dropped below 20% of baseline in groups P and KP2. More patients in Group P had >20% MAP reduction than Group KP1 ($p = 0.001$). Percentage heart rate change was comparable among all groups.

Conclusion: Ketofol 1:1 ratio was not superior to ketofol 1:2 ratio in minimising BP reduction post anaesthesia induction. Ketofol 1:1 ratio is an alternative to propofol, with maintenance of haemodynamic stability and minimal ketamine side effects.

Jelly-based Lumbar Spine Phantom Model as a Sonoanatomy Teaching Tool Relevant to Central Neuraxial Block

YEE SOON CHIEW[1], AZLINA MASDAR[2], MARYAM BUDIMAN[2], SITI NIDZWANI MOHAMAD MAHDI[2], SAW KIAN CHEAH[2], SHEREEN SUET PING TANG[3]

[1]Queen Elizabeth II Hospital, Kota Kinabalu, 88300 Sabah, Malaysia
[2]UKM Medical Centre, Jalan Yaacob Latif, 56000 Cheras, Kuala Lumpur, Malaysia
[3]Tunku Abdul Rahman University College, Jalan Genting Kelang, 53300 Kuala Lumpur, Malaysia

Objective: Pre-procedural ultrasound scan improves the efficiency of central neuraxial block (CNB) by precise identification of underlying anatomical structures. In this study, we aimed to determine if learning lumbar spine sonoanatomy through the jelly-based lumbar spine phantom model is replicable in normal body mass index (BMI) and obese adults.

Methods: Forty anaesthesia trainees with minimum three years training were recruited and exposed to a standardised teaching session relevant to ultrasound guided CNB of the adult lumbosacral spine. This was followed by a mini test where those who passed with minimum mark of 50% were required to perform ultrasound scans sequentially on a jelly-based lumbar spine phantom model, normal BMI (24.9 kg/m^2) and obese with BMI of 41.6 kg/m^2 volunteers. There were six and eight structures in paramedian and midline view respectively that needed to be recognised within 15 minutes per model. Data collected were time taken and number of structures recognised in the lumbar spine in both midline and paramedian views as well as the confidence level with lumbar spine sonoanatomy recognition before and after the study.

Results: All 40 participants passed the mini test and recognised the lumbar spine sonoanatomy structures at a mean time of 364.53 $\pm$ 90.53 seconds in phantom model and 396.33 $\pm$ 100.64 seconds in normal BMI volunteer. Only 23 (57.5%) recognised all the lumbar sonoanatomy structures in the obese volunteer with a mean time of 583.78 $\pm$ 85.76 seconds. The remainder 17 participants recognised more lumbar spine sonoanatomy structures in the midline when compared to paramedian views in the obese volunteer. Thirty-six (90%) participants showed increase in their confidence level after the study.

Conclusion: The jelly-based lumbar spine phantom model was found to be a good learning tool for recognition of lumbar spine sonoanatomy in normal BMI but not suitable for obese adults.

Ultrasound Assessment of Gastric Residual Volume in Children after Intake of Clear Fluids at One Versus Two Hours Prior to General Anaesthesia – A Randomised Controlled Trial

MA TJ, M DAMANHURI, KEVIN WS NG, CHAW SH, NADZRAH SY, II SHARIFFUDDIN

University of Malaya, Kuala Lumpur, Malaysia

Objective: The Association of Paediatric Anaesthetists of Great Britain and Ireland in 2018 recommends a more liberal fasting time for clear fluids (CF) in children up to one hour before general anaesthesia (GA). A restricted CF fasting time of two hours is often exceeded in clinical practice. Prolonged periods of fasting time in children can be detrimental and lead to a stressful anaesthesia induction.[1] This study aims to compare the gastric residual volume (GRV) of paediatric patients after one versus two hours of CF fasting using ultrasound and nasogastric aspiration.

Methods: Children (5-17 years) scheduled for general anaesthesia (GA) requiring tracheal intubation were enrolled and randomised into Group A (one hour) or B (two hours) of CF fasting. Ultrasound assessment was performed prior to induction of GA and GRV was calculated using Perlas[2] and Desgranges[3] equation. Post intubation, nasogastric tube (NGT) was inserted and its aspirated volume measured. Patient's anxiety level and parental satisfaction were also assessed. The relationship between fasting intervals, total fluid intake and GRV calculated by ultrasound and NGT aspirated volume were studied.

Results: In total, 56 patients were included. There is no significant difference in GRV measured from NGT aspiration (0.12 $\pm$ 0.26 ml/kg vs 0.21 $\pm$ 0.38 ml/kg, p=0.19) between both groups despite significant difference in fasting time (62.1 $\pm$ 11.3 min vs 121.3 $\pm$ 19.8, p<0.001). GRV measured from NGT aspiration is weakly correlated with GRV assessed by ultrasound (r=0.312, p=0.019 using Desgranges and r=0.113, p=0.406 using Perlas equation). Patients' anxiety level (42.7 $\pm$ 15.6% vs 39.9 $\pm$ 16.6%, p=0.41) and parents' satisfaction score (86.7 $\pm$ 6.9% vs 86.6 $\pm$ 6.1%, p=0.96) between groups A and B did not differ significantly.

Conclusion: One-hour CF fasting does not significantly increase GRV and aspiration risk compared to two-hour fasting. This supports the more liberal fasting regimen favouring a one-hour CF fasting time.

Perioperative Haematocrit Assessment in Adult Cardiac Surgery Patients with Cardiopulmonary Bypass in Sarawak Heart Centre: A Retrospective Observational Studies.

HASMIZY BIN MUHAMMAD, SK KHAW, FARIZ SYAZWAN, KHAIRUNNISA BINTI RADUAN, MARGERET JONG SY

Pusat Jantung Sarawak, Kota Samarahan, Malaysia.

Objective: Cardiac surgery is known to be associated with a high risk perioperative blood loss and allogeneic blood transfusion (ABT) due to invasiveness of the procedure, and cardiopulmonary bypass (CPB) resulting in haemodilution. Prevalence of anaemia varied between 23-45%; the transfusion rate reported is about 30-60%. Pre-operative anaemia was associated with adverse outcome such as prolonged hospital stay, and mortality. Recent RCT demonstrated that Hb threshold of <7.5 g/dl was not inferior to the liberal strategy of Hb <9.5 g/dl. Point of care haematocrit (HCT) and Hb using ABG machine were readily available in operation theatre (OT) to guide transfusion decision. Objective of this study is to determine the prevalence of perioperative HCT level of patients, and the rate of transfusion among patient undergone cardiac surgeries using CPB in Sarawak Heart Centre (SHC).

Methods: This is cross sectional study in SHC over the period of 12 months. Every consecutive cardiac surgery required CPB were included for data collection and analysis. Patients' information was extracted from the anaesthetic record form, and case notes and was analyzed using statistical software. Standard routine cardiac anaesthesia practices were perfomed for all patients including the use of tranexamic acid, and cell saver usage.

Results: Out of 114 cardiac surgeries in 2019, 46 cases were done with CPB. Average age was 55.4 years old. Male made up majority of patients, 39 (84.8%). Mean Euroscore is 1.08%. The mean (±SD) for HCT pre-operative, post-heparin, during CPB and post protamine were 44.9 (±4.9), 40.0 (±6.3), 24 (±4.8), 25.0 (±4.7) respectively. Whereas postoperatively, the mean (±SD) HCT in CICU, POD1 and POD2 were 37.9 (±7.2), 34.3 (±5.8) and 31.7 (±4.8), respectively. Transfusion was initiated in 3 patients in Operating room, another 1 case in CICU. There was a significant difference ($p<0.001$) between the baseline pre-operative HCT compared to HCT on arrival to CICU. The mean nadir haematocrit was 23.8 (±4.5).

Conclusion: The transfusion rate was low for cardiac surgeries conducted in SHC, and transfusion threshold were also comparable to standard practice.

Evaluating Optimal Operating Table Height For ProSeal-LMA™ Insertion

SL LOW[1], A MASDAR[2], N MD. NOR[2], A AZIDIN[3], HJ LOW[2], SN MOHAMAD MAHDI[2]

[1]Hospital Tuanku Ja'afar, Seremban, Negeri Sembilan
[2]Hospital Canselor Tuanku Muhriz, UKM Medical Centre, Kuala Lumpur, Malaysia
[3]Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Objective: ProSeal-Laryngeal Mask Airway™ (P-LMA™) is commonly used among all other laryngeal mask airways. Poor P-LMA™ placement quality still occurs despite proper insertion technique done by experienced user using a well-functioning device. This study looked at the influence of operating table height position affecting successful P-LMA™ placement.

Methods: One-hundred-thirty-eight American Society of Anesthesiologists I or II patients, aged between 18 to 65 years old who required general anaesthesia, with no contraindication towards the use of P-LMA™ were recruited. They were randomly positioned into three anatomical landmarks which were umbilicus, lowest rib margin and xiphoid. The P-LMA™ was inserted following muscle paralysis and the first attempt of successful placements were evaluated using positional and performance tests. Duration, ease of P-LMA™ insertion and airway complications were compared.

Results: Demographic and airway features were comparable among all groups. The P-LMA™ placement success rate was improved when the table height was positioned at the lowest rib margin ($p = 0.002$). All three positions were comparable in duration, ease of insertion and airway morbidities.

Conclusion: Lowest rib margin anatomical landmark provides optimal operating table height for successful P-LMA™ placement.

Does Volume Matter? A Comparison between Two Programmed Intermittent Epidural Bolus Regimens for Maintenance of Labour Analgesia

ISKANDAR KHALID, AZLINA MASDAR, NADIA MD NOR, MARYAM BUDIMAN, YEOH CHIH NIE, RAHA ABDUL RAHMAN

Hospital Canselor Tuanku Muhriz, UKM Medical Centre, Kuala Lumpur, Malaysia

Objective: The optimal regimen for programmed intermittent epidural bolus (PIEB) during maintenance of epidural labour analgesia (ELA) has not been established. Current evidence suggests that higher epidural pressures during PIEB results in better anatomical distribution of analgesic solutions in the epidural space leading to greater analgesic effect. The aim of this study was to compare two PIEB preparations of equal local anaesthetic (LA) doses but differing concentration and volume in terms of LA consumption, analgesic profile along with maternal and fetal outcomes.

Methods: A total of 96 parturients aged 18 to 45 of mixed parity and in active labour were given a combined-spinal epidural, then randomized to two groups; Group A received maintenance of ELA with PIEB using 0.1% levobupivacaine and fentanyl 2 µg/ml at 5 ml every hour, while Group B received 0.05% levobupivacaine and fentanyl 1 µg/ml at 10 ml every hour. Rescue analgesia was provided with patient-controlled epidural analgesia (PCEA) and clinician-administered boluses.

Results: Parturients in Group B had significantly less PCEA demand and delivery, as well as lower median hourly levobupivacaine dose administered via PCEA. Total LA consumption, median pain scores, incidence of epidural-related side-effects, patient satisfaction, as well as labour and fetal outcomes were similar between the groups.

Conclusion: In PIEB mode of labour analgesia without PCEA, a larger volume and lower concentration preparation of levobupivacaine may result in better analgesic profile and patient satisfaction.

Effectiveness of Pain Intervention Therapy in Reducing Opioids and Gabapentinoids Usage for Chronic Spinal Pain Patients

SYAFAWATI SAMSUDIN, NADIA MD NOR, SITI NIDZWANI MOHAMAD MAHDI, AZLINA MASDAR, JAAFAR MD ZAIN, MOHD KHAZRUL NIZAR ABD KADER, AZARINAH IZAHAM

Department of Anaesthesiology & Intensive Care, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.

Objective: Pain intervention therapy play an important role in the management of chronic pain patients by using a minimally invasive technique such as joint injections, nerve blocks, neuromodulations and implantable drug delivery system which aim to relieve, reduce, and improve patient's overall quality of life.

Methods: This cross-sectional retrospective study amongst 215 patients with spinal pain treated under Pain Clinic, Universiti Kebangsaan Malaysia Medical Centre from June 2018 until June 2019. The data were collected from patient's clinical notes and interview session during routine clinic visits. They were divided into two groups, patients who received pharmacotherapy with pain intervention therapy (Group 1) and patients who received pharmacotherapy only (Group 2). The opioids usage was using Morphine Equivalent Dose (MED), in which MED at time of first encounter in pain clinic (MED_1) and MED at current pain clinic visit ($MED_{current}$). The gabapentinoids (GabaP) treatment were recorded as GabaP at the time of first encounter at pain clinic ($GabaP_1$) and GabaP at current pain clinic visit ($GabaP_{current}$). Treatment outcome such as pain intensities, interference, disability, psychiatry risk and opioids addiction risk were assessed through various validated questionnaires.

Results: A total of 111 patients in Group 1 and 104 patients in Group 2 were recruited. There were statistically significant reduction in morphine usage for the current MED and percentage reduction in Group 1, $MED_{current}$ [22.5(10.0,30.0) versus 30.0(30.0,40.0) p value <0.001] and $MED_{\%changes}$ (-34.2 versus -8.8, p value <0.001). Meanwhile for the gabapentinoids usage, there was statistically significant reduction initial GabaP dosage and percentage reduction of medication in Group 1, $GabaP_1$ [900.0(600.0,900.0) versus 600.0(300.0,900.0), p value<0.001] and $GabaP_{\%changes}$ (-15.4 versus +1.2, p value <0.001). There was significant improvement in pain interference in Group 1 (p=0.042).

Conclusion: Intervention pain therapy for chronic spinal pain has reduce the opioids and gabapentinoids usage with improvement of the pain interference.

Anxiety Before Elective Caesarean Section, Can Music Mellow Expecting Mothers?

LM WONG[1], M MUHAMMAD[2], CY LIU[2]

[1]Department of Anaesthesiology & Intensive Care, Hospital Sibu, Jalan Ulu Oya, 96000 Sibu, Sarawak., Malaysia.
[2]Department of Anaesthesiology & Intensive Care, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Malaysia.

Objective: Anxiety is experienced by most surgical patients and is usually attenuated with sedative premedication. However, this is not feasible for obstetric patients going for elective Caesarean section (CS) due to transplacental transfer of drugs to the foetus. We evaluated music as an alternative in reducing anxiety among this population.

Methods: After obtaining institutional approval, forty patients with term pregnancy scheduled for elective CS were recruited and randomised equally into two groups – Group M and Group C. Parturients in Group M were given headphones connected to an MP3 player playing instrumental jazz music for 30 minutes before CS while parturients from Group C received standard care. We measured pre-operative anxiety level by using the Amsterdam Preoperative Anxiety and Information Scale (APAIS) score before and after music intervention. The Parturient's blood pressure (BP) and heart rate (HR) pre-, intra- and post-intervention were also recorded.

Results: There were no significant differences in the demographic data and previous history of CS between parturients from both groups. There was no significant baseline APAIS score difference between pateints from Group M and Group C. Parturients from Group M reported a significantly lower mean APAIS score after music intervention as compared to those in Group C (16.0 ± 4.7 vs 22.3 ± 5.4, $p<0.001$). However, our study did not find any significant haemodynamic changes between the two groups. The reduction of APAIS score after music was significant regardless of parturients educational level or previous history of CS.

Conclusion: We conclude that listening to instrumental jazz music preoperatively was able to reduce anxiety level in term parturients undergoing CS.

One Year Retrospective Audit of Peripheral Nerve Blocks Services in Universiti Kebangsaan Malaysia Medical Centre

I NURUL ERIDA[1], SSP TANG[2], CY LIU[3]

[1]Hospital Enche' Besar Hajjah Khalsom, Jalan Kota Tinggi, 86000 Kluang, Johor, Malaysia
[2]Faculty of Medicine and Health Sciences (FMHS), Universiti Tunku Abdul Rahman, Sungai Long Campus, Jalan Sungai Long, Bandar Sungai Long, 43200 Kajang, Selangor, Malaysia
[3]Department of Anaesthesiology and Critical Care, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Malaysia

Objective: Peripheral nerve block (PNB) has become a popular technique of anaesthesia as well as part of peri-operative multimodal analgesia. This technique confers benefits such as avoiding general anaesthesia, reducing medications used and reducing postoperative pain as well as fast-tracked recovery process. In our local institution, a dedicated PNB service was established in 2017 and due for formal review. We aimed to ascertain the outcome of PNB and to identify key indicators for quality improvement of PNB services.

Methods: This was a retrospective, cross sectional study and the data was retrieved from our registry of regional anaesthesia in UKM Medical Centre from August 2017 to August 2018.

Results: A total of 300 patients were identified, with 271 complete data analysed. Using a predefined criterion of successful block, we found 135 patients received PNBs as sole anaesthesia with 90.2% success rate and 137 patients received PNB as adjunct analgesia with 93.4% success rate. PNBs as sole anaesthesia technique were performed almost equally for upper (52.5%) and lower limbs (47.4%). In contrast, more PNB were performed as adjunct analgesia for lower limb (47.1%). Among many factors that might have contributed to a successful PNB, we found that self-reported technical difficulty was significantly associated with PNB outcome. We also detected 2.7% of immediate complications and no late complication were observed. All cases were done using aseptic technique with test method before injection of local anaesthetic agent. Overall, 81.0% of patients were satisfied with PNB received.

Conclusion: PNB services in UKMMC had high successful rate with good compliance to existing standard operating procedure. This study was a good exercise for further quality improvement.

Timing of Antibiotics Prophylaxis and Surgical Site Infections (SSI)

HUEY NEE NG, MING HAN LING, SIU MIN LIM, ZAINAL ABIDIN MF

University Malaya Medical Centre, Kuala Lumpur, Malaysia

Objectives: To assess the efficacy and compliance of a timely antibiotic administration antibiotic (within 60 minutes prior to surgical skin incision) educational campaign in reducing postoperative surgical skin infections (SSI).

Methods: This is an observational before (phase 1) and after (phase 2) study performed at University Malaya Medical Centre. Patients recruited were orthopedic cases involving implant insertions/removals from the semi-emergency trauma list. Patients with pre-existing infection and/or receiving regular antibiotics were excluded from the study. Control group (n=113) patients received antibiotic prophylaxis based on existing protocols with timing of administration subjected to knowledge and experience of the individual anesthetist. Treatment group patients (n=132) received antibiotic after an personal educational reminder to emphasize on timely administration of antibiotic prophylaxis. Timing of antibiotic delivery and incidence of SSI based on clinical findings were documented.

Results: There was no significant difference in incidence of SSI in patients who received prophylactic antibiotic within 60 minutes versus more than 60 minutes before skin incision (3.2% vs 7.3%, P = 0.174). Subgroup analysis revealed patient groups who received antibiotic prophylaxis within 30-60 minutes prior to skin incision had zero incidence of SSI which is statistically significant compared to those received antibiotic prophylaxis within 30 minutes or more than 60 minutes prior to skin incision (0% vs 6.7% vs 7.3%, P=0.0073) (boferroni correction significant if P<0.0083). There was a substantial improvement in compliance of timely prophylactic antibiotic administration in the Phase 2 post educational group within 60 mins (13.9 % vs 26.9%, p =.000).

Conclusion: Administration of antibiotics prophylaxis within 30-60 mins prior to skin incision is associated with significantly lower incidence of SSI.

Bilateral Mastectomy: Dispute of PCA Morphine vs Bilateral Erector Spinae Plane Catheters- Exploring Best Analgesic Management for Breast Cancer Surgery

DURGALAKSHMI NAIDU, WONG SHEE VEN, MOHAMED ASRI BIN MOHAMED ZAINI, NURAIMAN BINTI IMAM SUPAAT, NAWAL WAFA BINTI ABD RASHID, NUR ASIFA BINTI MOHD NASARUDDIN, ARIFF OSMAN, MUHAMAD RASYDAN BIN ABDUL GHANI

Sultan Ahmad Shah Medical Centre @ International Islamic University of Malaysia, Kuantan, Pahang, Malaysia

Objective: Surgical resection of the primary tumour with axillary dissection is a mainstream of breast cancer treatment. Many patients report moderate-to-severe pain post-operatively. Acute post-surgical pain can cause chronic pain, and, persistent use and over-prescription of opioids. The erector spinae plane block (ESPB) sufficiently blocks unilateral multi-dermatomal sensation from T1 to L3 and is a novel regional anaesthetic technique for effective analgesia after mastectomy, minimising opioid use.

Methods: We study the analgesic efficacy of bilateral ESPB with continuous infusions with a bilateral rectus sheath block (RSB) in a patient undergoing bilateral mastectomy and left axillary clearance for left invasive breast carcinoma and right breast ductal carcinoma-in-situ, and incisional hernia repair. We discuss recommendations and best analgesic management after mastectomy.

Results: The patient underwent ESPB using 20 ml of 0.2% Ropivacaine with catheter insertion bilaterally, and, bilateral RSB with 20 ml of 0.2% Ropivacaine after the induction of general anaesthesia. Post-operatively, she was extubated, did not require intensive care, required no rescue opioids, had good pain control, and successful early mobilisation. Post-operative PCA Morphine usage was only for 24 hours.

Conclusions: Regional anaesthesia for breast surgery reduces postoperative pain and opioid requirements, and, may be continued postoperatively using catheter techniques. The best analgesic technique for this patient could be PCA morphine alone, however, the combination of ESPB with continuous infusions, RSB and PCA morphine, provided excellent analgesia and allowed our patient to be discharged to the ward despite prolonged surgical hours. Patient experienced analgesic satisfaction, better night sleep, early ambulation and recovery. Although the gold

standard of analgesic techniques for bilateral mastectomy is bilateral Paravertebral Block, bilateral ESPB was performed as it is common in our centre. Despite the paucity of evidence, in the best hands, bilateral ESPB provided superior analgesia, as depicted in this case.

A Comparison of Thoracic Bioimpedance and Pulse Contour Analysis in Cardiac Output Monitoring in Critically Ill

GHAZALI AM[1], MAT NOOR MB[2], MAT RALIB AZRINA[2] RAMLY A[2]

[1]*International Islamic University Malaysia Kuantan Campus, Malaysia*
[2]*Sultan Ahmad Shah Medical Centre, Kuantan, Pahang, Malaysia*

Objective: Hemodynamic monitoring is an important tool in critical care unit and most have shidte using noninvasive cardiac output monitoring with good correlation with gold standard monitoring because of less complications. Latest invention of TBE has shown good result in multiple area but lacking in study with gold standard cardiac output monitoring. This study is to compare cardiac output monitorings between TBE with latest technology ICG and PiCCO in critically ill.

Methods: 23 patients required PiCCO were enrolled in this study. All patients were in septic shock with SOFA score of > 4. Cardiac output parameters were taken, at 4 intervals. Parameters taken were CO, CI, SV, SVi, SVR and SVRI. Correlation analysis done by using Pearson's correlation, mean difference was tested using paired t test and correlation between these two methods were tested using Bland Altman test.

Results: Pearson's r correlation coefficient showed significant results for SVR with R of R: 0.92 at 1 hour, 0.543 at 6 hour, 0.638 at 12 hour, and 0.551 at 24 hour (P value of <0.05). There was moderate correlation of stroke volume r: 0.426 with P value <0.005. moderation correlation seen in stroke volume index at stage 2 (R 0.383), stage 3 (R 0.504) and stage 4 (R 0.411) with stroke volume also showed moderate correlation at stage 3 (R 0.426) and stage 4 (R 0.411), even though both parameters showed no significant correlation. In mean difference, there were significant differences at stage 3 and 4 (p-value <0.05) in stroke volume index while Cardiac index only showed significant in difference in stage 4. Bland Altman showed discrepancy result between both tools and presence of bias.

Conclusion: All cardiac output parameters were statistically not significant except SVR. Haemodynamic parameters from Physioflow were not interchangeable with PiCCO

CASE SERIES/REPORT

Evaluation of Ambu® AuraGain™ as a Conduit for Intubation in Clinical Paediatrics - A Series Report Case

LIM SS, KEVIN WS NG, JAMAL AZMI I S, CHAW SH, ZAINAL ABIDIN MF, I I SHARIFFUDDIN

Department of Anaesthesiology, University of Malaya, Kuala Lumpur, Malaysia

Introduction: Management of a difficult airway in paediatrics is essential in the field of anaesthesia. The latest American Society of Anaesthesiologist (ASA) guidelines in 2013 for the management of difficult airway places the supraglottic airway devices (SGA) as an indispensable tool in the algorithm of managing failed intubation scenarios. Similar algorithms were published by the Difficult Airway Society, UK in 2015. The central approach in these guidelines is the utilization of the SGA as a means of maintaining ventilation while deciding to either abandon the procedure and wake up the child; to use the SGA as an alternative to tracheal intubation to maintain airway throughout the surgery; or attempting intubation via the SGA.The objective of this study is to evaluate the efficacy and safety of Ambu® AuraGain™ as a conduit for intubation in paediatrics.

Methods: After local ethics approval and inform consent from parents, a total of 16 patients aged between 3-12 years were recruited. Following induction of anaesthesia and insertion of the the Ambu® AuraGain™, fibreoptic guided intubation was performed via the SGA. The time taken to successful tracheal intubation was taken as the primary outcome. Secondary outcomes include number of attempts and the time required for insertion and removal of Ambu® AuraGain™, oropharyngeal leak pressures, fibre optic grading of glottic views, and complications.

Results: Overall success rate in regard to intubation was 87.5% (14 patients) with mean intubation time of 57 + 39.4 seconds. Successful first attempt intubations were achieved in 13 out of the 14 patients. Results shown easy removal of the Ambu® AuraGain™ device with mean SGA removal time of 27.2 seconds + 19.8 seconds. No major complications were noted throughout the study.

Conclusion: Ambu® AuraGain™ device can be considered safe and effective to be used as a conduit for intubation in paediatrics.

Spinal Anaesthesia for Obese Patient Undergoing Laparoscopic Surgery: Two Case Reports

WE TEO[1], KHAN MH[1], SC TEO[2]

Sarawak General Hospital, Kuching, Malaysia

Introduction: Subarachnoid block (SAB) has been done in laparoscopy for obese patients, avoiding complications of general anaesthesia (GA). We present two case reports of obese patients receiving SAB for laparoscopic surgery.

Case discription: Mr MA, 20-year-old, ASA 2 (BMI 35.4, height 165 cm, weight 96.5 kg, STOPBANG 3, bronchial asthma and smoker) and Mr CE, 25-year-old, ASA 2 (BMI 35, height 175 cm, weight 110 kg, STOPBANG 4), both underwent laparoscopic appendicectomies. Both received SAB at L3/L4 level with levobupivacaine 0.5% 4.0 ml and 4.2 ml for Mr MA and CE respectively. Both achieved block height at T2 level. IV midazolam was titrated to achieve sedation score of 1. IV fentanyl 50 mcg was given to pre-empt and treat shoulder tip pain (STP). Both surgeries started 10 minutes post-SAB.Mr MA's abdominal insufflation pressure and flow were 12 cm H2O and 6 L/min. Surgery completed in 20 minutes.

Mr CE's initial insufflation pressure and flow were 12 cm H2O and 6 l/min; however, pressure was increased to 14 cm H2O to improve surgical view. Surgery lasted 120 minutes as he had a perforated appendicitis. An abdominal drain was inserted. Both patients were stable intra-operatively. They were discharged from recovery with Bromage score 3 and pain score 0.

Subsequently, Mr MA was discharged on post-operative day (PoD) 1. Mr CE was discharged on PoD 3 after drain removal.

Discussion: Generally, SAB carries no risk of airway-related complications, and affords adequate muscle relaxation, reduces intraoperative bleeding and has more rapid return of gut function[3]. In obese patients, performing laparoscopy under SAB will potentially reduce intra- and postoperative respiratory complication. Nevertheless, SAB in laparoscopy carries its own risk which every anesthesiologist should anticipate.

Conclusion: SABs can provide adequate anaesthesia for laparoscopic surgery. It is a viable option in our anaesthetic armamentarium for managing laparoscopy in obese patients.

Continuous Bilateral Rectus Sheath Block as a Rescue Block Following Vertical Midline Laparotomy

SV WONG, M FAUZI I, C AINUN NI, M ASRI MZ, M ZULHILMI Z, NAJIBAH ZJ, M RASYDAN AG

International Islamic University Malaysia, Pahang, Malaysia

Introduction: Peripheral nerve block has been adopted in many ERAS protocol as part of opioids-sparing-analgesia. Block failure is unavoidable in the hand of beginners and it presents great challenge as patients might be in severe pain, half-sedated, compromising optimal positioning for a rescue block. Besides, the concerns about local anaesthetic systemic toxicity (LAST) with subsequent local anesthetic (LA) injections is elevated. Post-operative anticoagulant prophylaxis therapy also complicates timing of intervention for neuraxial anaesthesia and deep regional blocks.

Case description: We report a case of 33-year-old lady with Krukenberg tumour presented for a laparotomy TAHBSO. She underwent complicated operation with dense adhesion under general anaesthesia plus bilateral transversus-abdominis-plane block after failed attempts of epidural catheter insertion. 4 hours postoperative, patient experienced breakthrough pain requiring rescue opioids. Considering the risk of LAST for a rescue block, patient was started on patient-controlled morphine bolus with background infusion, and it was subsequently converted to patient-controlled fentanyl bolus with infusion in view of excessive sedation, nausea and ileus. Her opioids requirement remained high and hence on day-2 postoperatively, bilateral rectus sheath (BRSB) catheters were inserted for bolus dose of LA followed by continuous infusion. Her pain improved dramatically and opioids requirement was reduced to half. With better pain management, patient was then able to participate in physiotherapy and she started to ambulate and tolerate oral feeding on subsequent day. Fentanyl was off on day-4 and BRSB catheters were removed on day-6 without complications.

Conclusion: BRSB may play a valuable role as a rescue block as it can be easily performed in supine position, requires smaller LA volume and appears safer compared to neuraxial or deep regional technique during the anticoagulant therapy. Its potential beyond analgesic adjunct for umbilical hernia repair or laparoscopic procedures worth further exploration.

Ultrasound- Guided Continuous Interscalene Catheter Block – A Case Report

P KUMARAN, CK HOR, AK SAIFUL

Hospital Tuanku Ja'afar, Seremban, Malaysia

Introduction: Interscalene nerve block anesthetizes most of the territory innervated by the brachial plexus, sparing the inferior trunk (C8-T1).

Objectives: Describe the parts of the upper extremity that are anesthetized during continuous interscalene nerve blocks.
Outline the steps involved in performing an interscalene perineural catheter placement using ultrasound guidance.

Case description: We performed a case of GA with right continuous interscalene nerve block for a 61 years old gentleman, ASA 2, scheduled for wound debridement, removal of implant for chronic osteomyelitis of right shoulder with history of prosthesis insertion. With informed consent, patient was positioned supine with the head turned 30 degrees to the left side. C5, C6, C7 nerve roots (situated between the anterior and middle scalene muscles) were traced cranially from the supraclavicular fossa and any surrounding vessels were identified using colour doppler. Under aseptic technique and skin lignocaine 2% infiltration, 2.0 inch Tuohy 18 G needle was advanced gradually in downward, medial and posterior direction in-plane to the transducer assisted by hydro-dissection. 15 mls of 0.375% ropivacaine was injected in aliquots. Next, a catheter was placed through the Tuohy needle and placement was confirmed with ultrasound. The catheter was secured firmly via tunnelling through an immobile skin over the clavicular area. No intraoperative opioid was given. Post-operatively, connected to 0.1% ropivacaine infusion running at 3mls/hour.

Summary: The continuous interscalene nerve block covered most of the brachial plexus providing coverage of shoulder, and proximal humerus hence preventing intraoperative and postoperative opioids administration and reduced recovery time as a whole. Pain score post op was consistently less than 4.

Conclusion: Continuous interscalene nerve block for the management of intraoperative and postoperative pain associated with painful shoulder procedures provided us with a useful case report, highlighting the various prerequisites for a successful rollout of a new modality.

Ultrasound-guided Continuous Erector Spinae Plane Block (ESPB) For Pain Control In Open Nephrectomy – A Case Report

MJ LEE, A LIM, SA KESUT

Hospital Tuanku Ja'afar, Seremban, Malaysia

Introduction: Despite being a recently defined block, erector spinae plane block (ESPB) is an upcoming interfascial plane block due to its ease of application and safety profile. In this case study, we report of its analgesic use for open left nephrectomy through anterior subcostal incision for renal cell carcinoma in a 57 years old ASA II gentleman. Sensory block was provided by the ESPB performed at T7 level as the local anaesthetic spread 3 to 4 levels cranially and caudally.

Objectives: Outline the steps involved in performing ESPB with catheter placement under ultrasound guidance.
To assess postoperative pain control with continuous ESPB.

Case description: With informed consent, patient was placed in the right lateral position. Under aseptic technique, T7 spinous level was located using a high frequency ultrasound transducer placed in the parasagittal plane, then moved laterally to visualize the transverse process (TP) and erector spinae muscle (ESM). After skin infiltration with lignocaine 2%, a Contiplex® Tuohy Ultra 18G 100 mm needle was inserted superior to the transducer and advanced gradually in posteroinferior direction in-plane to the transducer. Once the needle tip was seen below the ESM, hydrodissection from TP confirmed the needle placement and 20 mls of ropivacaine 0.375% was administered in aliquots, followed by a 20G catheter placement through the needle, with 4 cm of the catheter in the space, targeting the dorsal and ventral rami of the spinal nerves.

Postoperatively, ropivacaine 0.2% infusion was started running through the catheter at 6 mls/hour and regular oral paracetamol, celecoxib and tramadol was prescribed. No opioid was required. Patient's pain score was consistently below 4.

Summary: Continuous ESPB provided effective postoperative pain control without requiring opioid rescue, which resulted in a satisfied patient with enhanced recovery time and reduced length of hospital stay.

Conclusion: Continuous ESPB provided effective opioid sparing pain control for open nephrectomy surgery.

Anaesthetic Considerations For Caesarian Section of a Clinically Marfanoid Parturient with Dissecting Aortic Aneurysm (Standford A) and Severe Aortic Regurgitation – A Case Report

S THANESH KUMAR, M HASMIZY, S HANAFI, B SITI BAIDURI

Jabatan Anestesiologi dan Rawatan Rapi, Pusat Jantung Sarawak, Kota Samarahan, Sarawak, Malaysia

Introduction: Aortic aneurysm dissection is an uncommon pathology with a tendency to worsen during pregnancy, especially in a parturient with Marfans syndrome or other connective tissue diseases. Although rare, the possibility of a rupture or leak may potentially be fatal to both mother and fetus.

Case description: We present a case of a healthy parturient, gravida 3 para 2, at 37 weeks, with no previous medical or surgical history, with an incidental finding of an aortic aneurysm with aortic dissection (Standford A), severe aortic regurgitation, and a newly clinically diagnosed Marfans syndrome. A multidisciplinary intervention team was warranted, as the risk of an impending aneurysmal rupture or leak posed a looming threat as the gestation progressed. A myriad of management issues and careful planning was required especially in the setting of an ongoing pandemic. The elective or emergency nature of the complications, timing and method of delivery, role of corrective surgery, feto-maternal monitoring, patient education, logistical, equipment, support staff, method of anesthesia, and the possibility of a maternal collapse were all addressed respectively. The core objective of the multidisciplinary task force was to achieve the best feto-maternal outcome, while mitigating and preparing for the catastrophic possibilities that might ensue.

Conclusion: The management of an aortic dissection during pregnancy is multifaceted and requires a multidisciplinary task force to ensure the best feto-maternal outcome.

The Critically Ill Patient with Eisenmenger Syndrome: A Case Report

MX LIM[1], ABDUL JABBAR ISMAIL[2]

[1]Department of Anaesthesia and Intensive Care Unit, Hospital Queen Elizabeth, Kota Kinabalu, Sabah, Malaysia
[2]Department of Anaesthesia and Intensive Care Unit, Hospital Queen Elizabeth 2, Kota Kinabalu, Sabah, Malaysia

Case description: Eisenmenger syndrome (ES) – the most advanced form of pulmonary arterial hypertension associated with congenital heart disease – has become rare due to advancement in perinatal care. ES is a challenging condition to manage. This is further compounded if the patient were critically ill and acutely decompensated, warranting multidisciplinary management in centers with expertise, which may not be readily available at times. From the initial assessment and management upon patient's presentation to subsequent critical care in Intensive Care Unit (ICU), it is a challenging and dynamic process due to the patient's ever changing hemodynamic status and fragile physiology. As of date, there are no clear guidelines on the ideal therapies for pulmonary arterial hypertension in a critically ill patient with ES, where systemic hypotension is concurrently present. This case report presents our experience in managing a critically ill adult patient with ES secondary to ventricular septal defect, who presented in acute decompensation and cardiogenic shock precipitated by infection. Our aims were to treat the precipitating factor, optimizing the right ventricular preload (RV), reducing the RV afterload, improving RV contractility, and preserving perfusion pressures. It also highlights the complexity of management of the pulmonary arterial hypertension with concurrent systemic hypotension requiring vasopressor therapy.

Successful Suprainguinal Fascia Illiaca Block For Surgical Anaesthesia of Hip Surgery

MF IBRAHIM, NL SAAD, SV WONG, SA ABDUL RAHIM

University Islam Antarabangsa Malaysia, Kuantan, Malaysia

Introduction: Suprainguinal Fascia Illiaca Block is unpopular choice for anaesthesia of hip surgery. Deep nerve block such as neuroaxial and lumbar plexus nerve block are much more common due to difficulty to attain relief of selective hip pain. However, these nerve blocks might not be feasible in patients with certain comorbidities such as spine and cardiovascular disease. The nerve block result in blockade of femoral nerve, lateral femoral cutaneous nerve and obturator nerve. Suprainguinal approach may result in a more proximal spread, hence more efficacious analgesia for hip surgery.

Case description: We reported three successful cases of suprainguinal fascia iliaca nerve block use as anaesthesia technique supplemented with monitored anaesthesia care. The patients in our report had multiple comorbidities at which general anaesthesia and neuraxial nerve block might not be feasible. All patients presented with neck of femur fracture and underwent proximal femoral nail insertion. The first patient had lung adenocarcinoma with spine metastases and the second patient had severe aortic stenosis. The third case was a patient with hypertensive heart disease and obesity. We perform the surgeries using fascia illiaca block by suprainguinal approach under ultrasound guidance using 40 mls of lignocaine 0.5%. Catheter was inserted during the procedure and further 10 mls of levobupivacaine were given after 1 hour. All surgeries were supplemented with dexmedetomidine infusion and boluses of ketamine. Postoperatively, all patients were started on levobupivacaine infusion 0.1% at 10 mls/h for the analgesia. The surgeries were performed successfully with adequate sensory block around the hip region, and we recorded good postoperative pain control.
The benefit of this technique extends beyond adequate pain relief but also allow minimal cardiovascular and respiratory interference. We concluded that ultrasound-guided superficial fascia iliaca nerve block is an effective anesthetic technique for patients undergoing surgery for fracture of the neck of femur.

Pulmonary Arteriovenous Malformation (PAVM) in Remote Anaesthesia

NM ISMAIL, YT LIOW, JL KHAW, SP NG, CY YONG

Department of Anesthesiology & Intensive Care, Hospital Pulau Pinang, Pulau Pinang, Malaysia

Case description: This is a 61 year-old female, diagnosed to have PAVM 5 months back, presented with dyspnoea. Chest x-ray showed increased bronchovascular markings at right lower zone. CTPA revealed arteriovenous malformations in the right lower lobe. She has physical status ASA III, with bronchial asthma, coronary arterial disease and chronic rheumatic heart disease with moderate mitral stenosis. She was planned for right PAVM embolization under general anaesthesia. Total intravenous anaesthesia (TIVA) was used to avoid the inhibition of hypoxic pulmonary vasoconstriction by inhalational anaesthetics.

She was preoxygenated and induced with targeted controlled infusion (TCI) remifentanil 2 ng/ml and TCI propofol 4 mcg/ml and followed by rocuronium 1 mg/kg. Intraoperatively, anaesthesia was maintained with TCI propofol 2-3 mcg/ml and TCI remifentanil 1-2 ng/ml. Hemodynamic parameters were maintained with 20% of baseline. Her oxygen saturation (Spo2) prior to procedure was 93%. During the procedure, Spo2 varied between 92-94% with Fio_2 of 0.6. Ventilation was maintained with tidal volume of 6 mls/kg to prevent the rise in airway pressure. The procedure lasted for 170 minutes. During manipulation to deploy the vascular plug, there was small amount of blood-stained secretion in the endotracheal tube which resolved with single attempt of suctioning. There was no other complication and she was transferred to CICU for controlled extubation. She was extubated on the next day and weaned to nasal canula. Finally, she was discharged on the second post-procedural day with her baseline oxygen saturation.

Conclusions: Device embolization is the mainstay treatment in majority of the patients and is safe compared to surgical excision which posed more risks and challenges in patient with multiple comorbidities. We have shown in this case that TIVA is an excellent choice compared to other normal anaesthetic agents. A basic knowledge of this rare condition and its anaesthesia considerations are important in providing a safe and effective anaesthesia.

Embolization of Right Lingual Arteriovascular Malformation

M DING, CL WONG, CY YONG, SP NG

Department of Anaesthesia & Intensive Care, Penang General Hospital, Malaysia.

Case description: We report a case of a 76 year old lady who presented with hemoptysis and further workup revealed the diagnosis of right lingual arteriovascular malformation (AVM). As patient refused for surgical excision, palliative embolization of the right lingual AVM under interventional radiology was planned. With anticipation of airway oedema post embolization, tracheostomy was done one day prior to the procedure. The airway was secured with awake fiberoptic intubation prior to tracheostomy. The following day, superselective artery embolization of the right lingual artery and right ascending pharyngeal arteries were successfully performed. Unfortunately, the patient sustained an right partial anterior circulation infarct after recovery from anaesthesia. She was started on single antiplatelet therapy and neurorehabilitation therapy was initiated. Over the next few days, she had no further haemoptysis episode and had gradual recovery of her neurological symptoms.

Discussion: AVM are usually asymptomatic and remain undiagnosed until later age when patients present with complications such bleeding, pain and ulceration. Multimodal treatment, including preoperative embolization and complete surgical resection is necessary for the management of AVMs.

Conclusion: This case presents the challenges in establishing diagnosis and emphasized on the importance of multidisciplinary approaches with regards to the treatment of AVMs. Anaesthetic planning for AVM requires careful discussion with patient, surgeon and interventional radiologist. In this case, endovascular embolization is shown to be effective and a safe adjuvant to surgical resection. Despite the neurological complication in this case, majority of the studies revealed that it can be performed with a high success rate and a low rate of permanent neurologic complications.

Delayed Respiratory Depression Following Intrathecal Opiod in a Parturient with Short Stature

ANASTASIA J LIM, M ROHISHAM Z ABIDIN, CP LEE

Department of Anesthesiology and Intensive Care, Hospital Tengku Ampuan Rahimah, Klang, Malaysia

Introduction: Literature on anesthetic management of parturients with short statute is limited. However, it is listed as an indepedant antenatal risk factor for cephalopelvic disproportion and hence for Caesarean delivery. In this case, we report a delayed respiratory depression following administration of intrathecal Morphine for Caesarean delivery in a parturient with short stature.

Case description: A 29-year-old para 3 Burmese lady with an antenatal history of gestational diabetes, chronic hypertension and short stature with a height of 139 cm and weight of 63 kg underwent Caesarean delivery for fetal macrosomia. She was given a subarachnoid block with intrathecal Fentanyl 15 mcg, Morphine 100 mcg and Hyperbaric Bupivacaine 0.5% with a total volume of 2.0 ml. 5 hours following the operation, she was found to be unconscious and bradypneic. The patient was immediately put on supplemetal oxygen and given titrated doses of IV Naloxone up to 0.4 mg which resulted in improvement of her consciousness and resolution of symptoms.

Conclusion: Although intrathecal Morphine has definitive benefits in obstetrics, a dose reduction or omission should be considered in parturients with a short stature. Mandatory respiratory monitoring should be done for the first 24 hours and adequate resuscitation facilities should be available.

Continuous Spinal Anaesthesia in an Elderly Undergoing Open Gastrojejunostomy and Colostomy – A Case Report

CHC CHONG, MHKH KHAN, SC TEO

Sarawak General Hospital, Kuching, Malaysia

Introduction: Continuous spinal anaesthesia (CSA) is an underutilized technique in modern anaesthesia practice. Notable complications are post-dural puncture headache (PDPH), and cauda equina syndrome which was reportedly seen with usage of microcatheters. There are studies mentioning thoracic CSA being used for abdominal surgeries in high-risk patients.

Case description: We here describe a case report of a lumbar CSA performed on an elderly gentleman who underwent a midline laparotomy. A 76-year-old male presented with obstructed synchronuous duodenal tumour and anorectal carcinoma. He underwent an emergency open gastrojejunostomy and colostomy under CSA using a standard epidural set (BBraun Perifix 401), inserted at L3/L4 level. Spinal injectate was isobaric levobupivacaine 0.5%. An initial volume of 3 ml was given, achieving a block height of T2. Subsequent injectates of 1ml were given 30, 90 and 100 minutes after initial dose. Hypotension was treated with ephedrine, phenylephrine infusion and fluids boluses. Throughout surgery, which lasted 200 minutes, he received propofol 1% for sedation which was infused using target controlled infusion (TCI) propofol Schnider algorithm to achieve RASS -1 to -2. At the end of surgery, the spinal catheter was removed. Postoperatively, he received patient-controlled analgesia (PCA) fentanyl, in addition to paracetamol and tramadol. Pain score was 2 from Postoperative Day (PoD) 1 to PoD3, hence discharged from our acute pain service. He neither developed any residual paraesthesia, PDPH nor symptoms of cauda equina syndrome.

Conclusion: CSA is a viable and safe technique for laparotomy, particularly in high-risk elderly patients, avoiding the complications of general anaesthesia.

Ceftriaxone-induced Liver Injury: A Case Report

PPC LOW, GH SIEW, MY KIING

Hospital Miri, Sarawak, Malaysia

Introduction: Ceftriaxone is a commonly used broad-spectrum third generation cephalosporin for systemic infection empirically especially in the Intensive Care Unit (ICU). The objective of this case report is to highlight the rare complication of ceftriaxone-induced liver injury to ensure early diagnosis and prompt cessation of ceftraixone in highly suspicious cases. Drug induced liver injury (DILI) is a disorder whereby administered drug causes liver damage and occurs shortly after exposure. In the past, there were a few cases of reported raised liver enzymes caused by ceftriaxone.

Case description: This case study reports a 14-year-old girl with underlying Type 1 Diabetes Mellitus who was admitted for Diabetes Ketoacidosis (DKA) secondary to infective gastroenteritis. She was treated empirically with Ceftriaxone and developed an unexpected deranged liver function test. Her jaundiced appearance and hepatomegaly prompted a thorough investigation of the cause of the sudden acute liver injury. Upon ruling out infective and autoimmune causes, this further established the diagnosis of ceftriaxone-induced liver injury. Ceftriaxone was immediately witheld with high suspicion of the ceftriaxone-induced liver injury and she was started on a course of N-acetylcysteine (NAC). She was subsequently discharged home well and her liver function test normalised in 3 months' time.

Conclusion: Early recognition of drug-induced liver injury is important and prompt cessation of the offending drug is recommended.

Anaesthetist Nightmare; Suspected Malignant Hyperthermia in a Girl with Perforated Appendicitis, a Case Report

AISYAH FITRIAH, NUR DIYANA, NUR FARHANAH, RAHIMAH H, SHAHNAZ MN, ZAYUAH MS

Hospital Sultan Haji Ahmad Shah, Temerloh, Pahang, Malaysia.

Introduction: Malignant hyperthermia is a rare but life-threatening syndrome occurs in patient with genetically susceptible when exposed to suxamethonium and almost all volatile anaesthetic agents.

Case description: In this case report we share our experience in treating an otherwise a healthy Malay female child age 8 years old. She was admitted into our hospital for perforated appendicitis and emergency operation was done. However after an hour into the operation, she developed malignant hyperthermia syndrome i.e. tachyarrhythmia (heart rate up to 200 bpm), hypercarbia (ETCO2 above 160 mmhg), hyperthermia rapidly elevated from 36.5°C to 40°C and 42°C. After operation concluded, surgical drape removed and noted patient had generalized rigidity bilateral upper and lower limb with mild arching of the back. The diagnosis of malignant hyperthermia is suspected and treatment immediately initiated according to dantrolene protocol. Post operation patient admitted to ICU for further stabilization and management. She became acutely ill with worsening metabolic and lactic acidosis, rhabdomyolisis and acute liver failure. Subsequently general condition improving with aggressive treatment, patient able to be extubated well on day 4 of ICU admission. She then reviewed at clinic 2 months later, general condition was very good with CK and liver enzyme reaching near normal value. Renal profile was normal. Patient discharged from anaesthesia clinic after second visit. In conclusion, rapid recognition and management of malignant hyperthermia is important to avoid lethal complications. Fortunately with the help of multidisciplinary team effort, we manage to salvage this child and eventually she was able to be discharged back home safely.

Total Pain Concept in Cancer Management: A Case Report

N NAGARAJAN[1], MZ SHAZHARN[1], KM RAJESH[2]

[1]Department of Anaesthesiology and Intensive Care, Hospital Queen Elizabeth, 88450 Kota Kinabalu, Sabah.
[2]Faculty of Medicine and Health Sciences, University Malaysia Sabah, Jalan UMS, 88300 Kota Kinabalu, Sabah.

Introduction: Pain Concept is a holistic pain management concept. This concept involves physical, psychological, social and spiritual assessment, which will influence the treatment. This is a case report of a woman with a successful treatment using the Total Pain Concept.

Case description: A 58-year-old lady was diagnosed with Stage 3 Breast Carcinoma. She had undergone 6 cycles of chemotherapy, and was planned for mastectomy with lymph node clearance. However, her condition deteriorated after the chemotherapy, and plans for surgery was postponed. She was referred to our Pain Clinic for pain management. We practiced Total Pain Management for her during her visits.

Discussion: Physical Pain: She presented to our Pain Clinic complaining of severe pain over her chest area, with a pain score of 9/10. The pain was consistently there all the time. There was no aggravating or relieving factors. We started her on oxycodone and pregabalin, based on the WHO analgesic ladder. Psychological Pain: She was initially in denial regarding her diagnosis. Regular family consultations were done with the Palliative Unit. The Pain Clinic also had regular family meetings. Social Pain: She was very active socially previously. After her pain, she was unable to meet her friends. However, we encouraged her to continue her daily activities. Her friends started their visits, and it helped a lot. Spiritual Pain: She is a very spiritual person, being married to a church pastor. Her sources of strength were her family and her church. After several appointments with her husband in our Pain Clinic, we were able to assist her to have a stronger spiritual support.

Conclusion: Several months later, the patient passed away, pain free. This was a successful management of pain using the Total Pain Concept. We recommend this method to be used to manage patients with severe cancer pain.

A Dual Injection Approach with Ultrasound-Guided Superior Trunk Block and Erector Spinae Plane Block for Complex Scapular Surgery - A Case Report

MN FATHIN, KW TAN, AK SAIFUL, A ANITA

Hospital Tuanku Ja'afar, Seremban, Malaysia

Introduction: Most scapular surgery is complex and done under General Anaesthesia (GA) with or without regional anaesthesia technique as an adjunct. Since scapular innervation is complicated, we performed a dual injection technique with superior trunk block and erector spinae plane block prior GA for a 23 years old gentleman, ASA 1, undergone plating of left scapular comminuted fracture.

Objectives: Analgesic efficacy of these blocks by assessing postoperative pain score (VAS). Postoperative 24 hours cumulative opioid consumption by using patient-controlled analgesia (PCA) morphine.

Case description: With informed consent, patient was placed supine with head tilted to left side, ultrasound guided superior trunk block was performed by identifying superior trunk (C5, C6) of the brachial plexus which located within the interscalene groove and traced distally to where they coalesced into the superior trunk. Under aseptic technique, 15 mls of 0.375% ropivacaine was injected by using Stimuplex® Ultra 360® 22 G 50 mm followed by Erector Spinae Plane (ESP) block which was performed at level of T2 with 20 mls of 0.375% ropivacaine given. Patient induced under GA with tracheal intubation and standard monitoring. No intraoperative opioid was given. Post-operatively, assessment of VAS and cumulative opioid consumption were recorded for 24 hours. Patient was given oral paracetamol 1 g 6 hourly and oral tramadol 50 mg 8 hourly postoperatively.

Summary: The dual injection approach with superior trunk block and ESP block provided satisfactory postoperative analgesia over shoulder and scapular region. Postoperative pain score was satisfactory with VAS less than 4 and total consumption of 5mg morphine in 24 hours.

Conclusion: For scapular surgery, combinations of blocks are required in view of the complex innervations of the surgical field. Dual injection technique has been described and provided satisfactory coverage for postoperative analgesia. In the future, continuous infusion via catheter can be considered

Case Series Preoperative PENG Block: Painless Positioning during Spinal Anaesthesia for Hip Surgery

ANAS ABDULLAH, KOMELLA PRAKASAM, MB ARIF, KB YAP, MUZAFFAR MOHAMAD, DELIMA HASAN, MUZLIFAH KB, SAIFUL AIZAR

Department of Anaesthesiology, Hospital Tuanku Ampuan Najihah, Kuala Pilah, Malaysia

Introduction: Hip fracture is common in the elderly and the majority of them require surgical fixation. Based on the National Orthopedic Registry Malaysia (NORM), spinal anaesthesia makes up 66.3%, is the preferred mode of anaesthesia. The challenge lies in positioning the patient in sitting or lateral position during the procedure which is limited by pain. The PEricapsular Nerve Group (PENG) block has been used as an excellent analgesic option for positional pain during spinal anesthesia. It has opioid-sparing effects and reduces opioid-related adverse effects. The objective of this study is to assess the efficacy of PENG block by comparing pain scores and ability to sit unsupported when performing spinal anaesthesia. Pain was assessed using Numerical Rating Scale at rest and on movement, before and after the PENG block.

Case description: We report a series of ten patients who received PENG blocks to reduce the intensity of pain during positioning. The block was administered under ultrasound guidance with a curvilinear probe locating the iliopubic eminence, iliopsoas tendon and femoral artery. Stimuplex needle (either 50 mm or 100 mm) 22 G was advanced beneath the iliopsoas tendon from lateral to medial approach and 20 mls of Ropivacaine 0.375% was injected. All 10 patients showed reduction in NRS and were able to sit up during spinal anesthesia. Some could remain seated independently without support.

Conclusion: The results show a significant reduction in pain, which translates to optimal positioning and thus improved success rate for spinal anaesthesia. PENG block could be considered as a routine analgesia for hip fracture patients.

PRES in an Eclamptic Patient with Viral Pneumonia

WS NG, KOMELLA PRAKASAM, KB YAP, MUZLIFAH KB, SAIFUL AIZAR

Department of Anesthesiology, Hospital Tuanku Ampuan Najihah , Kuala Pilah, Malaysia

Introduction: Posterior Reversible Encephalopathy Syndrome is a rare, potentially reversible disorder associated with acute hypertension.

Case description: We present a case report of a 30-year-old lady, 34 weeks into her pregnancy, who developed PRES after presenting with viral pneumonia and underwent a near full recovery after 2 months. The patient was admitted for stabilisation of high blood pressure and pneumonia. She was subsequently intubated following a period of desaturation and drop in GCS. We proceeded with an emergency lower segment caesarean section in view of high ventilator settings. Postoperatively while still intubated, she developed an eclamptic fit in the ICU and was treated for eclampsia. CT Brain showed PRES and multifocal lacunar infarcts. She was cared for in our ICU for a period of three weeks due to slow GCS recovery and slow weaning off the ventilator. Upon discharge from hospital, she had aphasia and generalised motor weakness, requiring nasogastric tube feeds. Two months later, during clinic follow up, her GCS was full and she was able to ambulate with a walking frame, requiring minimal assistance with feeding and bathing. The mortality risk of PRES is 15%. Despite its name, it may not be reversible in all cases and has a wide spectrum. The treatment of PRES is symptomatic since no specific therapeutic strategy is currently available. The management of the underlying disease or pathology leading to PRES development is of major importance.

Conclusion: PRES is usually associated with good recovery; however neurological sequelae may persist. Early imaging and prompt treatment is crucial for a good long-term outcome.

Thoracic Epidural Anaesthesia for Emergency Abdominal Surgery in a High Risk Patient: A Case Report

NANTHINI JOOTHEVELOO, KOMELLA PRAKASAM, KB YAP, MUZLIFAH KAMARUL BAHRIN, SAIFUL AIZAR

Department of Anesthesiology, Hospital Tuanku Ampuan Najihah , Kuala Pilah, Malaysia

Introduction: Thoracic epidural regional anaesthesia and its role in postoperative analgesia is effective to reduce pain and attenuate metabolic responses that result in organ dysfunction. However, its use as a sole anaesthetic technique for abdominal surgery is limited.

Case description: We present a case of a 72-year-old patient, ASA III who underwent abdominal surgery twice under thoracic epidural as sole anaesthetic. This gentleman presented with type 1 respiratory failure and was at high risk for general anaesthesia in view of possible lung malignancy, massive pleural effusion and an endoluminal mass in his trachea but required emergency abdominal surgery. A bolus of normal saline was administered, and low dose inotropic support was initiated preemptively prior to procedure. Epidural catheter was placed at the T10/11 using a midline approach. Epidural boluses were titrated to achieve anaesthesia from T4 to T12. Sensory and motor blockade were assessed by a pinprick test and the Bromage scale respectively. Midline laparotomy, release of fibrotic band, enterotomy, bowel decompression, appendicectomy and left hernioplasty was done successfully without need for additional analgesia. The patient was discharged home on post-op day 7. The same patient underwent re-laparotomy, wound debridement, closure, and diversion sigmoid colostomy under thoracic epidural anaesthesia for the second time a week later.

Conclusion: Carefully selected cooperative patients can be offered the option of TEA when risks of GA are high, particularly in patients with malignancies and advance directives for resuscitation. Thoracic epidural anaesthesia is a viable option for abdominal surgery.

Videolaryngoscopy as an Adjunct for Lateral Decubitus Position Laryngoscopy

JS NG, PEGGY CHEANG

Hopsital Raja Permaisuri Bainun, Ipoh, Malaysia

Case description: This case report highlights the use of videolaryngoscope as an adjunct for securing an airway in a suboptimal position which is lateral decubitus position (LBP). An ASA II patient presented for an orthopedic procedure of the lower limb. Induction of general anaesthesia proceeded smoothly and airway was secured with laryngeal mask airway (LMA). However, surgeon required a change of supine position to lateral position for optimal operative condition. After changing to lateral position, there was a massive leak of the LMA and trial of reinsertion of different sizes of LMA proved to be unsatisfactory. The patient was intubated with videolaryngoscopy in lateral position without turning back to supine. The case report discuss the benefits of using videolarygoscope in intubating in lateral position such as patient do not need to reposition supine that prolong anaesthesia time and clear vocal cord structure visualise comparable to supine.

Awake Self-prone in Covid-19 Pneumonia: A Blanket Rule for All?

ALIZA MOHAMAD YUSOF, MOHD NIZAM MOKHTAR, SAW KIAN CHEAH, WAN RAHIZA WAN MAT, AZARINAH IZAHAM, RUFINAH TEO, NADIA MD NOR, RAHA ABDUL RAHMAN

University Kebangsaan Malaysia Medical Center, Kuala Lumpur, Malaysia

Introduction: Awake self-prone positioning has gained popularity in improving oxygenation in patients with Covid-19 pneumonia, despite its effect which wears off when returned supine. It is proven to be safe; however, the choice of patient and monitoring of response during self-prone is vital to avoid self-inflicted lung injury.

Case description: A 68-year-old man diagnosed with Covid-19 pneumonia, developed progressive hypoxia on day 7 of illness. Although saturation of 90% on room air, he was not breathless, and the CT-thorax showed minimal ground-glass densities suggesting the early stages of pneumonia. His oxygenation improved with awake self-prone positioning, and oxygen delivered via a non-rebreather mask in the intensive care unit (ICU). Intravenous dexamethasone and two doses of IL-6 inhibitor were administered to address the cytokine release syndrome (CRS). Oxygenation remained stable with an average duration of 6 hours per day of self-prone position, and the patient was discharged on day 8 of ICU admission.

Discussion: Severe hypoxaemia in early Covid-19 pneumonia occurs because of pulmonary vasoplegia and hyperperfusion of under-ventilated alveoli, occluded by thick and fibrinous sputum. The prone position promotes postural drainage, reduces atelectasis, decreases intrapulmonary shunt, and hence improves oxygenation. However, this improvement is temporary, as observed in our patient once he turned supine. The self-prone intervention is a supportive measure that acts as a bridge, before implementing other definitive treatment in Covid-19, such as steroids and IL-6 inhibitors for CRS in this case. Awake self-prone is safe, but not everyone will benefit from the manoeuver. The patient who remains tachypnoeic in the prone position risks potential exacerbation of lung injury due to self-inflicted injury. Therefore, patient selection and monitoring of response is essential during the awake self-prone position.

Anaesthesia For Tracheal Resection Of Tracheal Adenoid Cystic Carcinoma: A Case Report

BW TAN[1], ZAINAL ABIDIN MF[2], KS YAP[1]

[1]Department of Anaesthesiology, University Malaya Medical Centre, Kuala Lumpur, Malaysia
[2]Department of Anaesthesiology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

Introduction: Tracheal resection for a tracheal tumour is a relatively rare procedure. It poses many challenges to the anaesthesiologist with regards to the conduct of anaesthesia.

Case description: We describe a case of a 27 years old lady who was diagnosed with adenoid cystic carcinoma of the trachea. CT neck and thorax showed tracheal lesion at C7-T1 vertebral level, occupying >50% of the endotracheal lumen. The tracheal mass was 2 cm in length with 3 cm distance between the upper margin and the vocal cord. An elective tumour debulking was done until >90% of the lumen was patent 4 days prior to the tracheal resection. A hybrid method for intubation, utilizing CMAC video laryngoscopy to visualize vocal cord and fibreoptic guided endotracheal tube (ETT) advancement into the trachea was performed to avoid direct injury to the tumour during intubation. She was maintained on total intravenous anaesthesia (TIVA) of propofol and remifentanil and depth of anaesthesia was guided by bispectral index (BIS). After the tracheal rings were resected, an armoured ETT was placed in the distal trachea and cross field ventilation established using a second GA machine. A sterile connection was constructed using multiples of Great Group Medical. Co HME flex tube as an extension. This modified extension provided a stable connection to the ETT over the surgical field. Once anastomosis of the posterior wall was done, the distal ETT was removed and proximal ETT was re-introduced beyond the anastomosis line. Completion of the anterior wall anastomosis was subsequently performed. At the end of surgery, neuromuscular blockade was reversed with sugammadex and she was extubated deep with her neck in flexed position to prevent tension over the anastomotic sutures.

Conclusion: Preoperative multidisciplinary team briefing is pivotal in this complex surgery. A thorough understanding of the steps of operation is required to execute a meticulous perioperative anaesthetic plan.

Chronic Haemorrhagic Pericardial Effusion Presented with Cardiac Temponade Succesfully Treated with Echocardiography-guided Pericardiocentesis. A Case Report

I IQBAL, MB ARIF, SP KOMELLA ANNE, KB MUZLIFAH

Hospital Tuanku Ampuan Najihah, Kuala Pilah, Malaysia

Introduction: Cardiac Temponade is an acute condition which is potentially life threatening if left untreated. Prompt recognition and treatment are essential for a more favourable outcome.Pericardiocentesis is one of the quickest yet effective options in treating cardiac temponade. Echocardiography-guided pericardiocentesis has gained its popularity due to its availability in critical care setting, provide guidance for catheter placement as well as reducing rate of complications.

Case description: A 61 year old previously healthy lady presented to our intensive care unit with typical signs and symptoms of cardiac temponade (Beck's triad, tachycardia, pulsus paradoxus). Bedside transthoracic echocardiography revealed a massive pericardial effusion with a temponade effect (right ventricle systolic collapse, right ventricle diastolic collapse, left shifted intraventricular septum). We decided to perform pericardiocentesis after obtaining and informed consent. Patient was put on non invasive ventilation and intravenous ketamine was given as light sedation. Pericardiocentesis was done using 16G angiocatheter subxiphoid approach with echo-guided in apical 4-chamber view. Haemorrhagic pericardial effusion was aspirated. A controlled aspiration was done with echocardiography and after 750 ml of aspiration, there was marked improvement clinically. There was also resolution of temponading effect from echocardiogram. We did not attempt to drain the effusion completely since it can lead to pericardiocentesis decompression syndrome. The pericardial effusion was drained gradually every eight hours since it was massive and most probably a chronic effusion. After 2 days in ICU, total drained was 2300 ml. CT thorax was done on day 3 and it showed right lung mass with possible lung cancer with minimal residual pericardial effusion. The patient was safely discharge after 1 week in hospital and was referred to Institute Kanser Negara for further management. In conclusion, echocardiography is a useful bedside equipment while performing pericardiocentesis due to its advantages.

The Grey Lady

SM WONG, I ABDUL RAHIM, K LIM

Hospital Pulau Pinang, Pulau Pinang, Malaysia

Introduction: Congenital methaemoglobinemia is a rare genetic condition caused by diminished enzymatic reduction of methaemoglobin to functional haemoglobin. Although generally asymptomatic, patients with the genetic form have a higher risk of developing the acquired form which is commonly induced by specific drugs, chemicals or food. The resulting reduction of the oxygen-carrying capacity of circulating haemoglobin can lead to tissue hypoxia and potential death.

Case description: We describe the management of a 36 year old Gravida 3 Para 2 foreigner with undiagnosed congenital methaemoglobinemia who presented for emergency caesarean section due to fetal distress. A quick pre-operative assessment revealed two previous uneventful caesarean section and an unremarkable medical history. Her vital signs were stable although the ward staffs had experienced difficulty in getting a SpO2 reading on the pulse oximeter which they attributed to machine error. Patient appeared clinically well and comfortable and her routine blood investigations were normal. In view of the urgency, we proceeded with surgery under spinal anaesthesia. Intra-operatively, patient's pulse oximetry showed low SpO2 readings between 56-60% despite being clinically asymptomatic. During sampling for arterial blood gas, her blood was noted to be chocolate-coloured and her arterial PaO2 was normal. A repeat sample was sent for analysis with the multiple wavelength co-oximeter which revealed that her methaemoglobin levels was 7.5%. The surgery was uneventful, and post-operatively, patient was admitted to ICU for further management and investigation of her methaemoglobinemia. Her newborn was intubated and admitted to NICU due to cyanosis was later found to have methaemoglobinemia as well. Genetic studies revealed both mother and baby have autosomal dominant alpha type congenital methaemoglobinemia.

Obstacles of Continuous Peripheral Nerve Block in Physiotherapy

SALMAN BJ, ZAKI S, AFIF H, YH SAW, MF IBRAHIM, M RASYDAN AG, F NADIA MH

International Islamic University Malaysia, Pahang, Malaysia

Introduction: Perineural local anesthetic infusion also known as continuous peripheral nerve blocks (PNB), is a technique of providing analgesia for multiples days or even weeks by administrating local anesthesia via catheter following insertion of a catheter to peripheral nerve. The technique has beenapplied to different body regions for a wide range of operations for both hospitalized and ambulatory patients. It is commonly used in providing analgesia post-operation or assisting patient in physiotherapy. Despite of numerous benefits of continuous PNB, various complications have been reported relating to either, needle or catheter insertion or local anaesthetic administered. We hereby report obstacles on a patient with continuous PNB.

Case description: A 22-year-old gentleman complicated with right elbow stiffness after underwent two operations for right olecranon process fracture, planned for aggressive physiotherapy. He was subsequently received continuous PNB via supra-clavicular approach with continuous infusion. During 17 days of physiotherapy course, the catheter been changed multiple times due to dislodgement despite using topical skin adhesive glue, suture technique, single or double tunneling method, and require alternating insertion via supra-clavicular and costoclavicular approach. Patient also developed Horner's syndrome invariably despite titrating down infusion rate, limiting boluses volume, minimal local anesthetic concentration, and adjust to multiple staged small boluses. Later, patient complicated with catheter related infection over insertion site with minimal pus formation. Catheter was removed following infection and patient recovered well with a course of oral antibiotic.

Conclusion: Despite of peripheral nerve block catheter inserted using aseptic technique under ultrasound guided together with nerve stimulator, dislodgement, Horner Syndrome and infection complications still can happen. Various challenges associated with PNB especially with long course catheter insertion, to have optimal analgesia for physiotherapy with minimal complications. The team and with patient's co-operation did the best that can be done to help the patient.

Preoperative Autologous Blood Donation and Intravenous Iron Therapy in Coronary Artery Bypass Grafting Surgery During COVID-19 Pandemic: A Case Report

ISQANDAR ADNAN[1], MSH MANSOR[1], AD ABDUL KADIR[1], KARIS MISIRAN[1], MR ADLI AZAM[2], ABID AMIR[2], NH ISHAK[1]

[1]Department of Anaesthesiology and Intensive Care (Cardiothoracic Anaesthesia and Critical Care Unit), Faculty of Medicine, Universiti Teknologi MARA (UiTM), Selangor, Malaysia.
[2]Department of Surgery (Cardiovascular and Thoracic Surgery Unit), Faculty of Medicine, Universiti Teknologi MARA (UiTM), Selangor, Malaysia.

Introduction: In light of the current COVID-19 pandemic, the whole country is experiencing insufficient blood supply due to a disrupted blood donation drive. Despite postponing elective surgeries, the semi-emergency and emergency ones are still ongoing. Perioperative bleeding and allogeneic blood transfusion are not uncommon, and sometimes it can be inevitable in cardiac surgery. It is highly associated with the invasiveness of the surgery, administration of high dose heparin, and institution of cardiopulmonary bypass (CPB). Our Cardiothoracic Unit in Pusat Perubatan Universiti Teknologi MARA (PPUiTM) has embarked on an unpopular yet practical approach to overcoming this limitation by initiating Preoperative Autologous Blood Donation (PABD) and Intravenous Iron Therapy (IIT) as our new services for cardiac surgery patients.

Case description: We present a 49-year old gentleman who had an expedited Coronary Artery Bypass Grafting (CABG) surgery due to severe triple vessel disease with an underlying mild left ventricular dysfunction and regional wall motion abnormality. His co-morbid were hypertension, dyslipidaemia, ex-smoker, gastro-oesophageal reflux disease and previous stroke with no residual neurological deficit. Both PABD and IIT were commenced perioperatively according to the protocol developed. Allogeneic blood and blood products were successfully omitted altogether during his hospitalisation, with no complications observed. Our case illustrates that PABD is a safe and efficient alternative to allogeneic blood and blood product in uncomplicated cardiac surgery. Timely administration of IIT remains essential in preventing anaemia and maintaining haemoglobin level perioperatively. The approach with multidisciplinary collaboration, evidence-based protocol and blood conservation strategies will improve our patient's blood management and be extended to other non-cardiac surgeries with potential high blood loss.

A Case Series of Paediatric Living Donor Liver Transplant in University of Malaya Medical Centre (UMMC): Indications, Perioperative Management and our Learning Points

M DAMANHURI[1], I RASHID[2], II SHARIFFUDDIN[1], NG TY[1], KEVIN WS NG[1], CHAW SH[1], NG RT[1], YOONG BK[1], LOH PS[1]

[1]University of Malaya, Kuala Lumpur, Malaysia
[2]University of Malaya Medical Centre, Kuala Lumpur, Malaysia

Introduction: Living donor liver transplantation (LDLT) has become the gold standard for end stage liver disease. In UMMC, LDLT was started in 2017 for adults and 2019 for paediatrics. Advancements in anaesthetic and surgical techniques have enabled LDLT to be performed safely in young recipients in Malaysia and negate the need to wait for cadaveric liver grafts.

Objective: This case series demonstrates the experience in paediatric LDLT in UMMC and highlights the indications, perioperative management and challenges in the development of the program.

Methods: A retrospective review of all paediatric liver transplants from 2019 to date was performed through Electronic Medical Records (EMR) followed by a descriptive analysis.

Results: UMMC performed 12 cases of paediatric LDLT from the year 2019 to the present with equal numbers in each gender, seven recipients were Malay (58%) and five were Chinese (42%). Seven recipients (58%) were less than two years old at the time of transplantation, whereas the rest were between two to 10 years of age. The mean recipient weight was 13.1 $\pm$ 6.1kg. Biliary atresia is the primary disease in nine (75%) recipients. The commonest indication for transplantation were post-Kasai patients who developed decompensated liver disease and faltered growth. Other indications included Alagille syndrome, autoimmune sclerosing cholangitis and acute liver failure secondary to viral infection. The mean Paediatric End-stage Liver Disease (PELD) score of the patients was 24.4 $\pm$ 15.1. The donors were fathers (n=6, 50%), mothers (n=5, 42%) and aunt (n=1, 8%). Two patients passed away post liver transplant, one within 24 hours and another at day 46 post-operatively due to severe sepsis and massive bleeding respectively.

Conclusions: In our early experience, paediatric LDLT has made promising strides in Malaysia. Careful patient selection and astute perioperative management determine the immediate and 1-year outcomes of these patients.

Heart on Pause: A Challenging Case of Mixed Valvular Heart Lesions with Fluid Restriction

SHAHRANEE SHAH REZA, CHUA CHEN CHEN

Hospital Queen Elizabeth II, Kota Kinabalu Sabah, Malaysia

Introduction: A thorough understanding of valvular heart disease is essential for perioperative care. Management is a challenge when patients present with mixed valvular lesions under fluid restriction.

Case description: A 70-year-old male with end stage renal failure (ESRF) on haemodialysis was admitted for a scheduled double valve replacement (DVR) and coronary artery bypass grafting (CABG) for severe aortic stenosis, moderate mitral stenosis and single vessel disease. Patient revealed he had frequent syncopal attacks at home. In hospital, the patient had bradycardic/asystolic episodes which spontaneously revert to sinus rhythm with pain stimuli but later required chest compressions and eventual transvenous pacing wire insertion. However, asystole events persist despite pacing with good recovery, i.e: intact neurology and no distal organ insult. Patient was then kept ventilated in view of multiple cardiac events and challenging fluid management until urgent surgery was performed. Surgery and recovery proceeded without other major events. Haemodynamics control is a challenge with mixed valvular lesions. In AS, as the cardiac output is fixed, afterload must be maintained. In MS however, the volume of blood entering the left ventricle (LV) is fixed. Hence in mixed valvular lesions, it is essential to maintain a good preload and optimum heart rate of 60-80bpm with normal sinus rhythm - this will allow for adequate filling of LV, subsequently maintaining an optimal cardiac output.

Conclusion: In this case, the care of this patient's haemodynamics is also complicated by his underlying condition of ESRF, making fluid management challenging in order not to cause pulmonary complications and reflex tachycardia but also ensuring adequate filling of the heart. Multiple stenotic heart lesions with ESRF make achieving the haemodynamic goals tough, however achievable with close monitoring, tight fluid control and avoid major reduction in cardiac output. Good critical care and aggressive rehab allowed for ideal recovery.

Unravelling The Versatility of Dexmedetomidine: A University of Malaya Experience

MA SYAHMI[1], KEVIN WS NG[1], LUCY CHAN[2]

[1]University of Malaya, Kuala Lumpur, Malaysia
[2]University of Malaya Medical Centre, Kuala Lumpur, Malaysia

Introduction: The role of dexmedetomidine in providing sedation for ICU and procedures have been well established. However, there appears to be a large area of interest to expand the uses of dexmedetomidine in anaesthetic practice. Here we share our experience with some novel uses for dexmedetomidine in our hospital.

Methods: A retrospective review of the distinctive uses of dexmedetomidine in University of Malaya Medical Centre. This includes reference to clinical practice, academic publications and clinical workshops.

Discussion: (i) "Hypnotic" of choice. In neurosurgery, dexmedetomidine again is our agent of choice to provide deep sedation during awake craniotomies. Once again, its properties of providing hypnosis while preserving the respiratory drive as well easy awakening makes it our agent of choice. High dose dexmedetomidine (up to 2.5 mcg/kg/hr) is used to provide hypnosis for drug induced sleep endoscopy in our centre for both adults and paediatric patients. With it's unique pharmacodynamics of preserving respiration and mimicking natural sleep, dexmedetomidine has replaced propofol as our agent of choice for providing total intravenous anaesthesia for this procedure. (ii) Adjunct to regional anaesthesia. The use of Dexmedetomidine in both neuraxial and peripheral nerve blocks enhances the onset and duration of both sensory and motor blockade. This was demonstrated successfully in our clinical workshop in 2019. (iii) Remote anaesthesia. Dexmedetomidine offers a safe alternative for remote anaesthesia in adults. We have published data to support its use in overcoming claustrophobia for MRI.

Conclusion: Our centre has continuously expanded the uses of dexemedetomidine. This is reflected in our many publications on this topic. This narrative shares our experience and it is hoped that with increasing interest, dexmedetomidine would be of greater benefit to our patients.

Anaesthetic Consideration for Intracardial Leiomyomatosis (ICLM)-A Case Report

SK KHAW, HASMIZY BIN MUHAMMAD, HANAFI B SIDIK, SITI BAIDURI BINTI BUSRAH

Sarawak Heart Centre, Kota Samarahan, Sarawak, Malaysia

Introduction: Intracardial leiomyomatosis (ICLM) is a rare condition characterized by progression of a histological benign smooth muscle tumor of the uterus that grows within the veins, extending into the inferior vena cava (IVC) into the right side of the heart. Surgery is the primary treatment of ICLM. Owing to its rarity, the knowledge about ICLM is derived mainly from isolated case reports and case series.

Case description: A 56-year-old nulliparous lady, presented to Sarawak General Hospital (SGH) with post menopausal vaginal bleeding and abdominal distension in May 2019. Computerized tomography (CT) scan showed a huge pelvic mass measuring 13x20x11 cm with tumour thrombus extending from the right ovarian vein, the entire length of IVC and into the right atrium (RA). This patient was referred to Hospital Serdang for further treatment due to lack of vascular surgery support in SGH. She underwent first stage surgery with median sternotomy, cardiopulmonary bypass (CPB), and removal of RA tumour in June 2019. A repeated cardiac echocardiography after 4 weeks in July 2019 at SGH showed the RA tumour measuring 3.8x1.8 cm fluctuating from the IVC into the RA. The second stage surgery was planned and completed with multidiscipline cooperation in Sarawak Heart Centre in September 2019. She underwent single stage surgery successfully started with bilateral ureteric stenting, total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAHBSO), then removal of IVC/RA tumour. CPB was on stand-by during the surgery period.

Discussion: This rare case of ICLM in Malaysia highlighted the challenges of managing such a case in Sarawak, and the need for multidisciplinary cooperation. Several surgical techniques have been described; these included one or two stages surgical approach, with the use of cardiopulmonary bypass and circulatory arrest with deep hypothermia.

Summary: Multidiscipline teamwork is pertinent in the management of this rare case despite the lack of resources in Sarawak.

Methaemoglobinaemia during Treatment of *Pneumocystis carinii* Pneumonia

FATIMA KATRAN, WAN RAHIZA WAN MAT, ALIZA MOHAMAD YUSOF, RAHA ABDUL RAHMAN, CHEAH SAW KEAN, KANESH KUMAR DORAISAMY, AZARINAH IZAHAM

Department of Anaesthesiology & Intensive Care, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.

Introduction: Methaemoglobinaemia is a state of increase in the oxidation of ferrous ion of normal haemoglobin to the ferric state, precipitated by oxidative stress or oxidizing agents leading to a low oxygen-carrying capacity and eventually tissue hypoxia.

Case description: We present a 41-year-old gentleman with no past medical history who presented with six months history of fever, worsening shortness of breath, and left sided chest pain. There was loss of appetite and weight around 15 kg. His respiratory function continues to deteriorate requiring elective intubation of the trachea and mechanical ventilation. Inspired oxygen fraction (FiO_2) 0.5 was used with oxygen partial pressure (PaO_2) of 130-154 mmHg in the arterial blood gas, and oxygen saturation (SpO_2) ranging from 93-95%. Rapid test for HIV was positive which later was confirmed with serology test. Plain chest radiograph showed radiological features of *Pneumocystis carinii* pneumonia. The tracheal aspirate culture confirmed *Pneumocystis Jiroveci* and *Methicillin-Resistant Staphylococcus Aureus*. Intravenous clindamycin 600 mg daily and oral primaquine 300 mg daily were initiated. We note methaemoglobin level rose from 3.2% to the highest level of 13.6%. Antimicrobial regime was changed to intravenous bactrim 400/80 mg thrice daily. Following this change, the methaemoglobin levels reduced to normal levels after 5 days. Patient was extubated 6 days later.

Discussions: In retroviral patient, methaemoglobinaemia is commonly the result of oxidative stress on erythrocytes caused by medications, in particular dapsone and primaquine. At severely elevated levels (over 20%), or in patients with underlying lung disease, methaemoglobinaemia can be life-threatening. Patients with glucose-6-phosphate dehydrogenase (G6PD)-deficiency are more susceptible, but patients with normal G6PD levels can experience methemoglobinemia. This potentially fatal drug interaction therapy with primaquine should alert us on methaemoglobinaemia can lead to apparent worsening respiratory function.

Case Report: Awake Cardiopulmonary Bypass Under Neuraxial Anaesthesia For Elective Posterior Mediastinal Mass Excision

NAM YUSOFF[1], I SAMSUDIN[2], AAM RAZI[2], MF HAMDAN[3], MH ARIFFIN[2], SNL YAHYA[2], NH ISHAK[1]

[1]Department of Anaesthesiology and Intensive Care (Cardiothoracic Anaesthesia and Critical Care Unit), Universiti Teknologi MARA (UiTM), Selangor, Malaysia
[2]Department of Surgery (Cardiovascular and Thoracic Surgery Unit), Universiti Teknologi MARA (UiTM), Selangor, Malaysia
[3]Department of Radiology, Universiti Teknologi MARA (UiTM), Selangor, Malaysia

Introduction: A pre-existing compression of the airways or great vessels secondary to a mediastinal mass risk respiratory and/or haemodynamic compromise. Depending on the degree of compression, this may lead to a complete airway obstruction and cardiovascular collapse either during induction of general anaesthesia (GA), intubation, mechanical ventilation, or positioning. Most literature routinely recommend having cardiopulmonary bypass (CPB) on "stand-by" with the perfusionists on ready-mode and machine primed. Establishment of awake CPB for mediastinal tumour resection has been scarcely reported with majority of them being done under local anaesthesia (LA).

Case description: We herein report a case of 65-year-old lady with stable co-morbid of diabetes mellitus, hypertension and bronchial asthma who was referred to our centre with a huge right posterior mediastinal tumour scheduled for elective surgical excision. In the previous hospital, she was preoperatively asymptomatic but developed superior vena caval obstructive features post-gaseous induction. Following that, they proceeded with awake fiberoptic intubation but surgery was postponed after having difficulties of maintaining ventilation post-positioning. In view of these haemodynamic and ventilatory events, we have opted for an early initiation of CPB prior to GA in anticipation of unnecessary delays in activating "stand-by" CPB. The cardiothoracic surgical team wanted a smooth femoro-femoral cannulation, hence neuraxial anaesthesia was performed. This unconventional approach of awake CPB under neuraxial block is to ensure a favourable cannulation site as compared to a field infiltrated with LA, maintained anaesthesia if cannulation needed to be done contralaterally, and provides a predictable analgesia for the awake patient throughout the procedure.

Broken Epidural Catheter, What to Do Next?: A Case Report

EE LEEN LEE, CHOOI PHENG LEE, GEE HO SIEW, HJ MOHD ROHISHAM ZAINAL ABIDIN

Hospital Tengku Ampuan Rahimah, Klang, Malaysia

Case description: We share a case of a 32 years old G5P2+2 at 38 weeks and 3 days with BMI 33.5 kg/m^2, where insertion of epidural catheter was uneventful and safely anchored. The catheter snapped when it was pulled slightly prior to be plastered. The usage of epidural catheter as a mode of anaesthesia and analgesia in obstetric patients had been increasing tremendously. Despite the benefits from the usage of the epidural catheter, the usage of epidural catheter are with risks. Complications includes abscess, hematoma, radiculopathy, migration, kinking and breakage of the catheter. Breakage of the epidural catheter is a rare occurrence and there had been few isolated cases that are reported. In the 1980s, there were reports on the incidence of catheter breakage of 0.04% (12 in 27000) compared to the cases reported in the 2000s, which is about 0.002% (1 in 60000). Most literature reviews report on breakage of epidural catheter during removal of the catheter rather than during insertion of the epidural catheter. Some of the factors leading to breakage of epidural catheter are the features of the catheter itself, techniques, kinking or entrapment of the catheter and many more.

Discussion: In any event of breakage of an epidural catheter, it will be an unpleasant experience for both the anaesthetist and the patient. The anaesthetist will be left worried and puzzled. The patient's discomfort and psychological stress need to be considered. Further investigations and referrals to other primary teams need to be done to further manage a broken and retained epidural catheter. In our case, we would like to increase the awareness regarding the incident of broken and retained epidural catheter and the sequelae of the incident - psychological sequelae of both the patient and anaesthetist involve, importance of communication with the patient and family members and the management of the broken epidural catheter.

Small Bowel Anastomosis Under Spinal Anaesthesia : A Case Report

BJ NG[1], KHAN MH[1], SC TEO[2]

Sarawak General Hospital, Kuching, Malaysia

Introduction: Subarachnoid blocks (SABs) have been used for surgeries involving the lower abdomen, perineum and lower limbs. It is particularly suitable for elderly patients, particularly for those suffering from cardiovascular and respiratory diseases[1,2,3]. We present a case report in which SAB was performed and found to be effective for a patient who was diagnosed with a strangulated left femoral hernia and underwent hernioplasty with small bowel resection.

Case description: A 72-year-old lady, ASA-2 (hypertension and dyslipidemia) presented with vomiting, abdominal pain and reduced oral intake associated with a tender and irreducible left inguinal swelling. She was posted for open hernioplasty KIV bowel resection KIV stoma. SAB was given as she had no contraindications. It was performed at L3/L4 level, using Pencan-27G, and 3 mls levobupivacaine 0.5% was injected intrathecally. Block height was deemed at least at T8/9 level as she had trouble discriminating paraesthesia to cold stimuli. Intravenous midazolam 1mg was given for anxiolysis. Initial incision for hernioplasty was painless. Intraoperatively, pus was noted upon opening the hernial sack with unhealthy bowel. Surgery proceeded with a subumbilical midline laparotomy at 75 minutes post-SAB. There was ascites upon entering the peritoneum with an estimated 10 cm length of ischaemic small bowel. Small bowel resection, primary anastomosis and hernioplasty were performed. Surgery was completed 165 minutes post-SAB. Bromage score was 0 at the end of surgery and she was discharged uneventfully from recovery room. Postoperatively, pain is controlled with regular analgesia. Oral intake started gradually on post-operative day (PoD) 3 with opened bowels. She was subsequently discharged on PoD6.

Conclusion: SABs can provide adequate anaesthesia for surgeries below umbilicus (T10) and expedite patients' recovery. Factors such as the patient's co-morbidities and the surgery itself should be considered for feasibility of this anaesthetic option.

Laparoscopic Procedure Under Spinal Anaesthesia: Two Case Reports

BJ NG, KHAN MH, SC TEO

Sarawak General Hospital, Kuching, Malaysia

Introduction: There have been numerous studies regarding spinal anaethesia (SAB) for laparoscopic surgeries. We describe our experience in these two case reports.

Case description: Two ASA 1 patients, Mdm WZ, 40 years old and Mdm SF, 28 years old, underwent laparoscopic bilateral salphingectomy and laparoscopic right salphingectomy respectively. Both received SAB at L3/L4 level with levobupicaine 0.5%, 4 ml and attained block height at T2 level. IV midazolam was given to achieve sedation score 1. Shoulder tip pain (STP) due to abdominal insufflation was pre-empted and treated with IV fentanyl 50 mcg boluses. Both surgeries started 20 minutes after SAB. Mdm WZ's initial insufflation pressure was 17 cmH_2O with flow 12 l/min. She developed mild-moderate epigastric discomfort, treated with IV fentanyl. Pain did not recur when the pressure was reduced to 10 cmH_20. Mdm SF's initial insufflation pressure was 16 cmH_2O with flow 12 l/min. She experienced nausea and hypotension, requiring IV metoclopramide 10mg and IV ephedrine 6 mg. Pressure and flow were subsequently reduced to 12 cmH_20 and 6 l/min, whereupon she had no further adverse events. Both surgeries lasted 80-90 minutes. In recovery, they were stable and were discharged to ward with Bromage score 2-3 and pain score 0. They were discharged on PoD1 with pain score 0.

Discussion: Laparoscopic peritoneal gas insufflation might cause unwanted effects,[1,2,3] determined not only by its pressure but also flow[4]. These effects are most prominent during initial insufflation, particularly with high pressure and flow. There are case reports stating detrimental bradycardia, a vagal-mediated reflex, because of rapid peritoneal distension with high initial insufflation flow, despite a low initial pressure[4,5]. Notably, Mdm SF developed a vagal-mediated hypotension with nausea but no bradycardia.

Conclusion: SAB is a viable option for laparoscopic surgery. The peritoneal insufflation pressure and flow factors into patient tolerance of this technique for laparoscopy.