Young Investigator Award
YIA 1  
Time: 1100-1115  
PROGNOSTIC VALUE OF N-TERMIMAL B-TYPE NATRIURETIC PEPTIDE IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION: A MULTICENTER STUDY  
Koh Keng Tat¹, Tan SSN²,³, Sim PP⁴, Tiong LL²,³, Ku MY²,³, Hoo WSY¹, Wong IT⁵, Yong KY⁶, Lau KT⁶, Chandan DB⁷, Fong SL⁷, Sia TLL⁷, Shu FEP⁸, Oon YY¹, Nor Hanim MA¹, Khiew NZ¹, Cham YL¹, Asri S¹,⁹, Voon CY¹, Khaw CS¹, Ho KH¹, Tan CT¹, Fong AYY¹,³, Ong TK¹.  
¹Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia  
²Department of Pharmacy, Sarawak General Hospital, Kuching, Malaysia  
³Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia  
⁴Department of Pharmacy, Sarawak Heart Centre, Kota Samarahan, Malaysia  
⁵Department of Medicine, Sibu Hospital, Malaysia  
⁶Department of Medicine, Miri Hospital, Malaysia  
⁷Department of Medicine, Bintulu Hospital, Malaysia  
⁸Department of Medicine, Kapit Hospital, Malaysia  
⁹Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia  

YIA 2  
Time: 1115-1130  
“CAS-FIRST” INVESTIGATIONAL APPROACH FOR STABLE CHEST PAIN: A 2-YEAR OUTCOME SINGLE-CENTRE STUDY  
Universiti Teknologi Mara (UiTM)  

YIA 3  
Time: 1130-1145  
EVALUATION OF PARAMETERS TO DIFFERENTIATE BETWEEN PHYSIOLOGICAL AND PATHOLOGICAL ADAPTIVE PROCESS OF THE LEFT ATRIUM  
Najme Khir R¹, Chua NYC¹, Ibrahim KS¹, Ismail JR¹, Zainal HA¹, Lim CW¹, Arshad K¹, Ibrahim ZO¹, Kasim S¹, Abdul Rahman E¹.  
¹Faculty of Medicine, UiTM Sg Buloh, Malaysia  

YIA 4  
Time: 1145-1200  
VALIDATION OF THE SAME-TT2R2 SCORE IN A MULTIETHNIC ASIAN PATIENTS WITH ATRIAL FIBRILLATION ON WARFARIN THERAPY – A MULTICENTER STUDY  
Khaw CS³, Lim MSH²,³, Tiong LL²,³, Tan SSN¹,²,³, Ku MY¹,²,³, Tan CSY¹,²,³, Lau ERL⁴, Nor Azila AL⁴, Lum KY¹, Lee QJ¹, Nagappa K⁵, Cham YL³, Ong TK³, Lip GYH²,³, Fong AYY²,³.  
¹Department of Cardiology, Sarawak General Hospital Heart Centre, Kota Samarahan, Malaysia  
²Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia  
³Department of Pharmacy, Sarawak General Hospital Heart Centre.  
⁴Department of Pharmacy, Sarawak General Hospital.  
⁵Department of Pharmacy, Sarawak General Hospital.  
⁶Department of Pharmacy, Bau Hospital  
⁷Department of Pharmacy, Serian Hospital  
⁸Department of Pharmacy, Sibu Hospital  
⁹Department of Pharmacy, Betong Hospital  
¹⁰Department of Pharmacy, Sibu Hospital  
¹¹Department of Pharmacy, Sibu Hospital  
¹²Department of Pharmacy, Miri Hospital  
¹³Institute of Cardiovascular Sciences, University of Birmingham, United Kingdom
**Young Investigator Award Abstracts**

**Date:** 8th April 2017  
**Venue:** Sentral Exchange, Hilton KL  

---  

**YIA 5**  
Time: 1200-1215  

**HDL FUNCTION IN PREDICTING YOUNG ACUTE CORONARY SYNDROME**  
Nicholas Chua\(^1\), Rizmy Najme Khir\(^1\), Raja Ezman\(^1\), Noorlizah Wendy\(^1\), Johan Rizwal\(^1\), Zubin Othman\(^1\), Kamal Arshad\(^1\), Effa Abdul Rahman\(^1\), Lim Chiao Wen\(^1\), Hafisyatul Aiza\(^1\), Thuhairah Rahman\(^2\), Sazzli Kasim\(^1\).  
\(^1\)Cardiology Department, UiTM Sungai Buloh, Malaysia.  
\(^2\)Pathology Department, UiTM Sungai Buloh, Malaysia  

---  

**YIA 6**  
Time: 1215-1230  

**THE ASSOCIATION OF 12-LEAD ELECTROCARDIOGRAM (ECG) FINDINGS AND COMPUTED TOMOGRAPHY PULMONARY ANGIOGRAPHY (CTPA) IN DIAGNOSING PULMONARY EMBOLISM IN SELECTED PATIENTS IN UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE**  
Mohd Shawal Faizal Mohamad\(^1\), Vannese Wong Phey Jia\(^1\), David Cumberland\(^3\), Hamat Hamdi Che Hassan\(^1\), Choor Chee Ken\(^1\), Shathiskumar Govindaraju\(^1\), Tiau Wei Jyung\(^1\), Fazalina Mohd Fadzilah\(^2\), Rosnah Ismail\(^3\), Oteh Maskon\(^1\).  
\(^1\)Cardiology Unit Department of Internal Medicine Universiti Kebangsaan Malaysia (UKM)  
\(^2\)Radiology Department Universiti Kebangsaan Malaysia (UKM)  
\(^3\)Department of Community Health Universiti Kebangsaan Malaysia (UKM)
PROGNOSTIC VALUE OF N-TERMINAL B-TYPE NATRIURETIC PEPTIDE IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION: A MULTICENTER STUDY

Koh Keng Tat¹, Tan SSN²,³, Sim PP⁴, Tiong LL²,³, Ku MY²,³, Hoo WSY¹, Wong IT⁵, Yong KY⁶, Lau KT⁶, Chandan DB⁷, Fong SL⁷, Sia TLL⁷, Shu FEP⁸, Oon YY¹, Nor Hanim MA¹, Khiew NZ¹, Cham YL¹, Asri S¹,⁹, Voon CY¹, Khaw CS¹, Ho KH¹, Tan CT¹, Fong AYY¹,³, Ong TK¹.

¹Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia
²Department of Pharmacy, Sarawak General Hospital, Kuching, Malaysia
³Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia
⁴Department of Pharmacy, Sarawak Heart Centre, Kota Samarahan, Malaysia
⁵Department of Medicine, Sibu Hospital, Malaysia
⁶Department of Medicine, Miri Hospital, Malaysia
⁷Department of Medicine, Bintulu Hospital, Malaysia
⁸Department of Medicine, Kapit Hospital, Malaysia
⁹Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia

BACKGROUND: Several models have been developed to help the clinician in risk stratification for Acute Coronary Syndrome (ACS), such as the TIMI and GRACE risk scores. However, there is conflicting evidence for the prognostic value of NT-proBNP in acute myocardial infarction (AMI).

OBJECTIVE: (1) To explore the association of NT-proBNP with 30-day clinical outcome in AMI patients. (2) To compare the prognostic value of NT-proBNP with TIMI and GRACE risk scores in AMI patients.

METHODS: We conducted a multicenter, prospective observational study recruiting patients presented with AMI between 29-October-2015 and 14-January-2017, involving 1 cardiology referral centre and 4 non-cardiology hospitals. NT-proBNP level (Alere Triage®, US) was measured within 24 hours from the diagnosis of AMI. Patients were followed-up for 1 month.

RESULTS: A total of 186 patients were recruited, 143 from tertiary cardiology centre and 43 from non-cardiology hospitals. Mean age was 54.7±10.0 years, 87.6% male and 64% were STEMI. The NT-proBNP level ranged from 60 to 16700pg/ml, with a median of 714pg/ml. Using the 75th centile as the cutoff, Kaplan-Meier survival analysis for the 30-day cardiac related mortality was significantly higher for patient with NT-proBNP level of ≥1600pg/ml (6.4% vs. 0.7%, p=0.02). Cox-regression analysis showed that NT-proBNP level of ≥1600pg/ml was an independent predictor of 30-day cardiac related mortality, regardless of TIMI risk score, GRACE score, LV ejection fraction and study hospitals (HR 9.274, p=0.054, 95%CI 0.965, 89.161). Readmission for heart failure at 30-day was also higher for patient with NT-proBNP level of ≥1600pg/ml (HR 9.308, p=0.053, 95%CI 0.969, 89.492). NT-proBNP level was not associated with all-cause mortality, risk of readmission for ACS, arrhythmia and stroke (p>0.05). By adding 50 score to GRACE risk score for NT-proBNP level of ≥1600pg/ml, combination of GraceNT-proBNP scores of more than 200 appeared to be a better independent predictor for 30-day cardiac related mortality (HR:2.828, p=0.004, 95%CI 2.94, 272.1). ROC analysis showed that this new score had 75% sensitivity and 91.2% specificity in predicting 30-day cardiac related mortality (AUC 0.791, p=0.046).

CONCLUSIONS: NT-proBNP is a useful point-of-care risk stratification biomarker in AMI. It can be combined to the current risk score model for better risk stratification in AMI patients.
“CAS-FIRST” INVESTIGATIONAL APPROACH FOR STABLE CHEST PAIN: A 2-YEAR OUTCOME SINGLE-CENTRE STUDY
Universiti Teknologi Mara (UiTM)

INTRODUCTION: Cardiovascular (CV) risk factors are highly prevalent in south east Asia and current risk scoring systems have been proven to have some drawbacks. Calcium score (CAS) has emerged as a potential marker to improve risk prediction however data is lacking on its utility in a population with high CV burden.

OBJECTIVE: We aim to test the diagnostic performance of CAS in comparison to Framingham risk score (FRS) in a sample of Malaysian population presented with stable chest pain to an outpatient setting.

METHOD: This was a single-centre restrospective study of patients referred for coronary CT angiography (CTCA) for investigation of stable chest pain in 2014. Their baseline clinical data such as demographics, CV risk profiles, CAS and CTCA results were obtained from electronic medical records. A combined clinical outcome of CV event such as acute coronary syndromes and revascularization that occurred over a period of 2 years were also traced.

RESULT: Out of 240 patient referred for CTCA, 130 patients with complete data and remained under follow-up were analyzed. The mean age was 54±11.6 years. 66% (86 patients) were males and 32% (49 patients) were diabetics. The disease prevalence in this cohort was 26%. Over a period of 2 years, CV event occurred in 34 patients, of which mostly occurred in patients with CAS >400 and high FRS risk (16 patients). Out of 53 high FRS-risk patients, CAS downgraded 33 patients to “lower” risk with the largest shift occurred when CAS was zero. Detectable calcium upgraded 3 out of 39 low FRS-risk patients to “higher” risk. Out of 35 patients with intermediate FRS-risk, CAS downgraded 23 patients to “lower” risk and upgraded 11 patients to “higher” risk. When CAS was added to FRS in a statistical model, the area under ROC curve improved from 0.67 to 0.92 in detection of obstructive CAD by CTCA and 0.65 to 0.85 in detection of CV outcome.

CONCLUSION: CAS has a potential role in refining risk stratification for CV outcome when combined with FRS risk in this Malaysian sample population presenting with stable chest pain.
EVALUATION OF PARAMETERS TO DIFFERENTIATE BETWEEN PHYSIOLOGICAL AND PATHOLOGICAL ADAPTIVE PROCESS OF THE LEFT ATRIUM

Najme Khir R1, Chua NYC1, Ibrahim KS1, Ismail JR1, Zainal HA1, Lim CW1, Arshad K1, Ibrahim ZO1, Kasim S1, Abdul Rahman E1.

1Faculty of Medicine, UiTM Sg Buloh, Malaysia

BACKGROUND: Recognition of left atrial (LA) remodeling is important, as it has been shown to be a predictor of adverse cardiovascular outcomes. However, the adaptive remodeling can occur in response to either physiological or pathological response. Little is known on the parameters to differentiate between these two distinct processes.

OBJECTIVE: We aim to describe and assess differences in parameters related to LA function in 3 groups of population at risk of LA remodeling; professional athletes, recreational sportsman and patients with cardiomyopathy

MATERIALS & METHODS: This was a descriptive single centre cross-sectional study comparing LA function in male professional athletes, recreational sportsman and subjects with cardiomyopathy by 2D transthoracic echocardiography. Maximum, minimum and pre-A volumes were obtained by manual calculation. Values representing LA reservoir, conduit and pump function were expressed as LA total emptying, passive emptying and active emptying fraction respectively. Global longitudinal LA strain (GLS) was also calculated using conventional software

RESULTS: There were 23 professional athletes, 20 recreational sportsman and 27 subjects with cardiomyopathy in this cohort. Their mean age were 23±1.9 years, 26±2.1, 35±2.4 years respectively. Athletes and cardiomyopathy subjects have a significantly larger LA volume index compared to recreational sportsman (38.1±11.1 ml/m$^2$, 25.6±7.7 ml/m$^2$ and 28.89±12.9 ml/m$^2$ respectively). Cardiomyopathy subjects had a significant lower LA reservoir capacity (mean LA total emptying fraction of 0.38±0.1, 0.57±0.1 and 0.59±0.8 respectively, p<0.01) lower conduit function (mean LA passive emptying fraction of 0.2±0.1, 0.5±0.3, 0.4±0.2 respectively, p=0.001), lower pump function (mean LA active emptying fraction of 0.2±0.1, 0.3±0.1 and 0.32±0.2 respectively, p=0.02) and lower LA global longitudinal strain (mean 9.8±6.7, 23.9±12.1, 27.8±14.6, p<0.001). When compared professional to recreational sportsman, no significant difference between the three phasics of LA function and GLS. Of these parameters, GLS is the best discriminatory factor between physiological and pathological LA remodeling. (GLS sensitivity: 86%, specificity 97%, AUC curve: 0.8, p<0.001)

CONCLUSION: LA remodeling occurs differently in response to exercise and diseases. GLS LA outperform current conventional parameters as a discriminatory factor for physiological versus pathological LA remodeling.
VALIDATION OF THE SAME-TT2R2 SCORE IN A MULTIETHNIC ASIAN PATIENTS WITH ATRIAL FIBRILLATION ON WARFARIN THERAPY – A MULTICENTER STUDY
Khaw CS1, Lim MSH1,2, Tiong LL1,2, Tan SSN1,2, Ku MY1,2, Tan CSY1,2, Lau ERL4, Nor Azila AL4, Lum KY1, Lee QJ1, Nagappa K5, Cham YL3, Ong TK1, Lip GYH12, Fong AYY2,3
1Department of Pharmacy, Sarawak General Hospital Heart Centre, Kota Samarahan, Malaysia
2Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia
3Department of Cardiology, Sarawak General Hospital Heart Centre.
4Department of Pharmacy, Sarawak General Hospital.
5Department of Pharmacy, Bau Hospital
6Department of Pharmacy, Serian Hospital
7Department of Pharmacy, Sibu Hospital
8Department of Pharmacy, Betong Hospital
9Department of Pharmacy, Sri Aman Hospital
10Department of Pharmacy, Bintulu Hospital
11Department of Pharmacy, Miri Hospital
12Institute of Cardiovascular Sciences, University of Birmingham, United Kingdom

BACKGROUND: The SAMe-TT2R2 score has been proposed to predict adequate control of INR ie time in therapeutic range (TTR) ≥65% (SAMe-TT2R2 score of 0-1) or <65% (SAMe-TT2R2 score ≥2). This score has been validated in several studies looking at selected populations in specialized settings, but not in a multiethnic Asian population in a developing country.

OBJECTIVE: To investigate the validity of the SA Me-TT2R2 score in a multicenter cohort of AF patients.

METHOD: We enrolled patients with AF on warfarin therapy for at least 1 year or had 10 INR readings, from 15 outpatient anticoagulation clinics between November 2015 and February 2017. The TTR of each patient was calculated based on Rosendaal method and SA Me-TT2R2 scores were determined for each patient.

RESULTS: A total of 1030 patients were recruited, mean age(SD) 65.0(11.8) years, 56.3% male. The mean(SD) TTR was 59.8(22.41).The cohort comprised 25.1% Malay, 34.5% Chinese and 40.4% non-Malay Bumiputra. There were 468 (45.4%) patients with TTR ≥65% and 562 (54.6%) with TTR <65%. We found a progressive decline in mean (SD) TTR for a SA Me-TT2R2 score of 2 [61.3 (20.8)], 3 [60.3 (22.9)] and ≥4 [59.6 (23.2)], but the score was unable to predict which patients would achieve a TTR ≥65% (p=0.439). Subgroup analysis revealed significant differences in median(IQR)% TTR score between ethnic groups [Malay 61.0(29.5), Chinese 66.4(31.1) and non-Malay Bumiputra 56.2(35.5); p<0.001 ], and different hospital settings - tertiary center [n= 579 (56.2%), mean(SD)% score [Malay 61.0(20.5), Chinese 67.0(20.1), non-Malay Bumiputra 64.2(22.8); p=0.012], district hospitals [n=451 (43.8%), mean(SD)% score [Malay 52.0(21.3), Chinese 59.4(24.2), non-Malay Bumiputra 52.3(22.4); p=0.022].

CONCLUSION: In this large multicenter study involving a multiethnic Asian population in a developing country, the SA Me-TT2R2 score was unable to discriminate patients INR control. Other factors such as ethnicity and hospital setting significantly affected INR control.
YIA 5
General Cardiology

**HDL FUNCTION IN PREDICTING YOUNG ACUTE CORONARY SYNDROME**
Nicholas Chua¹, Rizmy Najme Khir¹, Raja Ezman¹, Noorlizah Wendy¹, Johan Rizwal¹, Zubin Othman¹, Kamal Arshad², Effa Abdul Rahman¹, Lim Chiao Wen¹, Hafisyatul Aiza¹, Thuhairah Rahman², Sazzli Kasim¹
¹Cardiology Department, UiTM Sungai Buloh, Malaysia.
²Pathology Department, UiTM Sungai Buloh, Malaysia

**BACKGROUND:** In recent years, patients with acute coronary syndrome (ACS) are significantly younger. We hypothesized that the capacity of HDL to accept cholesterol from macrophages, via cholesterol efflux capacity (CEC) would serve as a predictor of atherosclerotic disease.

**OBJECTIVE:** Compare CEC of young ACS to a healthy control cohort.

**MATERIALS & METHODS:** This was a prospective, single center pilot study that was carried out at University Technology MARA (UiTM) in Sungai Buloh since 1st November 2016. All subjects were below 40 years old. Blood serum were taken and analyzed with high-throughput screening CEC assay kit (cell-based, ab196985) using fluorescently-labelled cholesterol and J774.1 macrophage cell line. Fluorescent microplate reader was equipped with a filter for Ex/Em = 482/515 nm to calculate the percentage of efflux at 4 hours.

**RESULTS:** 20 young ACS and 20 healthy control subjects were recruited. The mean age was 35.3±3.6 and 29.9±2.7. All subjects were male, except 7 women in the control cohort. In the young ACS, there were 70%(n=14) STEMI and 30%(n=6) NSTEMI. Young ACS waist circumference(cm) and BMI were 101.3±4.4 and 28.9±2.9 as opposed to 82.6±11.5 and 24.5±4.3 in the control with p=0.001. Young ACS cardiovascular risk assessment revealed 85%(n=17) smokers, 45%(n=9) hypertension, 25%(n=5) DM and 25%(n=5) dyslipidemia. Conversely, in the control cohort there were 20% (n=4) smokers. Young ACS had mean fasting glucose level of 6.8±1.2 mmol/l, and serum creatinine 91.4±9.0 µmol/L. Lipid profile revealed mean total cholesterol of 5.57±1.2 mmol/L, triglyceride 2.05±0.7 mmol/L, HDL 1.01±0.3 mmol/L, and LDL of 3.66±1.0 mmol/L. Carotid intimal medial thickness (CIMT) of young ACS and healthy control were significant at 0.78mm (±0.3) and 0.48mm (±0.1) with P-value < 0.005. Mean HDL for Young ACS was 1.0±0.3 mmol/L and healthy cohort was 1.1±0.2 mmol/L, with no significant difference (p=0.19). Mean CEC in the young ACS and control were significantly different at 17.9±1.5% and 26.3±1.1% (p<0.005).

**CONCLUSION:** Young ACS has significantly impaired HDL function as expressed by impaired CEC, despite no significant quantitative difference. CEC can be incorporated into cardiovascular risk scoring model for young ACS.
YIA 6
General Cardiology

THE ASSOCIATION OF 12-LEAD ELECTROCARDIOGRAM (ECG) FINDINGS AND COMPUTED TOMOGRAPHY PULMONARY ANGIOGRAPHY (CTPA) IN DIAGNOSING PULMONARY EMBOLISM IN SELECTED PATIENTS IN UNIVERSITI KEBANGSAAN MALAYSIA MEDICAL CENTRE

Mohd Shawal Faizal Mohamad¹, Vannese Wong Phey Jia¹, David Cumberland¹, Hamat Hamdi Che Hassan¹, Choor Chee Ken¹, Shathiskumar Govindaraju¹, Tiau Wei Jyung¹, Fazalina Mohd Fadzilah², Rosnah Ismail³, Oteh Maskon¹

¹Cardiology Unit Department of Internal Medicine Universiti Kebangsaan Malaysia (UKM)
²Radiology Department Universiti Kebangsaan Malaysia (UKM)
³Department of community Health Universiti Kebangsaan Malaysia (UKM)

BACKGROUND: Pulmonary embolism is a medical emergency which may lead to devastating mortality. A rapid and cost-effective tool such as the ECG would help the physician to rapidly diagnose or rule out pulmonary embolism. The aim of the study is to determine the association between 12-lead ECG findings and CTPA in diagnosing pulmonary embolism in selected patients in the UKMMC.

MATERIALS AND METHODS: A total of 327 patients’ files from January 2010 to June 2015 were traced retrospectively by using administrative datasets of CTPA. Cases of pulmonary embolism and non-pulmonary embolism were identified. Other exposure information such as socio-demographic, risk factors, clinical presentations and investigations (clotting profile, arterial blood gases, X-ray, D-dimer and ECG) were extracted using research proforma. Analyses were done using SPSS version 22.

RESULTS: A total of 327 patients’ files were analyzed. Majority were female patient (59.9%). A total of 146 patients (44.6%) were diagnosed as pulmonary embolism using CTPA. Only 4 out of 15 risk factors found to be significantly associated with pulmonary embolism which are active cancer ($\chi^2$=3.39, p=0.044), dehydration ($\chi^2$=3.84, p=0.039), obesity ($\chi^2$=4.78, p=0.024), recent surgery ($\chi^2$=3.15, p=0.050). ECG changes proven to have a significant association in diagnosing pulmonary embolism; these were T wave changes ($\chi^2$=13.35, p<0.001), S wave changes ($\chi^2$=18.53, p<0.001), sinus tachycardia ($\chi^2$=10.52, p=0.001), TwiST score ($\chi^2$=22.66, p<0.001). In this sample studied, sinus tachycardia is the most sensitive (74.7%) but less specific (42.5%) sign to diagnose pulmonary embolism. D-dimer investigation seems promising tool with sensitivity of 68.6% and specificity of 31.4%. By using ROC curve, we found out that the cut-off point for the TwiST score and D-dimer were 4.00 and 1.33 respectively.

CONCLUSION: ECG is an enduring tool to complement the diagnosis of pulmonary embolism by virtue of the TwiST score. It is cheap, easily available, non-invasive and should be considered the arsenal of every physician especially in the emergency setting. Interestingly, D-dimer is an auspicious tool which is warranted for further study.

KEYWORDS: 12-lead electrocardiogram (ECG), computed tomography pulmonary angiography (CTPA), pulmonary embolism
Free Paper Presentation
General Cardiology 1
(FP1.1-1.7)
General Cardiology

Date: 7th April 2017
Venue: Sentral Accord, Hilton KL

FP 1.1 Time: 1100-1110

CLINICAL OUTCOMES OF PATIENTS ADMITTED TO A DAY CARE CARDIOLOGY WARD FOR CORONARY ANGIOGRAPHY
Crystal Tan Sing Yee1,2, Shirin Tan Hu1, King Teck Long1,2, Alan Fong Yean Yip2,3, Ong Tiong Kiam3
1Department of Pharmacy, Sarawak General Hospital, Kuching, Sarawak
2Clinical Research Centre, Sarawak General Hospital, Kuching, Sarawak
3Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Sarawak

FP 1.2 Time: 1110-1120

BETA-BLOCKER USE AND RISK OF SYMPTOMATIC BRADYARRHYTHMIAS: A HOSPITAL-BASED CASE-CONTROL STUDY
Chu Zhen Quek1, Hou Tee Lu1,2, Jiyan Kam2, Benjamin Leo2, Gunasekaran2, Chuey Yan Lee2
1Clinical School Johor Bahru, Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia,
Johor Bahru, Johor, Malaysia
2Department of Cardiology, Sultanah Aminah Hospital, Jalan Masjid Abu Bakar, Johor Bahru, Johor, Malaysia

FP 1.3 Time: 1120-1130

STATIN NAÏVE PATIENTS IN ACUTE CORONARY SYNDROME PATIENTS IN THE NORTH OF KUALA LUMPUR, MALAYSIA.
CHONG Pei Feng1, Nicholas CHUA Yul Chye2
1Department of Pharmacy, Hospital Sungai Buloh, Malaysia
2Department of Cardiology, University Technology Mara Malaysia (UITM)

FP 1.4 Time: 1130-1140

CARDIOVASCULAR EVENTS DURING LONG TERM FOLLOW-UP AFTER CESSION OF DUAL ANTIPLATELET THERAPY IN PATIENTS WITH ACUTE CORONARY SYNDROME
Wardati Mazlan-Kepli1, Jesse Dawson2, Colin Berry2, Matthew Walters2
1Pharmacy Department, Hospital Serdang;
2Institute of Cardiovascular and Medical Sciences, University of Glasgow

FP 1.5 Time: 1140-1150

CLINICAL COMPARISON OF TWO HIGH SENSITIVE TROPONIN-I ASSAYS IN PATIENTS SUSPECTED OF ACUTE MYOCARDIAL INFARCTION IN THE EMERGENCY DEPARTMENT
Dian Nasrnia Nasuruddin1, Najwa Hayati Muzaimi1, Ida Zarina Zaini2, Azmawati Mohammed Nawi1, Hamat Hamdi Che Hassan2, Choor Chee Ken2, Mohd Shawal Faizal Mohamad2, Shathiskumar Govindaraju1, Tiau Wei Jyung2, David Cumberland2, Oteh Maskon3.
1Department of Pathology,
2Department of Emergency Medicine,
3Department of Community Health,
4Department of Medicine, Universiti Kebangsaan Malaysia
FP 1.6  Time: 1150-1200

QUALITY OF LIFE AMONG REVASCULARISED PATIENTS: CABG VERSUS PCI
Brenda Samban AK Andrew Nuga1, Aimi Zafirah Muzzani1, Siti Amirah Ruslan1, Nor Hidayah Razak1, Zubin Ibrahim2, Rizmy Khir2, Johan Rizwal2, Nicholas Chua2, K Syafiq Ibrahim2, Hafisyatul Zainal Abidin2, Lim Chiao Wen2, Effarezan A Rahman2, Kamal M Arshad2, Azmee M Ghazi3, Sazzli Kasim2.
1UI TM Medical Student, Medical Faculty, Sungai Buloh, 2UI TM Medical Faculty, Sungai Buloh, 3Institut Jantung Negara

FP 1.7  Time: 1200-1210

FASTING LIPID PROFILES IN PATIENTS ADMITTED WITH ACS - ADMISSION AND 30-DAY TRENDS
Ku MY1,2, Tan SSN1,2, Tan CSY1,2, Tiong LL1,2, Lim AMW1,2, Ling DE3, Hii EHH3, Kiu ISN3, Wong LW4, Ting MLL4, Sumbai ME5, Chua ATT5, Lim CH6, Tan YS6, Douglas JS6, Theng MI7, Chew SW7, Fong AYY2,8, Ong TK8
1Department of Pharmacy, Sarawak Heart Centre, Kota Samarahan, Sarawak 2Clinical Research Centre, Sarawak General Hospital, Kuching, Sarawak 3Department of Pharmacy, Sibu Hospital, Sibu, Sarawak 4Department of Pharmacy, Miri Hospital, Miri, Sarawak 5Department of Pharmacy, Bintulu Hospital, Bintulu, Sarawak 6Department of Pharmacy, Sri Aman Hospital, Sri Aman, Sarawak 7Department of Pharmacy, Kapit Hospital, Kapit, Sarawak 8Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Sarawak
CLINICAL OUTCOMES OF PATIENTS ADMITTED TO A DAY CARE CARDIOLOGY WARD FOR CORONARY ANGIOGRAPHY

Crystal Tan Sing Yee1,2, Shirin Tan Hui2, King Teck Long1,2, Alan Fong Yean Yip2,3, Ong Tiong Kiam3
1Department of Pharmacy, Sarawak General Hospital, Kuching, Sarawak
2Clinical Research Centre, Sarawak General Hospital, Kuching, Sarawak
3Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Sarawak

BACKGROUND: The increasing number of patients referred to our centre for coronary angiography (CA) has seen a corresponding rise of patients listed for day case procedures (DC-CA). A greater focus on transradial access, careful case selection for intervention and appropriate pre-procedure antithrombotic therapy aimed at improving clinical outcomes in patients undergoing DC-CA.

OBJECTIVE: To describe the characteristics and clinical outcomes of patients undergoing DC-CA at a tertiary referral cardiology centre.

METHODS: Data were collected by reviewing case notes of consecutive patients who were electively admitted to the DC Cardiology Ward from October 2016 to January 2017 for CA.

RESULTS: In total, 322 patients were included. Mean age was 56±10 years old and Body Mass Index (BMI) was 26.91±4.83 kg/m². A total of 76.1% were male and majority were Chinese (39.8%). The primary indication for CA was for recent ACS (32.9%), atypical chest pain (14.9%), congestive heart failure (13.0%) and positive CT Angiogram (12.7%). The median length of stay in DC cardiology ward was 8.83 hours (interquartile range, 6.83 to 10.83 hours). Excluding those admitted for pre-operative CA, 95.8% of patients were on aspirin, and 93.6% on P2Y12 receptor antagonist, on admission day. Of 322 patients, 261 (81.1%) had exclusively transradial procedure, with the remainder having femoral access, either directly or following failed radial access. Comparing radial and femoral access procedures, bleeding complications were similar in both groups (4.6% vs 3.3%, respectively; all were minor bleeds), while post-procedure clinical events were significantly higher in femoral access procedures (1.5% vs 27.9%, respectively). In total, 8.4% of patients developed minor clinical events such as arrhythmia, post-procedure chest pain and coronary thrombus identification during CA which warranted extended in-hospital stay. There was no in-patient mortality during this study. DC-CA findings showed significant coronary artery disease in 67.7% of patients, 19.2% underwent percutaneous coronary intervention and 20.2% referred for elective CABG.

CONCLUSION: Patients admitted for a DC-CA at our centre were typically young, male and had a moderate to high suspicion for significant CAD. They predominantly underwent a radial access procedure, which was associated with better clinical outcomes than patients undergoing a femoral access procedure.
BETA-BLOCKER USE AND RISK OF SYMPTOMATIC BRADYARRHYTHMIAS: A HOSPITAL-BASED CASE-CONTROL STUDY
Chu Zhen Quek1, Hou Tee Lu1,2, Jiyen Kam2, Benjamin Leo2, Gunasekaran2, Chuey Yan Lee2,
1Clinical School Johor Bahru, Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Johor Bahru, Johor, Malaysia
2Department of Cardiology, Sultanah Aminah Hospital, Jalan Masjid Abu Bakar, Johor Bahru, Johor, Malaysia

Background: Beta blocker has widespread clinical indication in cardiovascular and non-cardiovascular disease. However, there are limited studies to examine the predisposing risk factors associated with the occurrence of bradyarrhythmia in patients on usual adult dose and long term use of β-blockers. Predicting which patients may develop bradyarrhythmias after the initiation of β-blockers would be advantageous in the management of patients requiring β-blockers.

Objective: To investigate the risk factors of symptomatic bradyarrhythmias in relation to β-blockers use.

Methods: A hospital-based case-control study [228 patients: 108 with symptomatic bradyarrhythmias (cases) and 120 controls] was conducted in Sultanah Aminah Hospital, Malaysia between January 2011 and January 2014.

Results: The mean age was 61.1 ± 13.3 years with a majority of men (68.9%). Cases were likely than control to be older, hypertensive, lower body mass index and concomitant use of rate-controlling drugs (such as digoxin, verapamil, diltiazem, ivabradine or amiodarone). Significantly higher level of serum potassium, urea, creatinine and lower level of estimated glomerular filtration rate (eGFR) were observed among cases as compared to controls. On univariate analysis among patients on β-blockers, older age (crude OR: 1.07; 95% CI: 1.03–1.11, \( P = 0.000 \)), hypertension (crude OR: 5.6; 95% CI: 1.51–20.72, \( P = 0.010 \)), lower sodium (crude OR: 0.04; 95% CI: 0.81–0.99, \( P = 0.036 \)), higher potassium (crude OR: 2.36; 95% CI: 1.31–4.26, \( P = 0.004 \)) and higher urea (crude OR: 1.23; 95% CI: 1.11–1.38, \( P = 0.000 \)) were associated with increased risk of symptomatic bradyarrhythmias; eGFR was inversely and significantly associated with symptomatic bradyarrhythmias in both ‘β-blockers’ (crude OR: 0.97; 95% CI: 0.96–0.98, \( P = 0.000 \)) and ‘non-β-blockers’ (crude OR: 0.99; 95% CI: 0.97–0.99, \( P = 0.023 \)) arms. However, eGFR was not significantly associated with symptomatic bradyarrhythmias in the final model of both ‘β-blockers’ (adjusted OR: 0.98; 95% CI: 0.96–0.98, \( P = 0.103 \)) and ‘non-β-blockers’ (adjusted OR: 0.99; 95% CI: 0.97–1.01, \( P = 0.328 \)) arms. Importantly, older age was a significant predictor of symptomatic bradyarrhythmias in the ‘β-blockers’ as compared to the ‘non-β-blockers’ arms (adjusted OR: 1.09; 95% CI: 1.03–1.15, \( P = 0.003 \) vs. adjusted OR: 1.03; 95% CI: 0.98–1.09, \( P = 0.232 \), respectively).

Conclusion: Older age was a significant predictor of symptomatic bradyarrhythmias in patients on β-blockers than those without β-blockers.
FP 1.3  Time: 1120-1130

STATIN NAÏVE PATIENTS IN ACUTE CORONARY SYNDROME PATIENTS IN THE NORTH OF KUALA LUMPUR, MALAYSIA.

CHONG Pei Feng¹, Nicholas Chua Yul Chye²

¹Department of Pharmacy, Hospital Sungai Buloh, Malaysia
²Department of Cardiology, University Technology Mara Malaysia (UITM)

BACKGROUND: Statins are well known for their pleiotropic benefits in decreasing the incidence of clinical coronary disease.

OBJECTIVE: We aimed to analyse the effect of statin treatment on presentation of ACS and 90 days mortality in a Malaysian cohort.

MATERIALS & METHODS: This was a single cohort of ACS patients diagnosed as unstable angina (UA), Non-ST-segment elevation myocardial infraction (NSTEMI) and STEMI, admitted between 2014 and 2015 at Sungai Buloh Hospital, Malaysia. Data on statin treatment before and after hospitalization, with a follow-up of 90 days were analysed.

RESULTS: There were a total of 1422 ACS patients, which comprised of 45.9% UA, 29.6% NSTEMI and 24.5% STEMI. 49.2% patients had prior statin when referred to Sungai Buloh hospital. The commonly prescribed statin was atorvastatin (48%), followed by simvastatin (36%) followed by lovastatin (16%). 90-days mortality were 9.3% (n=69) and 7.9% in statin naïve and prior statin respectively (P=0.369). Subtypes of acute coronary syndrome on prior statin unstable angina, NSTEMI and STEMI were 24%, 15% and 8% respectively. 745 patients who were statin naïve developed ACS as opposed to 721 with prior statin (P=0.0001). However, this observational study cannot exclude confounding by clinical, hospital and patient factors.

CONCLUSION: Statin treatment has demonstrated benefits in the outcome of ACS patients. Chronic statin therapy seems to improve the 90 days mortality in patients presented with ACS. Future work should look on the statin types and intensity.
CARDIOVASCULAR EVENTS DURING LONG TERM FOLLOW-UP AFTER CESSEATION OF DUAL ANTIPLATELET THERAPY IN PATIENTS WITH ACUTE CORONARY SYNDROME

Wardati Mazlan-Kepli1, Jesse Dawson2, Colin Berry2, Matthew Walters2
1Pharmacy Department, Hospital Serdang;
2Institute of Cardiovascular and Medical Sciences, University of Glasgow

BACKGROUND: Dual antiplatelet therapy (DAPT) is given for a defined period of time after which patients continue with antiplatelet monotherapy. There are reports that the risk of cardiovascular events increases after DAPT is stopped.

OBJECTIVE: To assess whether cardiovascular event rate is increased after dual antiplatelet therapy (DAPT) cessation in real-world practice and explore predictive factors for recurrent events after DAPT cessation during long-term follow up.

MATERIALS & METHODS: In this retrospective study, 7232 acute coronary syndrome (ACS) patients discharged from secondary care hospitals between January 2008 and December 2013 were identified. Those who continued DAPT after discharge and were subsequently prescribed ongoing antiplatelet monotherapy were included. The rates of cardiovascular events were assessed during each 90-day period of DAPT treatment and 90-day period after stopping DAPT. CV events were defined as composite of death, ACS, transient ischaemic attack or stroke. Cox regression was used to identify predictors of cardiovascular events following DAPT cessation.

RESULTS: 1340 patients were included. Cardiovascular events occurred in 15.7% (n=211) during the DAPT period and in 16.7% (n=188) following DAPT cessation. Independent predictors for cardiovascular event following DAPT cessation were age (hazard ratio (HR) 1.07; 95% confidence interval (CI) 1.05-1.08; p<0.001), DAPT duration (HR 0.997; 95% CI 0.995-0.998; p<0.001) and having revascularization therapy during the index admission (HR 0.58; 95% CI 0.39-0.85; p=0.005).

CONCLUSION: The rate of cardiovascular events was not significantly increased in the early period post DAPT cessation compared to later periods in this real-life ACS population. Increasing age, shorter DAPT duration and lack of revascularization therapy for the ACS were associated with increased risk of cardiovascular events during long term follow up after DAPT cessation.
CLINICAL COMPARISON OF TWO HIGH SENSITIVE TROPONIN-I ASSAYS IN PATIENTS SUSPECTED OF ACUTE MYOCARDIAL INFARCTION IN THE EMERGENCY DEPARTMENT


1Department of Pathology, 2Department of Emergency Medicine, 3Department of Community Health, 4Department of Medicine, Universiti Kebangsaan Malaysia

BACKGROUND: Symptoms of suspected acute coronary syndrome (ACS) are common presentation in the Emergency Department (ED). Highly sensitive biomarkers have been recommended by many guidelines in the early diagnosis of acute myocardial infarction.

OBJECTIVES: We assessed the correlation of two high sensitive troponin I (hs-cTnI) assays (Abbott Diagnostics; STAT hs-cTnI and Beckman Coulter; Access AccuTnI+3) in diagnosis and their roles in predicting the 30-day and 90-day outcome in patients suspected with ACS in ED. Further diagnostic accuracy was evaluated between NSTEMI and UA. The cut-off value for Access AccuTn1+3 were verified in our institution.

METHODS: This is a prospective study, where two serial serum hs-cTnI measurements at time of presentation and three hour (3H) later were collected in 141 patients with suspected ACS presenting to the Emergency Department of UKM Medical Centre between January to December 2016. The diagnostic cut-off value for STAT hs-cTnI was ≥ 26.2 pg/ml and Access AccuTnI+3 was ≥ 40.0 pg/ml. The final diagnosis of NSTEMI and UA was determined by the cardiology team. For verification of cut-off value of Access AccuTn1+3, a group of 40 healthy individuals were tested via health screening questionnaires and blood investigations.

RESULTS: There was a strong correlation and agreement between the two assays in both ACS and non ACS groups at baseline and 3H measurements (r=0.942, p<0.001 and r=0.977, p<0.001 respectively; K=0.896, p<0.001 and K=0.929, p<0.001 respectively). Both assays performed excellently in differentiating the diagnosis of NSTEMI and UA at 3 hour serial measurement (AUCs of 0.93, 95% CI: 0.866-1.000 for Architect STAT hsTnI and 0.91 (95% CI: 0.837-0.992 for hsTnI Access AccuTnI+3). There was no correlation between ACS and non ACS group in the outcome of 30-day (p=0.539) and 90-day (p=0.407) in this study.

CONCLUSION: Both hsTnI assays provide similar result in early stratification of ACS and non ACS, further able to differentiate NSTEMI from USA. Serial measurement of either hsTnI at 0 and 3 hours allow rapid diagnosis of ACS in the ED setting.
QUALITY OF LIFE AMONG REVASCULARISED PATIENTS: CABG VERSUS PCI
Brenda Samban AK Andrew Nuga1, Aimi Zafirah Muzzani1, Siti Amirah Ruslan 1, Nor Hidayah Razak 1, Zubin Ibrahim 2, Rizmy Khir 2, Johan Rizwal 2, Nicholas Chua 2, K Syafiq Ibrahim 2, Hafisiyatul Zainal Abidin 2, Lim Chiao Wen 2, Effarezan A Rahman 2, Kamal M Arshad 2, Azmee M Ghazi 3, Sazzli Kasim 2.

1UITM Medical Student, Medical Faculty, Sungai Buloh,
2UITM Medical Faculty, Sungai Buloh,
3Institut Jantung Negara

BACKGROUND: The two major procedures used to treat coronary artery disease include percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG). Studies examining the outcome of both treatment modalities with regard to quality of life are lacking.

OBJECTIVE: We aim to assess and compare the quality of life among patients with coronary disease who have had revascularisation, specifically among Malaysians who have had PCI or CABG.

MATERIALS AND METHODS: A retrospective study was carried out involving 50 post CABG and 50 post PCI patients. Patients were selected from the outpatients clinics in Universiti Teknologi MARA Sungai Buloh Medical Campus and the National Heart Institute, Kuala Lumpur. A validated ischemic heart disease (IHD) specific health-related quality of life (HeartQoL) questionnaire which revolves around two domains, a physical and an emotional domain was chosen as our main research instrument. All variables were analysed using Statistical Packaging for the Social Sciences (SPSS) version 22.0 where p < 0.05 was considered significant. The HeartQol designers have categorized the scores as 0-poor quality of life, 1-low average quality of life, 2-above average quality of life, and 3-good quality of life.

RESULTS: The average age of respondents were 58.4 years for those who underwent PCI and 61.2 years for those who underwent CABG. The procedures were performed on average 4.9±1.5 months before meeting our researchers. The baseline demographics between the two groups were comparable. The mean global score for post PCI and CABG patients are 2.42±0.49 and 2.48±0.44 (p=0.38) respectively. Analysis of specific cardiac risk factors and the HeartQol score did not reveal any significant differences or associations. Of interest is the good scores achieved in patients who had multi-vessel disease regardless of the modality of treatment.

CONCLUSIONS: In this studied population of patients who underwent revascularization for coronary artery disease, the HeartQol scores achieved indicated an above average level of quality of life at an early period post procedure. There were no statistically significant differences between scores achieved between the patients who had PCI versus CABG.
FASTING LIPID PROFILES IN PATIENTS ADMITTED WITH ACS - ADMISSION AND 30-DAY TRENDS

Ku MY1,2, Tan SSN1,2, Tan CSY1,2, Tiong LL1,2, Lim AMW1,2, Ling DE3, Hii EHH3, Kiu ISN3, Wong LW4, Ting MLL4, Sumbai ME5, Chua ATT5, Lim CH5, Tan YS6, Douglas JS6, Theng MI7, Chew SW7, Fong AYY2,8, Ong TK8

1Department of Pharmacy, Sarawak Heart Centre, Kota Samarahan, Sarawak
2Clinical Research Centre, Sarawak General Hospital, Kuching, Sarawak
3Department of Pharmacy, Sibu Hospital, Sibu, Sarawak
4Department of Pharmacy, Miri Hospital, Miri, Sarawak
5Department of Pharmacy, Bintulu Hospital, Bintulu, Sarawak
6Department of Pharmacy, Aman Hospital, Aman, Sarawak
7Department of Pharmacy, Kapit Hospital, Kapit, Sarawak
8Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Sarawak

BACKGROUND: Hypercholesterolaemia is a risk factor of premature coronary artery disease, including acute coronary syndrome (ACS). Strategies that improve in lipid profile parameters, especially low-density lipoprotein cholesterol (LDL-C) is associated with improved clinical outcomes after ACS.

OBJECTIVE: To define the fasting lipid profiles (FLP) in patients admitted with ACS, and at clinical follow up at least 30 days post-discharge.

MATERIALS AND METHODS: This prospective, multi-centre observational study was conducted at a tertiary cardiology referral centre and five district hospitals in Sarawak. Consecutive patients with ACS with FLP performed during hospital admission from May to December 2016 were recruited.

RESULTS: A total of 527 patients who were admitted with ACS from 6 hospitals had FLP performed. From this group, 269 patients had FLP performed at least 30 days post discharge, which formed this study cohort. The mean age was 58.2 (12.03) years and 78.4% were male, with 37.9% diagnosed with STEMI and 34.9% NSTEMI. The mean levels of Total Cholesterol, LDL-C and TG on admission were 4.7±1.26mmol/L, 2.9±1.13mmol/L and 1.7±0.94mmol/L respectively, and at clinical follow up were 3.8±1.00mmol/L (p<0.001), 2.0±0.84mmol/L (p<0.001) and 1.6±0.90mmol/L (p=0.028), respectively. The mean HDL-C remained at 1.0mmol/L (p=0.745). Approximately 52.4% were statin-naive. Statin-naive patients demonstrated greatest LDL-C reduction of 41.2% (mean 3.4mmol/L to 2.0mmol/L) compared to patients prescribed prior high and moderate-intensity statins (p<0.01). High and moderate-intensity statins were prescribed to 91.1% and 7.8% of patients upon discharge respectively. At clinical follow up, only 44.7% of patients achieved subsequent LDL-C of <1.8mmol/L; 39.7% of patients had suboptimal response to statin therapy of <30% LDL-C reduction. Thirty one patients were readmitted within 1 month, with ACS being the main cause. These patients showed an LDL reduction from 2.9mmol/L to 2.1mmol/L (p=0.003). The multivariate analysis showed prior statin use was predictive of having subsequent LDL-C >1.8mmol/L (OR=1.73; 95% CI 1.03-2.91; p=0.04)

CONCLUSIONS: This pioneering multicentre study studying FLP in clinical practice in patients with ACS demonstrated that the majority of patients during admission were statin-naive, and subsequently prescribed moderate-high intensity statin. Despite a significant reduction in LDL-C levels at clinical follow up, a substantial number did not achieve the guideline recommended targets.
Imaging
(FP2.1-2.8)
FP 2.1  
**Time: 1100-1110**

**ACCURACY AND REPRODUCIBILITY OF REAL-TIME THREE-DIMENSIONAL ECHOCARDIOGRAPHY VERSUS TWO-DIMENSIONAL ECHOCARDIOGRAPHY IN MEASURING LEFT VENTRICULAR VOLUMES AND EJECTION FRACTION IN DAILY CLINICAL PRACTICE**

Oon Yen Yee¹, Nor Hanim Mohd Amin¹, Asri Said², Andrew Kilung¹, Koh Keng Tat¹, Khaw Chee Sin¹, Ho Kian Hui¹, Francis Shu¹, Tan Cheng Ting¹, Voon Chi Yen¹, Khiew Ning Zan¹, Cham Yee Ling¹, Alan Fong¹, Ong Tiong Kiam¹.  
¹Department of Cardiology, Sarawak Heart Center, Kota Samarahan, Kuching, Sarawak.  
²Faculty of Medicine, University Malaysia Sarawak, Kota Samarahan, Kuching, Sarawak.

FP 2.2  
**Time: 1110-1120**

**IMPORTANCE OF CALCIUM SCORE ZERO IN PREDICTING PRESENCE OF OBSTRUCTIVE CORONARY ARTERY DISEASE AND 2-YEAR CARDIOVASCULAR OUTCOME IN DIABETIC PATIENTS: A PILOT SINGLE-CENTRE RETROSPECTIVE STUDY**

Universiti Teknologi Mara (UiTM)

FP 2.3  
**Time: 1120-1130**

**COMPARISON OF ADAPTIVE CHANGES IN THE RIGHT VENTRICLE BETWEEN PROFESSIONAL FOOTBALLERS AND WEEKEND WARRIORS**

Najme Khir R¹, Chua NYC¹, Ibrahim KS¹, Ismail JR¹, Zainal HA¹, Lim CW¹, Arshad K¹, Ibrahim ZO¹, Kasim S¹, Abdul Rahman E¹.  
¹Faculty of Medicine, UiTM Sg Buloh, Malaysia.

FP 2.4  
**Time: 1130-1140**

**INDICATION, SAFETY AND CLINICAL IMPACT OF CARDIOVASCULAR MAGNETIC RESONANCE : A PILOT RUN OF THE FIRST NATIONAL CMR REGISTRY FOR MALAYSIA**

Ho Kian Hui¹, Nor Hanim Mohd Amin¹, Nur Atiqah Muht Aipipi¹, Nurul Liyana Husain¹, Koh Keng Tat¹, Asri Said², Fazalena Johari³, Alan Fong Yean Yip¹, Ong Tiong Kiam¹  
¹Cardiology department, Sarawak Heart Centre, Sarawak  
²Faculty of Medicine and Health Sciences, University Malaysia Sarawak (UNIMAS), Sarawak  
³Clinical Research Centre, Sarawak General Hospital

FP 2.5  
**Time: 1150-1200**

**DIAGNOSTIC PERFORMANCE OF CALCIUM SCORE IN DETECTION OF CORONARY ARTERY DISEASE AND PREDICTION OF 2-YEAR CARDIOVASCULAR OUTCOME**

Universiti Teknologi Mara (UiTM)
THE INCIDENCE AND CLINICAL RELEVANCE OF CORONARY ARTERY ANOMALIES DETECTED ON MULTIDETECTOR COMPUTED TOMOGRAPHY IN SARAWAK

Oon Yen Yee¹, Khoo Siew Im¹, Lim Hui Soon¹, Nor Hanim Mohd Amin¹, Koh Keng Tat¹, Khaw Chee Sin¹, Ho Kian Hui¹, Francis Shu¹, Tan Cheng Ting¹, Voon Chi Yen¹, Khiew Ning Zan¹, Asri Said², Cham Yee Ling¹, Alan Fong¹, Ong Tiong Kiam¹.

¹Department of Cardiology, Sarawak Heart Center, Kota Samarahan, Kuching, Sarawak.
²Faculty of Medicine, University Malaysia Sarawak, Kota Samarahan, Kuching, Sarawak.

COMPARISON OF RIGHT VENTRICLE ADAPTIVE CHANGES IN WEEKEND WARRIORS, COMPARED TO NORMAL SEDENTARY SUBJECTS


Faculty of Medicine, UiTM Sg Buloh, Malaysia.

CHRONIC KIDNEY DISEASE STAGE 2 SHOULD BE CONSIDERED HIGH RISK INDIVIDUALS FOR PRIMARY PREVENTION

Ahmad Bakhtiar Md Radzi, Sazzli Shahlan Kasim,

Department of Medicine, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh Campus, Selangor, Malaysia
ACCURACY AND REPRODUCIBILITY OF REAL-TIME THREE-DIMENSIONAL ECHOCARDIOGRAPHY VERSUS TWO-DIMENSIONAL ECHOCARDIOGRAPHY IN MEASURING LEFT VENTRICULAR VOLUMES AND EJECTION FRACTION IN DAILY CLINICAL PRACTICE

Oon Yen Yee¹, Nor Hanim Mohd Amin¹, Asri Said², Andrew Kilung¹, Koh Keng Tat¹, Khaw Chee Sin¹, Ho Kian Hui¹, Francis Shu¹, Tan Cheng Ting¹, Voon Chi Yen¹, Khiew Ning Zan¹, Cham Yee Ling¹, Alan Fong¹, Ong Tiong Kiam¹.

¹Department of Cardiology, Sarawak Heart Center, Kota Samarahan, Kuching, Sarawak.
²Faculty of Medicine, University Malaysia Sarawak, Kota Samarahan, Kuching, Sarawak.

BACKGROUND: Left ventricular (LV) volumes and ejection fraction (EF) from real-time three-dimensional echocardiography (RT3DE) has been shown to be superior to measurements obtained from two-dimensional echocardiography (2DE). However, most of these studies were conducted in research setting with high volume 3DE use, selected cohort of patients and experienced sonographers.

OBJECTIVES: This study aimed to determine the accuracy and reproducibility of RT3DE and 2DE in measuring LV volumes and EF in daily clinical practice.

METHODS: 30 patients (age 52 ± 12 years, 24 men, 29 in sinus rhythm, 23 with good acoustic window) undergoing clinically indicated cardiac magnetic resonance (CMR) imaging were prospectively recruited to have transthoracic 2DE and RT3DE performed within 4 hours after CMR. To assess inter-observer variability, 2 sonographers performed the same set of measurements independently on the same day. A subgroup of patients (n=10) was studied for intra-observer variability. CMR was the reference standard.

RESULTS: The LV end-diastolic volume (EDV), end-systolic volume (ESV), and EF measured from CMR were 194.3 ± 72.5 ml, 125.7 ± 69.0 ml and 37.8 ± 19.2% respectively. The biases ± SD for RT3DE were -72.7 ± 45.7 ml, -47.6 ± 38.5 ml and 2.3 ± 9.8% for EDV, ESV and EF respectively. The biases ± SD for 2DE were -70.5 ± 46.6 ml, -50.8 ± 42.4 ml and 5.7 ± 9.5% for EDV, ESV and EF respectively. The difference in bias between RT3DE and 2DE volumes was statistically not significant (p = 0.54 and p = 0.47 for EDV and ESV respectively). However, the difference in bias between RT3DE and 2D EF was marginally significant (p = 0.05). EF measured by CMR was similar by RT3DE (P = 0.21) but not by 2DE (P = 0.003). The inter- and intra-observer variation in volumes and EF were similar for RT3DE and 2DE.

CONCLUSIONS: In daily clinical practice, RT3DE and 2DE underestimates LV volumes. Compared to 2DE, RT3DE is more accurate for EF measurement. The reproducibility of RT3DE measurements is similar to that of 2DE.
IMPORTANCE OF CALCIUM SCORE ZERO IN PREDICTING PRESENCE OF OBSTRUCTIVE CORONARY ARTERY DISEASE AND 2-YEAR CARDIOVASCULAR OUTCOME IN DIABETIC PATIENTS: A PILOT SINGLE-CENTRE RESTROSPECTIVE STUDY
Abdul Rahman E, Najme Khir R, Othman N, Chuah Sc, Ibrahim Ks, Lim Cw, Mohd Arshad Mk, Ibrahim Zo, Ismail Jr, Zainal Abidin Ha, Kasim Ss.
Universiti Teknologi Mara (UiTM)

INTRODUCTION: Diabetes is a major cardiovascular risk factors associated with significant morbidity and mortality. Little is known on diagnostic performance of calcium score (CAS) zero in refining cardiovascular (CV) risk prediction amongst Malaysians that were well-known with multiple co-morbidities.

OBJECTIVE: We aim to test the diagnostic performance of CAS in a sample of diabetic Malaysian population presented with stable chest pain to an outpatient setting.

METHOD: This was a pilot, single-centre, retrospective study of patients referred for coronary CT angiography (CTCA) for investigation of stable chest pain in 2014. Their baseline clinical data such as demographics, CV risk profiles, CAS and CTCA results were obtained from electronic medical records. A combined clinical outcome of CV event, the need to undergo invasive coronary angiogram and revascularization over a period of 2 years were also traced.

RESULT: 130 patients with complete data were analyzed. The mean age was 54±11.6 years. 49 patients were diabetics and 81 patients were non-diabetic. When CAS zero, only 1 out of 17 diabetic patients had obstructive CAD on CTCA which led to intervention. When CAS was more than zero, 16 out 32 diabetic patients had obstructive CAD on CTCA, of which 15 led to intervention. 1 patient declined intervention, treated medically and did not develop event. When coronary calcium is present there’s 94.1% (95% CI 71.3 to 99.8%) and 93.8% (95% CI 69.7% to 99.8%) probability to developed obstructive CAD on CTCA and CV event within 2 years. When CAS zero, there’s 94.4% (95% CI 71.1 to99.1%) and 94.1% (95% CI 69.9% to99.1%) probability to have non-obstructive CAD and be event-free for 2 years.

CONCLUSION: Absence of coronary calcification confers benefit in diabetic patients suggesting clinical utility of zero calcium score as risk stratification tool in a population already at high risk of CVD.
COMPARISON OF ADAPTIVE CHANGES IN THE RIGHT VENTRICLE BETWEEN PROFESSIONAL FOOTBALLERS AND WEEKEND WARRIORS

Najme Khir R1, Chua NYC1, Ibrahim KS1, Ismail JR1, Zainal HA1, Lim CW1, Arshad K1, Ibrahim ZO1, Kasim S1, Abdul Rahman E1.

1Faculty of Medicine, UiTM Sg Buloh, Malaysia.

BACKGROUND: Regular exercise is associated with cardiac remodeling. We examine if there were any differences in cardiac remodeling of the right ventricle (RV) between professional football players and "weekend warriors" (vigorous intensity exercise of METS 6 and above for at least 75 minutes a week).

OBJECTIVE: To compare adaptive changes in the right ventricle between professional footballers and weekend warriors

MATERIALS AND METHODS: 23 professional football players, 20 “weekend warrior” with no past medical problems were evaluated. The subject’s age ranges from 20 to 40-years old. The subjects were evaluated by two-dimensional echocardiography and tricuspid annular plane systolic excursion (TAPSE), right ventricular ejection fraction (RVEF), right ventricle basal dimension, right ventricle mid dimension and tissue doppler systolic wave of tricuspid valve (TDs)

RESULTS: There were no differences between the mean TAPSE of the football players (2.38 cm +– 0.37) and the weekend warriors (2.25 cm +– 0.22), the mean RVEF of footballers (53.7 +– 9.14) and the weekend warriors (53.11 +–8.62) and the mean TDs of footballers (11.3 cm/s+– 5.7) and weekend warriors (12.44 cm/s +–1.23). However significant differences were seen the RV dimensions between the mean basal RV of the footballers (4.33 cm +– 0.39) and weekend warriors (3.47 cm +– 0.44) and the mid RV of the footballers (3.87 cm +– 0.62) and weekend warriors (3.17 cm +– 0.59)

CONCLUSION: Exercise causes adaptive changes in right ventricles and these adaptive changes are dependent on the intensity and duration of exercise, where there are no significant differences in the RV function of the two distinct groups, but the RV dimensions are larger in the professional footballer groups.
INDICATION, SAFETY AND CLINICAL IMPACT OF CARDIOVASCULAR MAGNETIC RESONANCE: A PILOT RUN OF THE FIRST NATIONAL CMR REGISTRY FOR MALAYSIA

Ho Kian Hui¹, Nor Hanim Mohd Amin¹, Nur Atiqah Muhd Apipi¹, Nurul Liyana Husain¹, Koh Keng Tat¹, Asri Said², Fazalena Johari³, Alan Fong Yean Yip¹, Ong Tiong Kiam¹

¹Cardiology department, Sarawak Heart Centre, Sarawak
²Faculty of Medicine and Health Sciences, University Malaysia Sarawak (UNIMAS), Sarawak
³Clinical Research Centre, Sarawak General Hospital

BACKGROUND: Cardiovascular magnetic resonance (CMR) is a rapidly emerging noninvasive imaging technique providing high resolution images without any application of radiation. It has broad range of clinical applications and is increasingly been used in clinical practice in Malaysia. A national CMR Registry is needed to assess its practice in Malaysia.

Objective: To evaluate indications, safety and impact on patient management of CMR in Sarawak Heart Centre.

MATERIALS AND METHODS: A pilot run of CMR Registry in single centre with consecutive patients who underwent clinical CMR from January-June 2015. Retrospective data collection from CMR database and case notes.

RESULTS: A total of 169 patients underwent clinical CMR, with 20 did not complete scan; 25% due to claustrophobia. 94% of patients received gadolinium-based contrast agent. Most important indications were viability assessment (54.4%), cardiomyopathy (28.2%), and risk stratification in suspected coronary artery disease (CAD) (4.7%). 6.7% of patients received stress CMR (adenosine or dobutamine). Severe complications only occurred in 0.7% of the cases (anaphylactic reaction secondary to contrast agent). No mortality during/due to CMR. There was direct impact of CMR on the clinical management by confirming suspected diagnosis (59.1%), excluding suspected diagnosis (21.5%), providing additional information for suspected diagnosis which is confirmed or excluded (18.1%) and providing unsuspected completely new diagnosis (1.3%). Invasive coronary angiogram was avoided and diagnosis were excluded in all patients referred for risk stratification of suspected coronary artery disease. Invasive therapeutic procedures such as PCI, CABG, valve surgery were triggered in 49.6% of patients after CMR was done, regardless of indication. Out of 81 patients who underwent CMR for viability study, 76.5% were planned for revascularisation (CABG or PCI) with the rest were planned for optimal medical therapy only after the CMR.

CONCLUSIONS: The top indications of CMR in Sarawak are viability assessment, cardiomyopathy and risk stratification in suspected CAD, which differs from the EuroCMR registry results. This demonstrated the importance of establishing a national multicentre CMR registry in Malaysia, and subsequently substudy on specific conditions. With appropriate medical personnel training and patient selection, CMR is safe and has strong impact on clinical management.
INTRODUCTION: Cardiovascular (CV) risk factors are highly prevalent in south east Asia and current risk scoring systems have been proven to have some drawbacks. Calcium score (CAS) has emerged as a potential marker to improve risk prediction in western population however data is lacking on its utility in Malaysia.

OBJECTIVE: We aim to test the diagnostic performance of CAS in comparison to Framingham risk score (FRS) in a sample of Malaysian population presented with stable chest pain to an outpatient setting.

METHOD: This is a single-centre restrospective study of patients referred for coronary CT angiography (CTCA) for investigation of stable chest pain in 2014. Their baseline clinical data such as demographics, CV risk profiles, CAS and CTCA results were obtained from electronic medical records. A combined clinical outcome of CV event, the need to undergo invasive coronary angiogram and revascularization over a period of 2 years were also traced.

RESULT: 130 patients with complete data were analyzed. The mean age was 54±11.6 years. 66% (86 patients) were males and 32% (49 patients) were diabetics. There were 43% (56 patients), 30% (39 patients) and 27% (35 patients) in the low-, intermediate- and high FRS risk respectively. 36%(47 patients) had CAS zero and 33%(43 patients) had CAS <100. CAS of 100-399 and more than 400 had 15% (20 patients) respectively. CAS has higher sensitivity and negative predictive value in detecting obstructive CAD on CTCA compared to FRS (94.6%; 95%CI 81.8 to 99.3% and 94.8%;95%CI 82.4 to 98.6% respectively). CAS has also higher sensitivity and negative predictive value in predicting 2-year CV outcome (97.4%;95%CI 86.2 to 99.9% and 97.9%; 95%CI 87.1% to 99.7% respectively) compared to FRS (91.2%; 95% CI 76.3 to 98.1% and 92.3%; 95%CI 79.8 to 97.3%).

CONCLUSION: Even in a population with a high CVD burden, there is a potential role of CAS in refining conventional risk stratification particularly in excluding presence of obstructive CAD and risk of CV outcome within 2 years.
THE INCIDENCE AND CLINICAL RELEVANCE OF CORONARY ARTERY ANOMALIES DETECTED ON MULTIDETECTOR COMPUTED TOMOGRAPHY IN SARAWAK

Oon Yen Yee¹, Khoo Siew Im¹, Lim Hui Soon², Nor Hanim Mohd Amin¹, Koh Keng Tat¹, Khaw Chee Sin¹, Ho Kian Hui¹, Francis Shu¹, Tan Cheng Ting¹, Voon Chi Yen¹, Khiew Ning Zan¹, Asri Said², Cham Yee Ling¹, Alan Fong¹, Ong Tiong Kiam¹.

¹Department of Cardiology, Sarawak Heart Center, Kota Samarahan, Kuching, Sarawak.
²Faculty of Medicine, University Malaysia Sarawak, Kota Samarahan, Kuching, Sarawak.

BACKGROUND: Coronary artery anomalies (CAAs) are rare. Some anomalies are associated with myocardial ischaemia, heart failure and sudden cardiac death.

OBJECTIVES: The aims of this study were to determine the incidence of CAAs detected on multidetector computed tomography (MDCT) and their clinical relevance.

METHODS: We reviewed our center’s MDCT database from January 2005 to December 2015.

RESULTS: 76 out of 5677 (incidence 0.01%) patients were reported to have CAAs. They consisted of 44 patients (57.9%) with anomalous origin of right coronary artery (RCA), 7 (9.2%) with anomalous origin of left coronary artery (LCA), 3 (3.9%) with anomalous origin of the left circumflex artery (LCX), 1 (1.3%) with abnormal course of LCX, 15 (19.7%) with coronary artery fistulas, 3 (3.9%) with single coronary artery, 3 (3.9%) with anomalous left coronary artery from pulmonary artery (ALCAPA). We were able to retrieve 26 patients’ (mean age 49 ± 13 years, 17 male) case folder. They consisted of 11 patients with anomalous origin of the RCA (10 from left coronary sinus), 4 with anomalous origin of LCA from right coronary sinus (3 inter-arterial course), 7 with coronary fistulas (2 large fistulas), 1 with single coronary artery (Lipton LII, anterior course), 3 with ALCAPA. Out of the 26 patients, 24 (92.3%) were alive and 2 were lost to follow-up. The commonest presenting symptom was chest pain (65.4%), followed by dyspnea (34.6%) and heart failure (11.5%). 3 patients underwent surgery and 1 underwent transcatheter coiling of fistula. 4 patients had positive functional test (2 anomalous origin of RCA, 1 anomalous origin of LCA from right coronary sinus and 1 ALCAPA). Only 1 patient who had positive functional test underwent surgery. The remaining 3 who did not undergo surgery were still alive. The patient with single coronary artery presented with heart failure and remained alive with pharmacotherapy. All 3 ALCAPA patients were alive, with the oldest patient survived to age 71 years. None of them had surgery performed.

CONCLUSIONS: CAAs are rare. Majority of cases may be benign. Large-scale studies are needed to better define the prognosis and optimal treatment of individual forms of CAAs.
COMPARISON OF RIGHT VENTRICLE ADAPTIVE CHANGES IN WEEKEND WARRIORS, COMPARED TO NORMAL SEDENTARY SUBJECTS
Faculty of Medicine, UiTM Sg Buloh, Malaysia.

BACKGROUND: It is known that the heart of an athlete undergoes adaptive changes by training. But as society gets more health conscious, we see a rise in these groups of “weekend warriors” that undergoes vigorous intensity exercise of more than METS 6 of at least 75 minutes twice a week.

OBJECTIVE: To compare the right ventricle adaptive changes between weekend warriors and healthy sedentary subjects.

METHOD: 20 “weekend warriors” and 15 sedentary subjects with no past medical problems were evaluated. The subject’s age ranges from 20 to 40-years old. The subjects were evaluated by two-dimensional echocardiography and tricuspid annular plane systolic excursion (TAPSE), right ventricle ejection fraction (RVEF), right ventricle basal dimension, right ventricle mid dimension and tissue doppler systolic wave of tricuspid valve (TDS).

RESULTS: There is no significant difference between the mean RVEF of the weekend warrior (53.11% +/- 8.62) and the sedentary subject (54% +/- 36.35) There were significant difference between the mean TAPSE of the weekend warriors (2.25 cm +/- 0.22) and sedentary subjects (1.57 cm +/- 1.09), mean RV basal of the weekend warriors (3.47 cm +/- 0.44) and sedentary subjects (2.58 cm +/- 1.75), the mean RVD middle portion of the weekend warriors (3.18 cm +/- 0.59) and sedentary subjects (2.0 cm +/- 1.38) and TDS of the weekend warriors (12.44 cm/s +/- 1.24) and sedentary subjects (2.5 cm/s +/- 5).

CONCLUSION: Moderate intensity exercise causes adaptive changes to the right ventricles when compared to sedentary subjects. These changes shows that exercise enhances the function of the right ventricle even in non-athlete individuals with vigorous exercise intensity habit.
CHRONIC KIDNEY DISEASE STAGE 2 SHOULD BE CONSIDERED HIGH RISK INDIVIDUALS FOR PRIMARY PREVENTION
Ahmad Bakhtiar Md Radzi, Sazzli Shahlan Kasim,
Department of Medicine, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh Campus, Selangor, Malaysia

BACKGROUND: Arterial damage in chronic kidney disease (CKD) is characterized by aortic stiffness. This is seen in elderly patients with advanced CKD. Patients with CKD stages 3 and above are considered high risk for cardiovascular disease with two-fold higher cardiovascular mortality rate when compared with patients with normal renal function. The association between arterial stiffness and early CKD is not well established.

OBJECTIVE: We aimed to study the presence of arterial stiffness using pulse wave velocity (PWV) in patients with CKD stage 2 of younger-age population.

MATERIALS AND METHODS: Patients below the age of 55 years with CKD stage 2 and normal renal function were recruited. Demographic details, co-morbidity, risk factors, medications as well as blood investigations were collected. Arterial stiffness was determined using carotid-femoral (aortic) PWV. Results were analysed using SPSS version 22.0.

RESULTS: 39 patients with CKD stage 2 and 39 control patients were recruited. The mean age of CKD patients was 46 years ± 5.7. Patients with CKD stage 2 had a significant higher mean PWV (7.5 m/s ± 1.5) compared to controls (5.7 m/s ± 1.1) (p<0.001, 95% CI -2.45, -1.21). Diabetics patients had higher mean PWV (7.8 m/s ± 1.7) compared to non-diabetics (7.3 m/s ± 1.3) (p=0.34, 95% CI -1.50, 0.53). Multiple linear regression analysis revealed pulse pressure as the independent predictor of abnormal PWV (r²=0.568, p=0.006).

CONCLUSIONS: Arterial stiffness as assessed by PWV occurs early in the young CKD stage 2 patients.
Arrhythmias & Basic Science
(FP3.1-3.7)
FP 3.1 Time: 1430-1440

COMPARING WARFARIN WITH NOVEL ORAL ANTI COAGULANTS IN STROKE EVENTS FOR PATIENTS WITH ATRIAL FIBRILLATION UNDERGOING ELECTRICAL CARDIOVERSION
Goh Chong Aik1, Kong Poi Keong1, Saravanan Krishnan2, Ma Soot Keng3, Omar Ismail
1Hospital Pulau Pinang, Pulau Pinang, Malaysia
2Hospital Sultanah Bahiyah, Alor Setar, Kedah, Malaysia
3Loh Guan Lye Specialists Centre, Pulau Pinang, Malaysia

FP 3.2 Time: 1440-1450

SYNCOPE, DIZZINESS AND FALLS OVERLAP AMONG PATIENTS REFERRED TO A FALLS AND SYNCOPE SERVICE AT THE UNIVERSITY OF MALAYA MEDICAL CENTRE
Gan Sin Yin1, Nor Izzati Saedon1,2, Sukanya Subramaniam1, Nor Fairuz Husna Alias1, Siti Sakinah Mohd Nasir1, Nor Fatin Izzati Abu Hashim1, Imran Zainal Abidin3, Chee Kok Han3, Jassie Teo Yeh Lin4, Tan Maw Pin1,2.
1Falls and Syncope Service, Cardiorespiratory Laboratory, University of Malaya Medical Centre, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia.
2Division of Geriatric Medicine, Faculty of Medicine, University of Malaya Medical Centre, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia.
3Division of Cardiology, Faculty of Medicine, University of Malaya Medical Centre, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia.
4Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia.

FP 3.3 Time: 1450-1500

IDENTIFICATION OF METABOLITE CHANGES IN PLASMA FOLLOWING TICAGRELOR CESSATION IN ACUTE CORONARY SYNDROME PATIENTS USING METABOLOMICS
Wardati Mazlan Kepli1, Jesse Dawson2, Matthew Walters3, Colin Berry2
1Pharmacy Department, Hospital Serdang;
2Institute of Cardiovascular and Medical Sciences, University of Glasgow

FP 3.4 Time: 1500-1510

THE EFFECTS OF PERI-PERCUTANEOUS CORONARY INTERVENTION OXYGENATION ON MYOCARDIAL PROTECTION AND CARDIORESPIRATORY FUNCTION: A CONCEPT PROVING STUDY
Chan Soo Chin1, Anwar Suhami1, Ganiga Srinivasah Sridhar2, Timothy Watson2,3.
1Cardiac Rehabilitation Service, Department of Rehabilitation Medicine, Faculty of Medicine, University of Malaya, Malaysia
2Cardiology Unit, Department of Internal Medicine, Faculty of Medicine, University of Malaya, Malaysia
3Department of Medicine, University of Auckland, New Zealand
FP 3.5  Time: 1510-1520

**LACTATE AS A PROGNOSTIC INDICATOR AMONG ACUTELY ILL CARDIAC PATIENTS**

Suraya Hani Kamsani, Yap Lok Bin, Navanitha Chandrasekaran, Nandakumar Ramakrishnan

FP 3.6  Time: 1520-1530

**SPECTRAL ANALYSIS OF BLOOD PRESSURE VARIABILITY IN ELDERLY FALLERS**

Goh CH¹,², Ng SC¹, Kamaruzzaman SB², Chin AV², Tan MP²*;

¹Department of Biomedical Engineering, Faculty of Engineering, University of Malaya, Kuala Lumpur, Malaysia,
²Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia, *Corresponding author

FP 3.7  Time: 1530-1540

**COMPARATIVE TREATMENT COST, EFFECTIVENESS AND SAFETY OF DABIGATRAN, RIVAROXABAN AND WARFARIN IN ATRIAL FIBRILLATION (AF) PATIENTS: A DESCRIPTIVE STUDY FROM PENANG GENERAL HOSPITAL (PGH)**

Looi Wan Lin¹, Tan Swee Kee¹, Yeo Hui Yee², Aznisyafeza bt. Andin Selamat¹, Atisha Binti Abdul Hanif¹ and Cynthia Priyadarshini¹

¹Pharmacy Department, Penang General Hospital, Pulau Pinang, Malaysia
²Clinical Research Centre, Seberang Jaya Hospital, Pulau Pinang, Malaysia
FP 3.1  
Time: 1430-1440  

COMPARING WARFARIN WITH NOVEL ORAL ANTICOAGULANTS IN STROKE EVENTS FOR PATIENTS WITH ATRIAL FIBRILLATION UNDERGOING ELECTRICAL CARDIOVERSION  
Goh Chong Aik¹, Kong Poi Keong¹, Saravanan Krishinan², Ma Soot Keng³, Omar Ismail¹  
¹Hospital Pulau Pinang, Pulau Pinang, Malaysia  
²Hospital Sultanah Bahiyah, Alor Setar, Kedah, Malaysia  
³Loh Guan Lye Specialists Centre, Pulau Pinang, Malaysia  

BACKGROUND: Patients with atrial fibrillation (AF) undergoing electrical cardioversion (ECV) may experience stroke as a complication. Although warfarin is conventionally used in ECV, novel oral anticoagulants (NOACs) are being increasingly used. Observational studies have shown that these two agents are comparable in stroke risks after ECV.

OBJECTIVE: We aimed to compare stroke rates among Asian patients undergoing ECV in Hospital Pulau Pinang who were treated on NOACS with those treated on warfarin.

MATERIALS & METHODS: Medical records from patients with AF undergoing ECV between July 2014 and January 2017 were retrospectively analysed. One group was patients taking warfarin with INR between 2 to 3 for at least 3 weeks prior to ECV. Another group was patients on NOACs, namely dabigatran, rivaroxaban or apixaban, for at least 3 weeks prior to ECV. Both groups continued oral anticoagulants for at least 4 weeks after ECV. Stroke rates at 30 days after ECV were examined.

RESULTS: Fifty four ECV were carried out on 48 patients. Twenty procedures were on warfarin while 34 on NOACs. Patients in NOACs group were older (67±5.4 years versus 60.5±7.5 years, p=0.01). Both groups had median CHA2DS2-VASc score of 3 (p=0.65). Three (15%) patients in warfarin group have valvular AF. Both warfarin and NOACs groups had male predominance 13 (65%) versus 24 (70.6%), p=0.76. In total, there were 29 (60.4%) Chinese, 17 (35.4%) Malay and 2 (4.2%) Indian patients. Six patients in warfarin group (30%) and 11 in NOACs group (32.4%) had transoesophageal echocardiogram (TOE) prior to ECV, p=0.86. In the NOACs group, 18 (52.9%) were on dabigatran, 12 (35.3%) rivaroxaban and 4 (11.8%) apixaban. There were no stroke events observed for both groups at 30 days.

CONCLUSION: Within the limitation of sample size in a single-centre retrospective study, we observed no difference in stroke events at 30 days after ECV between warfarin and NOACs groups among our Asian patients.
FP 3.2
Time: 1440-1450

SYNCOPE, DIZZINESS AND FALLS OVERLAP AMONG PATIENTS REFERRED TO A FALLS AND SYNOPE SERVICE AT THE UNIVERSITY OF MALAYA MEDICAL CENTRE

Gan Sin Yin¹, Nor Izzati Saedon¹², Sukanya Subramaniam¹, Nor Fairuz Husna Alias¹, Siti Sakinah Mohd Nasir², Noor Fatin Izzati Abu Hashim¹, Imran Zainal Abidin³, Chee Kok Han³, Jassie Teo Yeh Lin⁴, Tan Maw Pin¹².

¹Falls and Syncope Service, Cardiorespiratory Laboratory, University of Malaya Medical Centre, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia.
²Division of Geriatric Medicine, Faculty of Medicine, University of Malaya Medical Centre, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia.
³Division of Cardiology, Faculty of Medicine, University of Malaya Medical Centre, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia.
⁴Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia.

BACKGROUND: Falls and syncope are interrelated health problems in older persons. While this relationship has been described in Western countries, research evaluating falls and syncope in among Asians remains limited.

OBJECTIVE: To determine the characteristics and symptom overlap of patients attending a new falls and syncope service at the University of Malaya Medical Centre (UMMC).

MATERIALS & METHODS: Demographic and clinical information of consecutive patients seen were collected from July 2014 till December 2016. Following a structured clinical assessment, patients were evaluated according to clinical indications with head-up tilt test, carotid massage, active stand and autonomic function test.

RESULTS: A total of 205 patients, 61.5 % female, mean age (standard deviation) = 70 (17) years attended the clinic over the time period. There was a bimodal age distribution with a small peak at 25-30 years and a larger peak at 75-80 years. Of these, 37.6 % presented with dizziness, 35.1 % syncope, 12.7 % presyncope and 4.7 % vertigo. 73.7 % had fall(s) and 26.3 % sustained injuries. 36 % had two out of three while 7.3 % had all three symptoms of falls, dizziness and syncope. The two most common diagnoses were orthostatic hypotension (25.9 %) and reflex syncope (23.4 %).

CONCLUSIONS: Symptoms of falls, syncope and dizziness overlap among patients attending our service with one in four experiencing injuries. The evaluation of these conditions requires close interdisciplinary working to ensure a cost-effective approach with good diagnostic yields.
FP 3.3 Time: 1450-1500

IDENTIFICATION OF METABOLITE CHANGES IN PLASMA FOLLOWING TICAGRELOR CESSION IN ACUTE CORONARY SYNDROME PATIENTS USING METABOLICS

Wardati Mazlan Kepli1, Jesse Dawson2, Matthew Walters2, Colin Berry2

1Pharmacy Department, Hospital Serdang;
2Institute of Cardiovascular and Medical Sciences, University of Glasgow

BACKGROUND: Stopping dual antiplatelet therapy (DAPT) has been shown to increase the risk of adverse event following acute coronary syndrome (ACS).

OBJECTIVE: We explored whether metabolomic techniques could identify changes in metabolites before and after stopping DAPT.

MATERIALS & METHODS: We used liquid chromatography-mass spectrometry to compare the serum metabolite profile of patients with ACS while on ticagrelor (within one month before DAPT ended) and after cessation (between 7 to 30 days after ticagrelor ended). Metabolite changes between before and after cessation were determined using paired t-tests with a p-value of <0.05 considered significant.

RESULTS: The metabolomics analysis cohort included 7 patients [mean age 66.0 (SD 7.2) years], 5 ST-elevation myocardial infarction (STEMI) and 2 non-STEMI. All patients were treated with aspirin 75mg daily and combination with ticagrelor 90mg twice daily. Mean total duration (SD) of DAPT therapy following ACS was 167 (32.5) days. 311 putative metabolites were identified. We found 16 statistically significant metabolites of interest, of which 7 metabolites were from lipid pathway, 1 from carbohydrate metabolism and one from nucleotide metabolism. Notably, after stopping ticagrelor, adenosine pathway was upregulated to 2.6 fold (uncorrected p=0.028).

CONCLUSIONS: In this preliminary study, we used an untargeted metabolomics approach to assess changes in metabolites after cessation of ticagrelor. Multiple metabolite changes were observed, including an up-regulation of the adenosine pathway. The clinical significance of these changes remains to be determined.
THE EFFECTS OF PERI-PERCUTANEOUS CORONARY INTERVENTION OXYGENATION ON MYOCARDIAL PROTECTION AND CARDIORESPIRATORY FUNCTION: A CONCEPT PROVING STUDY

Chan Soo Chin¹, Anwar Suhami¹, Ganiga Srinivasaiah Sridhar², Timothy Watson²,³
¹Cardiac Rehabilitation Service, Department of Rehabilitation Medicine, Faculty of Medicine, University of Malaya, Malaysia
²Cardiology Unit, Department of Internal Medicine, Faculty of Medicine, University of Malaya, Malaysia
³Department of Medicine, University of Auckland, New Zealand

BACKGROUND: Elective percutaneous coronary intervention (PCI) is often associated with myocardial necrosis evidenced by peri-procedural troponin release and this is surrogate for subsequent cardiovascular events. There is no local study on effect of peri PCI oxygenation in in myocardial protection and cardiopulmonary fitness outcome. The effect of peri PCI oxygenation on cardiovascular fitness is not known.

OBJECTIVE: The aim of this study is to assess the utility of oxygen for reduction of ischaemia in patients with significant stable coronary artery disease scheduled for elective PCI. A secondary purpose is to evaluate further effect of peri- PCI oxygenation on cardiovascular fitness and autonomic response.

METHODS: Thirty subjects undergoing elective PCI were recruited in the study. 16 subjects were randomized to receive treatment (oxygen) or 14 randomized to placebo (medical air) for 30 minutes prior to PCI. Subjects were then assessed with submaximal exercise treadmill test. The primary outcome was Troponin I at 6 hours and 24 hours after PCI. Secondary outcomes include cardiopulmonary fitness and cardiovascular autonomic response.

RESULTS: PCI is associated with peri-procedural myocyte necrosis in both group; the median Troponin I at 24 hours is lower in the experimental group compared to the control group (0.165 versus 0.230ng/mL, P= 0.637). The experimental group achieved higher heart rate recovery (33.38 versus 29.71 bpm, P= 0.461). More subjects in experimental group achieved target heart rate recovery; 7 out of 16 subjects in the experimental group versus 4 out of 14 in the control group, P= 0.389. There is no significant difference in METs.

CONCLUSIONS: Despite the insignificant result in the benefits of oxygen in myocardial protection and improving cardipulmonary fitness; the experimental group experienced less myocardial necrosis as evidenced by lower median Troponin I. There are improvements in autonomic response as evidenced by more subjects achieving higher heart rate recovery and target chronotropic index in the experimental group. This group of subjects may have lower cardiovascular mortality as chronotropic index is a strong predictor for cardiovascular mortality and lesser myocardial necrosis. Longer study period is suggested to increase sample size and to monitor trend of progress or morbidity and mortality.
LACTATE AS A PROGNOSTIC INDICATOR AMONG ACUTELY ILL CARDIAC PATIENTS
Suraya Hani Kamsani, Yap Lok Bin, Navanitha Chandrasekaran, Nandakumar Ramakrishnan

BACKGROUND: Hyperlactatemia had been shown to be associated with poor outcome in patients with critical conditions such as sepsis and trauma[1] [2] [3].

OBJECTIVE: The study aims to document lactate levels on admission to Coronary Care Unit (CCU) and correlate with clinical outcomes.

MATERIALS & METHODS: This was a prospective, observational study of data collected from CCU Registry in a tertiary cardiac centre over 6 months. Lactate levels were documented from the first arterial blood gas taken on admission to CCU. Correlations were made with inpatient mortality, left ventricular ejection fraction (LVEF), requirement for ventilator and inotropic support; and duration of hospital stay.

RESULTS: 26 out of 90 patients entered into the registry had data on lactate measurements. 50% of these patients had a high lactate level of more than 3.2 mmol/l. The most common diagnosis at admission for this group was decompensated heart failure (69.2%) followed by NSTEMI (38.5%). Inpatient mortality for this group of patient was higher at 38.5% compared with 30.8% in those with lactate level of less than 3.2 mmol/l (p= 0.025). These patients also have lower LVEF (33% vs 40%, p = 0.065), higher requirement for mechanical ventilation (85% vs 54%) and inotropic support (61.5% vs 46.2%, p= 0.001) with longer hospital stay (22.5 days vs 12.2 days).

CONCLUSIONS: This preliminary data shows that there is a trend for poorer outcome in patients with higher lactate level. However, further study with larger number is needed to ascertain this. As lactate measurement can be obtained rapidly at point-of-care, knowing its prognostic implication would allow early risk stratification, proper monitoring and more tailored therapy.


SPECTRAL ANALYSIS OF BLOOD PRESSURE VARIABILITY IN ELDERLY FALLERS
Goh CH\textsuperscript{1,2}, Ng SC\textsuperscript{1}, Kamaruzzaman SB\textsuperscript{2}, Chin AV\textsuperscript{2}, Tan MP\textsuperscript{3};
\textsuperscript{1}Department of Biomedical Engineering, Faculty of Engineering, University of Malaya, Kuala Lumpur, Malaysia
\textsuperscript{2}Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia, *Corresponding author

BACKGROUND: Falls are major public problems faced by older persons that lead to increased mortality and morbidity. While orthostatic hypotension is considered an established falls risk factor, single measurements demonstrating blood pressure drop may not accurately reflect physiological changes in blood pressure.

OBJECTIVES: Developed algorithms to assess blood pressure variability (BPV) using spectral analysis in order to measure fluctuations in blood pressure using short segments of continuous blood pressure recordings obtained non-invasively, and proceeded to compare the characteristics of BPV between one-off and recurrent fallers in our population.

METHODOLOGY: Blood pressure measurements were obtained during health checks conducted for the Malaysian Elders Longitudinal Research (MELoR) study. Continuous beat-to-beat blood pressure data was obtained during 10 minutes’ supine rest and three minute after standing. Using custom written software, blood pressure variability was then computed into low frequency (LF, 0.07-0.14 Hz) and high frequency (HF, 0.14-0.35 Hz) spectral power density using a fast Fourier Transform (FFT) algorithm.

RESULTS: Two hundred and fifty-six older individuals with at least one fall in past 12 months were selected. Thirty-one percent had multiple falls. There is no significant difference between those with single falls and multiple falls in their age, gender, BMI and waist to hip ratio. Older individuals with multiple falls are had significantly lower standing to supine ratio (SSR) of systolic blood pressure variability (SBPV) – LF (p = 0.017), SSR of SBPV-LF:HF ratio (p = 0.012), SSR of diastolic blood pressure variability (DBPV) – LF (p = 0.008) and SSR of DBPV-LF:HF ratio (p = 0.025).

CONCLUSION: Older individuals with multiple falls had lower SSR of SBPV-LF and SSR of DBPV - LF compared to those with only one fall. This may be attributed to gain and range of baroreflex, suggesting that those with recurrent falls are more likely to experience perturbations in autonomic responses to posture change. Further evaluation is required to understand the relevance of very short-term BPV.
COMPARATIVE TREATMENT COST, EFFECTIVENESS AND SAFETY OF DABIGATRAN, RIVAROXABAN AND WARFARIN IN ATRIAL FIBRILLATION (AF) PATIENTS: A DESCRIPTIVE STUDY FROM PENANG GENERAL HOSPITAL (PGH)

Looi Wan Lin¹, Tan Swee Kee¹, Yeo Hui Yee², Aznisyafeza bt. Andin Selamat¹, Atisha Binti Abdul Hanif¹ and Cynthia Priyadarshini¹

¹Pharmacy Department, Penang General Hospital, Pulau Pinang, Malaysia
²Clinical Research Centre, Seberang Jaya Hospital, Pulau Pinang, Malaysia

BACKGROUND: Warfarin has been the predominant treatment option for stroke prevention in AF patients in PGH. However, it requires frequent monitoring due to its narrow therapeutic index. Newer oral anticoagulants, Dabigatran and Rivaroxaban, were introduced into the National Drug Formulary since 2009. They were found to be as effective as warfarin with lesser monitoring requirements. Nevertheless, they are more expensive.

OBJECTIVE: To compare cost, effectiveness and safety of Dabigatran, Rivaroxaban and Warfarin in AF patients from Cardiology Clinic, PGH.

MATERIALS AND METHODS: This is a one-year retrospective study. Treatment costs include medications, INR point-of-care testing, personnel, and facilities. Effectiveness outcome was stroke. Safety outcomes were major and minor bleeding. Data was collected from clinic case notes, pharmacy inventory and finance department using a pre-design data collection form.

RESULTS: A total of 224 patients were included in this study (Warfarin, n=122; Dabigatran, n=63; Rivaroxaban, n=39). Total treatment cost per patient annually for Warfarin, Dabigatran and Rivaroxaban were MYR 651.11, MYR 2944.83 and MYR 2893.73, respectively. Personnel cost (MYR354.17) and INR point-of-care testing cost (MYR152.49) were the two largest contributing costs in warfarin treatment annually. Warfarin patients had an average of 9.8 outpatient clinic visits compared to 3.19 outpatient clinic visits in NOACs patients. However, high drug acquisition cost for Dabigatran (MYR2828.75) and Rivaroxaban (MYR2777.65) led to high treatment cost in NOACs as compared to Warfarin(RM142.00). During the study period, 1 incident of ischemic stroke was observed in patients taking Warfarin, none from the NOACs group. No bleeding events were reported in Rivaroxaban group while 1 patient (1.59%) on Dabigatran experienced minor bleeding. A higher percentage of bleeding events (4.92%) were observed in patients on Warfarin, 3 patients with major bleed and 3 with minor bleed.

CONCLUSIONS: The treatment costs for both Dabigatran and Rivaroxaban were 4 times higher than Warfarin. Patients taking Warfarin had 3-fold higher bleeding events compared to Dabigatran. This study serves to assist the decision makers in PGH in optimal utilization of oral anticoagulant medicines within the given budget while taking into consideration the benefits and risks of the newer versus conventional therapy.
Interventional Cardiology 1
(FP4.1-4.7)
FP 4.1 Time: 1430-1440

A COMPARISON OF THE OUTCOME AND SAFETY PROFILE OF PRIMARY PERCUTANEOUS CORONARY INTERVENTION DONE DURING OFFICE HOURS AND NON-OFFICE HOURS
Nazrul M, Ng YP, Kumara G, Shah Zeb, Intan Syafinaz, Al-Fazir Omar, Rahal Mohamed Yusoff, Mahathar Abdul Wahab, Alzamani Mohammad Idrose, Rosli Mohamed Ali

FP 4.2 Time: 1440-1450

COMPARISON OF RESTING PD/PA WITH FRACTIONAL FLOW RESERVE USING A MONORAIL PRESSURE CATHETER
Koh Keng Tat¹, Oon YY¹, Khaw CS¹, Mulia E¹, Voon CY¹, Asri S², Cham YL¹, Shu FEP¹, Ho KH¹, Tan CT¹, Nor Hanim MA¹, Khiew NZ¹, Fong AYY¹, Ong TK¹.
¹Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia
²Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia
³Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia

FP 4.3 Time: 1450-1500

PRIMARY PERCUTANEOUS CORONARY INTERVENTION IN ST ELEVATION MYOCARDIAL INFARCTION NETWORK: OUTCOME & DETERMINANT FACTORS. THE HOSPITAL SERDANG EXPERIENCE.
Julian Tey Hock Chuan¹, Abdul Muizz AM¹, Noriza M¹, Mawaddah B¹, Abdul Raqib AG¹, Gary Lee Chin Keong¹, Prem Nathan¹, Halwani¹, Hartini¹, Foo Yoke Long², Norzian Ismail², Shamini³, Liana L¹, Ahmad Fazli AA², Asri Ranga¹, Kamaraj Selvaraj¹, Abdul Kahar AG¹
¹Department of Cardiology, Hospital Serdang; ²Faculty of Medicine, University Putra Malaysia; ³Clinical Research Centre, Hospital Tengku Ampuan Rahimah, Hospital Putrajaya and Hospital Banting.

FP 4.4 Time: 1500-1510

SHORT AND LONG TERM OUTCOME IN PATIENTS WITH CALCIFIED LESIONS REQUIRING ROTATIONAL ATERECTOMY
Kumara Gurupparan Ganesan, Al Fazir Omar, Nazrul M, Ng yau Piau, Shah Zeb, Imran M, Theeapa Nesam, Zulaikha Zainal, Rosli Mohd Ali

FP 4.5 Time: 1510-1520

A COMPARISON OF OUTCOMES BETWEEN THROMBOLYSIS AT A SPOKE HOSPITAL VERSUS TRANSFER FOR PRIMARY PERCUTANEOUS CORONARY INTERVENTION AT A HUB HOSPITAL FOR ACUTE ST-ELEVATION MYOCARDIAL INFARCTION
Lee Zhen-Vin¹, Muhammad Imran bin Abdul Hafidz¹, Faizal Khan bin Abdullah², Eashwary @ Carthilyayini A/P Mageswaram², Chee Kok Han¹
¹Cardiology Unit, Department of Medicine, University Malaya Medical Centre, Kuala Lumpur, Malaysia
²Department of Medicine, Hospital Tengku Ampuan Rahimah, Selangor, Malaysia
FP 4.6 Time: 1520-1530

THIRTY-DAY CLINICAL OUTCOME OF PRIMARY PERCUTANEOUS INTERVENTION VERSUS FIBRINOLYSIS FOLLOWED BY CORONARY ANGIOGRAPHY IN ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION

Oon Yen Yee, Nasyitah bt Yakub, Siti Alis Soolihan bt Ramli, Koh Keng Tat, Khaw Chee Sin, Ho Kian Hui, Francis Shu, Tan Cheng Ting, Voon Chi Yen, Khiew Ning Zan, Asri Said, Nor Hanim Mohd Amin, Cham Yee Ling, Alan Fong, Ong Tiong Kiam.

1Department of Cardiology, Sarawak Heart Center, Kota Samarahan, Kuching, Sarawak.
2Faculty of Medicine, University Malaysia Sarawak, Kota Samarahan, Kuching, Sarawak.

FP 4.7 Time: 1530-1540

TRANS-CORONARY ABLATION OF SEPTAL HYPERTROPHY (TASH) IN HYPERTROPHIC OBSTRUCTIVE CARDIO-MYOPATHY (HOCM): ACUTE AND LONG-TERM SAFETY AND EFFICACY OUT-COME FROM A SINGLE CENTER EXPERIENCE

Afran Y Haroon, Alfazir, Rosli M Ali
A COMPARISON OF THE OUTCOME AND SAFETY PROFILE OF PRIMARY PERCUTANEOUS CORONARY INTERVENTION DONE DURING OFFICE HOURS AND NON-OFFICE HOURS

Nazrul M, Ng YP, Kumara G, Shah Zeb, Intan Syafinaz, Al-Fazir Omar, Rahal Mohamed Yusoff, Mahathar Abdul Wahab, Alzamani Mohammad Idrose, Rosli Mohamed Ali

BACKGROUND: Patients with ST Elevation Myocardial Infarction should be treated with Primary Percutaneous Coronary Intervention (PPCI) when available. There has been ongoing debate regarding the efficacy of PPCI during non-office hours, as compared to PPCI done during office hours.

OBJECTIVE: To determine the outcome of Primary Percutaneous Coronary Intervention (PPCI) for patients with ST Elevation Myocardial Infarction (STEMI), during non-office hours as compared to PPCI done during office hours via the HKL IJN Network (HISNET).

METHODS: Consecutive STEMI patients referred from HKL to IJN for PPCI between January 2015 and December 2016 were studied. Patients were subdivided into two groups, PPCI done during office hours and those done during non-office hours (Defined as weekend, and weekdays between 5pm till 8am). Patient’s demographics as well as in hospital mortality, 30 day mortality, 6 months mortality, 1 year mortality and MACE were observed. MACE was defined as death, re-infarction, bleeding, urgent coronary bypass graft (CABG) and stroke.

RESULTS: A total of 277 patients were involved in the study, with 162 patients being treated during non-office hours and 115 patients during office hours. There was 69 patients that had cardiogenic shock during the procedure, with 41 patients presenting during non-office hour and 28 during office hour. The First Medical Contact (FMC) to balloon time was 95 minutes (79-128) for non-office hour presentations and 86 minutes (75-108) for those presenting during office hours. The baseline characteristics of the patients involved in the study were similar, with a majority of patients were male (87%). The in-hospital mortality for non-office hours and office hours were nine (6%) and four (4%) respectively. Thirty day and one year mortality for non-office hour’s patients’ vs office hour patients are three (2%) vs 1(1%) and zero vs one (2%) respectively.

CONCLUSION: PPCI done at our Centre during non-office hours were comparable to those performed during office hours in terms of outcomes and efficacy.
COMPARISON OF RESTING PD/PA WITH FRACTIONAL FLOW RESERVE USING A MONORAIL PRESSURE CATHETER
Koh Keng Tat1, Oon YY1, Khaw CS1, Mulia E1, Voon CY1, Asri S2, Cham YL1, Shu FEP1, Ho KH1, Tan CT1, Nor Hanim MA1, Khiew NZ1, Fong AYY1,3, Ong TK1.
1Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia
2Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia
3Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia

BACKGROUND: The RXi™ system (ACIST Medical Systems, MN, USA) is a new Fractional Flow Reserve (FFR) technology utilising an ultrathin monorail microcatheter (Navvus®; ACIST Medical Systems) with an optical pressure sensor located close to the distal catheter tip. FFR measurement using monorail microcatheter is comparable to the conventional pressure wires. However, the predictive value of resting distal coronary artery pressure/aortic pressure (Pd/Pa) on hyperemic FFR value in the real world practice is unknown.

OBJECTIVE: to explore the diagnostic accuracy of resting Pd/Pa in relation to hyperemic FFR using the monorail pressure catheter.

METHODS: Resting Pd/Pa and FFR were measured using monorail pressure catheter in 67 consecutive patients with intermediate coronary artery lesions (30% to 80% diameter stenoses) between 01-03-2016 to 17-01-2017. Of 121 studied lesions, 29 (23.97%) were excluded because of no hyperemic FFR due to positive resting Pd/Pa (n=17), severe or non-critical stenosis (n=11) and suboptimal acquisition (n=1), leaving 92 lesions for final analysis. Hyperemic FFR was induced with intracoronary adenosine. The selection of coronary wire and the dose of intracoronary nitroglycerine were at the operators’ discretions.

RESULTS: Bland-Altman plots showed a moderate degree of scatter between Pd/Pa and FFR value. On average, Pd/Pa exceeded FFR by 0.066 (-0.09 to +0.22). Receiver-operating characteristic curves of the resting Pd/Pa with FFR≤0.80 as the reference variable showed an area under the curve of 0.78 (95% confidence intervals 0.680 to 0.881, p<0.001), with a diagnostic accuracy of 79.3% when the resting Pd/Pa was ≤0.86. Certain cutoff values of Pd/Pa can reliably predict whether hyperemic FFR was positive or negative (FFR cutoff≤0.80). Resting Pd/Pa value of >0.96 had a negative predictive value (NPV) of 100% and sensitivity of 100%; the resting Pd/Pa value of ≤0.82 had a positive predictive value (PPV) of 100% and specificity of 98.3%. These were consistent regardless of coronary vessel, location of lesion or degree of diameter stenosis.

CONCLUSIONS: Certain range of resting Pd/Pa measured by monorail pressure catheter had excellent NPV and sensitivity or excellent PPV and specificity to predict hyperemic FFR. Clinical outcome studies are required to determine whether the results might obviate the need for hyperemia in selected patients.
PRIMARY PERCUTANEOUS CORONARY INTERVENTION IN ST ELEVATION MYOCARDIAL INFARCTION NETWORK: OUTCOME & DETERMINANT FACTORS. THE HOSPITAL SERDANG EXPERIENCE.

Julian Tey Hock Chuan¹, Abdul Muizz AM¹, Noriza M¹, Mawaddah B¹, Abdul Raqib AG¹, Gary Lee Chin Keong¹, Prem Nathan¹, Halwani¹, Hartini¹, Foo Yoke Long², Norzian Ismail², Shamini¹, Liana L¹, Ahmad Fazli AA², Asri Ranga¹, Kamaraj Selvaraj¹, Abdul Kahar AG¹

¹Department of Cardiology, Hospital Serdang; ²Faculty of Medicine, University Putra Malaysia; Acknowledgement: Staffs of Cardiology Department, Hospital Serdang, Emergency Physicians of Hospital Serdang, Hospital Kajang, Hospital Putrajaya and Hospital Banting.

BACKGROUND: Primary Percutaneous Coronary Intervention (PPCI) is the treatment of choice for patients presented with acute ST elevation myocardial infarction (STEMI). The purpose of STEMI Network is to improve the management of STEMI patients with the aim to transfer patients for PPCI. This Network includes Hospital Serdang as PCI-capable hospital with three other non-PCI-capable hospitals (distance covered 9.8-46.4km).

OBJECTIVES: This study portrays and correlates factors including patients' demographic, timeliness of patients' transfer and patients' hemodynamic status in treatment of STEMI with PPCI. The primary outcome measured is the 30 days all-cause mortality.

METHODS: This prospective study collected data for all patients underwent PPCI for acute STEMI in Hospital Serdang from 12 May 2015 till 24 November 2016. The 30 days' outcome were obtained from patients' follow up clinics notes and via phone calls. Data interpreted by using logistic regression analysis.

RESULTS: 176 patients were studied. Mean age 54.0 years, of which 86.9% were male. 11 patients (6.3%) died within 30 days after PPCI. No significant difference in outcome for gender and age groups. Prolonged door in door out (DIDO) at primary hospital showed higher mortality rate (<30 minutes: 4.8% p=0.549, 30-60min: 5.3% p=0.708, >60min: 11.1% p=0.165). Longer door to device (DTD) duration is associated with higher mortality rate in both PCI-capable Hospital (<90minutes: 4.8% vs >90min: 12.5%, p=0.342) and non-PCI-capable hospitals (<120min: 3.6% vs >120min: 9.1% p=0.359). Systolic blood pressure (BP) is significant factor affecting patients' outcome (Odd Ratio (OR)=0.959 (0.935-0.983), p=0.001). Systolic BP < 100mmHg (OR 4.339 (1.295-14.543), p=0.045), and diastolic BP < 60mmHg (OR= 4.339 (1.295-14.543), p=0.045) are associated with high mortality. Patients presented with Killip I (OR 0.202 (0.062-6.59), p=0.008) had favorable outcome while patients presented with Killip IV (OR 6.151 (2.056-18.40), p=0.04) had poor outcome in this study.

CONCLUSION: PPCI for acute STEMI 30 days mortality rate is 6.3%. Outcome of patients with Killip IV remained poor despite immediate intervention. Blood pressure is an important factor predicting patients' outcome. Shorter transfer time associated with better outcome but not statistically significant. As STEMI network in this region is expanding, a more comprehensive outcomes study will be obtained with longer study period and bigger sample size.
SHORT AND LONG TERM OUTCOME IN PATIENTS WITH CALCIFIED LESIONS REQUIRING ROTATIONAL ATERECTOMY
Kumara Gurupparan Ganesan, Al Fazir Omar, Nazrul M, Ng Yau Piau, Shah Zeb, Imran M, Theepa Nesam, Zulaikha Zainal, Rosli Mohd Ali

BACKGROUND: Despite the evolution of interventional techniques and operator experience, percutaneous revascularization of complex coronary lesions especially calcified lesions remains challenging because of lower procedural success and higher restenosis rates. Limited data are available on the effect of rotational atherectomy (RA) plus stenting in the treatment of complex calcified lesions of coronary artery disease.

OBJECTIVE: This study is aimed to investigate the characteristics, short and long term outcomes in patients undergoing RA.

MATERIALS AND METHODS: A database search was performed from the year 2008 to 2015 in the National Heart Institute KL. A total of 22,434 patients who underwent PCIs were enrolled in 2 groups, RA group (408) and non-RA group (22,026). The Chi Square test and Kaplan Meier analysis were used.

RESULTS: Male patients (82.6%) and elderly population (63.6%) were predominant in the study. The RA group had more co-morbidities such as diabetes on insulin (36%) and chronic kidney disease (58%). The lesions in the RA group were more complex with higher Type C lesions (75.6%) and longer (more than 20mm) (20.5%) compared to those in the non-RA group. The procedural success rates were higher in the RA group (98.3%) than in the non-RA group, though the difference was not statistically significant (p=0.08). In terms of in-hospital outcome, there was less peri-procedural MI (0.5%) and mortality (1.0%) in the non-RA group compared to the RA group, which was statistically significant (P< 0.001). The was significantly less incidence stent thrombosis in the RA group compared to the non-RA group (p< 0.001). Compared to RA group (90.7%), non RA group (97.1%) had higher rates of 1-year survival in Kaplan-Meier survival graph (p<0.001).

CONCLUSION: Despite the complexity of lesions and increased co-morbidities of patients in the RA group, the short and long term outcomes are acceptable. This may be explained by better vessel preparation and stent expansion following rotational atherectomy.
A COMPARISON OF OUTCOMES BETWEEN THROMBOLYSIS AT A SPOKE HOSPITAL VERSUS TRANSFER FOR PRIMARY PERCUTANEOUS CORONARY INTERVENTION AT A HUB HOSPITAL FOR ACUTE ST-ELEVATION MYOCARDIAL INFARCTION

Lee Zhen-Vin, Muhammad Imran bin Abdul Hafidz, Faizal Khan bin Abdullah, Eashwary @ Carthiyayini A/P Mageswaren, Chee Kok Han

1Cardiology Unit, Department of Medicine, University Malaya Medical Centre, Kuala Lumpur, Malaysia
2Department of Medicine, Hospital Tengku Ampuan Rahimah, Selangor, Malaysia

BACKGROUND: Primary percutaneous coronary intervention (PCI) has been deemed to be superior to thrombolytic therapy in a large number of clinical trials. This is the basis of formation of ST-elevation myocardial infarction (STEMI) networks around the world. STEMI networks are however frequently subjected to economical evaluation.

OBJECTIVE: We sought to compare the outcomes between patients with acute STEMI who were thrombolysed at the spoke hospital versus patients who were transferred to our hospital (hub) for primary PCI.

MATERIALS & METHODS: A STEMI network was initiated on the 1st of July 2015 between our hospital and a tertiary non-PCI-capable hospital. The network is however active only during office hours (8.00 am to 5.00 pm). Our study included all patients presenting to the spoke hospital with acute STEMI, who were either thrombolysed at the spoke hospital or transferred to our hospital for primary PCI, from 1st of July 2015 to 31st of December 2015.

RESULTS: Our study enrolled 70 patients of which 67 (95.7%) were males and mean age was 55 years old. Forty-four patients were thrombolysed while 26 were transferred for primary PCI. Majority of patients were in Killip class I (64.3%). The median first medical contact (FMC) to needle time was 50 minutes. The median door-in-door-out (DIDO) time was 78 minutes and the median FMC to PCI time was 158 minutes. The 30-day mortality was 9% for patients who were thrombolysed and 3.8% for patients who underwent primary PCI. The median length of hospital stay was 5 days for patients who were thrombolysed and 4 days for patients who underwent primary PCI.

CONCLUSIONS: Our study revealed that patients with acute STEMI who underwent primary PCI at our hospital (hub) had lower 30-day mortality rates and shorter length of hospital stay compared to patients who were thrombolysed at the spoke hospital; although the DIDO, FMC to needle and FMC to PCI times were not ideal. We believe that the results of our study serve as a good reason for creation of more STEMI networks in the country although additional studies are needed to assess the overall cost-effectiveness of the STEMI network.
BACKGROUND: Primary percutaneous coronary intervention (PCI) is the preferred reperfusion strategy in patients with ST-segment elevation myocardial infarction (STEMI). However, timely PCI cannot be offered to many patients.

OBJECTIVE: The purpose of this study was to compare the 30-day clinical outcome of primary PCI strategy and fibrinolysis followed by coronary angiography strategy in STEMI patients.

METHODS: This was a prospective, observational, single center study. All patients admitted for STEMI from 1 January 2016 to 30 November 2016 were screened for the study. Patients were divided into 2 reperfusion strategies: primary PCI or fibrinolysis followed by coronary angiography. Primary outcome was composite of all-cause mortality at 30 days.

RESULTS: A total of 178 patients were identified: 33 (18.5%) underwent primary PCI and 145 (81.5%) underwent fibrinolysis first. The median door-to-balloon time in the primary PCI group was 161.0 minutes (IQR 84.5). The median time from fibrinolysis-to-arrival at catheterization lab was 1738 minutes (IQR 901). The median total ischaemic time was 369 min (IQR 524) and 210 (IQR 247) for the primary PCI and fibrinolysis first group respectively (p=0.002). Kaplan-Meier survival analysis for 30-day all-cause mortality was 24.2% vs 9.7% respectively in primary PCI and fibrinolysis group (p=0.018). Multivariate Linear Regression showed that Killip Class and LVEF were independent predictors of 30-day all-cause mortality. Reperfusion strategy was not associated with 30-day all-cause mortality (p=0.216).

CONCLUSIONS: The clinical outcome of primary PCI strategy in STEMI is not better than fibrinolysis followed by coronary angiography strategy when timely PCI cannot be performed.
TRANS-CORONARY ABLATION OF SEPTAL HYPERTROPHY (TASH) IN HYPERTROPHIC OBSTRUCTIVE CARDIO-MYOPATHY (HOCM): ACUTE AND LONG-TERM SAFETY AND EFFICACY OUT-COME FROM A SINGLE CENTER EXPERIENCE.
Afrah Y. Haroon, Alfazir, Rosli M Ali

BACKGROUND: Trans-coronary ablation of septal hypertrophy (TASH) has been shown to reduce outflow obstruction and symptom relief in the short and intermediate period. We aimed to assess the short and long term efficacy and safety in a single center experience.

OBJECTIVES: The aim is to assess the long-term efficacy and safety of TASH in a single center experience.

MATERIALS & METHODS: There were 61 patients analyzed with symptomatic hypertrophic obstructive cardiomyopathy (HOCM) that underwent TASH procedure between 2005-2017. All patient had serial echocardiography prior to procedure and subsequent follow-up. Procedural success was defined as improvement in patient symptoms and reduction of the left ventricular outflow tract pressure gradient by at least 50% on echocardiography

RESULTS: The mean age of patients in our study is 49.4 ± 11.4 years. The majority of patients were male (72.7%). The mean duration of follow-up was 3.6 ± 2.4 years. The number of septal branches ablated were 2.0±1.0 and the mean alcohol used 3.1 ± 1.8 ml. LVOT gradient reduction by more than 50% was achieved in 91% of patients immediately post TASH, with mean LVOT gradient reduction from 83 ± 37 mmHg to 42 ± 34mmHg (p<0.001). Majority of the patients (81.8%) showed clinical improvement in New York Heart Association class of 1.3 ± 1.0. There is significant improvement in severity of mitral regurgitation and reduction in inter-ventricular septum (IVS) thickness with p value 0.02, 0.04 respectively, without any significant reduction in left ventricular function. The mean post-procedure creatinine kinase (CK) was 1570.0 ± 1011.2 IU/L. level of >1000 IU/L showed strong correlation with LVOT PG reduction.

CONCLUSIONS: TASH is a safe and effective procedure in achieving persistent and significant immediate and long term reduction in LVOT pressure gradient and patient symptoms, as well as improvement in echocardiographic variables such as mitral regurgitation.
General Cardiology 2
(FP5.1-5.7)
FP 5.1  Time: 1630-1640

**CAROTID INTIMAL MEDIAL THICKNESS IN PREDICTING YOUNG ACUTE CORONARY SYNDROME**
Nicholas Chua¹, Raja Ezman¹, Rizmy Najme Khir¹, Noorlizah Wendy¹, Thuhairah Rahman¹, Johan Rizwal¹, Zubin Othman¹, Kamal Arshad¹, Efza Abdul Rahman¹, Lim Chiao Wen¹, Hafisyatul Aiza¹, Sazzli Kasim¹.

FP 5.2  Time: 1640-1650

**2 POINT PLASMA DABIGATRAN, RIVAROXABAN AND APIXABAN LEVELS IN PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION: A SINGLE CENTRE STUDY**
Melissa Lim Siaw Han¹,², Tiong LL¹,², Tan SSN¹,², Ku MY¹,², Charles S², Ong TK³, Fong AYY²,³
¹Department of Pharmacy, Sarawak General Hospital Heart Centre, Kota Samarahan, Malaysia
²Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia
³Department of Cardiology, Sarawak General Hospital Heart Centre.

FP 5.3  Time: 1650-1700

**IMPACT OF CARDIAC REHABILITATION INVOLVING CARERS/SPOUSES ON QUALITY OF LIFE, PSYCHOLOGICAL STATUS AND SELF-EFFICACY OF CARDIAC PATIENTS**
Ruthpackiavathy A/P Rajen Durai¹, Khairuddin Idris¹, Md Salleh Hj Hassan¹, Hamat Hamdi Che Hassan², Choong Chee Ken², Mohd Shawal Faizal Mohamad², Shathiskumar Govindaraju², Tiau Wei Jyung³, David Cumberland², Oteh Maskon³
¹Universiti Putra Malaysia,
²Universiti Kebangsaan Malaysia

FP 5.4  Time: 1700-1710

**DILATED CARDIOMYOPATHY IN CHILDREN AT SAIFUL ANWAR GENERAL HOSPITAL**
Dyahris Koentartiwi, Nanda, Renny S
Saiful Anwar General Hospital, Malang

FP 5.5  Time: 1710-1720

**IMPLICATIONS OF HIGH-SENSITIVITY CARDIAC TROPONIN I IN CARDIOLOGY CLINICAL PRACTICE**
KHAW CHEE SIN¹, Loretta LLC², Amirul Fadhli H², Azzlee M², John Y¹, Lim HS¹, Naemah Madzlan¹, Noor Najiha MZ², Nasyfiah Y¹, Shahira R², Siow ZY¹, Mohd Zailani AS², Nor Hamim MA¹, Khiew NZ¹, Cham YL¹, Asri S¹, Voon CY¹, Oon YY¹, Koh KT¹, Ho KH¹, Tan CT¹, Fong AYY¹,³, Ong TK¹.
¹Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia
²Department of Emergency, Sarawak Heart Centre, Kota Samarahan, Malaysia
³Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia

FP 5.6  Time: 1720-1730

**ORTHOSTATIC HYPOTENSION IN THE MALAYSIAN ELDERS LONGITUDINAL RESEARCH (MELOR)**
Saedon NI¹, Frith J², Goh CH¹, Shahruhl SB¹, Chin AV¹, Khor HM¹, Tan, MP¹
¹Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur
²Institute for Ageing and Health, Campus for Ageing and Vitality, Newcastle University
BODY MASS INDEX AND WAIST CIRCUMFERENCE AS PREDICTIVE FACTORS IN THE DEVELOPMENT OF ACUTE CORONARY SYNDROME IN YOUNG ADULTS
Raja Ezman Faridz Raja Shariff¹, Nicholas Chua¹, Rizmy Najme Khir¹, Khairul Syafiq Ibrahim¹, Mohd Kamal Mohd Arshad¹, Lim Chiao Wen¹, Johan Rizwal¹, Effarezan Abdul Rahman¹, Hafisyatul Aiza¹, Zubin Othman Ibrahim¹, Sazzli Kasim¹
¹Cardiology Department, UiTM Sungai Buloh, Selangor, Malaysia
CAROTID INTIMAL MEDIAL THICKNESS IN PREDICTING YOUNG ACUTE CORONARY SYNDROME
Nicholas Chua¹, Raja Ezman¹, Rizmy Najme Khir¹, Noorlizah Wendy¹, Thuhairah Rahman¹, Johan Rizwal¹, Zubin Othman¹, Kamal Arshad¹, Effa Abdul Rahman¹, Lim Chiao Wen¹, Hafisyatul Aiza¹, Sazzli Kasim¹.

BACKGROUND: In recent years, patients presenting with acute coronary syndrome (ACS) are significantly younger. Most of the patients in our local data from Sungai Buloh Hospital lack the traditional cardiovascular risk factors.

OBJECTIVE: Identify demographics, risk factors, biochemical results, and carotid intimal medial thickness (CIMT) of young ACS.

MATERIALS & METHODS: This was a prospective, single center study carried out in Cardiovascular and Thoracic Center (CTC) of University Technology MARA (UiTM) in Sungai Buloh from 1st November 2016 until 14th February 2017. All patients were below 40 years old. Consent were taken, and subsequently patients underwent blood testing and carotid ultrasound.

RESULTS: There was a total of 20 young ACS patients recruited along with 20 healthy control subjects. The mean age was 35.3(±3.6) and 29.9(±2.7) in the young ACS and control cohort. All subjects were male, except 7 women in the control cohort. In the young ACS, there were 70%(n=14) STEMI and 30%(n=6) NSTEMI. Young ACS waist circumference(cm) and BMI were 101.3(±4.4) and 28.9(±2.9) respectively. Meanwhile in the control cohort, the WC was 82.6(±11.5) and BMI was 24.5(±4.3). Young ACS cardiovascular risk assessment revealed 85%(n=17) smokers, 45%(n=9) hypertension, 25%(n=5) DM and 25%(n=5) dyslipidemia. Conversely, in the control cohort there were 20% (n=4) smokers. Young ACS biochemical markers showed mean fasting glucose level of 6.8 mmol/l(±1.2), and serum creatinine 91.4 µmol/L (±9.0). Lipid profile revealed mean total cholesterol of 5.57 mmol/L(±1.2), triglyceride 2.05 mmol/L(±0.7), HDL 1.01 mmol/L(±0.3), and LDL of 3.66 mmol/L(±1.0). Young ACS echocardiography had LVEF of 46.9%(±9.6), TAPSE 1.9cm(±0.2) and RV S’ 10cm/s(±0.3). Carotid intimal medial thickness (CIMT) of young ACS and healthy control were 0.78mm (±0.3) and 0.48mm (±0.1) respectively, with p-value < 0.005. Two young ACS had CIMT of 1.22mm and 1.25mm. All young STEMI (n=14) underwent primary percutaneous coronary intervention.

CONCLUSION: CIMT can be used as an additional score in cardiovascular risk stratification for young Malaysian adults.
2 POINT PLASMA DABIGATRAN, RIVAROXABAN AND APIXABAN LEVELS IN PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION: A SINGLE CENTRE STUDY

Melissa Lim Siaw Han1,2, Tiong LL1,2, Tan SSN1,2, Ku MY1,2, Charles S2, Ong TK3, Fong AYY2,3

1Department of Pharmacy, Sarawak General Hospital Heart Centre, Kota Samarahan, Malaysia
2Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia
3Department of Cardiology, Sarawak General Hospital Heart Centre.

BACKGROUND: New classes of oral anticoagulant (NOACs), Dabigatran, Rivaroxaban and Apixaban aim to improve clinical outcomes in patients with non-valvular atrial fibrillation (NVAF). In comparison to warfarin, they alleviate the need for frequent INR monitoring and are able to achieve steady state concentrations about three days post administration. However, it was previously demonstrated that there was a wide range for all plasma NOAC levels. The consistency of plasma NOAC levels in Malaysian patients have not been characterized.

OBJECTIVE: To determine the 2 point differences of plasma trough levels of dabigatran, rivaroxaban and apixaban in patients with non-valvular atrial fibrillation taking either drugs.

METHOD: Random 2 point trough plasma NOAC levels were obtained from patients established on either NOACs from January 2016 till January 2017. Trough levels of NOACs were determined by reversed phase liquid chromatography tandem mass spectrometry (LC-MS/MS) on an Agilent 1290 Infinity Binary Liquid Chromatography System.

RESULTS: There were 53 patients in total with 23 patients were on dabigatran 110mg twice daily, 13 patients on dabigatran 150mg twice daily, 1 patients on rivaroxaban 15mg once daily, 12 on rivaroxaban 20mg once daily and 4 patients on apixaban 2.5mg twice daily. The mean(SD) age was 69.06 (9.94) years, with a mean CHA2DS2-VASc score of 3.68(1.37) and mean HASBLED score of 1.28(0.69). The 1st and 2nd mean(SD) trough plasma dabigatran level were 28.6(27.3)ng/ml vs 24.1(15.2)ng/ml, while the 1st and 2nd mean(SD) trough plasma rivaroxaban were 27.8(17.8)ng/ml vs 38.3(37.5)ng/ml and the 1st and 2nd mean(SD) trough plasma apixaban level were 35.2(28.6)ng/ml vs 21.6(1.6)ng/ml. A total of 5 patients died while taking Dabigatran and only 1 died while taking Rivaroxaban.

CONCLUSION: There was a wide range of plasma NOAC levels in our patients with NVAF in spite of a second time repeated blood sampling. However, majority of these patients not deemed to be at an elevated risk of bleeding. Prospective studies correlating repetitive plasma NOACs levels to stroke and bleeding outcomes are warranted.
IMPACT OF CARDIAC REHABILITATION INVOLVING CARERS/SPOUSES ON QUALITY OF LIFE, PSYCHOLOGICAL STATUS AND SELF-EFFICACY OF CARDIAC PATIENTS

Ruthpackiavathy A/P Rajen Durai¹, Khairuddin Idris¹, Md Salleh Hj Hassan¹, Hamat Hamdi Che Hassan², Choor Chee Ken², Mohd Shawal Faizal Mohamad², Shathiskumar Govindaraju², Tiau Wei Jyung², David Cumberland², Oteh Maskon²

¹Universiti Putra Malaysia, ²Universiti Kebangsaan Malaysia

BACKGROUND: Coronary Heart Disease remains the number one cause of death in Malaysia. Cardiac Rehabilitation is an important part in the treatment of Coronary Heart Disease patients experiencing Acute Coronary Syndrome which can reduce mortality and morbidity. But it is underused due to the many barriers.

OBJECTIVES: This study aimed to study the impact of an educational intervention and cardiac rehabilitation phase 1 involving the carer/spouse on quality of life, psychological status and self-efficacy of acute coronary syndrome patients.

METHOD: This was an intervention study where 132 acute coronary syndrome patients hospitalized for treatment were recruited to take part. They were randomly allocated to the intervention and control group with and without carer/spouse. A structured educational intervention and cardiac rehabilitation phase 1 was initiated for the intervention group with and without carer/spouse. This comprised of activity initiation, medication, cardiac related nutrition and risk factor management, smoking cessation and carer/spouse support. The outcome measurement included World Health Organization Quality Of Life-BREF (WHOQOL-BREF), Depression, Anxiety and Stress Scale (DASS), Cardiac Self-Efficacy (CSE) and cardiac physiological parameters. Data was measured between baseline and follow-up in the cardiology clinic.

RESULT: There was a significant difference in QOL in the intervention group with and without carer/spouse in the following domains: physical (44.7±17.21 versus 63.36±9.29, \(p=0.0001\)); psychological (56.71±16.48 versus 70.85±12.1, \(p=0.0001\)); social relationship (57.5±12.67 versus 69.91±10.67, \(p=0.0001\)) and environment (54.64±12.01 versus 67.41±8.41, \(p=0.0001\)) compared to the control group with and without carer/spouse: physical (42.23±21.66 versus 59.35±10.14, \(p=0.0001\)); psychological (59.21±14.54 versus 66.36±10.33, \(p=0.0001\)); social relationship (59.86±12.48 versus 64.44±12.12, \(p=0.002\)) and environment (55.09±10.83 versus 62.61±8.49, \(p=0.0001\)). The intervention group demonstrated higher scores. There was a significant difference in DASS in the intervention group with and without carer/spouse in: depression (\(p=0.010\)), anxiety (\(p=0.0001\)) and stress (\(p=0.0001\)). There was also a significant difference in self-efficacy (\(p=0.0001\)) between the intervention group: with carer/spouse (24.26±10.602 versus 63.87±8.919); without carer/spouse (29.15±10.642 versus 59.06±8.363), compared to the control group: with carer/spouse (24.26±10.602 versus 63.87±8.919); without carer/spouse (21.21±7.929 versus 47.52±8.304). The intervention group with carer/spouse demonstrated higher scores compared to the intervention group without carer/spouse and control group with and without carer/spouse.
DILATED CARDIOMYOPATHY IN CHILDREN AT SAIFUL ANWAR GENERAL HOSPITAL
Dyahris Koentartiwi, Nanda, Renny S
Saiful Anwar General Hospital, Malang

BACKGROUND: Dilated cardiomyopathy (DCM) is a disease of the heart muscle characterized by ventricular dilatation and decreased systolic function. The cause of DCM is multifactorial. Although most cases are idiopathic, nowadays secondary dilated cardiomyopathy due to systemic disease such as collagen disease, severe infection or after antracyclin administration.

OBJECTIVE: to describe profile of the children suffered from dilated cardiomyopathy

METHODS: We reviewed echocardiography results from outpatients clinic and inpatients from January 2015 to February 2017. Sixty patients were diagnosed as cardiomyopathy based on echocardiography examination, but only two patients diagnosed as hypertrophic cardiomyopathy and 58 patients diagnosed as dilated cardiomyopathy. Echocardiography was performed to all patients by examining left ventricular systolic function (ejection fraction, EF and fractional shortening, FS).

RESULTS: There were 27 (45%) boys and 33 (55%) girls. Twenty nine patients had age below five years old. The most common cause of cardiomyopathy were systemic disease such as lupus nephritis and acute glomerular nephritis following by dilated cardiomyopathy due to antracyclin drugs in leukemic patients and some patient suffered from infective endocarditis. Some patients suffered from severe malnutrition (24%) due to various disease like HIV infection, and moderate malnutrition about 44%. Two patients died due to suspected anomalous left coronary artery to pulmonary artery (ALCAPA). Echocardiography measurement for left ventricular function revealed mean for ejection fraction was 48% and mean for fractional shortening was 26%. Pericardial effusion was the most common seen in DCM patients.

CONCLUSION: The most common underlying disease for DCM in Saiful Anwar General Hospital due to renal disease, the age were more than five years old and almost all the children had moderate malnutrition.
IMPLICATIONS OF HIGH-SENSITIVITY CARDIAC TROPONIN I IN CARDIOLOGY CLINICAL PRACTICE

Khaw Chee Sin¹, Loretta LLC², Amirul Fadli H², Azzlee M², John Y¹, Lim HS¹, Naemah Madzlan¹, Noor Najihah MZ², Nasyitah Y¹, Shahira R², Siow ZY¹, Mohd Zailani AS², Nor Hanim MA¹, Khiew NZ¹, Cham YL¹, Asri S¹, Voon CY¹, Oon YY¹, Koh KT¹, Ho KH¹, Tan CT¹, Fong AYY¹, Ong TK¹.

¹Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia
²Department of Emergency, Sarawak Heart Centre, Kota Samarahan, Malaysia
³Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia
⁴Faculty of Medicine and Health Sciences, University Malaysia Sarawak, Kota Samarahan, Malaysia

BACKGROUND: High sensitivity troponin (hsTn) has better sensitivity for myocardial tissue injury detection compared to standard troponin assays, despite lower diagnostic specificity and lack of hsTn assay standardization.

OBJECTIVES: To examine implications of introducing hsTnI in clinical practice.

METHODS: We retrospectively collected information of patients presented to a single tertiary cardiac referral centre with suspected acute coronary syndrome (ACS), who had ≥1 hsTnI sample (Abbott ARCHITECT STAT), from 1st June 2016-17th August 2016. Upper range limit (URL), i.e. 99th percentile, was defined as 34.2 ng/L, 15.6 ng/L and 26.2 ng/L for male, female and both gender ("overall") respectively. Patients were divided into 4 groups - Group 1: hsTnURL but <3 times URL, Group 2: hsTn between 3-5 times URL and Group 4: hsTn>5 times URL.

RESULTS: Data from 366 patients was analysed: 227(62.0%), 34(9.3%), 13(3.6%), 92(25.1%) in Group 1, 2, 3 and 4 respectively. In Group 1 to 4, the proportion of ACS was 8.8%, 38.0%, 53.8%, 82.6% and proportion of MI were 0.8%, 29.4%, 53.8%. By using >5 times URL as cut-off, hsTn has higher specificity and PPV, but lower sensitivity and NPV in diagnosis of ACS ((sensitivity:0.66, specificity:0.94, PPV0.83, NPV0.85), with ROC curve AUC:0.896, p<0.001, 95% CI:0.861-0.931). Our analysis showed serial paired hsTn samples increase the PPV of hsTn to detect ACS. There was no significant difference between using hsTn URL "overall" or "gender-specific" for ACS diagnosis. Kaplan Meiyer analysis showed 30-day all-cause mortality in the group with maximal hsTn value >URL is significant higher (p<0.001). Multiple-logistic regression showed that URL of hsTn was an independent variable for 30-day all-cause mortality (p<0.001).

CONCLUSIONS: Introducing hsTnI has led to the recognition of a large proportion of patients with minor cardiac troponin increases (above URL of 99th percentile but <5 times URL), the majority of whom do not have ACS or MI. There is no significant difference in using “overall” and “gender-specific” URL in diagnosing ACS. Using 5 times above URL and serial hsTn will increase PPV to detect ACS. Maximal HsTn value >99th percentile is independently associated with 30-day all-cause mortality.
ORTHOSTATIC HYPOTENSION IN THE MALAYSIAN ELDERS LONGITUDINAL RESEARCH (MELOR)
Saedon NJ\textsuperscript{1}, Frith J\textsuperscript{2}, Goh CH\textsuperscript{1}, Shahrul SB\textsuperscript{1}, Chin AV\textsuperscript{1}, Khor HM\textsuperscript{1}, Tan, MP\textsuperscript{1}.

\textsuperscript{1}Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur
\textsuperscript{2}Institute for Ageing and Health, Campus for Ageing and Vitality, Newcastle University

BACKGROUND: Orthostatic hypotension (OH) is defined as a systolic (SBP) drop $>20$mmHg or diastolic BP (DBP) $>10$mmHg within 3 minutes of standing. Little is known about the characteristics of individuals with OH or its relevance in the older population.

OBJECTIVE: To evaluate the haemodynamic characteristics of individuals with OH using data from a cohort study involving community dwelling older adults.

METHODS: The Malaysian Elders Longitudinal Research (MELoR) study is a longitudinal study of ageing involving adults aged 55 years and above selected from three parliamentary constituencies within the Klang Valley, Kuala Lumpur. Demographic information and baseline characteristics were collected during a home-based computer assisted interview. Subsequently patients were then invited to the local teaching hospital for health assessments. Postural blood pressure change was assessed during five minutes' supine rest followed by three minutes of standing using non-invasive continuous blood pressure measurements (Task Force, CNSystems, Austria).

RESULTS: Haemodynamic data was available for 1245 participants. 936 (75%) fulfilled consensus criteria for OH. Participants with OH were slightly older (68.8(7.2) VS 67.9 (7.2) years; $p=0.105$). Women were significantly more likely to have OH than men (53% vs 47%, $p=0.001$). Individuals with OH had significantly higher baseline supine SBP (114.4(22.4) vs 109.9 (21.0), $p=0.002$) but there was no significant difference in DBP (69.4(16.4) vs 67.5(14.2), $p=0.079$). Individual with OH were also more likely to report a history of hypertension (471(72.2) vs181(27.8), $p= 0.012$) and atrial fibrillation (43(87.8)vs 6(12.2) , $p= 0.025$)

CONCLUSIONS: Three out of four individuals aged 55 years and over fulfilled the criteria of orthostatic hypotension when their blood pressure was measured using continuous non-invasive monitoring. The clinical significance of OH in this population remains unclear. Future research will now focus on determining factors which determine clinically significant OH.
BODY MASS INDEX AND WAIST CIRCUMFERENCE AS PREDICTIVE FACTORS IN THE DEVELOPMENT OF ACUTE CORONARY SYNDROME IN YOUNG ADULTS
Raja Ezman Faridz Raja Shariff¹, Nicholas Chua¹, Rizmy Najme Khir¹, Khairul Syafiq Ibrahim¹, Mohd Kamal Mohd Arshad¹, Lim Chiao Wen¹, Johan Rizwal¹, Effarezan Abdul Rahman¹, Hafisyatul Aiza¹, Zubin Othman Ibrahim¹, Sazzli Kasim¹
¹Cardiology Department, UiTM Sungai Buloh, Selangor, Malaysia

BACKGROUND: Cardiovascular disease (CVD) is the primary cause of death globally. In Malaysia, the mean age of acute coronary syndrome (ACS) is 56 years. However, younger patients lacking common risk factors are more frequently being diagnosed with ACS. As these risk factors are often present at later years, there may be an underestimation of CVD risk and subsequent lack of attempts in employing primary prevention measures in this group of patients. Fortunately, there is greater appreciation for alternative variables in predicting CVD risk. Body mass index (BMI) is a predictor variable in the British-developed 'Q-RISK2' model, which helps guide the prescription of statin therapy in at-risk groups. Likewise, waist circumference (WC) is being used in the 'China-PAR CVD-Risk Predictor' as well. However, both variables have yet to exist simultaneously in a single risk assessment model.

OBJECTIVE: The purpose of the study was to assess the differences in BMI and WC in individuals aged 40 years or younger, who had developed ACS, versus that of a healthy age-matched cohort.

MATERIALS & METHODS: A prospective, observational single-centre study was conducted between the 1st November 2016 till 14th January 2017. Data was collected and subsequently analyzed using a statistical package system.

RESULTS: 21 patients suffering from ACS during the study period were enrolled, alongside 31 healthy participants of a similar age group. The mean BMI for ACS sufferers, versus the healthy cohort, were 25.18 kg/m² (SD ± 3.94 kg/m²) and 28.86 kg/m² (SD ± 2.86 kg/m²) respectively. The mean WC for the former, versus the latter, were 83.54 cm (SD ± 11.00 cm) and 100.99 cm (SD ± 4.44 cm) respectively. An independent t-test was performed for both variables, showing a significant difference in both BMI (t(50) = -3.67 p = 0.001) and WC (t(50) = -6.87 p = 0.000) when comparing the different cohorts studied.

CONCLUSION: This study demonstrates statistically significant differences in both BMI and WC, between young adults suffering from ACS versus their healthy counterparts. We recommend further larger, prospective studies looking into risk ratios, to help delineate such relationships better.
Interventional Cardiology 2
(FP6.1-6.7)
OUTCOME AND FEASIBILITY OF PPCI FOR STEMI VIA HISNET
Mohamed Imran Thoulath¹, Mohamed Nazrul Mohamed Nazeeb¹, Ng Yau Piow¹, Kumara Gurupparan Ganesan¹, Jayakhanthan Kolanthaivelu¹, Farina Mohd Salleh¹, Rossman Hawari¹, Intan Safarinaž¹, Al-Fazir Omar¹, Aizai Azan Abd Rahim¹, Rosli Mohamed Ali¹, Rahal Mohamed Yusoff², Mahathar Abdul Wahab², Alzamani Mohammad Idrose²,
¹Institut Jantung Negara, Kuala Lumpur, Malaysia,
²Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

ONE-YEAR CLINICAL OUTCOME OF SIROLIMUS-ELUTING ENDOThelial PROGENITOR CELL CAPTURE COMBINATION STENT VERSUS POLYMER-FREE BIOlimus A9 COATED STENT
Koh Keng Tat¹, John Yeo¹, Oon YY¹, Khaw CS¹, Ho KH¹, Tan CT¹, Shu FEP¹, Voon CY¹, Asri S¹², Cham YL¹, Nor Hanim MA¹, Khiew NZ¹, Fong AYY¹³, Ong TK¹.
¹Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia
²Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia
³Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia

CLINICAL AUDIT ON INCIDENCE OF VASCULAR COMPLICATIONS POST INVASIVE CARDIAC PROCEDURES IN HOSPITAL SERDANG FROM AUGUST 2015 TO FEBRUARY 2016
Vickneswaran Marathamuthu¹, Abdul Muizz AM¹, Noor Ashikin I¹, Muhammad Faris A¹, Thanendran Renganathan¹, Goh SF¹, Abdul Ariff S¹, Juliana AN¹, Kamaraj Selvaraj¹, Abdul Kahar AG¹
¹Department of Cardiology, Serdang Hospital, Selangor, Malaysia

PROGNOSTIC VALUE OF NT-PROBNP IN ACUTE ST ELEVATION MYOCARDIAL INFARCTION WHO UNDERWENT PRIMARY PERCUTANEOUS CORONARY INTERVENTION
Nandakumar Ramakrishnan, Malini Kerisnan, Suraya Hani, Aslannif, Rubenthiran, Ng Yau Piow, Ng Min Yeong, Lim Kien Chien, Tan Kin Leong, Jayakhanthan, Yap Swee Hein, Yap Lok Bin

OUTCOMES IN PATIENTS WITH CARDIOGENIC SHOCK FOLLOWING PRIMARY PERCUTANEOUS CORONARY INTERVENTION
IJN Malaysia
THE INFLUENCE OF RESIDENTIAL DISTANCE ON TIME TO TREATMENT IN ST-ELEVATION MYOCARDIAL INFARCTION PATIENTS

Winnie Hoo Soo Yee, Ahmad K, Tan SSN, Sim PP, Tiong LL, Ku MY, Koh KT, Oon YY, Nor Hanim MA, Khiew NZ, Cham YL, Asri S, Voon CY, Khaw CS, Ho KH, Shu FEP, Tan CT, Fong AYY, Ong TK.

1Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia
2Faculty of Medicine, University of Aberdeen, United Kingdom
3Department of Pharmacy, Sarawak General Hospital, Kuching, Malaysia
4Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia
5Department of Pharmacy, Sarawak Heart Centre, Kota Samarahan, Malaysia
6Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia
OUTCOME AND FEASIBILITY OF PPCI FOR STEMI VIA HISNET
Mohamed Imran Thoulath1, Mohamed Nazrul Mohamed Nazeeb1, Ng Yau Piow1, Kumara Gurusaran Ganesan1, Jayakhanthan Kolanthaivelu1, Farina Mohd Saleh1, Rossman Hawari1, Intan Safarianaz1, Al-Fazir Omar1, Aizai Azan Abd Rahim1, Rosli Mohamed Ali1, Rahal Mohamed Yusoff2, Mahathar Abdul Wahab2, Alzamani Mohammad Idrose2,
1Institut Jantung Negara, Kuala Lumpur, Malaysia, 
2Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

BACKGROUND: Primary percutaneous coronary intervention (PCI) is the preferred treatment for ST-segment elevation myocardial infarction (STEMI). HKL IJN Network (HISNET) is the pilot project in Malaysia for STEMI network between PCI capable and non-PCI capable center.

OBJECTIVE: To assess the outcome and feasibility of primary PCI for STEMI patients via the HISNET registry.

METHOD: This is a prospective, observational study done for period of January 2015 to December 2016. 277 consecutive STEMI patients with mean age 53 ± 10 presented with chest pain within 12 hours to HKL was transferred to IJN for primary PCI were studied. Patient demographics, risk factors, procedural characteristics, timing variables and outcome which are in-hospital and major adverse cardiovascular events (MACE) [death, reinfarction, urgent coronary artery bypass surgery (CABG) and stroke] at follow up were assessed.

RESULTS: A total of 277 HISNET patients underwent primary PCI during this period. The mean age was 53 ± 10 years and 241 (87%) were males, 126 (46%) were hypertensive, 107 (39%) were diabetics and 30 (11%) were Killip >2. Sixty-nine (25%) patients had cardiogenic shock (CS) during procedure. The median chest pain onset to first medical contact (FMC) time, FMC to transfer time, FMC to balloon time and total ischemic times were 145 (80–249), 33 (26–55), 92 (77–116) and 257 (186–353) minutes respectively. The median length of stay (LOS) post PPCI was 3 days (3–4). In-hospital mortality occurred in 13 (5.0%) patients. Mortality at 30 days, 6 months and 1 year follow up were, 4 (1.6%), 7 (3.3%) and 1 (0.8%) respectively. Overall mortality at 1 year follow up were 25 (9.0%). Twenty-two (9%) MACE occurred at follow up, 11 (4.3%) mortality, 7 (2.7%) heart failure hospitalization, 3 (1.2%) stent thrombosis and 1 (0.4%) CABG.

CONCLUSION: Our study has shown that primary PCI is feasible with good outcomes. Although the FMC to balloon time was performed within the international standards, further efforts are required to improve the total ischemic time.
ONE-YEAR CLINICAL OUTCOME OF SIROLIMUS-ELUTING ENDOThelial PROGENiTOr CELl CAPTURE COMBINATION STENT VERSUS POLYMER-FReE BIOlIMUS A9 COATED STENT

Koh Keng Tat1, John Yeo1, Oon YY1, Khaw CS1, Ho KH1, Tan CT1, Shu FEP1, Voon CY1, Asri S1,2, Cham YL1, Nor Hanim MA1, Khiew NZ1, Fong AYY1,3, Ong TK1

1Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia
2Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia
3Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia

BACKGROUND: The polymer/carrier-free Biolimus A9 drug-coated BioFreedom® stent (Biosensors, Europe) has been shown to be superior to bare-metal stent in patients at high risk for bleeding. The sirolimus-eluting endothelial progenitor cell capture Combo® stent (OrbusNeich Medical, Florida) has also been shown to be safe with 1 month DAPT. Both stents are useful in patients with high bleeding risk requiring short duration of DAPT and unknown compliance to DAPT. However, the efficacy of Combo® stent compared to BioFreedom® stent is unknown.

OBJECTIVE: To compare the one-year clinical outcomes after coronary implantation of the Combo® stent with the BioFreedom® stent.

METHODS: This was a prospective, single-centre, double-arm, all-comers observational study from a tertiary care cardiac centre. Consecutive patients who underwent PCI with the Combo® and BioFreedom® stents between 01-Jan-2015 and 31-Dec-2016 were enrolled in this study. Data was obtained from National Cardiovascular Disease Registry. The baseline characteristics, procedural details and the one-year clinical outcomes were compared between the 2 groups. Primary outcome was target lesion failure (TLF) defined as a combination of cardiac mortality, target vessel myocardial infarction (TVMI) or stent thrombosis (ST). Exploratory secondary outcomes included all-cause mortality, in-hospital mortality, TVMI and TLR.

RESULTS: Total of 224 patients were implanted with either Combo® or BioFreedom® stent, of which 165 had completed 1-year follow up or met primary endpoint (88 patients with Combo® stent and 77 patients with BioFreedom® stent). The mean age was 56.7±10.7 and 57.9±11.1 years old respectively (p=0.506). The baseline cardiovascular disease risk factors were similar between the 2 groups. The indication for PCI was Acute Coronary Syndrome in 30.7% vs 32.5% of the patients respectively (p=0.805). At one-year, Kaplan-Meier survival analysis for TLF occurred in 9 (10.2%) in the Combo® stent group and 8 (10.4%) in the BioFreedom® stent group (p=0.97). ST occurred in 2(2.3%) in Combo® stent group and 2(2.6%) in BioFreedom® stent group (p=0.822). There was no difference in all-cause mortality, cardiac mortality, in-hospital mortality, TVMI and TLR, (p>0.05).

CONCLUSIONS: Combo® stent and BioFreedom® stent had similar one-year clinical outcomes. Overall, TLF, ST and TLR were low in our cohort of patients. However, longer-term follow-up is recommended.
CLINICAL AUDIT ON INCIDENCE OF VASCULAR COMPLICATIONS POST INVASIVE CARDIAC PROCEDURES IN HOSPITAL SERDANG FROM AUGUST 2015 TO FEBRUARY 2016
Vickneswaran Marathamuthu, Abdul Muizz AM, Noor Ashikin I, Muhammad Faris A, Thanendran Renganathan, Goh SF, Abdul Ariff S, Juliana AN, Kamaraj Selvaraj, Abdul Kahar AG

BACKGROUND: Vascular complications are one of the most common causes of complications following cardiac catheterization procedures and remain an important source of increased morbidity, mortality, length of stay, and cost.

OBJECTIVE: To determine the incidence of vascular complications (Hematoma, Pseudoaneurysm/dissection, A-V fistula, retroperitoneal bleed) after invasive coronary procedures by comparison in 2 different phases; pre-intervention audit and post-intervention audit. Target to be achieved is <1% of incidence post-intervention, based on national standards.

MATERIALS & METHODS:

PHASE 1: Pre-intervention audit data (August 2015 to October 2015) was collected and incidence was calculated. An internal focus group discussion with all stakeholders was held in November 2015 to identify the risks and establish ways to reduce incidence of vascular complication.

Risks identified were operator factor (experience), patient factor (body habitus, tortuous vessels, uncooperative), puncture approach (site and type of puncture) and techniques in offing sheath (manual compression by experienced staff, device aided compression, usage of vascular closure device)

Remedial actions were undertaken; anticipating patient factor, improving operator skills (workshop and credentialling), removing sheath in lab by experienced staff, manual compression aided by C-clamp and vascular closure device for select cases.

PHASE 2: Post-intervention audit data (December 2015 to January 2016) where the remedial actions were implemented was collected via prospective observation. The incidence data from phase 1 and phase 2 were then compared.

RESULTS: Total number of cases based on Phase 1 data is 605 cases. Out of which 16 cases (2.6%) were noted to have vascular complications. Total number of cases based on Phase 2 is 470 cases. Out of which 3 cases (0.6%) were noted to have vascular complications. A one tailed Fisher exact test gives a P value of 0.0125. (Statistically significant)

CONCLUSION: The incidence of vascular complication showed a significant reduction from 2.6% to 0.6% post intervention thus achieving set target.
FP 6.4  Time: 1700-1710

PROGNOSTIC VALUE OF NT-PROBNP IN ACUTE ST ELEVATION MYOCARDIAL INFARCTION WHO UNDERWENT PRIMARY PERCUTANEOUS CORONARY INTERVENTION
Nandakumar Ramakrishnan, Malini Kerisnan, Suraya Hani, Aslannif, Rubenthiran, Ng Yau Piow, Ng Min Yeong, Lim Kien Chien, Tan Kin Leong, Jayakanthan, Yap Swee Hein, Yap Lok Bin

BACKGROUND: Previous clinical studies have demonstrated that natriuretic peptide values are independent predictors of mortality and heart failure in acute coronary syndrome.

AIM: To correlate the outcome with the level of NT-proBNP taken on admission, among patients in acute ST elevation myocardial infarction (STEMI) who underwent successful revascularisation.

METHOD: The study involved 148 patients who presented with acute STEMI within 12 hours, and underwent successful primary PCI. Data was collected on baseline characteristics, and NT-proBNP level on admission. Echocardiogram results and outcome at 1 year follow up was documented.

RESULT: The NT-proBNP taken on admission showed 99(67%) patients had a normal NT-proBNP <300 pg/ml and 49(33%) had elevated NT-proBNP >300pg/ml. Patient with elevated NT-proBNP level >300pg/ml had lower left ventricular ejection fraction (LVEF) (40 +/- 10 vs 46 +/- 10, p <0.001) and higher incidence of multiple vessel disease (57% vs 37%, p> 0.023). From logistic regression analysis, the odd ratios indicates that patients with NT-proBNP>300pg/mL are 3.25 times more likely to have impaired LVEF when compared to those with NT-proBNP level <300pg/mL (OR 3.25, 95% CI 1.56 to 6.74, p=0.002). Higher total ischaemic time was also associated with higher NT-proBNP (p< 0.001). There were no differences in length of stay, heart failure, recurrent acute coronary syndrome and mortality within 1 year.

CONCLUSION: The study suggests that elevated baseline NT-proBNP level in patients with acute STEMI who underwent successful primary PCI is associated with reduce left ventricular ejection fraction but NT-proBNP level does not predict heart failure and mortality within 1 year.
Outcomes in Patients with Cardiogenic Shock Following Primary Percutaneous Coronary Intervention

IJN Malaysia

**Background:** Cardiogenic shock (CS) complicates between 5–8% of ST-elevation myocardial infarction (STEMI). Mortality rates in patients with CS approaches 70–80% if managed medically and 40-50% if primary percutaneous coronary intervention (PPCI) performed.

**Objective:** To compare the in-hospital outcome of PPCI in patients with or without cardiogenic shock having acute ST elevation MI via HKL IJN Network (HISNET) Registry.

**Materials and Methods:** This observational study was conducted from January 2015 to December 2016 including all the consecutive STEMI patients who were transferred from HKL to IJN for PPCI. All the study population were grouped in cardiogenic shock (CS) having Killip class III/IV or Non Cardiogenic Shock (Non-CS) having Killip class I/II. The data was analyzed by SPSS Version 24.0.

**Results:** All the 277 patients underwent PPCI during the study period were included. Of the study population 30 (11%) were in cardiogenic shock while 247(89%) were Non CS. Baseline characteristics of both the group were statistically non-significant. The median chest pain onset to first medical contact (FMC) time, FMC to balloon time and total ischemic times were also statistically non-significant. There was a delay in Mean FMC to transfer for CS i.e.45 vs. 32 for Non CS (p value is 0.023) but the mean FMC to balloon time between CS and Non CS patient was statistically not significant. The Mean length of stay (LOS) post PPCI was 3 in Non CS vs. 4 days in CS group, p value is 0.3. Radial approach was used in 163 (66%) in Non-CS vs. 9 (30%) in CS patients, p value < 0.001. Procedure success was documented in 241 (98%) of Non CS patients compare to 26 (87%) in CS patients, p value is 0.015. In-hospital mortality was 6 (2%) in non CS patients as compare to 7(23%) in CS patients, p value <0.001. At 1 year the mortality for the CS is 8 (27%) vs. 17 (7%) for non CS, p<0.05.

**Conclusion:** despite the high procedural success the mortality of Cardiogenic Shock in AMI patients presenting to IJN from KL remain high than those with Non CS.
THE INFLUENCE OF RESIDENTIAL DISTANCE ON TIME TO TREATMENT IN ST-ELEVATION MYOCARDIAL INFARCTION PATIENTS

Winnie Hoo Soo Yee¹, Ahmad K², Tan SSN³,⁴, Sim PP⁵, Tiong LL³,⁴, Ku KT¹, Oon YY¹, Nor Hanim MA¹, Khiew NZ¹, Cham YL¹, Asri S¹,⁶, Voon CY¹, Khaw CS¹, Ho KH¹, Shu FEP¹, Tan CT¹, Fong AYY¹,³, Ong TK¹.

¹Department of Cardiology, Sarawak Heart Centre, Kota Samarahan, Malaysia
²Faculty of Medicine, University of Aberdeen, United Kingdom
³Department of Pharmacy, Sarawak General Hospital, Kuching, Malaysia
⁴Clinical Research Centre, Sarawak General Hospital, Kuching, Malaysia
⁵Department of Pharmacy, Sarawak Heart Centre, Kota Samarahan, Malaysia
⁶Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Malaysia

BACKGROUND: Pre-hospital transportation delay is often overlooked as a major contributor in total ischemic time (TIT), since majority of clinical practice guidelines emphasize on door to balloon (D2B) and door to needle time (D2N). A major factor in pre-hospital transportation delay is the residential distance (RD), which will be evaluated in this study.

OBJECTIVE: To explore the relationship between RD and the time to treatment in patients with STEMI.

METHODS: We conducted a prospective observational study analysing consecutive patients presented with STEMI within the STEMI network of SHC between 01-August-2016 and 08-February-2017. The RD to the first medical contact (FMC), second medical contact (SMC) and SHC via the motorway was computerised using the home address of the patient’s residence and the medical centres. Duration of symptom to time of FMC (S2D), symptom to FMC with/without revascularization service, and symptom to time of revascularization (TIT) were analysed in relation to the RD. Finally, the S2D and TIT were plotted on the map of STEMI network to evaluate the pattern of geographical distribution.

RESULTS: A total of 75 patients with STEMI were included in the analysis. The RD to the FMC was not associated with the duration of S2D (p=0.330). The RD to SHC was also not associated with TIT (p=0.365). The median RD to SHC for patient who underwent primary PCI (n=12) and non-primary PCI patients was 23.8km (IQR19.17) vs 22.8km (IQR14.5) (p=0.633). Overall, the TIT was widely distributed (median 315min, IQR1153). The median D2B time was 73min(IQR62) and the median D2N time was 43min(IQR61.25). Of the 52 patients with known duration of symptoms to FMC with revascularization service, the median pre-hospital delay was 179min (IQR216), which constitute a median of 77.7% of the TIT. There was no recognisable geographical distribution on the residential address when the S2D and TIT were plotted on the map of STEMI network.

CONCLUSIONS: There is no association between the RD and the TIT. Despite acceptable D2B and D2N time, pre-hospital delay is major factor that lead to increase in time to treatment in STEMI patients.
# Poster Presentation

(PP1 - PP26, PP28 - PP30, PP32 - PP33, PP35 - PP67)

<table>
<thead>
<tr>
<th>Display PP ID</th>
<th>Poster Zone</th>
<th>Set Up Date / Time</th>
<th>Dismantle Date / Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP1 - PP10</td>
<td>A</td>
<td>7th April 2017 from 0700</td>
<td>7th April 2017 after 1700 - 1800</td>
</tr>
<tr>
<td>PP11 - PP18</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP19 - PP26</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP28 - PP34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP35 - PP43</td>
<td>A</td>
<td>8th April 2017 from 0700</td>
<td>8th April 2017 after 1700 - 1800</td>
</tr>
<tr>
<td>PP45 - PP52</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP53 - PP67</td>
<td>C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PP 1  IMPACT OF CHOLESTEROL LEVELS ON ACUTE CORONARY SYNDROME MORTALITY IN NORTH OF KUALA LUMPUR
Affida Ahmad, Nicholas Chua, Rizmy Najme Khir, Chong Pei Feng, Lim Chiao Wen, Johan Rizwal, Effa Abdul Rahman, Hafisyatul Aiza, Mohd Kamal Mohd Arshad, Zubin Othman Ibrahim, Faridah Embong, Christopher Lee, Sazzli Kasim

PP 2  A CASE REPORT OF ACUTE PERICARDITIS AS INITIAL PRESENTATION OF UNDERLYING AUTOIMMUNE CONNECTIVE TISSUE DISEASE (CTD)
Andy Ko TY, Tan SW, Teo Yan, Wong TM, Ling GR

PP 3  A CURIOUS CASE OF ST ELEVATION AFTER INTRAVENOUS EPINEPHRINE USE FOR ANAPHYLAXIS: KOUNIS SYNDROME OR EPINEPHRINE EFFECT?
Baldip Kaur Gurcharan Singh, Chong Jen Lim, Siti Khairani bt Zainal Abidin
Cardiology Department, Tengku Ampuan Afzan Hospital, Kuantan, Pahang, Malaysia.

PP 4  GLOBAL REGISTRY OF ACUTE CORONARY EVENTS (GRACE) RISK SCORE IN PREDICTING OUTCOME IN ELDERLY PATIENTS WITH ST ELEVATION MYOCARDIAL INFARCTION AT 6 MONTHS AFTER PRIMARY PERCUTANEOUS CORONARY INTERVENTION IN HOSPITAL SERDANG
Hakimah Mohammad Sallehuddin, Siti Fatimah Azman, Sabariah Md Noor, Ummu Alman Faisal, Saravanam Vengadesa Pillai, Ahmad Fazli Abdul Aziz.
1Department of Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia.
2Department of Cardiology, Hospital Serdang, Selangor, Malaysia.
3Department of Pathology, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia

PP 5  CARDIAC TAMPOANADE SECONDARY TO POST MYOCARDIAL INFARCTION LEFT VENTRICLE RUPTURE
Shu Xian Lim, Zhai Sing Wong, Keng Tat Koh
1Department of Medicine, Miri Hospital, Sarawak, Malaysia
2Department of Cardiology, Sarawak Heart Centre, Sarawak, Malaysia

PP 6  PRIOR ANTIPLATELET USE AND CARDIOVASCULAR OUTCOMES IN PATIENTS UNDERGOING PRIMARY PERCUTANEOUS CORONARY INTERVENTION
Hoo Yee Yin, Tai Jia Yee, Abdul Muizz AM, Wardati Mazlan Kepli
1Dept of Pharmacy Hospital Serdang
2Dept of Cardiology Hospital Serdang

PP 7  CHARACTERISTICS & OUTCOMES OF ACUTE CORONARY SYNDROME PATIENTS IN HOSPITAL PUTRAJAYA
Iskandar Mirza bin Amran, Muhammad Irfan bin Mohd Sallehuddin, Siti Aribah binti Alias, Nor Shuhaila Shahri
1Department of Medicine, Hospital Putrajaya
2Clinical Research Centre, Hospital Putrajaya

PP 8  DUKE TREADMILL SCORE PREDICTS CORONARY ARTERY DISEASE STATUS AMONG ASIAN WOMEN PATIENTS
Kong Poi Keong, Sailesh Desmond C Kanasan, Mohammad Syakir Yazid, Haizil Azizan Khamdan, Omar Ismail
1Hospital Pulau Pinang, Georgetown, Pulau Pinang, Malaysia
2Kolej Kejururawatan Pulau Pinang, Georgetown, Pulau Pinang Malaysia
PP 9  INFECTIVE ENDOCARDITIS CAUSED BY GRANULICATELLA ADIACENS – A CASE REPORT
Mei Ling Look¹, Hon Shen P'ng¹, Zher Lin Go¹, Sy Hwan Ang¹, Foong Kee Kan², Rohaidah Hashim³
¹ Internal Medicine Department, Hospital Sultanah Nora Ismail, Batu Pahat, Malaysia
² Internal Medicine Department, Hospital Sultanah Aminah, Johor Bahru, Malaysia
³ Bacteriology Unit, Infectious Disease Research Centre, Institute for Medical Research, Kuala Lumpur, Malaysia

PP 10  SECONDARY PREVENTION PATTERNS IN PATIENTS WITH PRE-EXISTING CORONARY ARTERY DISEASE ADMITTED WITH MYOCARDIAL INFARCTIONS
Muhammad Imran Bin Abdul Hafidz¹, Lee Zhen-Vin¹, Mohd Firdaus Bin Hadi¹
¹Cardiology Unit, University of Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia
PP 11  LIPID PROFILE AND LIPID LOWERING THERAPY PATTERNS AMONG PATIENTS WITH PRE-EXISTING CORONARY ARTERY DISEASE (CAD) RE-ADMITTED WITH MYOCARDIAL INFARCTIONS
Muhammad Imran Bin Abdul Hafidz¹, Lee Zhen-Vin¹, Mohd Firdaus Bin Hadi¹
¹Cardiology Unit, University of Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia

PP 12  FUNGAL MASS MIMICKING ATRIAL MYXOMA IN AN IMMUNOCOMPROMISED PATIENT
Muhammad Imran Bin Abdul Hafidz¹, Nor Ashikin Binti Md Sari¹
¹Cardiology Unit, University of Malaya Medical Centre, Kuala Lumpur

PP 13  ACUTE KIDNEY INJURY IN PATIENTS WITH PREEXISTING CORONARY ARTERY DISEASE ADMITTED WITH MYOCARDIAL INFARCTION IS ASSOCIATED WITH INCREASED MORTALITY
Muhammad Imran Bin Abdul Hafidz¹, Lee Zhen-Vin¹, Mohd Firdaus Bin Hadi¹, Pramanantha Veerappan¹
¹Cardiology Unit, University of Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia

PP 14  PRESENTATION AND OUTCOME DIFFERENCES IN OLDER PATIENTS WITH PREEXISTING CORONARY ARTERY DISEASE ADMITTED WITH MYOCARDIAL INFARCTION
Muhammad Imran Bin Abdul Hafidz¹, Lee Zhen-Vin¹, Mohd Firdaus Bin Hadi¹, Pramanantha Veerappan¹
¹Cardiology Unit, University of Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia

PP 15  YOUNG ACUTE CORONARY SYNDROME RISK FACTORS AND OUTCOME
Nicholas Chua¹, Rizmy Najme Khir¹, Chong Pei Feng³, Lim Chiao Wen¹, Johan Rizwal¹, Effa Abdul Rahman¹, Hafisyatul Aiza¹, Mohd Kamal Mohd Arshad¹, Zubin Othman Ibrahim¹, Faridah Embong², Christopher Lee², Sazzli Kasim¹
¹Cardiology Department, UiTM Sg Buloh, Malaysia
²Medical Department, Sungai Buloh Hospital
³Department of Pharmacy, Sungai Buloh Hospital

PP 16  UNDEROPTIMIZED PRIOR STATIN THERAPY IN ACUTE CORONARY SYNDROME
Nicholas Chua¹, Rizmy Najme Khir¹, Chong Pei Feng³, Lim Chiao Wen¹, Johan Rizwal¹, Effa Abdul Rahman¹, Hafisyatul Aiza¹, Mohd Kamal Mohd Arshad¹, Zubin Othman Ibrahim¹, Faridah Embong², Christopher Lee², Sazzli Kasim¹
¹Cardiology Department, UiTM Sg Buloh, Malaysia
²Medical Department, Sungai Buloh Hospital
³Department of Pharmacy, Sungai Buloh Hospital

PP 17  RISK FACTORS AND OUTCOME OF ACUTE CORONARY SYNDROME IN THE ELDERLY: A MALAYSIAN PERSPECTIVE
Noor Azileen Ahmad Tarmizi, Nicholas Chua, Aima Abdullah, Sazzli Kassim
Faculty of Medicine, Sungai Buloh Campus, Universiti Teknologi MARA, Selangor, Malaysia
PP 18  MSSA PURULENT PERICARDITIS IN IMMUNOCOMPROMISED PATIENT: A RARE CASE REPORT
Nurazam Omar, Norazrulrizal MatNor, Azri Nordin, Wan Syazween Lyana Wan Ahmad Kamal, Kamarul Ariffin Hamzah, Sia Koon Ket, Omar Ismail
Cardiology Unit, Hospital Tuanku Fauziah, Perlis, Malaysia
PP 19  A YOUNG MAN PRESENTED WITH EPIGASTRIC PAIN AND EVOLVING ST-ELEVATION (STE) STEMI? OR A STEPI? (PERICARDIAL INFLAMMATION)  
Patrick Tiau WJ, Tan TS, Siti Hafizah, Ang CM, Shatishkumar, Mohd Shawal, Choor Chee Ken, Hamat Hamdi Che Hassan, David Cumberland, Oteh Manskon  
Department of Medicine, Cardiology Unit, UKM

PP 20  CLINICAL AUDIT ON CONSENT AND INFORMATION PROVISION SURROUNDING CARDIO-TOXICITY FOLLOWING ANTHRACYCLINE-BASED CHEMOTHERAPY AND MEDIASTINAL RADIOTHERAPY IN LYMPHOMA PATIENTS  
Raja Ezman Faridz Raja Shariff¹, Laura Cove-Smith¹, Valerie Goode¹  
¹The Christie’s, Manchester, United Kingdom

PP 21  BODY MASS INDEX AND WAIST CIRCUMFERENCE AS PREDICTIVE FACTORS IN THE DEVELOPMENT OF ACUTE CORONARY SYNDROME IN YOUNG ADULTS  
Raja Ezman Faridz Raja Shariff¹, Nicholas Chua¹, Rizmy Najme Khi¹, Khairul Syafiq Ibrahim¹, Mohd Kamal Mohd Arshad¹, Lim Chiao Wen¹, Johan Rizwal¹, Effarezan Abdul Rahman¹, Hafisyatul Aiza¹, Zubin Othman Ibrahim¹, Sazzi Kasim¹  
¹Cardiology Department, UiTM Sungai Buloh, Selangor, Malaysia

PP 22  CASE STUDY OF ASYMPTOMATIC HEART BLOCK IN A CARDIAC SARCOIDOSIS PATIENT  
Shahrani S¹, Megat Samsudin WN², Kaur S²  
¹Faculty of Medicine, University Malaya  
²Cardiology Department, Institut Jantung Negara (IJN)

PP 23  CASE REPORT: HAEMOLYTIC ANAEMIA IN SLE PATIENT WITH LUPUS NEPHRITIS POST DVR  
Suraya Hani Kamsani, Asliannif Roslan, Nandakumar Ramakrishnan, Mohd Nasir Muda

PP 24  COMPLETE HEART BLOCK ASSOCIATED WITH MYCOPLASMA PNEUMONIAE  
Wu Jin Teng, Ahmad Suhaimi Mustafa, Chong Jen Lim, Baldip Kaur Gurcharan Singh, Siti Khairani Bt Zainal Abidin, Anwar Irawan B Ruhani, Shahidi B Jamaludin, Noor Darinah Bt Mohd Daril  
Cardiology Department, Hospital Tengku Ampuan Afzan, 25100 Kuantan, Pahang, Malaysia.

PP 25  HEART FAILURE AS A NEW INDICATION FOR REHABILITATION: TRANSLATING GUIDELINES INTO LIFE-CHANGING PRACTICES  
Anwar Suhaimi¹, Shaida Mustapha¹, Lim Tsau Jun¹, Lee Jen Ping¹, Lau Eng Foo¹, Salmah Anim Abu Hassan², Natiara Mohamed³, Nooratiqah Maarup⁴, Muhammad Badiuzzaman Farhan Mohd Ali⁴, Koo Jui Geok⁴, Fauziah Baharuddin⁴  
¹Department of Rehabilitation Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur.  
²Department of Orthopaedics, Traumatology and Rehabilitation, International Islamic University Malaysia, Kuantan.  
³Discipline of Rehabilitation Medicine, Universiti Teknologi MARA, Sungai Buloh.  
⁴Cardiac Rehabilitation Services, Department of Rehabilitation Medicine, UM Medical Centre.
PP 26 ANGIOTENSIN RECEPTOR NEPRLYSIN INHIBITOR (ARNI) FOR HEART FAILURE WITH REDUCED EJECTION FRACTION – EARLY CLINICAL EXPERIENCE IN INSTITUT JANTUNG NEGARA
Azmee Mohd Ghazi, Aslannif Roslan, David Chew, Aizai Azan Abdul Rahim

PP 28 CHRONIC HEART FAILURE IN MULTIETHNIC POPULATION IN NORTH KUALA LUMPUR
1Cardiology Unit, Universiti Teknologi MARA Sg Buloh.
2Department of Epidemiology and Public Health, Universiti Teknologi MARA Sg. Buloh.

PP 29 GUIDELINE ADHERENCE TO PRESCRIPTION IN HEART FAILURE POPULATION IN NORTH KUALA LUMPUR REGION
1Cardiology Unit, Universiti Teknologi MARA Sg Buloh.
2Department of Epidemiology and Public Health, Universiti Teknologi MARA Sg. Buloh.

PP 30 DEMOGRAPHICAL, CLINICAL CHARACTERISTICS AND MANAGEMENT OF PATIENTS PRESENTED TO INSTITUT JANTUNG NEGARA WITH ACUTE DECOMPENSATED HEART FAILURE : A RETROSPECTIVE OBSERVATIONAL ANALYSIS
Koh Hui Beng, Lim Siew Suan, Jamalia Jaafar, Maizatu Akma Sulung, Intan Safarinaz Sabian, Norfazlina Jaffar @ Jaafar, Aizai Azan Abdul Rahim, David Chew Soon Ping, Azmee Mohd Ghazi
Institut Jantung Negara, Kuala Lumpur, Malaysia.

PP 32 DILATED CARDIOMYOPATHY IN LUPUS NEPHRITIS : CASE SERIES
Dyahris Koentartiwi, Astrid Kristina Kardani, Renny S
Saiful Anwar General Hospital, Malang.

PP 33 SEVERE LIP ULCERATION AS THE PRIMARY PRESENTING SYMPTOM FOR INCOMPLETE KAWASAKI DISEASE
Lim Shou Xun, Ng Rui Lun, Koay Han Siang
1Paediatric Department, Hospital Kulim.
2Paediatric Cardiology Unit, Penang Hospital.
PP 35 USEFULNESS OF MYOCARDIAL PARAMETRIC IMAGING TO EVALUATE PHYSIOLOGICAL CHANGING IN LEFT VENTRICULAR NONCOMPACTATION ASSOCIATED VIRAL MYOCARDITIS BEFORE AND AFTER PATENT DUCTUS ARTERIOSUS CLOSING
Abdul Muhaimin Ahmad, Haifa Abdul Latiff, Hasri Samion
Institut Jantung Negara

PP 36 INTRAMYOCARDIAL DISSECTING HAEMATOMA IN THREE PATIENTS TREATED CONSERVATIVELY
Aslannif Roslan, Tantawi Afrikanus, Wan Nabeela Megat Samsudin, Najmi Hakim

PP 37 PSEUDOANEURYSM SECONDARY TO INFECTIVE ENDOCARDITIS POST BENTALL PROCEDURE
Aslannif Roslan, Nabeelah Megat Syamsudin, Tantawi Afrikanus, Najmi Hakim

PP 39 INFLUENCE OF CALCIUM SCORE IN PREDICTING PRESENCE OF OBSTRUCTIVE CORONARY ARTERY DISEASE AND 2-YEAR CARDIOVASCULAR OUTCOME FROM GENDER PERSPECTIVES: A PILOT SINGLE-CENTRE RESTROSPECTIVE STUDY
Universiti Teknologi Mara (UiTM)

PP 40 FEASIBILITY OF VARIOUS AORTIC VALVE AREA CALCULATIONS USING 3D TRANSOESOPHAGEAL ECHOCARDIOGRAPHY AND 2D TRANSTHORACIC ECHOCARDIOGRAPHY IN PATIENTS WITH AORTIC STENOSIS
Universiti Teknologi Mara (UiTM)

PP 41 THE ROLE OF CORONARY CT CALCIUM AS A STAND-ALONE SCREENING TOOL FOR CORONARY ARTERY DISEASE IN A YOUNGER MULTI-RACIAL ASIAN POPULATION
Ng Yau Piow, Beni Isman Rusani, Shahrol Anuar, Akmal Hakim, Ahmad Khairuddin, Rosli Mohd Ali, Al Fazir Omar
IJN Malaysia

PP 42 2016 CORONARY ANGIOGRAPHY AUDIT: DEMOGRAPHICS OF PATIENTS WITH NORMAL CORONARY ANGIOGRAPHY RESULTS
Arumuganathan PN, Tay LK, Mylano TA, Abdul Muizz AM, Kamaraj S, Abd Kahar AG;
Dept of Cardiology, Hospital Serdang, Malaysia

PP 43 SPONTANEOUS CORONARY ARTERY DISSECTION IN YOUNG MALES, A CASE SERIES
Baldip Kaur Gurcharan Singh, Shahidi Bin Jamaludin, Ahmad Suhaime Bin Mustafa, Siti Khairani bt Zainal Abidin
Cardiology Department, Tengku Ampuan Afzan Hospital, Kuantan, Pahang, Malaysia.
PP 45 SIGNIFICANT FUNCTIONAL IMPROVEMENT IN A PREGNANT PATIENT WITH SEVERE PULMONARY HYPERTENSION AND MITRAL STENOSIS USING PERCUTANEOUS TRANSVENOUS MITRAL COMMISSUROTOMY
Muhammad Imran Bin Abdul Hafidz¹, Lee Zhen-Vin¹, Wan Azman Bin Wan Ahmad¹
¹Cardiology Unit, University of Malaya Medical Centre, Kuala Lumpur, Malaysia

PP 46 DISSECTION OF THE TOTAL LENGTH OF THE DESCENDING AORTA DUE TO A FEMORAL PUNCTURE – AN UNCOMMON COMPLICATION OF VASCULAR ACCESS FOR CARDIAC CATHETERISATION
Muhammad Imran Bin Abdul Hafidz¹, Ramesh Singh¹
¹Cardiology Unit, University Of Malaya Medical Centre, Kuala Lumpur, Malaysia

PP 47 RADIAL VS FEMORAL ACCESS IN PRIMARY PERCUTANEOUS INTERVENTION IN STEMI PATIENTS
(HISNET)HKL IJN STEMI NETWORK

PP 48 PROCEDURAL SAFETY AND ONE MONTH OUTCOME OF PATIENTS TREATED WITH MAGNESIUM BIORESORBABLE SCAFFOLD
Nicholas Chua¹, Mohd Kamal Mohd Arshad¹, Rizmy Najme Khir¹, Lim Chiao Wen¹, Johan Rizwal¹, Effa Abdul Rahman¹, Hafisyatul Aiza¹, Zubin Othman Ibrahim¹, Sazzli Kasim¹.
¹Cardiology Department, UiTM Sg Buloh, Malaysia

PP 49 PREVALENCE OF ATRIAL FIBRILLATION AMONG THE MOPD PATIENTS OF HOSPITAL TUANKU AMPUAN NAJIHAH, KUALA PILAH
Brian Joe Anthony, Fauzi Azizan, Chan HY, Padmini, Ram Prasad, Jeevakanthi

PP 50 IDIOPATHIC FASCICULAR LEFT VENTRICULAR TACHYCARDIA: A COMMONLY UNDER-RECOGNISED CAUSE OF TACHYCARDIA IN ADOLESCENCE
Koo Kim Lim¹, Mohd Nizam Mat Bah², Dhani Darshan Francis¹, Chin Pek Woon¹.
¹Department of Medicine, Hospital Enche’ Besar Hajjah Khalsom Kluang, Johor
²Department of General Paediatric & Paediatric Cardiology, Hospital Sultanah Aminah Johor Bahru.

PP 51 ATRIAL FIBRILLATION AND STROKE PREVENTION: HOW ARE WE DOING IN A DEVELOPING COUNTRY?
Chiao Wen Lim¹, Swee Eng Goay², Tze Yuan Tee², Jian Chen Lim², Sazzli Kasim¹, Azmillah Rosman².
¹Faculty of Medicine, Universiti Teknologi MARA.
²Hospital Selayang, Ministry of Health

PP 52 PREVALENCE OF ABNORMAL ELECTROCARDIOGRAPH IN AN ASYMPOMATIC REDISCOVER STUDY POPULATION
Chiao Wen Lim, Sazzli Kasim, Johan Rizwal Ismail, Effarezan Abdul Rahman, Nicholas Yul Chye Chua, Rizmy Najme Khir, Hafisyatul Aiza Zainal Abidin, Mohd Kamal Mohd Arshad, Zubin Othman Ibrahim, Khalid Yusoff
Universiti Teknologi MARA, Department of Cardiology, Selangor
PP 53  THE EFFECT OF LISTENING TO THE QURAN RECITAL ON DEPRESSION, ANXIETY AND STRESS AMONG CORONARY HEART DISEASE PATIENTS
Rosliza Jayus¹, Sharifah Shafinaz Sharif Abdullah², Santhna Letchumy², Hamat Hamdi Che Hassan¹, Choor Chee Ken¹, Mohd Shawal Faizal Mohamad¹, Shathiskumar Govindaraju¹, Tiau Wei Jyung¹, David Cumberland¹, Oteh Maskon¹
¹Universiti Kebangsaan Malaysia
²Universiti Teknologi Mara, Kuala Lumpur

PP 54  MORTALITY OUTCOMES IN ORAL MEDICATION REVIEW FOR ACS NORTH OF KUALA LUMPUR, MALAYSIA
Chong Pei Feng¹, Nicholas Chua Yul Chye²
¹Department of Pharmacy, Hospital Sungai Buloh, Malaysia
²Department of Cardiology, University Technology Mara Malaysia (UiTM)

PP 55  REVERSAL OF DABIGATRAN ACTIVITY WITH IDARUCIZUMAB IN A PATIENT WITH TRAUMATIC INTRACRANIAL BLEED
Lee Zhen-Vin¹, Muhammad Imran bin Abdul Hafidz¹, Chee Kok Han¹
¹Cardiology Unit, Department of Medicine, University Malaya Medical Centre, Kuala Lumpur, Malaysia

PP 56  SEVERE RHABDOMYOLYSIS AFTER CONCURRENT ADMINISTRATION OF ENTRESTO (SACUBUTRIL/VALSARTAN) AND HIGH DOSE ATORVASTATIN
Mohd Firdaus Bin Hadi¹, Muhammad Imran Bin Abdul Hafidz¹
¹Cardiology Unit, University of Malaya Medical Centre, Kuala Lumpur

PP 57  A MULTICENTRE EXPERIENCE OF NOVEL ANTICOAGULATION AND WARFARIN FOR USE FOR STROKE PREVENTION IN ATRIAL FIBRILLATION
Rubenthiran Navaratnam¹, Darwina Bolkim¹, Rhema Sundram¹, Norfazlina binti Jaafar¹, Farah Wahidah Zaimudin¹, Rosila Rebo¹, Razali Omar¹, Kantha Rao Narasamuloo², Wan Faizal Wan Rahimi Shah³, Tan Bee Mee³, Saravanan Krishinan⁴, Melissa Lim Siaw Han⁵, Tong Lee Len⁵, Ong Tong Kim⁵, Alan Fong Yean Yi⁶, Nor Azila binti Abdul Latif⁷, Chai Hui Joo⁷, Tan Yaw Shen⁷, Aylwin Lim Ming Wee⁷, Lim Chuen Lu⁸, Alice Chua Tien Tien⁹, Nor Syazwani bt Ahmad¹⁰, Kwong Chea Ing¹¹ Yap Lok Bin¹
¹Institut Jantung Negara,
²Hospital Sultanah Bahiyah,
³Sarawak General Hospital,
⁴Sarawak Heart Centre,
⁵Serian Hospital,
⁶Sri Aman Hospital,
⁷Betong Hospital,
⁸Bintulu Hospital,
⁹Miri Hospital,
¹⁰Bau Hospital

PP 58  THE CARDIAC REHABILITATION APPROACH IN THE MANAGEMENT OF BARIATRIC PATIENTS
Anwar Suhaimi¹,², Nor Hanim Mohamad Hanapi¹, Thor Ju An¹, Phang Shu San¹, Hazwani Halli², Muhammad Badriuzzaman Farhan Mohd Ali², Koo Jui Geok², Fauziah Baharuddin²
¹Department of Rehabilitation Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur
²Cardiac Rehabilitation Services, Department of Rehabilitation Medicine, UM Medical Centre.
PP 59 PERMANENT PACEMAKER IMPLANTATION REGISTRY IN HOSPITAL SERDANG IN YEAR 2016
Dr Hartini Mohd Yusof¹, Dr Nor Halwani Habizal¹, Prof Madya Dr Ahmad Fazli bin Abd Aziz², Dr Kamaraj A/L Selvaraj¹, Datuk Dr Abdul Kahar bin Abd Ghapar¹ ¹Jabatan Kardiologi Hospital Serdang, Selangor, Malaysia ²Jabatan Perubatan (kardiologi) Universiti Putra Malaysia, Selangor, Malaysia

PP 60 "NEAR NORMAL" ELECTROCARDIOGRAPHIC ANALYSIS IN A PATIENT WITH PERSISTENT ANGINA: REPORT OF A DISEASE FROM CIRCUMFLEX BRANCH OF LEFT CORONARY ARTERY
Dr Ng Choon Seong, Department of Internal Medicine & Cardiology Unit, Hospital Canselor Tuanku Muhriz (The National University of Malaysia Medical Centre), Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Wilayah Persekutuan, Malaysia

PP 61 WILLINGNESS TO PAY FOR NOVEL ORAL ANTICOAGULANTS IN NON-V ALVULAR ATRIAL FIBRILLATION AND DEEP VEIN THROMBOSIS PATIENTS
Kent Ter Lau¹, Tian Er Poh² ¹Medical Department, Hospital Miri ²Clinical Research Center, Hospital Miri

PP 62 ALTERNATIVE FORMULA FOR PULMONARY VASCULAR RESISTANCE USING ECHOCARDIOGRAPHY IS FEASIBLE
Kong Poi Keong¹; Pathmanaban Gunasekaran²; Muhammad Norezzuan Abu Bakar²; Mohd Safie Mat Jusoh ²; Mohammad Nadi Nor Azemi²; Zamharris Indra Shah Zamani²; Omar Ismail¹ ¹Hospital Pulau Pinang, Georgetown, Pulau Pinang, Malaysia ²Kolej Kejururawatan Pulau Pinang, Georgetown, Pulau Pinang, Malaysia

PP 63 A STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICE OF VAPING AS SMOKING CESSATION TOOL AMONG GENERAL PUBLIC IN SELANGOR
KS Ibrahim, D Katiman, CW Lim, JR Ismail, NYC Chua, R Najme Khir, E Abdul Rahman, MK Arshad, HA Abidin, ZO Ibrahim, SS Kasim Department of cardiology, Faculty of medicine, UiTM

PP 64 CARDIOVASCULAR SAFETY ASSESSMENT OF A NEW INTRABODY COMMUNICATION NETWORK
Najme Khir R¹, Chua NYC¹, Ibrahim KS¹, Ismail JR¹, Zainal HA¹, Lim CW¹, Arshad K¹, Ibrahim ZO¹, Kasim S¹, Abdul Rahman E¹. ¹Faculty of Medicine, UiTM Sg Buloh, Malaysia.

PP 65 TRENDS IN INDUSTRY-SPONSORED CARDIOVASCULAR CLINICAL TRIALS IN MALAYSIA
Tay Wai Cheng¹, Audrey Ooi Joo Ann¹ ¹Clinical Research Malaysia (CRM)
PP 66  PROVISION OF CRITICAL CARE PHARMACY SERVICES TO A CARDIAC SURGERY INTENSIVE CARE UNIT (CSICU)
Thong Choy Ping¹, Kamaleswary Arumugam¹
¹National Heart Institute, Kuala Lumpur, Malaysia

PP 67  AN EVALUATION OF VENOUS THROMBOEMBOLISM PROPHYLAXIS AMONG SURGICAL PATIENTS AT A NON-ACADEMIC SPECIALIST HOSPITAL IN PERAK
Wan Azuati WO¹, Nur ‘Atikah Huda MR¹, Nurul Hasfizah H¹
IMPACT OF CHOLESTEROL LEVELS ON ACUTE CORONARY SYNDROME MORTALITY IN NORTH OF KUALA LUMPUR

Affida Ahmad¹, Nicholas Chua¹, Rizmy Najme Khir¹, Chong Pei Feng³, Lim Chiao Wen¹, Johan Rizwal¹, Effa Abdul Rahman¹, Hafisyatul Aiza¹, Mohd Kamal Mohd Arshad¹, Zubin Othman Ibrahim¹, Faridah Embong², Christopher Lee², Sazzli Kasim¹.

BACKGROUND: Hypercholesterolaemia is an established risk factor for acute coronary syndrome (ACS), associated with higher mortality.

OBJECTIVE: To assess the impact of LDL level and total cholesterol-to-high density lipoprotein ratio (TC:HDL) on mortality and subtypes of ACS among patients in Sg Buloh Hospital.

MATERIALS & METHODS: This was a prospective, observational study conducted in Sungai Buloh Hospital. All ACS were enrolled during 2014 and 2015. Subsequent relevant information was then gathered and statistically analyzed.

RESULTS: There were 1479 ACS, with a mean age of 56 (±12). 70.8% were male. 45.9% with unstable angina (UA), 29.6% with Non-ST elevation myocardial infarct (NSTEMI) and 24.5% with ST-elevation myocardial infarct (STEMI). The prevailing risk factors were hypertension (65.9%), diabetes mellitus (48.5%), known ischaemic heart disease (42.7%), dyslipidemia (29.3%) and smoking (27.9%). Biochemical markers showed mean HbA1c 8.01 % (+-2.2), fasting glucose level of 7.56 mmol/L (+-3.8), and serum creatinine 124.48 µmol/L (+-34). Lipid profile revealed mean total cholesterol of 5.65 mmol/L (+-1.2), triglyceride 1.86 mmol/L (+-1), HDL 1.02 mmol/L (+-0.3), and LDL of 3.07 mmol/L (+-3.3). 56.6% (n= 837) had LDL of 2.6mmol/L or above on presentation. In those with LDL ≥ 2.6mmol/L, 48% presented with UA, 28.6% with NSTEMI and 16.7% with STEMI. In the LDL <2.6mmol/L group, 48.6% were on prior statin therapy compared to 45.2% in the LDL ≥ 2.6 group. Mortality at day-30 in those with LDL ≥ 2.6 was 4.5% and 11.0 % in those with LDL <2.6mmol/L (p <0.005). Mortality at day-30 for patients with TC:HDL ≥ 3.5 was 4.7 % (n = 45) and TC: HDL < 3.5 was 17.5% (n = 57).

CONCLUSION: There were more patients with ACS who has higher LDL level, however the risk of NSTEMI and mortality at day-30 are higher in the lower LDL group. Similarly, lower TC:HDL was also associated with higher mortality at day-30. Thus lipid levels are not independent mortality predictors in our cohort. These unexpected finding should highlight the importance of managing the lipid profile with other important risk factors concurrently.
A CASE REPORT OF ACUTE PERICARDITIS AS INITIAL PRESENTATION OF UNDERLYING AUTOIMMUNE CONNECTIVE TISSUE DISEASE (CTD)

Andy Ko TY¹, Tan SW¹, Teo Yan¹, Wong TM¹, Ling GR²

BACKGROUND: Autoimmune pericarditis has an incidence rate of 3-5%. The European Society of Cardiology (ESC) suggested investigation for secondary cause of acute pericarditis if any of these is present namely, fever > 38 °C, pericardial rub on examination, widespread ST elevation of electrocardiogram (ECG) and pericardial effusion > 2cm. The yield of investigation for secondary causes is low.

OBJECTIVE: Discuss the investigation of acute pericarditis.

RESULTS: We report a 38 year old lady who presented with chest pain associated with breathlessness, fever and reduced effort tolerance for 2 days. She denied history of autoimmune symptoms, malignancy or significant drug history. Examination showed normal heart sounds, lungs with basal crepitations, no pedal edema, lymph nodes or hepatosplenomegaly. Full blood count showed hemoglobin 8.8 g/dL, total white count of 14.1x10 ³ u/L, normal platelet. C-reactive protein was > 6 mg/L. Erythrocyte sedimentation rate 28mm/hr. ECG showed widespread ST elevation. Chest X-ray showed globular heart with clear lung fields. Echocardiogram demonstrated 0.5 cm pericardial effusion at right atrium and 2cm at left ventricle free wall with normal ejection fraction, no sign of cardiac tamponade. The ECG and echocardiogram findings fulfilled the ESC criteria for acute pericarditis. Her Creatinine Kinase level was not significantly raised. ANA titre was 1:5120, speckled pattern. C3 C4 was low; 0.6028 g/L and <0.08 g/L respectively. Extracted nuclear antigen was positive for anti U1 RNP. Rheumatology input sorted, impression was autoimmune undifferentiated CTD, probably Systemic Lupus Erythematosus (SLE). Her urea level was 2.8mmol/L, thyroid function test was normal, biohazards was negative, cultures were negative, sputum smear for acid fast bacilli and GeneXpert were negative. Acute phase Mycoplasma serology titer was raised >1/40, repeated negative in convalescent phase. She was on tapering dose of Aspirin, Colchicine and 5 days of intravenous Ceftriaxone and Azithromycin. Follow up was arranged to look for progression, sign and symptoms of SLE. ECG after 1 week showed resolved ST elevation. Echocardiogram 2 weeks later showed resolution of pericardial effusion.

CONCLUSION: The presence of acute pericarditis major factor should prompt identification of secondary cause. The raised ANA level together with the presentation of acute pericarditis suggested underlying CTD, possible SLE.
A CURIOUS CASE OF ST ELEVATION AFTER INTRAVENOUS EPINEPHRINE USE FOR ANAPHYLAXIS: KOUNIS SYNDROME OR EPINEPHRINE EFFECT?

Baldip Kaur Gurcharan Singh, Chong Jen Lim, Siti Khairani bt Zainal Abidin
Cardiology Department, Tengku Ampuan Afzan Hospital, Kuantan, Pahang, Malaysia.

This is a case of a 53 year old gentleman with no known medical illness who has a known allergy to a certain analgesic. He presented to a general practitioner for acute severe anaphylactic reaction after ingesting diclofenac sodium where his blood pressure plummeted to 80/50mmHg. He received 0.5mg of intravenous adrenaline, along with other medications to treat his suspected anaphylaxis after which his BP picked up only transiently to 130/80mmHg. After that, he was sent to the emergency department for further management. During the patient’s transfer to the emergency department, he developed left sided chest pain of typical character and his BP dropped to 80/48 mmHg again. His ECG revealed ST elevation at inferior leads with reciprocal changes in leads I, aVL. He was intended to receive a second dose of subcutaneous adrenaline, however, was accidentally given 0.3mg via intravenous route instead. He remained hypotensive and his chest pain and ST elevation persisted. An echocardiography scan was also done which revealed hypokinesia over the inferoseptal wall with preserved left ventricular systolic function. His serum creatine kinase levels peaked up to 1690 U/L in about 12 hours. This patient was treated with unfractionated heparin, dual antiplatelets and a short duration of noradrenaline infusion after which his chest pain and ST elevation resolved. He was discharged well after 4 days of admission. Subsequently, an outpatient COROS was performed on him which revealed mild coronary artery disease. This case is an example of vasospasm induced myocardial injury either due to a hypersensitivity reaction (also known as Kounis syndrome) or by the concentrated adrenaline used to treat it. Kounis syndrome is relatively underdiagnosed due to the lacking in awareness of this clinical entity. Furthermore, although anaphylaxis is not uncommon, healthcare personnel rarely manage and this leads to diagnostic and treatment errors especially when administering adrenaline. It is hoped that this case report will help create awareness of Kounis syndrome and the importance of knowing how to administer adrenaline to enable optimal management of patients with both acute allergic and/or myocardial events in the future.
GLOBAL REGISTRY OF ACUTE CORONARY EVENTS (GRACE) RISK SCORE IN PREDICTING OUTCOME IN ELDERLY PATIENTS WITH ST ELEVATION MYOCARDIAL INFARCTION AT 6 MONTHS AFTER PRIMARY PERCUTANEOUS CORONARY INTERVENTION IN HOSPITAL SERDANG

Hakimah Mohammad Sallehuddin, Siti Fatimah Azman, Sabariah Md Noor, Ummu Aiman Faisal, Saravanan Vengadesa Pillai, Ahmad Fazli Abdul Aziz.

1Department of Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia.
2Department of Cardiology, Hospital Serdang, Selangor, Malaysia.
3Department of Pathology, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia

BACKGROUND: Age is an important determinant of outcome in acute coronary syndrome (ACS) and ST-elevation myocardial infarction (STEMI) in elderly carries a high mortality rate. Despite advancement of interventions in STEMI, cardiologists often face dilemma whether to pursue aggressive invasive strategies in this high-risk subgroup which is often underrepresented in ACS clinical trials. Invasive treatment seems to yield better result than non-invasive treatment but a validated risk assessment is needed to support this decision. GRACE risk score is a validated risk assessment used for prediction of mortality in elderly patients admitted with ACS but its clinical application in Malaysia is lacking.

OBJECTIVE: To determine the correlation between GRACE risk score and outcome at 6 months post primary percutaneous coronary intervention (PCI) in elderly patients ≥60 years old with STEMI admitted to Hospital Serdang.

MATERIALS & METHODS: This is a retrospective, observational, single centre study involving 26 elderly patients ≥60 years old admitted to Cardiology Department Hospital Serdang from January 2015 to June 2015 and outcome was determined after 6 months. All patients were newly diagnosed with STEMI and underwent primary PCI. Data was obtained from the medical records and GRACE score was calculated using GRACE ACS Risk and Mortality Calculator upon admission. Statistical results were analysed using SPSS version 22.

RESULTS: Patients age ranged between 60 to 83 years old (69.5±5.7). Our study showed 12 out of 26 (46.2%) patients had high and intermediate GRACE risk score respectively and only 2 (7.7%) had low score. All patients with high GRACE risk score had unsuccessful outcome in which 7 out of 12 (58.3%) patients ended up with mortality and 5 out of 12 (41.7%) had failed PCI within 6 months after primary PCI. On the other hand, 11 out of 12 (91.7%) patients with intermediate GRACE score had successful PCI and only 1 (8.3%) had failed PCI. Both patients with low score had successful PCI at 6 months.

CONCLUSION: We found that there is a significant correlation between GRACE score and outcome at 6 months post primary PCI in elderly patients ≥60 years old with STEMI (p<0.001).
INTRODUCTION: Left ventricular wall rupture is a rare yet known mechanical complication of myocardial infarction. It is associated with high mortality. We present a case of lateral ST-elevation myocardial infarction complicated with left ventricular rupture with cardiac tamponade.

CASE DESCRIPTION: A 44-year-old gentleman presented with 2 days of chest pain, dyspnea and 4 hours of pre-syncpe. Physical examination revealed a fit middle-aged man with decreased breath sounds at the lung bases. His initial blood pressure was normal but became hypotensive after 20 minutes and required inotropic support. Electrocardiogram demonstrated ST elevation over leads I and aVL. A bedside transthoracic echocardiogram revealed cardiac tamponade with a segment of hyperdense fluid. Subxiphoid pericardiocentesis was performed and blood stained fluid was drained. The cardiac tamponade resolved transiently but recurred. A second pericardiocentesis via the apical region was performed. He was intubated and blood products was transfused. A CT Thorax demonstrated left ventricular rupture with pericardial effusion with the 2 pericardial drains in-situ. Despite vigorous resuscitation he deteriorated. We were unable to transfer to a tertiary center with cardiothoracic team. He finally succumbed 8 days later.

DISCUSSION: Cardiac rupture is a rare (2-4%) yet a highly fatal complication. Death in the early phase of myocardial rupture was 27%. 2D Echocardiogram can detect ventricular wall rupture, hemopericardium and cardiac tamponade. We were able to identify the latter but not the rupture. Hence a routine bedside echocardiogram is useful as seen in this case as it prevented a thrombolysis that could have hastened the patient’s death. We were only able to provide medical management and pericardiocentesis. Left ventricular free wall rupture includes medical treatment modalities such as resuscitation with fluids, blood products, inotropes, pericardiocentesis, and intraaortic-ballon pump counterpulsation. Definite treatment would be surgical repair.
PP 6

PRIOR ANTIPLATELET USE AND CARDIOVASCULAR OUTCOMES IN PATIENTS UNDERGOING PRIMARY PERCUTANEOUS CORONARY INTERVENTION

Hoo Yee Yin, Tai Jia Yee, Abdul Muizz AM, Wardati Mazlan Kepli

Dept of Pharmacy Hospital Serdang
Dept of Cardiology Hospital Serdang

BACKGROUND: Although antiplatelet therapy effectively reduces ischemic events, the cardiovascular (CV) event in some cases is still unpredictable.

OBJECTIVE: The objective of this study is to evaluate the impact of prior antiplatelet (PAP) use in ST elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary interventions (PCI).

MATERIALS & METHODS: Patients were identified from the PCI list in Hospital Serdang between May 2015 and November 2016. The goal is to include all 208 patients with STEMI undergoing primary PCI during this period. Currently the preliminary data consists of 46 patients. Data were collected through the electronic hospital information system (eHIS). Patients were grouped according to whether they were PAP users or non-antiplatelet users (NAP). The preliminary data are presented with general descriptive statistics.

RESULTS: So far, the study enrolled 46 STEMI patients undergoing primary PCI. Among 46 patients, 65.2% were Malay, 17.4% were Indian and 15.2% were Chinese. The proportion of male was higher than women (91% vs 8.7% respectively). Prior to admission, 15% were PAP users (43% aspirin, 14% clopidogrel, and 43% dual antiplatelet agents) and 85% were NAP users. Among patients treated with primary PCI, PAP users were 5 years older than NAP users [58.9(9.3) years vs 53.8(12.2) years respectively]. PAP users had higher rate of diabetes mellitus, hypertension and heart failure. Upon discharge, both groups received dual antiplatelet therapy, beta-blocker, angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) and statin. During hospitalisation, the rate of CV event and bleeding was higher in NAP users (5.1% vs 0.0% and 5.1% vs 0.0% respectively).

CONCLUSION: The preliminary data between PAP users and NAP users in STEMI patients undergoing primary PCI are presented. Further extension of this study is required to determine the impact of PAP on clinical outcomes following PCI.
CHARACTERISTICS & OUTCOMES OF ACUTE CORONARY SYNDROME PATIENTS IN HOSPITAL PUTRAJAYA

Iskandar Mirza bin Amran¹, Muhammad Irfan bin Mohd Sallehuddin¹, Siti Aribah binti Alias²
Nor Shuhaila Shahril¹
¹Department of Medicine, Hospital Putrajaya
²Clinical Research Centre, Hospital Putrajaya

BACKGROUND: Acute coronary syndrome (unstable angina (UA), ST elevation myocardial infarction (STEMI) and non-ST elevation myocardial infarction [NSTEMI]) is a common medical admission managed by general physicians. STEMI patients presenting within office hours are transferred for primary percutaneous coronary intervention (PCI) to Hospital Serdang under the STEMI network, where as those who presented out of office hours are managed as in patients.

OBJECTIVE: To describe the characteristics of patients admitted for Acute Coronary Syndrome (ACS) and their outcome on discharge.

MATERIALS & METHODS: This is a retrospective review of patients with the diagnosis of ACS from September to December 2016. Electronic medical records were reviewed. Demographics data, cardiac risk factors, and outcome of patients were extracted.

RESULTS: A total of 97 cases were reviewed; 26% (n=25) STEMI, 31% (n=30) NSTEMI and 43% (n=42) UA. Majority of these cases, 73% (n=73) were managed in the general medical wards. 6 out of 25 patients (24%) with STEMI were referred to Hospital Serdang under the STEMI network, with the remaining receiving thrombolytic therapy. Majority of patients were males 77% (n=75). Mean age at diagnosis were 57.55 (+ SD: 12.8) years ;( males 56.63 years [+ SD: = 12.6] and females 60.68 years [+ SD: 13.5]. Most of patients were government servants 49% (n=48), 30% (n=29) from private sector, 19% (n=18) were self-employed, and 25% (n=2) patients were foreign worker. Cardiac risk factors were hypertension (28%), diabetes (19%), hyperlipidemia (23%), family history of coronary artery disease (12%) and smoking (18%). 45% (n=44) of cases had 3 or more cardiac risk factors, 30% (n=29) has 2 risk factors, 18% (n=17) had only one risk factors identified. Three deaths occurred in the STEMI in-patients. Majority patients (76%) were referred to a tertiary cardiac centre on discharge and 12% received further outpatient risk stratification. Four patients (1 STEMI and 3 NSTEMI) had taken at-own-risk discharge due to multiple reasons.

CONCLUSION: Patients admitted with ACS were predominantly males and have multiple cardiac risk factors, with the commonest being hypertension. Only one quarter of all STEMI cases get access to the STEMI network since they presented during office hours.
DUKE TREADMILL SCORE PREDICTS CORONARY ARTERY DISEASE STATUS AMONG ASIAN WOMEN PATIENTS
Kong Poi Keong 1, Sailesh Desmond C Kanasan 2, Muhammad Syakir Yazid 2, Haizil Azizan Khamdan 2, Omar Ismail 1
1 Hospital Pulau Pinang, Georgetown, Pulau Pinang, Malaysia
2 Kolej Kejururawatan Pulau Pinang, Georgetown, Pulau Pinang Malaysia

BACKGROUND: Exercise stress treadmill (EST) test has limitation in accuracy despite its ease of use and accessibility for chest pain assessment. Duke Treadmill Score (DTS), through its objective scoring of common variables in EST, aims to reduce this limitation. DTS is not as widely validated in women and particularly Asian women subjects.

OBJECTIVE: We aimed to assess if DTS predicts coronary artery disease (CAD) status among Asian women patients in Hospital Pulau Pinang.

MATERIALS AND METHODS: We retrospectively reviewed EST performed in 2014 for first 50 Asian women patients (mean age 46.5±9.7 years) who had had coronary angiogram. DTS was calculated from DTS = (exercise duration in minutes) – 5(ST deviation in mm) – 4(angina index) where angina index is 0 for no angina, 1 for non-limiting angina and 2 for exercise-limiting angina. Patients with low DTS of ≤–11 were grouped as high risk for having CAD, intermediate DTS between –11 and +5 as intermediate risk and high DTS of ≥+5 were low risk. Data were analysed using Fisher exact test.

RESULTS: There were 14 (28%) patients in high risk and 36 (72%) patients in intermediate risk group. Patients with negative EST usually did not have coronary angiogram and were excluded resulting in absence of low risk group. In the high risk group, 14 (100%) patients had CAD whereas in the intermediate risk, 12 (33.3%) patients had CAD. Using high risk membership as test positive, intermediate risk as test negative and CAD status either as disease present or disease absent, DTS as a diagnostic test had a sensitivity of 53.8% (14/26) (95% confidence interval 41.4%–53.8%), specificity 100% (24/24) (86.6%–100%), positive predictive value 100% (14/14) (76.9%–100%) and negative predictive value 66.7% (24/36) (57.7%–67.7%) (p<0.001).

CONCLUSIONS: Within limitation of a retrospective study in a single centre, DTS is highly specific and a positive test result of DTS ≤–11 is highly predictive of CAD among Asian women patients
Staphylococci and Streptococci are the major causative microorganisms of infective endocarditis (IE). Granulicatella species, formerly one of the bacteria known as nutritionally variant Streptococci (NVS), is a fastidious and rare causative agent, estimated to cause between 4.3 to 6% of all IE attributed to Streptococci. Although there were cases of Granulicatella IE reported elsewhere, to our knowledge there were no such isolates from IE previously reported in South East Asia. We report a case of a 62 years old gentleman admitted to our hospital and treated for IE. His echocardiogram showed severe mitral regurgitation with vegetation at the posterior mitral valve leaflet measuring 1.18cm². Three sets of blood culture grew a catalase-negative, gram positive cocci in short chains, that grew on blood and chocolate agar as grey colonies with well demarcated edges. Granulicatella adiacens was identified based on commercial biochemical test. He was treated with intravenous vancomycin, the alternative antimicrobial of choice, due to an adverse reaction to guideline recommended intravenous ceftriaxone. He also developed clinical heart failure and an embolic stroke during his hospital stay. A total of 6 weeks of antibiotics was completed and he was discharged well. A review of the literature on Granulicatella endocarditis was carried out on Ovid-MEDLINE for the last 20 years. There were a total of 32 relevant articles with a combined total of 44 cases of IE from Granulicatella spp, including our case report. The commonest reported complication is heart failure and embolic phenomenon. The sensitivity of G. adiacens to penicillin, ceftriaxone and cefotaxime were only 38.9%, 43.3% and 18.9% respectively. G adiacens is 100% susceptible to vancomycin, carbapenem and aminoglycosides, while recording high sensitivity to levofloxacin and clindamycin (91.9% and 84.5% respectively). In conclusion, knowledge of such organism causing IE and their susceptibility pattern is important, as the fastidious nature of such organism may be mistaken as culture-negative cases leading to high rates of mortality and complications. Antibiotics sensitivity may be difficult to obtain, hence, epidemiology and antibiotic susceptibility pattern should be taken into consideration.
SECONDARY PREVENTION PATTERNS IN PATIENTS WITH PRE-EXISTING CORONARY ARTERY DISEASE ADMITTED WITH MYOCARDIAL INFARCTIONS
Muhammad Imran Bin Abdul Hafidz 1, Lee Zhen-Vin 1, Mohd Firdaus Bin Hadi 1
1Cardiology Unit, University of Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia

BACKGROUND: In individuals with pre-existing coronary artery disease (CAD), secondary prevention reduces risk of major adverse cardiac events such as death and myocardial infarctions (MI). Smoking cessation, antiplatelet therapy, lipid lowering therapy, beta-blockers and ACE inhibitors or angiotensin receptor blockers (ARB) all form secondary prevention.

OBJECTIVE: To determine secondary prevention patterns in individuals with pre-existing CAD admitted into UMMC with an MI.

METHODS: Retrospective, observational study of secondary prevention in patients with pre-existing CAD admitted with STEMI or NSTEMI in UMMC from September 2016 to January 2017.

RESULTS: 86 patients (62 males, 24 females) with a mean age of 64 years old were included. There were 20 (23%) STEMI and 66 (77%) NSTEMI cases. 20 (23%) patients had previous MI, 12 (14%) had previous CABG, 40 (47%) had previous angioplasty and 14 (16%) had non-revascularised CAD diagnosed on previous angiograms. 28 (33%) patients were on dual antiplatelet therapy, 35 (41%) were on aspirin monotherapy, 8 (9%) were on clopidogrel monotherapy and 15 (17%) were not on any antiplatelets. 66 (77%) patients were on statin therapy, 1 (1%) on ezetimibe and 19 (22%) were not on any lipid lowering therapy. Only 47 (55%) were on beta blockers and 48 (56%) were on either an ACE inhibitor or an ARB. 26 (30%) of patients were still active smokers.

CONCLUSION: Despite a small cohort, it is already evident that there is suboptimal secondary prevention among patients with pre-existing CAD. Reasons for this may include poor physician prescribing patterns and patient compliance. Reduction of risk of developing myocardial infarction in this high-risk group requires effective prescribing and encouraging patient compliance towards evidence based pharmacological therapy and lifestyle modification such as smoking cessation, weight loss and exercise. Physicians and patients should work together to achieve realistic risk-lowering targets such as ideal bodyweight, LDL and HbA1c levels.
LIPID PROFILE AND LIPID LOWERING THERAPY PATTERNS AMONG PATIENTS WITH PRE-EXISTING CORONARY ARTERY DISEASE (CAD) RE-ADMITTED WITH MYOCARDIAL INFARCTIONS
Muhammad Imran Bin Abdul Hafidz 1, Lee Zhen-Vin 1, Mohd Firdaus Bin Hadi 1
1Cardiology Unit, University of Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia

BACKGROUND: Individuals with documented CAD include those with previous myocardial infarctions (MI), previous coronary revascularization procedures (angioplasty or coronary artery bypass (CABG)) and those with significant plaques on angiography. This group is defined as being at “very high risk” of developing fatal or non-fatal cardiovascular events. The 2016 European Society of Cardiology and European Atherosclerosis Society Guidelines for the Management of Dyslipidaemias recommend an LDL target of below 1.8 mmol/L for this group. Guidelines also recommend using high intensity statins (atorvastatin or rosuvastatin) as secondary prevention after acute coronary syndromes.

OBJECTIVE: To determine lipid profiles and extent of lipid lowering therapies in individuals with pre-existing CAD admitted into UMMC with an MI.

METHODS: Retrospective, observational study of secondary prevention in patients with pre-existing CAD admitted with STEMI or NSTEMI in UMMC from September 2016 to January 2017.

RESULTS: 86 patients (62 males, 24 females) with a mean age of 64 years old were included. There were 20 (23%) STEMI and 66 (77%) NSTEMI cases. 20 (23%) patients had previous MI, 12 (14%) had previous CABG, 40 (47%) had previous angioplasty and 14 (16%) had non-revascularised CAD diagnosed on previous angiograms. The average LDL level was 2.61 mmol/L. 59 (69%) of patients did not meet target LDL levels of <1.8 mmol/L. 66 (77%) patients were on statin therapy, 1 (1%) on ezetimibe and 19 (22%) were not on any lipid lowering therapy. 41 (48%) were on atorvastatin, 20 (23%) were on simvastatin, 3 (3%) were on rosuvastatin and 1 (1%) was on fluvastatin. In the 20 patients with previous MI, 3 (15%) of them were not on high intensity statin (2 were on simvastatin, 1 patient was not on any lipid lowering therapy).

CONCLUSION: While recognizing that suboptimal lipid management in our small cohort may be explained by various factors including personal prescribing practices, side effects and patient compliance, our findings reflect other studies exploring suboptimal secondary prevention. Many studies have proven the benefit of aggressive lipid control on developing fatal or non-fatal cardiac events and efforts should be made to promote the practice of evidence based prescribing and target based medicine.
PP 12

FUNGAL MASS MIMICKING ATRIAL MYXOMA IN AN IMMUNOCOMPROMISED PATIENT
Muhammad Imran Bin Abdul Hafidz¹, Nor Ashikin Binti Md Sari¹
¹Cardiology Unit, University of Malaya Medical Centre, Kuala Lumpur

BACKGROUND: Intracardiac masses pose a diagnostic dilemma with a multitude of differentials. These include tumours, thrombus, vegetation or simply anatomical variants (e.g. Eustachian valve). The diagnosis can be achieved in most cases by history and non-invasive investigations. Echocardiography remains the benchmark with cardiac magnetic resonance imaging (MRI) being increasingly used to assist diagnosis. However, in certain cases diagnosis is only obtained with histopathology obtained through surgery or postmortem. We present an unusual case of a fungal mass mimicking an atrial myxoma in an immunocompromised patient diagnosed with history, laboratory investigations, echocardiography, cardiac MRI and response to antimicrobials.

CASE REPORT: We report a case of a 31-year-old female with Stage 4 Burkitts Lymphoma diagnosed 6 months earlier. She presented after completion of 6 cycles of chemotherapy (Berlin-Frankfurt-Munster regime) with neutropaenia and persistent fever with associated Methicillin-sensitive Staphylococcus aureus bacteraemia, which was treated with a prolonged course of intravenous cloxacillin. Despite a course of intravenous cloxacillin and subsequent blood cultures with no further bacterial growth she continued to have fever. A transthoracic echocardiogram (TTE) noted a right atrial mass measuring 38 x 13 mm. A CT scan was reported as disseminated infection in the brain, lungs and liver suggestive of a fungal infection. Further blood cultures were reported as growing a yeast species with polymerase chain reaction (PCR) testing revealing a Aureobasidium species of fungus. She was started on intravenous caspofungin, which was subsequently changed to amphotericin B. Another TTE and a transoesophageal echocardiogram showed a gradually reduction in size of the right atrial mass (30 x 11 mm, 13 x 9 mm respectively). An MRI done confirmed the reduction in size (15 x 9 mm) with no MRI characteristics of a tumour or thrombus. Clinically she improved with reduced inflammatory markers and settled fever.

CONCLUSION: Intracardiac masses are diagnostic dilemmas with many causes. Various noninvasive investigations are used to help diagnose and guide treatment. Fungal infection causing an intracardiac mass is very rare. In our case, the diagnosis was achieved with the use of blood cultures, PCR, serial echocardiograms, MRI and response to antifungal therapy.
ACUTE KIDNEY INJURY IN PATIENTS WITH PREEXISTING CORONARY ARTERY DISEASE ADMITTED WITH MYOCARDIAL INFARCTION IS ASSOCIATED WITH INCREASED MORTALITY

Muhammad Imran Bin Abdul Hafidz\(^1\), Lee Zhen-Vin\(^1\), Mohd Firdaus Bin Hadi\(^1\), Pramanantha Veerappan\(^1\)

\(^1\)Cardiology Unit, University of Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia

BACKGROUND: Acute kidney injury (AKI) is defined by KDIGO as an increase in serum creatinine (SCr) of ≥ 1.5 times baseline or an increase by ≥ 26.5 µmol/l in 48 hours. AKI complicating myocardial infarction is associated with higher short and long-term morbidity and mortality. Contributing factors to developing AKI include cardiogenic shock, preexisting CKD, diabetes mellitus and use of cardiac catheterization.

OBJECTIVE: To determine the impact of AKI on 30 day mortality rates in individuals with pre-existing CAD admitted into UMMC with an MI.

METHODS: Retrospective, observational study of patients with pre-existing CAD admitted with STEMI or NSTEMI in UMMC from September 2016 to January 2017.

RESULTS: 71 patients (53 males, 18 females) with a mean age of 64 years old were included. There were 16 (23%) STEMI and 55 (77%) NSTEMI cases. 16 (23%) patients had previous MI, 11 (15%) had previous CABG, 31 (44%) had previous angioplasty and 13 (18%) had non-revascularised CAD diagnosed on previous angiograms. 11 (15%) patients had peak SCr ≥ 1.5 times baseline and 23 (32%) patients had AKI defined as an increase in SCr by ≥ 26.5 µmol/l above baseline SCr within 48 hours. 30 day mortality was significantly increased in patients who develop AKI (p<0.05) and occurred in 6 (55%) patients with a SCr ≥ 1.5 times baseline and in 8 (35%) patients with an increase in SCr by ≥ 26.5 µmol/l.

CONCLUSION: While recognizing the small number included in our study, our results reflect the increased mortality associated with AKI in MI patients seen in larger studies. Identifying patients at risk of AKI is important and implementing steps to minimize the risk and treat AKI early would be essential to improving mortality. A multidisciplinary team involving the nephrologists at managing “at risk” patients would be an option to explore in the future.
PRESENTATION AND OUTCOME DIFFERENCES IN OLDER PATIENTS WITH PREEXISTING CORONARY ARTERY DISEASE ADMITTED WITH MYOCARDIAL INFARCTION
Muhammad Imran Bin Abdul Hafidz¹, Lee Zhen-Vin¹, Mohd Firdaus Bin Hadi¹, Pramanantha Veerappan¹
¹Cardiology Unit, University of Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia

BACKGROUND: Managing older patients who present with an MI is challenging. Older patients usually have more comorbidities putting them at higher risk of death however receive more conservative therapies.

OBJECTIVE: To explore the differences in clinical characteristics and outcomes in patients with pre-existing CAD admitted into UMMC with an MI who were below 65 years of age and those above 65 years of age.

METHODS: Retrospective, observational study of patients with pre-existing CAD admitted with MI in UMMC from September 2016 to January 2017. Patients were divided into 2 groups depending on age – below 65 years of age (Group I) or above 65 years of age (Group II).

RESULTS: 71 patients (53 males, 18 females) with a mean age of 64 years old were included. There were 16 (23%) STEMI and 55 (77%) NSTEMI cases. 16 (23%) patients had previous MI, 11 (15%) had previous CABG, 31 (44%) had previous angioplasty and 13 (18%) had non-revascularised CAD diagnosed on previous angiograms. There were 41 (58%) in Group I and 30 (42%) patients in Group II. The mean ages for Groups I and II were 57 and 75 years old respectively. Group I had lower rates of smoking (13% vs 39%), and lower total cholesterol (mean = 3.87 mmol/L vs 5.0 mmol/L) and LDL levels (mean = 2.0 mmol/L vs 3.1 mmol/L). Patients in the Group II were more likely to be diagnosed with an NSTEMI compared to Group I (90% vs 68%) and had higher 30-day mortality rates (27% vs 7%). There were no significant differences in rates of prehospital secondary prevention therapy, levels of serum creatinine at admission, HbA1, peak troponin, rates of acute kidney injury or haemodynamic parameters on admission.

CONCLUSION: Despite the younger patients having more diagnoses of STEMI, which usually has a worse prognosis, mortality rates were higher in the older patients. Older patients may have other comorbidities, treated conservatively and receive less evidence-based therapies due to bleeding or falls risks. More aggressive approaches that improve mortality rates have been shown to be safe in other studies and should be considered in older patients presenting with an MI.
Background: Recently, more patients are presenting at a younger age with acute coronary syndrome (ACS).

Objective: Identify the demographics, risk factors and outcomes of young ACS.

Materials & Methods: This was a prospective, observational study conducted in Sungai Buloh Hospital. Patients were enrolled during 2014 and 2015.

Results: There were 1479 ACS, with a mean age of 56 (±12). 10.6% (n=158) were below 40, with a mean age of 34(±4.7) with the youngest at 17. Meanwhile 15.1% (n=24) were female. Ethnicity breakdown revealed 62% Malays, 24% Indians, 1.3% Chinese and 12.7% of other races. ACS subtypes showed 51.3% unstable angina (UA), 22.2% non-ST elevation myocardial infarction (NSTEMI) and 20.9% ST elevation myocardial infarction (STEMI). Cardiovascular risk factor assessment revealed 46.2% hypertension, 43.0% smokers, 6.3% ex-smokers, 29.7% known ischemic heart disease (IHD), 27.2% diabetes mellitus, 22.8% dyslipidemia, 19.0% positive family history of IHD and 10.8% alcohol consumption. Biochemical analysis showed fasting glucose level of 7.1 mmol/L(±3.5), and serum creatinine 84.1 µmol/L(±23.5). Lipid profile revealed mean total cholesterol of 5.2 mmol/L(±1.3), triglyceride 2.2 mmol/L(±1.3), HDL 0.9 mmol/L(±0.2), and LDL of 3.2 mmol/L(±1.1). 34.8% (n=55) were on prior statin, but only 23.6% (n=13) had LDL of below 2.6 mmol/L. 20.4% (n=21) had LDL above 4 mmol/L from the statin naïve cohort. Mean left ventricular ejection fraction (LVEF) was 45% (±16). 10.1% (n=16) patients were referred for coronary angiography. Study revealed 4 non-obstructive disease, 6 single vessel disease, 3 two vessel disease and 3 triple vessel disease. 8 underwent PCI, while 1 had CABG. 30-day mortality was 3.2% while 90-day mortality was 4.5% (n=7). Their mean age was 34 (±4.6). Subtype of ACS revealed 2 UA, 2 NSTEMI and 3 STEMI. Their lipid profile revealed mean total cholesterol of 4.9 mmol/L(±1.4), triglyceride 1.8 mmol/L(±0.7), HDL 0.6 mmol/L(±0.3), and LDL of 3.4 mmol/L(±0.9). 42% (n=3) succumbed during the index ACS event.

Conclusions: Majority of young ACS were male with positive risk factors such as hypertension, smoking and diabetes mellitus. Additionally, less than a quarter of those on prior statin achieved LDL target. Those who succumbed had low HDL of 0.6 mmol/L(±0.3).
PP 16

UNDEROPTIMIZED PRIOR STATIN THERAPY IN ACUTE CORONARY SYNDROME
Nicholas Chua¹, Rizmy Najme Khir¹, Chong Pei Feng³, Lim Chiao Wen¹, Johan Rizwal¹, Effa Abdul Rahman¹, Hafisyatul Aiza¹, Mohd Kamal Mohd Arshad¹, Zubin Othman Ibrahim¹, Faridah Embong², Christopher Lee², Sazzli Kasim¹
¹Cardiology Department, UiTM Sg Bulo, Malaysia
²Medical Department, Sungai Buloh Hospital
³Department of Pharmacy, Sungai Buloh Hospital

BACKGROUND: A majority of patients presenting with acute coronary syndrome (ACS) were already on a statin therapy. Its effectiveness in our local setting remains unclear.

OBJECTIVE: Identify the proportion of patients with ACS on prior statin therapy to assess its efficacy and mortality outcome.

MATERIALS & METHODS: This was a prospective, observational study conducted in Sungai Buloh Hospital. Patients presenting with ACS were enrolled during 2014 and 2015. Subsequent relevant information was then gathered and statistically analyzed.

RESULTS: There were 1479 ACS, with a mean age of 56(±12). 70.8% were male. Subtypes of ACS revealed 20.6% STEMI and 31.1% NSTEMI. Mean hospital stay was 3.8(±3) days. Cardiovascular risk factor revealed 74.8% hypertension, 54.6% diabetes mellitus, 37.0% dyslipidemia and 25.1% smoker. 48.7% (n=721) were on prior statin therapy. 47.8%, 35.7%, 15.7% and 0.6% were on atorvastatin, simvastatin, lovastatin and rosuvastatin respectively. 28.6% were on high intensity statin (23% atorvastatin 40mg and 5.6% atorvastatin 80mg). Biochemical analysis of prior statin cohort showed fasting glucose level of 7.5(±3.2) mmol/L and serum creatinine 109.7(±69.5) µmol/L. Lipid profile revealed mean total cholesterol of 4.8(±1.3) mmol/L, triglyceride 2.2(±1.2) mmol/L, HDL 1.02(±0.2) mmol/L, and LDL of 3.0(±1.1) mmol/L. 52.0% (n=375) had LDL above 2.6 mmol/L and 61.2% (n=444) had total cholesterol above 4.0 mmol/L. Echocardiography mean ejection fraction was 43% (±15). 14.1% (n=102) were referred for coronary angiography, where 6.1% (n=44) had PCI while 2.1% (n=15) underwent CABG. 90-day mortality outcomes were 7.2%, 9.9% and 11.8% for prior atorvastatin, lovastatin and simvastatin respectively. Meanwhile, 90-day mortality in statin naïve versus on prior statin cohort were 9.1% (n=69) and 7.9% (n=57).

CONCLUSIONS: Approximately half (48.7%) of the patients were already on a prior statin therapy and about a quarter (28.6%) were on high intensity statin. Despite this, 61.2% failed to achieve LDL target. Hence, it’s imperative for the quality of primary and secondary prevention to be improved.
RISK FACTORS AND OUTCOME OF ACUTE CORONARY SYNDROME IN THE ELDERLY: A MALAYSIAN PERSPECTIVE

Noor Azleen Ahmad Tarmizi, Nicholas Chua, Aimiy Abdullah, Sazzli Kassim
Faculty of Medicine, Sungai Buloh Campus, Universiti Teknologi MARA, Selangor, Malaysia

BACKGROUND: The ageing population means the burden of acute coronary syndrome (ACS) will increase. Multiple studies on ACS in the elderly are available globally, though there is a paucity of similar data in Malaysia. Objective: Aim of this study was to identify factors affecting outcome post ACS in the elderly at a tertiary cardiology referral unit in Northern Klang Valley.

Methods: Patients data were extracted from the Hospital Sungai Buloh ACS registry from January 2014 till December 2015. Those aged 65 and above were included in this study. Patients demographics, medical background history, haematological investigations, length of stay, medications on discharge and outcome (alive or death) at 30 days and 90 days were analyzed. Results: Total of 1479 patients were in the registry. 394 patients were included in the study. Eldest patient included was 93, with median age of 71. There were 206 male (52.3%), and 188 females (47.7%). Follow up at 30 days showed outcome of 60 deaths (15.4%), while outcome at 90 days showed 69 deaths (17.7%). Mean length of stay was 4 (SD=3) days. Creatinine level (AOR=1.023, 95% CI=1.007-1.040, p=0.005) was associated with an increased risk, while discharged on beta blockers (AOR=0.079, 95% CI=0.012-0.513, p=0.008) and nitrates (AOR=0.383, 95% CI=0.161-0.914, p=0.031) were associated with a decreased risk for mortality at day 30. ACS subtype NSTEMI (AOR=2.821, 95% CI=1.266-6.284, p=0.011) and creatinine level (AOR=1.03, 95% CI=1.011-1.007, p=0.002) were associated with an increased risk, while being discharged on beta blockers (AOR=0.091, 95% CI=0.015-0.574, p=0.011) and nitrates (AOR=0.448, 95% CI=0.211-0.95, p=0.036) were associated with a decreased risk for mortality at 90 days.

Conclusions: High creatinine level on admission is shown to have increased risk of mortality among ACS in the elderly. Having been discharged with beta blockers and nitrates were associated with decreased risk of mortality.
We report a rare case of purulent pericarditis in immunocompromised patient. This is a case of 48 year-old lady with poorly controlled type 2 diabetes mellitus and Hepatitis C with Childs B liver cirrhosis admitted for progressive left sided chest pain which aggravated with leaning forward position for two weeks with heart failure symptoms. She was febrile and hypoxic. Apart from hypotensive, there was no raised jugular venous pressure and muffled heart sound to suggest cardiac tamponade. Her electrocardiogram showed ST Elevation at lead II, III, aVF, V2 to V6. An urgent echocardiogram was arranged after her symptoms not improved and persistent ST Elevation after thrombolysis. Her echocardiogram showed massive pericardial effusion without RV collapsed. The pericardial effusion was maximum inferior wall (3.06 cm) followed by anterior wall (2.5 cm) and posterior wall (1.5cm). There was no vegetation. A pericardiocentesis drained 390 cc of frank pus and grew Methicillin-sensitive Staphylococcus aureus. The acid-fast bacilli smear was negative. Her blood culture grew same organism and she was started with high dose intravenous cloxacillin. Post-pericardiocentesis her symptoms and ST elevation were improved and a Computed Tomography scan confirmed acute pericarditis with pericardial effusion and small right psoas abscess. We discussed the need for consideration of pericarditis with pericardial effusion in the patient with persistent ST elevation by using ECG and Echocardiogram; the non-invasive, easily access and very simple modality.
A YOUNG MAN PRESENTED WITH EPIGASTRIC PAIN AND EVOLVING ST-ELEVATION (STE) STEMI? OR A STEPI? (PERICARDIAL INFLAMMATION)

Patrick Tiau WJ, Tan TS, Siti Hafizah, Ang CM, Shatishkumar, Mohd Shawal, Choor Chee Ken, Hamat Hamdi Che Hassan, David Cumberland, Oteh Manskon

Department of Medicine, Cardiology Unit, UKM

CASE: A young man presented with epigastric pain and vomiting. He has Type1DM which was poorly controlled for the past 7 years. Clinically, he was dehydrated and hypotensive with a high glycemic index of 21mmol. His left lower limb was warm and erythematous. Cardiovascular examination was normal. VBG showed severe metabolic acidotic (PH 7.19, Hco3 9.4) with ketonuria, confirming the diagnosis of Diabetic Ketoacidosis. He was tachycardic, ECG showed ST elevations (STE) over the infero-lateral leads, with an evolving STE seen over the V5, V6 and V7 in the subsequent ECGs, suggest of an ongoing acute STEMI. However, echo showed presence of pericardial effusion without regional hypokinesia, and his cardiac troponins were also negative, placing the diagnosis of STEMI in doubt. He was resuscitated with fluids and insulin therapy. Antibiotic was started for his LL cellulitis. His condition improved in the next 24-hours. ECG showed resolution of STE with resolved pericardial effusion. He was discharged well later.

DISCUSSION: It is not uncommon to see ECG changes in DKA, which is often due to potassium abnormality (e.g. U wave, prolong QTc). However, STE in a diabetic patient may herald a more life-threatening condition – Myocardial Infarction. This is particular true when a DM patient presents with epigastric pain with an evolving STE changes involving the inferior leads. Therefore, it is crucial to differentiate between an acute STEMI and a non-MI cause of STE, such as acute pericarditis, because inappropriate use of thrombolytic-agent in acute pericarditis could result in hemorrhagic pericardial effusion or tamponade. In this case, negative biomarkers and echo exclude an AMI. In addition, diffuse concave STE and PR depression seen in the ECG here, is a characteristic of pericarditis. Although rare, pericarditis in DKA have been reported. The exact mechanism is unknown but it is believed due to the pericardial metabolic alternation (eg. hyperglycaemia osmotic shift and dehydration) or severe acidosis leading to subpericardial injury, which resolves after the metabolic alternation is corrected.

SUMMARY: Recognition of alternative causes of ST elevation, such as acute pericarditis, is essential as the treatment of the DKA here, has resulted in a favorable outcome.
PP 20

CLINICAL AUDIT ON CONSENT AND INFORMATION PROVISION SURROUNDING CARDIO-TOXICITY FOLLOWING ANTHRACYCLINE-BASED CHEMOTHERAPY AND MEDIASTINAL RADIOThERAPY IN LYMPHOMA PATIENTS
Raja Ezman Faridz Raja Shariff¹, Laura Cove-Smith¹, Valerie Goode¹
¹The Christie’s, Manchester, United Kingdom

BACKGROUND: Lymphoma is a malignant condition, due to the abnormal proliferation of lymphocytes and their precursors within the lymphoid system. In lymphoma patient receiving treatment, cardiotoxicity is the second most common late-effect, often attributed to the use of anthracycline-containing chemotherapy (eg. doxorubicin and epirubicin) and mediastinal radiotherapy. Common cardiac complications associated with anthracyclines include cardiomyopathies, congestive cardiac failure, and ischaemic heart disease and can occur anytime within the first year of, and up to 30 years post-treatment initiation.

OBJECTIVE: The aim was to audit the management of lymphoma patients, in relation to the potential risk of cardiotoxicity, following treatment using anthracycline chemotherapy and/or mediastinal radiotherapy. Three major areas were audited: (1) Consent acquisition prior to cardio-toxic therapy, (2) Pre-treatment cardiac investigation and monitoring and (3) Information provision on cardio-toxicity and preventative measures that can be taken.

MATERIALS & METHODS: A retrospective audit was conducted on patients diagnosed with lymphoma in years 1999 and 2009, registered with the Christie’s whom had received at least one form of cardiotoxic treatment. A total of 626 case files were reviewed between the 1st January 2016 to 30th June 2016, of which only 30 from each year-based cohort were eligible for auditing (60 patients total).

RESULTS: Of patients in 1999, 0% were consented for cardio-toxicity prior to treatment (both anthracycline-based chemotherapy and mediastinal radiotherapy). Only 40% received some form of pre-treatment cardiac investigation and monitoring. Only 20% and 10% received information regarding cardio-toxicity, and information regarding risk reduction measures throughout their treatment course respectively. Of patients in 2009, 33% and 45.5% were consented for cardio-toxicity prior to anthracycline-based chemotherapy and mediastinal radiotherapy respectively. Only 33% received some form of pre-treatment cardiac investigation and monitoring. Only 10% and 3.3% received information regarding cardio-toxicity, and information regarding risk reduction measures throughout their treatment course respectively.

CONCLUSION: The audit highlighted several areas of weaknesses despite advancement in treatment modalities within the decade, of which action plans have been set in place to improve documentation and information delivery and attainment. We await the results of a larger, national audit to help compare, and possibly echo the findings of our regional audit.
BODY MASS INDEX AND WAIST CIRCUMFERENCE AS PREDICTIVE FACTORS IN THE DEVELOPMENT OF ACUTE CORONARY SYNDROME IN YOUNG ADULTS

Raja Ezman Faridz Raja Shariff¹, Nicholas Chua¹, Rizmy Najme Khir¹, Khairul Syafiq Ibrahim¹, Mohd Kamal Mohd Arshad¹, Lim Chiao Wen¹, Johan Rizwal¹, Effarezan Abdul Rahman¹, Hafisyatul Aiza¹, Zubin Othman Ibrahim¹, Sazzli Kasim¹

¹Cardiology Department, UiTM Sungai Buloh, Selangor, Malaysia

BACKGROUND: Cardiovascular disease (CVD) is the primary cause of death globally. In Malaysia, the mean age of acute coronary syndrome (ACS) is 56 years. However, younger patients lacking common risk factors are more frequently being diagnosed with ACS. As these risk factors are often present at later years, there may be an underestimation of CVD risk and subsequent lack of attempts in employing primary prevention measures in this group of patients. Fortunately, there is greater appreciation for alternative variables in predicting CVD risk. Body mass index (BMI) is a predictor variable in the British-developed ‘Q-RISK2’ model, which helps guide the prescription of statin therapy in at-risk groups. Likewise, waist circumference (WC) is being used in the ‘China-PAR CVD-Risk Predictor’ as well. However, both variables have yet to exist simultaneously in a single risk assessment model.

OBJECTIVE: The purpose of the study was to assess the differences in BMI and WC in individuals aged 40 years or younger, who had developed ACS, versus that of a healthy age-matched cohort.

MATERIALS & METHODS: A prospective, observational single-centre study was conducted between the 1st November 2016 till 14th January 2017. Data was collected and subsequently analyzed using a statistical package system.

RESULTS: 21 patients suffering from ACS during the study period were enrolled, alongside 31 healthy participants of a similar age group. The mean BMI for ACS sufferers, versus the healthy cohort, were 25.18 kg/m² (SD ± 3.94 kg/m²) and 28.86 kg/m² (SD ± 2.86 kg/m²) respectively. The mean WC for the former, versus the latter, were 83.54 cm (SD ± 11.00 cm) and 100.99 cm (SD ± 4.44 cm) respectively. An independent t-test was performed for both variables, showing a significant difference in both BMI (t(50) = -3.67 p = 0.001) and WC (t(50) = -6.87 p = 0.000) when comparing the different cohorts studied.

CONCLUSION: This study demonstrates statistically significant differences in both BMI and WC, between young adults suffering from ACS versus their healthy counterparts. We recommend further larger, prospective studies looking into risk ratios, to help delineate such relationships better.
CASE STUDY OF ASYMPTOMATIC HEART BLOCK IN A CARDIAC SARCOIDOSIS
PATIENT
Shahrani S¹, Megat Samsudin WN², Kaur S²
¹Faculty of Medicine, University Malaya
²Cardiology Department, Institut Jantung Negara (IJN)

BACKGROUND: Sarcoidosis is a multi-system, non-caseating granulomatous disease of unknown etiology.

OBJECTIVE: To study the possible cardiac manifestations of sarcoidosis and the approach to diagnosis of CS.

MATERIAL AND METHOD: Case study was done on a 46 year old Indian gentleman referred to Cardiology Clinic IJN, with ocular sarcoidosis and restrictive lung disease since 2014, noted to have bradycardia with ECG of Type II second degree AV block but was clinically asymptomatic.

RESULTS: Cardiac MRI in 2014 showed EF of 67% and late phase gadolinium subepicardial hyperenhancement at inferolateral segment-mid left ventricle (LV) cavity to apical and focal fine mild wall enhancement of basal anterior wall. These features were suggestive of myocardial sarcoidosis. MSCT was normal. ACE level sent by a private hospital was elevated. Patient however subsequently continued follow-up at another hospital as he was clinically asymptomatic. He was referred back to IJN in 2016 for new development of clinically asymptomatic complete heart block. Serial ECG in IJN showed RBBB with LAD and 2:1 AV block. ECHO noted EF of 59% with good LV function. Coronary angiogram was normal. A permanent pacemaker was implanted on him on 10/8/16. Discussion Among the main cardiac sarcoidosis manifestations are conduction abnormalities, ventricular arrhythmias and heart failure. An estimated 20% to 25% of patients with systemic sarcoidosis have asymptomatic cardiac involvement. Among the available published guidelines for CS diagnosis are JMH Diagnostic guideline and HRS consensus statement. HRS criteria includes cardiac or extra-cardiac histological evidence of sarcoidosis; whereby JMH require histologic confirmation via myocardial biopsy or clinical confirmation via combination of major and minor criteria. Patient was not keen for a biopsy.

CONCLUSION: Studies indicate that CS is increasing in prevalence; however it may likely be due to improvements in imaging modalities. Further studies are needed to evaluate imaging guided therapies and role of immunosuppressants in improving patient outcome.
CASE REPORT: HAEMOLYTIC ANAEMIA IN SLE PATIENT WITH LUPUS NEPHRITIS POST DVR
Suraya Hani Kamsani, Aslannif Roslan, Nandakumar Ramakrishnan, Mohd Nasir Muda

BACKGROUND: Haemolytic anaemia is a known complication in patients with SLE as well as in patients with prosthetic cardiac valves.

CASE REPORT: We describe a case of a 48-year-old woman who has SLE with lupus nephritis since 1996. She underwent a double valve replacement in 2012 due to Severe MR and Severe AR caused by Libman–Sacks endocarditis.

Since early 2015, she has had recurrent admissions for symptomatic anaemia. Peripheral blood film examination showed evidence of anaemia due to chronic disease, upper GI scope showed duodenitis and lower scope revealed multiple caecal diverticulitis. Transthoracic ECHO showed no evidence of significant paravalvular leakage.

However in early September 2016, she presented with complaints of haemoptysis. Her Hb level was noted to be 5.1. Further investigations showed a high LDH level, raised reticulocyte count with normal bilirubin and negative Coomb’s test. Repeated full blood picture showed polychromasia, anisocytosis and poikilocytosis with many fragmented red cells (schistocytes) and occasional reticulocytes suggestive of microangiopathic hemolytic anaemia (MAHA).

Initial TTE only revealed mild transvalvular leakage however transoesophageal ECHO showed 2 gaps anterolateral and anteromedially to the mitral valve ring measuring 1.7 to 1.8cm by 0.3cm with significant paravalvular leak. In view of this, patient then underwent redo MVR in late September 2016.

TTE post surgery showed stable prosthetic valves with no leakage seen. She was discharged well with haemoglobin level of 9.9.

She returned for follow up in October 2016 and her haemoglobin had dropped to 5.1. Haematologist consult was obtained and it was deemed that her haemolytic anaemia was caused by hydroxychloroquine and it has since been withheld. She will be followed up regularly and bone marrow aspiration will be performed if the haemolysis persists.

CONCLUSION: This case illustrates the importance of a thorough assessment and a multidisciplinary approach in a complex diagnostic dilemma such as this. In a patient with SLE with lupus nephritis causing chronic renal impairment, there are a myriad of causes for anaemia which need investigation. The fact that this patient had double mechanical valve replacement as well means that proper imaging with transeosophageal ECHO is crucial to ensure accurate evaluation of the valves.
COMPLETE HEART BLOCK ASSOCIATED WITH MYCOPLASMA PNEUMONIAE

Wu Jin Teng, Ahmad Suhaimi Mustafa, Chong Jen Lim, Baldip Kaur Gurcharan Singh, Siti Khairani Bt Zainal Abidin, Anwar Irawan B Ruhani, Shahidi B Jamaludin, Noor Darinah Bt Mohd Daril

Cardiology Department, Hospital Tengku Ampuan Afzan, 25100 Kuantan, Pahang, Malaysia.

A wide variety of infections can result in myocarditis leading to complete heart block such as viruses, bacteria, rickettsia, Chlamydia and blood born parasites. A 28 year old healthy lady, presented with high grade fever of no specific pattern for 9 days. It was associated with myalgia, chills and rigor. She was admitted to a district hospital for poor oral intake. She developed 3 brief episodes of generalized tonic clonic seizure. There was no documented hypoglycaemia and no focal neurological sign were elicited. ECG showed complete heart block (CHB) with a heart rate of 20-30 beats per minute. She had hypocalcemia (1.86mmol/L), hypokalaemia (2.8mmol/L), and hypomagnesemia (0.7mmol/L) which were corrected to target levels. However, her CHB persisted and subsequently a temporary transvenous pacemaker (TPM) was inserted. Clinical examination revealed consolidation over the left lower lung which corresponded radiologically on chest x-ray. Blood investigations showed a white cell count of 6.4x10^9, urea 3.0mmol/L, potassium 4.8mmol/L, magnesium 2.12mmol/L, creatinine 69mmol/L, creatine kinase 239U/L, lactate dehydrogenase 855U/L, erythrocyte sedimentation rate 75mm/hour, C-reactive protein 99mg/L. She was empirically treated for atypical pneumonia and was started on ceftriaxone and azithromycin. She responded well with antibiotics, TPM was removed after 2 days.

Serum Mycoplasma Pneumoniae serology was positive (1:160 titre). Other investigations such as echocardiography, thyroid function test, connective tissue disease screening, Ebstein-Barr virus, Parvovirus, Leptospirosis were all normal. No long-term sequelae seen in further follow up. Myocarditis associated with Mycoplasma Pneumoniae should be suspected in patients that present with atypical pneumonia and bradyarrhythmia. CHB in this case is transient.
HEART FAILURE AS A NEW INDICATION FOR REHABILITATION: TRANSLATING GUIDELINES INTO LIFE-CHANGING PRACTICES

Anwar Suhaimi1,4, Shaida Mustapha1, Lim Tsau Jun1, Lee Jen Ping1, Lau Eng Foo1, Salmah Anim Abu Hassan2, Natiara Mohamed3, Nooratiqah Maarup4, Muhammad Badiuzzaman Farhan Mohd Ali4, Koo Jui Geok5, Fauziah Baharuddin6,

1Department of Rehabilitation Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur.
2Department of Orthopaedics, Traumatology and Rehabilitation, International Islamic University Malaysia, Kuantan.
3Discipline of Rehabilitation Medicine, Universiti Teknologi MARA, Sungai Buloh.
4Cardiac Rehabilitation Services, Department of Rehabilitation Medicine, UM Medical Centre.

BACKGROUND: Heart failure (HF) characterised by fatigue and dyspnoea leads to significant level of morbidity as individuals with HF limits their physical activity (PA), predisposing them to develop other CVD as well as deteriorating physical function and quality of life (QOL) as a result of deconditioning. Exercise training is viewed as counter-intuitive in improving the symptoms and signs of HF.

OBJECTIVE: In this case series we demonstrate the effects of exercise therapy and multidisciplinary outpatient cardiac rehabilitation interventions alongside medical optimisation in improving HF individuals’ function and QOL outcomes.

DESIGN: 29 HF clients were enrolled into a 8-12 weeks outpatient cardiac rehabilitation program consisting of rehabilitation physician, dietitian and pharmacist consultations, pre-rehabilitation exercise stress testing (EST) for exercise prescription, physiotherapist sessions focusing on aerobic, resistance exercises and respiratory muscle training, occupational therapist sessions focusing on anxiety and depressed mood management, functional activity simulation and training plus energy conservation technique. Multidisciplinary outcome measurements reflecting functional capacity, QOL and prognosis were collected pre and post program.

RESULTS: HF rehabilitation results in EST parameter changes consistent with improvements of functional capacity, work intensity and cardiopulmonary fitness. There were also improvements in QOL. No adverse events occurred during the intervention with satisfactory program adherence.

CONCLUSION: HF rehabilitation intervention positively influences functional capacity and potentially modifies long term outcome in HF individuals.
ANGIOTENSIN RECEPTOR NEPRILYSIN INHIBITOR (ARNI) FOR HEART FAILURE WITH REDUCED EJECTION FRACTION – EARLY CLINICAL EXPERIENCE IN INSTITUT JANTUNG NEGARA
Azmee Mohd Ghazi, Aslannif Roslan, David Chew, Aizai Azan Abdul Rahim

BACKGROUND: Sacubitril/valsartan (previously known as LCZ696) is in a new class of drug known as angiotensin receptor neprilysin inhibitor (ARNI) for treatment of chronic heart failure with reduced ejection fraction. In PARADIGM-HF, it was superior to ACE inhibitor alone in reducing the risks of death and hospitalization for heart failure. It is available in Malaysia since January 2016.

OBJECTIVE: We describe the early experience of prescribing sacubitril/valsartan in Institut Jantung Negara (IJN) with focus on patients’ tolerability.

MATERIALS & METHODS: This is a retrospective study of all patients prescribed with sacubitril/valsartan in IJN. Patients’ characteristics from the most recent follow-up were compared to baseline before the patients were started on sacubitril/valsartan. Patient selection, initiation and dosing were based on the approved indications. Patients without records of follow-up visits were excluded.

RESULT: From January to June 2016, 14 patients started treatment with sacubitril/valsartan with average follow-up period of 5.1 months (ranged from 1.8 to 7.1). The mean ejection fraction was 24% with standard deviation (SD) of 5.2. Majority of patients were in NYHA Class II (54.5%) followed by Class III (18.2%), Class I (18.2%) and Class IV (9.1%). Out of the 10 patients with NYHA classification documented at last visit, 5 showed improvement and the others remained unchanged. Mean NT-proBNP changed slightly from 1598.0 pg/mL (SD = 1325.9) to 1515.43 pg/mL (SD = 2387.1). The mean systolic BP at baseline and last visit were 128.1 mmHg (SD = 22.4) and 121.1 mmHg (SD = 17.3) respectively. Serum creatinine increased from mean of 105.8 mmol/L (SD = 29.9) to 108.9 mmol/L (SD = 37.9). Similarly mean serum potassium at last visit was 4.9 mmol/L (SD = 0.7) compared to baseline of 4.6 mmol/L (SD = 0.7). There were no cases of angioedema recorded.

CONCLUSIONS: To our knowledge, this is the first report on therapy with sacubitril/valsartan in Malaysia. While this study is insufficient to demonstrate efficacy, the early experience in IJN is mostly similar to PARADIGM-HF with regards to safety and tolerability. Changes in blood pressure and renal function were expected and within acceptable range. Appropriate patient selection and careful monitoring are important to ensure patients’ tolerability.
CHRONIC HEART FAILURE IN MULTIETHNIC POPULATION IN NORTH KUALA LUMPUR
Zainal Abidin HA1, Isa MR2, Mohd Arshad MK1, Ibrahim ZO1, Ibrahim KS1, Ismail JR1, Chua N1, Najme Khir R1, Lim CW1, Abd Rahman E1, Kasim S1.
1Cardiology Unit, Universiti Teknologi MARA Sg Buloh.
2Department of Epidemiology and Public Health, Universiti Teknologi MARA Sg. Buloh.

BACKGROUND: Chronic heart failure is a leading cause of hospitalization. Although a number of multicenter international hospital registries have been published, there are limited data from the South East Asia region particularly from Malaysia. The Malaysian population is unique, as it is comprised of a multiethnic population.

OBJECTIVE: To evaluate the prevalence of chronic heart failure in the multiracial population of Malaysia and to describe the demographic, clinical and biological characteristics of these patients.

METHODS: This retrospective study was conducted in UiTM Medical Specialist Center. Transthoracic echocardiography reports between 2013-2015 were reviewed and those with documented ejection fraction of less than 45% were included in the study. The demographic details were recorded from the patient’s medical charts. Medications prescribed were recorded from the online pharmacy ordering system.

RESULTS: There were 1181 patients with chronic heart failure with an ejection fraction of <45%. The mean age of the population was 58.64±11.40 with a predominant male population at 81.2%. The majority of the heart failure population was Malay (67.4%), followed by Chinese and Indian at 17.3% and 14.2% each. Malays and Indians presented at a younger mean age as compared to Chinese (p<0.001). More than half of the heart failure population had risk factors of coronary artery disease, hypertension and diabetes mellitus. 47% of the patients had left ventricular ejection fraction (LVEF) of 25-39 whereas 17% had LVEF of <25%. Dyspnoea and chest pain were the main presenting symptoms. Coronary artery disease was the main cause of heart failure (66%) followed by valvular heart disease.

CONCLUSIONS: Compared with other multicenter registries for Asian populations, patients with chronic heart failure in Malaysia are younger. There are higher prevalence of Type 2 diabetes mellitus and hypertension in the Malaysian population. Coronary artery disease remained the main aetiology of heart failure and it is consistent across the other continents.
GUIDELINE ADHERENCE TO PRESCRIPTION IN HEART FAILURE POPULATION IN NORTH KUALA LUMPUR REGION

Zainal Abidin HA\(^1\), Isa MR\(^2\), Mohd Arshad MK\(^1\), Ibrahim ZO\(^1\), Ibrahim KS\(^1\), Ismail JR\(^1\), Chua N\(^1\), Najme Khir R\(^1\), Lim CW\(^1\), Abd Rahman E\(^1\), Kasim S\(^1\)

\(^1\)Cardiology Unit, Universiti Teknologi MARA Sg Buloh.
\(^2\)Department of Epidemiology and Public Health, Universiti Teknologi MARA Sg Buloh.

INTRODUCTION: Optimal medical therapy (OMT) for patients with chronic heart failure and reduced ejection fraction includes angiotensin-converting enzyme inhibitors/angiotensin receptor blockers, \(\beta\)-blockers, and mineralocorticoid receptor antagonists plus a diuretic.

OBJECTIVE: To evaluate how recommendations of most recent guidelines regarding pharmacological treatments in chronic heart failure are adopted in clinical practice.

METHODS: This is a single centre, retrospective study conducted in UiTM Medical Specialist Center, Malaysia. Patients with chronic heart failure with ejection fraction (EF) <45% were identified from transthoracic echocardiography reports from January 2013 –December 2015. Medications prescribed were recorded from the online pharmacy ordering system. The heart rate and blood pressure from the last clinic visit were recorded.

RESULTS: There were 1181 patients with chronic heart failure EF < 45% with a mean age of 58.64±11.40. Angiotensin converting enzyme inhibitors (ACEi)/angiotensin receptor blocker (ARB) prescription achieved 70.4% and this is almost comparable to the ADHERE-AP data. \(\beta\)-blockers have an 80% prescription. Loop diuretics and aldosterone antagonist utilization were much lower as compared to other registries, which were 41% and 18% each (86% of loop diuretics and 41% aldosterone antagonists prescription from ADHERE-AP). 25.8% of the subjects had a recorded systolic blood pressure of more than 140mmHg in which the majority were on perindopril 4mg only. Less than half (45.3%) have achieved a target heart rate of <70 whereas the majority of those with heart rates >70 and SBP >140mmHg were still prescribed with bisoprolol 5mg.

CONCLUSION: The results showed that the chronic heart failure population in North Kuala Lumpur has not achieved optimal medical therapy according to the most recent guidelines. Ways to improve deliveries of care towards the chronic heart failure patient include: 1) To increase awareness among physicians 2) To optimize the doses of the medications prescribed 3) To increase the utilization of digoxin and ivabradine in order to achieve the target heart rate.
DEMOGRAPHICAL, CLINICAL CHARACTERISTICS AND MANAGEMENT OF PATIENTS PRESENTED TO INSTITUT JANTUNG NEGARA WITH ACUTE DECOMPENSATED HEART FAILURE: A RETROSPECTIVE OBSERVATIONAL ANALYSIS

Koh Hui Beng, Lim Siew Suan, Jamalia Jaafar, Maizatu Akma Sulong, Intan Safarina Sabian, Norfazlina Jaffar @ Jaafar, Aizai Azan Abdul Rahim, David Chew Soon Ping, Azmee Mohd Ghazi
Institut Jantung Negara, Kuala Lumpur, Malaysia.

BACKGROUND: Heart failure is an important cause of morbidity and mortality. Patients are living longer as more have survived myocardial infarctions (MI) and benefited from implantable devices. Incidence of acute decompensated heart failure (ADHF) is on the rise. Many guidelines and therapies have emerged throughout these years for heart failure management.

OBJECTIVE: To evaluate the demographics, clinical characteristics and management of ADHF patients presented to IJN.

METHODS: This is a retrospective observational analysis of ADHF patients presented to IJN from 2009 to 2016. Data was analysed using descriptive analysis.

RESULTS: From year 2009 to 2016, there’s increasing number of ADHF admissions; 5369 cases recorded throughout those years, males being the predominant subjects (74.4%). There were 53.4% Malays, 27.4% Indians and 15.8% Chinese. Mean Ejection Fraction (EF) was 33.8%. CAD was the main aetiology (72.7%), having had prior MI, PCI or CABG done. Others were non-ischaemic causes, mainly dilated cardiomyopathy. Some presented due to non-compliance to fluid restriction and medication. Few had renal insufficiency (32.1%) and hypotensive episode (0.5%). Atrial fibrillation was seen in a quarter of cases. Majority had diabetes (66%) and hypertension (74.7%). Hyperlipidaemia consisted 45.7%. Nearly half were smokers. 10.3% had prior devices implanted; ICD, CRT-P, CRT-D. Majority had dyspnoea, peripheral oedema and lung crepitations. Mean NTProBNP was 10365. During admission, most had diuretics (92.5%), some required dialysis (3.8%), mechanical ventilation (3.3%), or resuscitation (3.3%). Two thirds received heart failure counseling. On discharge, patients received loop diuretics (90%), beta-blockers (68%) and mineralocorticoid receptor antagonist (MRA) (60%). Only 31% and 25% of patients received angiotensin converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB) respectively. A third received digoxin. < 10% received coralan.

CONCLUSIONS: Rising ADHF cases is alarming. This study enlightened us about our 8 years experience in dealing with ADHF patients. There are still areas which can be improved for instance administration of ACEi / ARB and MRAs. We need to identify more patients who fulfill the criteria for device implantation. Local hospital protocols and pathways may improve the management of these patients and hopefully, attenuate the escalating cases of ADHF in future.
**BACKGROUND:** Cardiac manifestation in systemic lupus erythematosus (SLE) is one complication that lead to morbidity and mortality. Pericarditis was the most common complication and approximately 25% of all patients with SLE develop symptomatic pericarditis during the course of the disease, most often along with associated pleuritis. Another common cause cardiac manifestation in SLE was dilated cardiomyopathy likely due to directly cause by SLE and coexisting hypertension and/or coronary artery disease (CAD).

**OBJECTIVE:** To report a serial case dilated cardiomyopathy (DCM) in lupus nephritis

**CASES:** We report four cases of dilated cardiomyopathy in lupus nephritis patients. All patients were girls and the age about 11-14 years old. One patient was diagnosed lupus nephritis and DCM after suffering from hematuria and heart failure. She has already diagnosed as Rheumatic Heart Disease before. One patient had severe pericardial effusion without right atrial collapse and suffered from heart failure Ross Class IV. One patient come to emergency ward suffered from heart failure Ross Class II and and one patient was diagnosed as lupus nephritis first without DCM and then suffered from DCM after more than one year treatment. Clinical manifestation in all patients DCM were heart failure. Echocardiography in all patients revealed decreased left ventricular systolic function, all chambers dilatation and pericardial effusion. Two patients had received methylprednisolone and cyclophosphamide pulse intravenously while two patients had received only cyclophosphamide pulse because they suffered from systemic hypertension. Diuretics and vasodilators were administered to all patients. One patient died due to cerebral lupus.

Keyword: Dilated cardiomyopathy, lupus nephritis, heart failure.
SEVERE LIP ULCERATION AS THE PRIMARY PRESENTING SYMPTOM FOR INCOMPLETE KAWASAKI DISEASE
Lim Shou Xun¹, Ng Rui Lun¹, Koay Han Siang²
¹Paediatric Department, Hospital Kulim. ²Paediatric Cardiology Unit, Penang Hospital.

We report a 1 year 9 month-old girl who presented to us on day 4 of illness with severe ulcerated and crusted lips. She was having fever for past 4 days as well. However, there were no other symptoms to suggest Kawasaki Disease (i.e. non-purulent conjunctivitis, cervical lymphadenopathy, extremities changes or polymorphous rash). Her BCG scar was not indurated, she did not have perianal excoriation, arthritis or sterile pyuria. Her first ESR result was raised with value of 103mm/hr. However, she only fulfilled 2 supplementary criteria for Incomplete Kawasaki Disease (i.e. anemia for age, leukocytosis). Echocardiograph at day 9 of illness did not show any coronary artery dilatation. Based on the results, she was initially treated as oral Herpes Infection and started with Aciclovir for treatment. However, her condition did not improve and fever persisted. Only until day 9 of illness that she had thrombocytosis as the third supplementary criteria for Incomplete Kawasaki Disease. She was then commenced on Intravenous Immunoglobulin and oral aspirin. After treatment, her condition improved remarkably with resolution of fever and her ESR value dropped to 13 mm/hr 2 months after treatment. An echocardiography at 2 months after treatment by paediatric cardiologist showed no coronary artery dilatation. It has always been a challenge to diagnose children with Kawasaki Disease despite established diagnostic criteria and supplementary criteria. This is especially more difficult if working in a centre devoid of paediatric echocardiology service. Clinician should have high index of suspicion for Kawasaki Disease if children present with history of prolonged fever and lip ulceration.
USEFULNESS OF MYOCARDIAL PARAMETRIC IMAGING TO EVALUATE PHYSIOLOGICAL CHANGING IN LEFT VENTRICULAR NONCOMPACTION ASSOCIATED VIRAL MYOCARDITIS BEFORE AND AFTER PATENT DUCTUS ARTERIOSUS CLOSING

Abdul Muhaimin Ahmad, Haifa Abdul latiff, Hasri Samion

Institut Jantung Negara

The left ventricular sponge morphology fulfilling the diagnostic criteria for left ventricular noncompaction (LVNC) may occur in association with acute deterioration in left ventricular function of various causes. This may occur as consequence an adaptive mechanism aimed at increasing endocardial surface area and optimizing stroke volume. The combination of viral myocarditis and LVNC become dilemma if diagnosis of main cause left ventricular function depress. We report the case of a 1 year old girl with diagnosis patent ductus arteriosus (PDA) presented heart failure symptoms and viral myocarditis infection. Three dimensional echocardiography (3DE) accidently finding LVNC morphology. The patient was evaluated by 3DE parametric imaging, Mitral Valve (MV) inflow, Tissue doppler imaging (TDI) for before, intermediate, after 1 day and after 3 day PDA occlusion procedure. This evaluation study to define the changing in left ventricular (LV) delay contraction, myocardium contraction and MV inflow after reducing left ventricular volume overload by closing PDA shunt. The result; End diastolic LV volume reducing from 43.5ml into 36.6ml and LV ejection fraction improved from 26% to 44%. The MV inflow has showed significant change from absent A wave into normal pattern of MV inflow. The parametric imaging of bull eye has demonstrated significant change timing delay contraction and myocardium contraction except basal and apex region. Conclusion; The use of 3DE parametric imaging allowed evaluation of hemodynamic change based echocardiography and benefit of PDA occlusion in LVNC case.
PP 36

INTRAMYOCARDIAL DISSECTING HAEMATOMA IN THREE PATIENTS TREATED CONSERVATIVELY
Aslannif Roslan, Tantawi Afrikanus, Wan Nabeela Megat Samsudin, Najmi Hakim

BACKGROUND: Intramyocardial dissecting haematoma is a rare complication of myocardial infarction and usually carries a grave prognosis.

OBJECTIVE: The objective of this report is to familiarised with echocardiographic findings of intramyocardial dissecting haematoma and the options available in its managemant.

MATERIAL & METHOD: We reported 3 cases of intramyocardial dissecting haematoma with pertinent 2D-echocardiogram, 3D-echocardiogram and also CMR images.

RESULTS: All of our patients were treated conservatively with follow up echocardiogram. All of them have severely reduced ejection fraction but the one year survival was 100% with organised thrombus inside the dissection area.

CONCLUSIONS: It is important to recognised the appearance of intramyocardial dissecting haematoma in echocardiogram. The options of conservative management in select population of patients is an acceptable management strategy.
PP 37

PSEUDOANEURYSM SECONDARY TO INFECTIVE ENDOCARDITIS POST BENTALL PROCEDURE
Aslannif Roslan, Nabeelah Megat Syamsudin, Tantawi Afrikanus, Najmi Hakim

BACKGROUND: Patients post Bentall procedures can be susceptible to infective endocarditis. The presentation varies significantly and it is important for clinicians to recognise and diagnosed the condition. In a proper clinical setting, echocardiography can be invaluable to diagnosed infective endocarditis.

OBJECTIVE: To familiarised with echocardiographic findings of infective endocarditis and pseudoaneurysm post Bentall procedures.

MATERIALS & METHOD: We reports 2 cases of patients post Bentall procedure who presented with signs and symptoms consistent with infective endocarditis. The echocardiogram findings was shown that shows pseudoaneurysm seen clearly in both parasternal long axis view and short axis view at the aortic level. We also included a CT scan finding for one of the patient.

RESULTS: 2 different approaches was taken to treat our patients. In one patient, a repeat surgical procedure was done with good outcome and on the other one a conservative management was chosen.

CONCLUSIONS: An echocardiographic recognition of pseudoaneurysm post Bentall procedure is important. There are few approach to manage these patients as illustrated by the 2 cases we report here.
INTRODUCTION: Framingham risk score (FRS) has been shown to underperform in women. Calcium score (CAS) has emerged as a potential marker to improve risk prediction in western population and little is known on diagnostic performance of calcium score (CAS), a new marker in refining cardiovascular (CV) risk prediction, in Malaysia.

OBJECTIVE: We aim to evaluate the influence of CAS on gender in a sample of Malaysian population presented with stable chest pain to an outpatient setting.

METHOD: This was a pilot, single-centre, retrospective study of patients referred for coronary CT angiography (CTCA) for investigation of stable chest pain in 2014. Their baseline clinical data such as demographics, CV risk profiles, CAS and CTCA results were obtained from electronic medical records. A combined clinical outcome of CV event, the need to undergo invasive coronary angiogram and revascularization over a period of 2 years were also traced.

RESULT: 130 patients with complete data were analyzed. 66% (86 patients) were men and 34% (44 patients) were women. The mean age was 56.6±1.9 years for men and 58±2.3 years for women. Women are associated with lower FRS risk and CAS than men (mean CAS score 109±89 versus 259±45, p=0.01). Men are more likely to acquire CAS score >1000 compared to women (p=0.01). There is no significant gender differences in terms of presence of obstructive disease by CTCA and CV outcome when stratified by different CAS group (p=0.02 and p=0.08 respectively)

CONCLUSION: Similar with studies from western population, women are more likely to be associated with lower FRS risk and CAS however, different CAS group did not show significant gender differences in presence of obstructive disease by CTCA and CV outcome when stratified by different CAS group. The latter is likely due to small sample size.
FEASIBILITY OF VARIOUS AORTIC VALVE AREA CALCULATIONS USING 3D TRANSOESOPHAGEAL ECHOCARDIOGRAPHY AND 2D TRANSTHORACIC ECHOCARDIOGRAPHY IN PATIENTS WITH AORTIC STENOSIS


Universiti Teknologi Mara (UiTM)

BACKGROUND: Left ventricular outflow tract diameter has been shown to be one of the greatest source of error measurements when calculating aortic valve area (AVA) due to its eccentricity nature and potential magnification of erroneous measurements whenever an inaccurate LVOT diameter is applied to a continuity equation. 3D transesophageal echocardiography (3D TEE) has allowed a multidimensional visualization of the LVOT similar to computed tomography but minus the radiation.

OBJECTIVE: This study aimed to investigate feasibility of various ways of calculating LVOT area using 3DTEE

METHOD: 53 patients with severe AS were consented to undergo both 2DTTE and 3DTEE were included. LVOT areas were obtained by method 1; standard annular diameter measurement, method 2; mean of maximum and minimum LVOT diameter and method 3; circumference of LVOT area by direct plotting. LVOT areas obtained by these methods were then used to calculate AVA area using the standard continuity equation.

RESULTS: 3DTEE yielded a larger AVA compared to 2D TEE (3DTEE method 1; 0.85±0.37cm², method 2: 0.98±0.43 cm², method 3: 0.98±0.61 cm² versus 2D TTE; 0.78±0.25 cm², p=0.02). There was a strong correlation between AVA calculated by 2D TTE and 3D TEE using standard annular diameter measurement (method 1, r=0.8, p<0.1). Using 3D TEE method 1 as a reference, 3D TEE method 2 was more positively correlated compared to method 3 (r=0.72 and r=0.61 respectively, p<0.1).

CONCLUSION: When ambiguity in AVA calculations occur, confirmation of LVOT diameter can be made using 3D TEE and more so, reasonably compared to AVA obtained using mean of maximum and minimum LVOT diameter by 3D TEE.
THE ROLE OF CORONARY CT CALCIUM AS A STAND-ALONE SCREENING TOOL FOR CORONARY ARTERY DISEASE IN A YOUNGER MULTI-RACIAL ASIAN POPULATION
Ng Yau Piow, Beni Isman Rusani, Shahrol Anuar, Akmal Hakim, Ahmad Khairuddin, Rosli Mohd Ali, Al Fazir Omar.
IJN Malaysia

INTRODUCTION: Multi-slice coronary tomography (MSCT) calcium scoring is used for screening in the low-intermediate risk group as per AHA and NICE guideline. We aimed to investigate the use of calcium score as a stand-alone tool for risk stratification in our younger Asian multi-racial population presenting with chest pain.

METHODS: We analyzed 803 patients undergoing MSCT from 2012-2013. We divided the calcium score to 0, 1-10, 11-100 and 101-400. In the CT coronary angiogram, the main coronary arteries were graded from normal to severe disease. Other variables include age, sex, race and BMI.

RESULTS: There were 121 and 682 patients scanned in 2012 and 2013 respectively. The median age (IQR) was 55. There was a slight male majority at 423(52.7%) vs 380(47.3%). Majority were Malays (54.5%) followed by Indian (26.4%) and Chinese (18.7%). 51.3% of patients had Agatston score of 0. There were no statistically significant differences in the calcium score when comparing between different races across the different Calcium scores. In our multivariate analysis we noted that younger age groups <40(p<0.001) and female (p<0.001) were an independent predictor for low calcium score. BMI was found not to be an independent predictor for same above (p=0.107). In the Agatston 0 group we found that 19.6% showed abnormal CT coronary angiogram (CTCA) findings. In the moderate (11-100) and increased (101-400) calcification score there was statistically significant abnormal findings in the CTCA at 37.9% (p<0.001) and 32.8% (p<0.001) respectively. In the Agatston 0 score group there was 17.5% moderate to severe lesions noted on CTCA and 2 patients had moderate LMS lesion and 27 patients had moderate to severe LAD lesions.

CONCLUSION: The use of CT calcium score as a stand-alone screening tool may not be accurate even in the low-intermediate risk group in our population. A thorough clinical assessment including risk factors remains vital in the accurate assessment of patient presenting with chest pain. Clinical risk-factors and clinical assessment remains important in the accurate assessment for chest pains.
2016 CORONARY ANGIOGRAPHY AUDIT: DEMOGRAPHICS OF PATIENTS WITH NORMAL CORONARY ANGIOGRAPHY RESULTS
Arumuganathan PN, Tay LK, Mylano TA, Abdul Muizz AM, Kamaraj S, Abd Kahar AG; Dept of Cardiology, Hospital Serdang, Malaysia

BACKGROUND: Coronary angiography is the gold-standard imaging modality for establishing the diagnosis of coronary artery disease; however, it is not without risks. A relevant auditing method is necessary to establish the prevalence of ‘normal’ coronary angiography finding as a parameter of appropriate selection.

OBJECTIVES: We evaluate the prevalence of ‘normal’ coronary angiography results and look into the demographics of patients with these normal angiography findings. We also used these findings as a parameter for appropriate selection of patients who underwent coronary angiography at the Invasive Cardiology Laboratory (ICL) in Hospital Serdang from January to December 2016.

METHODOLOGY: All patients undergoing coronary angiography from January to December 2016 were included in this audit. All the coronary angiographies were performed in the ICL in Hospital Serdang. Data were obtained retrospectively from the patient records and manually analyzed.

RESULTS: A total of 2411 patients underwent coronary angiography within the study period. 1917 (79.5%) patients were male and 494 (20.5%) female. 1121 (46.5%) patients were Malay, 569 (23.6%) Chinese, 683 (28.3%) Indian and 38 (1.6%) other ethnic group. More than a third of patients were in the 5th decade (863; 35.7%). Close to 10% of the coronary angiograms were normal. There were more normal studies in the female (24.3%) compared to male group (5.6%). The other ethnic group had the highest normal study at 10.5% compared to the Malay (10.0%) and Chinese (9.8%). The Indian ethnic group had the lowest normal study at 8.1%. The normal study group had less diabetes mellitus, dyslipidemia, hypertension, smoking and family history (29.1% vs 49.5%, 33.5% vs 36.4%, 54.6% vs 62.2%, 21.1% vs 41.4%, 15.0% vs 11.4% respectively). Outpatient referrals had more normal studies (12.1%) compared to inpatient (7.1%) referrals.

CONCLUSION: There is an appropriate prevalence of normal coronary angiogram in Hospital Serdang. As expected, patients with normal study had an overall lower prevalence of cardiovascular risk factors. It is interesting to note that women only constituted a fifth of patients who underwent angiography, despite heart disease being the number one cause of death among women.
SPONTANEOUS CORONARY ARTERY DISSECTION IN YOUNG MALES, A CASE SERIES
Baldip Kaur Gurcharan Singh, Shahidi Bin Jamaludin, Ahmad Suhaimi Bin Mustafa, Siti Khairani bt Zainal Abidin
Cardiology Department, Tengku Ampuan Afzan Hospital, Kuantan, Pahang, Malaysia.

Spontaneous coronary artery dissection (SCAD) is a rare cause of acute myocardial infarction. It is more common in younger patients especially women. The optimal management of SCAD is uncertain as there is limited data in this area. Failure to identify this condition can lead to inappropriate management which can have detrimental effects. We describe two cases of SCAD in young males. The first case involves a 32 year old gentleman with dyslipidaemia who was a smoker who presented with typical chest pain at rest. An initial ECG at a private clinic revealed ST elevation with Q waves in the inferior leads with reciprocal changes in the anterior and lateral leads which resolved after a repeated ECG was done for him at the Emergency Department (ED). Cardiac catheterization was performed which revealed a spontaneous coronary artery dissection (SCAD) of a dominant right coronary artery (RCA) with a TIMI III flow. Our second case involves a 20 year old gentleman with no known cardiovascular risk factors who presented with typical chest pain during vigorous activity which persisted for 2 days. Upon presentation to ED, his ECG revealed a high take off at leads V2-V3 with significant Q waves and symmetrical T wave inversions in the inferior leads and a troponin I value of >10ng/ml. Cardiac catheterization was also performed which revealed a SCAD of a dominant RCA with distal thrombus (TIMI 0 flow) with grade III collaterals from the left system. In both cases, revascularization was deferred and both patients were treated conservatively with dual antiplatelets and heparin infusion but in the second case, patient received warfarin as well. A follow up coronary angiogram was performed after 1 month in the second case which revealed TIMI 3 flow at the distal RCA. We describe the varied presentation and subsequent management of two cases of SCAD and highlight the importance of considering it as a differential diagnosis even in the young male population. It is hoped that this case report will create awareness and add more information regarding SCAD as there is limited literature regarding this rare clinical entity.
SIGNIFICANT FUNCTIONAL IMPROVEMENT IN A PREGNANT PATIENT WITH SEVERE PULMONARY HYPERTENSION AND MITRAL STENOSIS USING PERCUTANEOUS TRANSVENOUS MITRAL COMMISSUROTOMY

Muhammad Imran Bin Abdul Hafidz1, Lee Zhen-Vin1, Wan Azman Bin Wan Ahmad1

1Cardiology Unit, University of Malaya Medical Centre, Kuala Lumpur, Malaysia

BACKGROUND: In developing countries, rheumatic heart disease remains a common cause for valvular heart disease in pregnant women, of which mitral stenosis (MS) is the commonest manifestation. Due to the hemodynamic changes in pregnancy, MS that was tolerated before pregnancy can become symptomatic as pregnancy progresses. Complications of MS in pregnancy include pulmonary hypertension (PH), pulmonary congestion, cardiac failure, cardioembolic phenomena and arrhythmias. The risk of preterm delivery, intrauterine growth restriction, maternal and fetonatal mortality and stillbirth are also raised significantly. Valve intervention prior to pregnancy is recommended in the European Society of Cardiology (ESC) and American Heart Association (AHA) guidelines. In the ESC guidelines, patients with moderate to severe MS are also counseled against getting pregnant. Nonetheless, for pregnant patients with severe MS with severe PH, improvements in functional class and successful pregnancies have been noted in literature and reinforce PTMC as the recommended intervention.

CASE REPORT: We present a case of a 27-year-old female who presented to our center with progressive dyspnea. She was 26 weeks pregnant and was breathless at rest (NYHA IV). During investigation for the dyspnea, a transthoracic echocardiogram (TTE) was performed, which showed severe pulmonary hypertension (PH) with pulmonary artery systolic pressure (PASP) of 104 mmHg and severe mitral stenosis (MS) with valve area by planimetry of 0.53 cm². A percutaneous transvenous mitral commissurotomy (PTMC) was performed which improved the valve area to 1.39 cm². Within 24 hours of the procedure, the patient’s breathing had improved significantly to the point she was able to mobilize around the ward (NYHA III). Her symptoms continued to improve to NYHA II and her PASP improved to 40 mmHg. She delivered a healthy male baby at 35 weeks via a Caesarean section.

CONCLUSIONS: PH complicating MS in pregnancy can cause a multitude of maternal and fetonatal complications. PTMC is an acceptable and indicated procedure for managing symptomatic pregnant patients with severe MS and severe PH and is recommended in both European and American guidelines.
PP 46

DISSECTION OF THE TOTAL LENGTH OF THE DESCENDING AORTA DUE TO A FEMORAL PUNCTURE – AN UNCOMMON COMPLICATION OF VASCULAR ACCESS FOR CARDIAC CATHETERISATION
Muhammad Imran Bin Abdul Hafidz¹, Ramesh Singh¹
¹Cardiology Unit, University of Malaya Medical Centre, Kuala Lumpur, Malaysia

BACKGROUND: Percutaneous coronary intervention is a procedure historically done via the femoral artery but is increasingly being done via the radial artery. Transradial approaches offer increased comfort for the patient and are associated with reduced vascular complications including bleeding and injuries to major arteries.

CASE REPORT: We present a case of a 57-year-old male who was diagnosed with severe triple vessel disease on a recent elective angiogram performed to investigate angina. He was initially referred for a coronary artery bypass graft operation after the first angiogram, however refused, opting instead for high-risk multi-vessel angioplasty. We had planned to perform the complex procedure transfemorally via a 7-French femoral sheath. The right femoral artery was palpated and a single puncture with a standard puncture needle was performed. The scrub nurse assisted by inserting the J-tip sheath guidewire but stopped after resistance. The guidewire was forcibly advanced despite resistance followed by insertion of the femoral sheath. Resistance was also encountered with a 0.035” J-tip wire and was noted to coil abnormally in the iliac artery but advanced up the descending aorta followed by a diagnostic JL 4.0 catheter. Advancement was halted after the patient complained of pain after which the J-tip is withdrawn and contrast injected through the catheter revealing a dissection from the level of the renal arteries distally into the right iliac artery. An emergency CT aorta showed a Stanford Type B aortic dissection extending from the left subclavian artery distally into both iliac arteries. Patient was treated conservatively with tight blood pressure control and made full recovery.

CONCLUSION: Vascular access complications are more common with femoral access compared to radial access, and thus the radial route has become the preferred route for coronary procedures. Nonetheless, aortic dissections are uncommon and in our case likely resulted from a femoral artery dissection with the puncture needle, which propagated with advancement against resistance with the 0.035” wire. Fluoroscopy during femoral artery punctures and contrast injections with the puncture needle or femoral sheath has been utilized routinely and can be used to guide femoral artery punctures, identify dissection at access sites and reduce complication rates.
PP 47

RADIAL VS FEMORAL ACCESS IN PRIMARY PERCUTANEOUS INTERVENTION IN STEMI PATIENTS
(HISNET)HKL IJN STEMI NETWORK

BACKGROUND: In acute STEMI patients, early reperfusion is the primary goal. Femoral approach would appear to offer rapid arterial access, more predictable vascular anatomy, and the ability to provide hemodynamic support and temporary pacing when needed. However, greater use of potent anticoagulant and antiplatelet therapy potentially leads to higher risk of bleeding via femoral approach, which in turn will be associated with significant ischemic consequences after PCI.

OBJECTIVES: This study aims to compare the characteristics, safety and outcomes of radial vs femoral access in primary percutaneous intervention done via HKL IJN (HISNET) pathway.

METHODS: Between January 2015 and December 2016, all patients referred from HKL emergency department to IJN for PPCI via HISNET pathway were included in the study. Patients’ demographics, risk factors, procedural characteristics were assessed. Comparison of outcomes between radial and femoral approach were done categorically on in-hospital mortality rate, MACE rate (Death, reinfarction, urgent CABG, Stroke) at 30 days, 60 days, and 1 year follow up.

RESULTS: A total of 277 HISNET patients who underwent PPCI during this period were included. Baseline characteristics between radial and femoral approach were comparable. There was no difference in the median time of first medical contact to balloon between radial and femoral approach, (p=0.07). 20% of patients in femoral approach group are in Killip classification 3 and 4 as compared to 5% in radial approach group (p value 0.01). Compared with femoral approach, radial approach was associated with lower risk of in-hospital mortality (2% vs 9% p value: 0.036). Risk of overall mortality and MACE at 1 year was statistically lower in radial approach group compared to femoral approach (5% vs 13% p value: 0.001 and 12% vs 5% p value: 0.033, respectively). Post procedural bleeding complications were higher in femoral approach group as compared to radial group.

CONCLUSION: Our study confirmed that in patients undergoing primary PCI, the radial approach offers favourable outcomes and should be the preferred approach especially in patients with no cardiogenic shock. Higher risk of mortality and MACE rates in femoral approach could be associated with more patients in cardiogenic shock. In conclusion, radial approach provides a better option for revascularization in PPCI with no significant timing delay.
PROCEDURAL SAFETY AND ONE MONTH OUTCOME OF PATIENTS TREATED WITH MAGNESIUM BIORESORBABLE SCAFFOLD

Nicholas Chua¹, Mohd Kamal Mohd Arshad¹, Rizmy Najme Khir¹, Lim Chiao Wen¹, Johan Rizwal¹, Effa Abdul Rahman¹, Hafisyatul Aiza¹, Zubin Othman Ibrahim¹, Sazzli Kasim¹
¹Cardiology Department, UiTM Sg Buloh, Malaysia

BACKGROUND: Magnesium bioresorbable scaffold (BRS) was launched last year with promising outcome. The advantage of using BRS are reduced long term complications such as stent fracture, late stent thrombosis, and in-stent restenosis with return of normal vasomotor function and late lumen gain with plaque regression. However, data pertaining to its procedural safety and long-term outcome is scarce.

OBJECTIVE: Identify safety and outcome of patients undergoing percutaneous coronary intervention (PCI) with magnesium BRS.

MATERIALS & METHODS: This was a prospective, observational single center study conducted in UiTM Sungai Buloh from 1st November 2016 to 14th February 2017. All relevant information was then gathered and statistically analyzed. All patients were followed up at one month in clinic.

RESULTS: There were 7 patients who were enrolled with mean age of 46(±9), where the youngest was 35. All the patients were male, and ethnicity breakdown showed 5 Malays, 1 Chinese, and 1 Indian. Cardiovascular risk assessment revealed 85.7% diabetes mellitus, 42.9% smokers, 28.6% hypertension and 28.6% dyslipidemia. Target vessels treated were 6 left anterior descending (LAD) and 1 right coronary artery (RCA). Out of the 7 patients, 28.6% were type A lesions, 42.8% were type B1, and 28.5% were type C. Among those, 4 involved LAD-D1 bifurcations, and 2 were chronic total occlusions (CTO). The lesions were prepared with semi-compliant balloons in 5 cases and non-compliant balloons in 2 cases. The balloon-to-stent ratio were 1:1 (n=1), 0.92:1 (n=1), 0.85:1 (n=4) and 0.83:1 (n=1). The Magnesium BRS diameters used were 3.5mm (n=4) and 3.0mm (n=3) with length of 15mm (n=1), 20mm (n=4) and 25mm (n=2). Post-dilatation in one patient was carried out with non-compliant balloon of equal diameter to the stent, while the rest had upsizing with +0.5mm larger balloons. Procedural outcome was 100% successful. All the patients were well with no symptoms at one-month follow-up and there were no MACE or TLR.

CONCLUSIONS: We demonstrated safety and good short-term outcome in the use of Magnesium BRS in our cohort. However, a larger cohort and long-term outcome monitoring would better delineate the safety and efficacy of this BRS.
PREVALENCE OF ATRIAL FIBRILLATION AMONG THE MOPD PATIENTS OF HOSPITAL TUANKU AMPUAN NAJIHAH, KUALA PILAH
Brian Joe Anthony, Fauzi Azizan, Chan HY, Padmini, Ram Prasad, Jeevakanthi

BACKGROUND: The prevalence of atrial fibrillation is increasing annually. It is the commonest tachyarrhythmia and its impact on the mortality and morbidity of patients is substantial. Therefore, it is important to study the sociodemographic distribution, risk factors and complications of this condition.

OBJECTIVE: This study was undertaken to study the prevalence of atrial fibrillation and its risk factors among our MOPD patients.

METHODS: A cross-sectional study among the MOPD patients in Hospital Tuanku Ampuan Najihah, Kuala Pilah was conducted from the 15/8/2016 to the 7/10/2016. A total of 112 patients were identified to have atrial fibrillation out of 2,105 patients. A structured, validated questionnaire was used in this study. Basic data regarding level of education, occupation, risk factors, comorbidities and treatment were included in the questionnaire. The data was analyzed using SPSS - 22 software and Microsoft Excel.

RESULTS: The prevalence of atrial fibrillation in this study population is 5.3%. There were equal number of males and females. Most of the patients (72.4%) were in the age group of 60 years and above. 47% of our patients have permanent atrial fibrillation followed by paroxysmal (34%) and persistent (19%). Majority of them (99.1%) had a good EHRA score meaning that they were either asymptomatic or had only mild symptoms. The most common risk factor associated with atrial fibrillation is systemic hypertension (76.8%), followed by chronic rheumatic heart disease (21.4%) and coronary artery disease (20.5%). In terms of other comorbidities, majority of them had hyperlipidemia (58.0%), followed by diabetes mellitus (30.4%) and stroke (11.6%). 92% of the patients in our study were anti-coagulated and more than 50% were on rate controlling agents for their atrial fibrillation.

CONCLUSION: It is reasonable to state that the development of atrial fibrillation is attributed to multiple factors as mentioned in this study. Identifying the risk factors, symptoms and co-existing medical conditions at all levels of healthcare would be the cornerstone in managing and preventing this condition.
PP 50

IDIOPATHIC FASCICULAR LEFT VENTRICULAR TACHYCARDIA: A COMMONLY UNDER-RECOGNISED CAUSE OF TACHYCARDIA IN ADOLESCENCE
Koo Kim Lim¹, Mohd Nizam Mat Bah², Dhani Darshan Francis¹, Chin Pek Woon¹.
¹Department of Medicine, Hospital Enche’ Besar Hajjah Khalsom Kluang, Johor
²Department of General Paediatric & Paediatric Cardiology, Hospital Sultanah Aminah Johor Bahru.

BACKGROUND: Ventricular tachycardia (VT) is uncommon in adolescents and usually presented with wide complex tachycardia. However, in certain conditions such as left ventricular tachycardia, it can present with narrow complex tachycardia.

OBJECTIVES: To report a case of left ventricular tachycardia in an adolescent and review the literature.

CASE DESCRIPTION: A 13-year old boy who presented with palpitations and relatively narrow complex tachycardia. The echocardiogram and blood investigations were unremarkable. He was hemodynamically stable and treated as supraventricular tachycardia with intravenous adenosine. Despite the maximum dose of adenosine and amiodarone, the tachycardia remained.

After an expert consultation with a cardiologist, a diagnosis of Left Ventricular VT (Idiopathic fascicular left ventricular tachycardia, IFLVT) was made. The tachycardia was terminated immediately by intravenous verapamil without complications. He was discharged with oral verapamil 20mg BD and remains in sinus rhythm since then. However, the VT was not inducible for ablation at the time of the electrophysiology study in February 2017.

CONCLUSIONS: A narrow complex tachycardia in adolescence is not always supraventricular in origin. Hence, a 12 lead ECG is mandatory, and features of left ventricular VT should be looked at carefully to avoid misdiagnosis and management.
PP 51
ATRIAL FIBRILLATION AND STROKE PREVENTION: HOW ARE WE DOING IN A DEVELOPING COUNTRY?
Chiao Wen Lim1, Swee Eng Goay2, Tze Yuan Tee2, Jian Chen Lim2, Sazzli Kasim1, Azmillah Rosman2.
1Faculty of Medicine, Universiti Teknologi MARA
2Hospital Selayang, Ministry of Health

Atrial fibrillation (AF) is the most common arrhythmia encountered in clinical practice. Management of AF and stroke prevention remains inadequate in Malaysia.

OBJECTIVE: To measure the prevalence of AF in the acute medical admissions in a single tertiary hospital, and to assess if this cohort is adequately managed for stroke prevention.

METHODS: All medical admissions to Hospital Selayang in Kuala Lumpur were screened for AF over a five-month period.

RESULTS: A total of 6147 acute admissions into the medical wards of Hospital Selayang were recorded from 1st January to 31st May 2016. Out of these, there were 160 (2.6%) AF patients, with female predominance at 52.5%. Mean age of AF cohort was 67 years old (+/- 13.3). 66.9% had hypertension, 32.5% type II diabetes mellitus, 22.5% congestive cardiac failure, 22.5% ischaemic heart disease, and 20.6% with diagnosis of previous stroke. Hospital stays ranged from one to 49 days, with mean of 5.8.

There were 36.9% of new onset AF, 51.2% permanent AF, whilst 11.9% had paroxysmal AF. The mean CHA2DS2-VAS score was 3.5 (+/- 1.8). 71.4% had score of ≥ 3, 13.8% had score of 2, and 10% had score of 1 and 5% with score of 0.

There were 24 in-hospital mortality in this cohort. Out of 136 patients on discharge, 60.3% patients were on oral anticoagulation (OAC), with 41.9% on warfarin and 18.4% on novel anticoagulants. Of the 54 patients that were not on anticoagulation: 18 patients refused OAC, 3 deemed low risk, 13 high bleeding risk, 14 had restoration of sinus rhythm, while 6 patients had no recorded reason. Beta-blocker was the most commonly used rate-limiting medication, prescribed in 61.3% of patients. In the new onset cohort, 47.5% received beta-blocker, 20.3% did not need any medication, 10.1% had Amiodarone, 10.2% received combination therapy of beta-blocker with amiodarone, 3.4% had DC cardioversion, and 3.4% beta-blocker with digoxin. 5.1% received digoxin as monotherapy.

CONCLUSIONS: Prevalence of AF in acute medical admission in our tertiary centre is 2.6%, which is slightly lower than previous similar study (2.8%) by Freestone et al in 2003. Management in stroke prevention remains suboptimal with only 60.3% of patients discharged with appropriate OAC.
PP 52

PREVALENCE OF ABNORMAL ELECTROCARDIOGRAPH IN AN ASYMPTOMATIC REDISCOVER STUDY POPULATION

Chiao Wen Lim, Sazzli Kasim, Johan Rizwal Ismail, Effarezan Abdul Rahman, Nicholas Yul Chye Chua, Rizmy Najme Khir, Hafisyatul Aiza Zainal Abidin, Mohd Kamal Mohd Arshad, Zubin Othman Ibrahim, Khalid Yusoff

Universiti Teknologi MARA, Department of Cardiology, Selangor

Resting electrocardiographic (ECG) abnormalities have been shown to be independently associated with cardiovascular disease. As ECG is low cost and widely used, it is a good tool for risk stratification of asymptomatic population. The REDISCOVER study is an observational longitudinal community-based study that tracks changing lifestyles, risk factors and chronic disease in urban and rural areas of Malaysia.

OBJECTIVES: To measure the prevalence of various ECG abnormalities in the asymptomatic REDISCOVER population.

METHODS: This is a community-based study conducted between the year 2007 and 2014. Participants were required to complete questionnaires on cardiovascular risk factors, medical history, physical examinations, blood tests, ECG and echocardiography examinations. Major and minor ECG abnormalities were independently analysed by two cardiologists retrospectively. Participants with previous myocardial infarction, coronary artery disease, cardiomyopathy, valvular heart disease, stroke, permanent pacemaker, chronic obstructive pulmonary disease, history of pulmonary embolism and thyroid dysfunction were excluded.

RESULTS: Out of 12 701 subjects were recruited, 9809 subjects had suitable ECG for interpretation. Mean age for the population was 52 (±11.6) years. There was female predominance (56.6%), and 52.8% of urban population. Of this population cohort, 16.7% were diagnosed with diabetes mellitus, 45.6% with hypertension and 68.1% with hypercholesterolaemia. There were 72.9% non-smoker, 12.6% active smoker, 10.2% that ceased smoking. Most common ECG abnormality was left ventricular hypertrophy at 3.5%, followed by first degree atrioventricular block at 1.8% and right bundle branch block (RBBB) 1.3%. Other abnormalities included ventricular ectopy 1.2%, asymptomatic Q wave myocardial infarction 0.9%, fascicular blocks 0.4%, atrial ectopy 0.2% and left bundle branch block 0.1%.

CONCLUSION: Left ventricular hypertrophy was the most common ECG abnormality in our asymptomatic REDISCOVER population. This can be explained by the higher than global average prevalence of hypertension in Malaysia.
THE EFFECT OF LISTENING TO THE QURAN RECITAL ON DEPRESSION, ANXIETY AND STRESS AMONG CORONARY HEART DISEASE PATIENTS
Rosliza Jayus¹, Sharifah Shafinaz Sharif Abdullah², Santhna Letchumy², Hamat Hamdi Che Hassan¹, Choor Chee Ken¹, Mohd Shawal Faizal Mohamad¹, Shathiskumar Govindaraju¹, Tiau Wei Jyung¹, David Cumberland¹, Oteh Maskon¹
¹Universiti Kebangsaan Malaysia
²Universiti Teknologi Mara, Kuala Lumpur

BACKGROUND: Coronary Heart Diseases potentially leads to morbidity and mortality or impaired quality of life. It also contributes to psychological problems such as anxiety, depression and significant increase to stress level. Listening to the Quran recital is one of the non-pharmacological treatment methods that were integrated to improve Coronary Heart Diseases patient’s depression, anxiety and stress symptoms.

OBJECTIVE: The study was conducted to examine the effectiveness of listening to the Quran recital on depression, anxiety and stress among Coronary Heart Diseases patients at the tertiary hospital.

METHODS: This Quasi-experimental pre-test & post-test design with intervention and control groups used the Depression, Anxiety and Stress Score (DASS) questionnaire. Convenience sampling was used and the subjects were divided into the listening to the Quran recital group (n = 40) and control group (n = 40). Listening to the Quran recital was given five times for 24 hours while control group received a routine care. Participants were assessed pre-test immediate after consented in the study and post-test given immediate after the 24 hours of the intervention.

RESULT: A total numbers of 80 respondents (aged 30-65) diagnosed with CHD were recruited over 3 months from March to May 2016. 38 respondents from the intervention group (male n = 26) and 37 from the control (male n=18) were available for analysis. There were improvement from baseline to follow-up in the DASS score in both groups; in the intervention group – depression score (5.13 ± 4.03 to 1.26 ± .83), anxiety score (6.05 ± 2.72 to 1.50 ± 1.10) and stress score (6.73 ± 4.29 to 1.29 ± .80) vs control group - depression score (4.13 ± 3.38 to 1.43 ± .87), anxiety score (5.64 ± 3.52 to 1.86 ± 1.08) and stress score (5.86 ± 2.73 to 1.24 ± .60). There mean difference of all DASS score were higher in the intervention group, with a statistically significant difference in the improvement of stress score favouring intervention (3.89 (5.04) vs 2.08 (2.43) p = 0.002).

CONCLUSION: The listening to the Quran recital resulted in a trend towards better improvement in the depression, anxiety and stress score (compared to control) among patients admitted with CHD, with statistically significant improvement in the stress score.
MORTALITY OUTCOMES IN ORAL MEDICATION REVIEW FOR ACS NORTH OF KUALA LUMPUR, MALAYSIA

Chong Pei Feng¹, Nicholas Chua Yul Chye²
¹Department of Pharmacy, Hospital Sungai Buloh, Malaysia
²Department of Cardiology, University Technology Mara Malaysia (UITM)

BACKGROUND: Randomised controlled trials support the use of aspirin, clopidogrel, ACE inhibitors, beta-blockers and statin as it has been shown to reduce death due to cardiovascular diseases.

OBJECTIVE: This study aimed to investigate the role of medications (aspirin, clopidogrel, ACE inhibitors, beta-blockers and statin) use in 90-days mortality and the presentation of ACS in a Malaysia population.

MATERIALS & METHODS: This was a single cohort study based on Sungai Buloh Hospital patients admitted with UA, NSTEMI, and STEMI in 2014 and 2015.

RESULTS: There were a total of 1422 ACS patients, which comprised of 45.9% UA, 29.6% NSTEMI and 24.5% STEMI. 85.4% of patient were on prior aspirin, 72.3% were on prior clopidogrel, 60.8% were on prior ACE inhibitors, 63.9% were on prior beta-blockers and 80.7% were on prior statins. 90-days mortality were: 7.2% (n=83) and 19.3% in aspirin and no aspirin groups respectively (P<0.001); 6.2% (n=63) and 18% in clopidogrel and no clopidogrel groups respectively (P<0.001); 5.5% (n=45) and 14% in ACE inhibitors and no ACE inhibitors groups respectively (P<0.001); 6.9% (n=78) and 19.7% in statin and no statin groups respectively (P<0.001) and 6.1% (n=53) and 13.5% in beta-blocker and no beta-blocker groups respectively (P<0.001).

CONCLUSION: Prior pharmacological therapy with aspirin, ACE inhibitors, beta-blockers or statins was found to improve 90 days mortality in patients with ACS.
REVERSAL OF DABIGATRAN ACTIVITY WITH IDARUCIZUMAB IN A PATIENT WITH TRAUMATIC INTRACRANIAL BLEED

Lee Zhen-Vin, Muhammad Imran bin Abdul Hafidz, Chee Kok Han
Cardiology Unit, Department of Medicine, University Malaya Medical Centre, Kuala Lumpur, Malaysia

INTRODUCTION: Idarucizumab, a monoclonal antibody fragment, has recently been made available as a reversal agent specifically for dabigatran which is a direct thrombin inhibitor. Idarucizumab is to be used for patients on dabigatran who either have severe bleeding or need to undergo urgent surgery or invasive procedures.

CASE DESCRIPTION: A 68 year old man presented with recurrent seizures. Patient had history of recurrent stroke associated with post stroke seizures and was on dabigatran for atrial fibrillation. Premorbidly, patient was able to ambulate without support although he had expressive dysphasia. While having recurrent seizures, patient has multiple episodes of falls in which there was trauma to the head. Seizures were aborted with intravenous (IV) diazepam but patient subsequently developed pulseless electrical activity requiring intubation and cardiopulmonary resuscitation for 8 minutes. A non-contrast computed tomography (CT) scan of the brain revealed acute right frontal lobe intraparenchymal bleed measuring 3.0 x 1.9 centimetres. Neurosurgical Team had decided to treat the patient conservatively. Although patient’s last dose of dabigatran was 14 hours ago and activated partial thromboplastin time (aPTT) ratio was 1.5, decision was made to administer 5 grams of IV idarucizumab to reverse the effects of dabigatran as it was deemed that dabigatran activity may perpetuate intracranial bleeding. Repeat aPTT ratio at 6 and 24 hours after idarucizumab administration was completely normal. Patient’s condition however continued to deteriorate and patient was too ill to undergo a repeat CT brain. Patient succumbed to death 6 days later due to a combination of intracranial bleed, sepsis and multiorgan failure.

CONCLUSION: Intracranial bleeding itself is associated with a high risk of mortality. Although the administration of idarucizumab in this patient did not result in a favourable outcome in terms of survival, we believe that idarucizumab plays a pivotal role in the management of dabigatran related bleeding as it completely reverses dabigatran activity as evidenced in this case by normalisation of aPTT ratio (qualitative test) and allows us to focus on other aspects of patient care. Dabigatran level ideally should have been measured by a quantitative test but quantitative tests are not available in our hospital.
SEVERE RHABDOMYOLYSIS AFTER CONCURRENT ADMINISTRATION OF ENTRESTO (SACUBUTRIL/VALSARTAN) AND HIGH DOSE ATORVASTATIN

Mohd Firdaus Bin Hadi 1, Muhammad Imran Bin Abdul Hafidz 1.
1 Cardiology Unit, University of Malaya Medical Centre, Kuala Lumpur

BACKGROUND: Patients presenting with myocardial infarction (MI) are recommended by major cardiology guideline to receive a high intensity statin as part of their secondary prevention therapy. The European Society of Cardiology and Americl College of Cardiology/American Heart Association guidelines advocate a high intensity statin but do not specify the dose. In the UK National Institute for Clinical Excellence (NICE) guidelines, atorvastatin at an 80 mg dose is the recommendation. Entresto (sacubutril/valsartan) is an angiotensin receptor neprilysin inhibitor, which has been recently introduced for the treatment of symptomatic heart failure with reduced ejection fraction. Side effects of statins include myalgia, transaminitis and rarely rhabdomyolisis, and these effects are more common with higher doses of high intensity statins with concurrent administration of drugs that increase serum statin levels. We report a case of severe life threatening rhabdomyolisis associated with concurrent administration of Atorvastatin and Entresto.

CASE REPORT: We report a case of a 58-year-old male with ischaemic heart disease, hypertension and chronic kidney disease who presented with severe myalgia and oliguria a month after discharge from hospital. During the previous admission due to heart failure, he was discharged on Entresto 50 mg twice daily and atorvastatin 80 mg daily due to persistently high LDL and a background of MI. During this admission, his serum creatinine kinase was noted to be 94,850 U/L (normal range 32-294 U/L) and he had developed anuric stage 3 acute kidney injury (serum creatinine 845 µmol/L vs 155 µmol/L previously) requiring urgent renal replacement therapy. He made a full recovery with supportive therapy and removal of likely culprit drugs of atorvastatin, Entresto and other nephrotoxic drugs.

CONCLUSION: Rhabdomyolisis is a serious side effect of statin therapy and is more likely in higher doses and intensity of statin and concurrent administration of drugs that increase serum statin level. Entresto is a new medication for heart failure, which may be associated with increased incidences of statin side effects, thus patients also on a statin should be monitored closely.
PP 57

A MULTICENTRE EXPERIENCE OF NOVEL ANTICOAGULATION AND WARFARIN FOR USE FOR STROKE PREVENTION IN ATRIAL FIBRILLATION

Rubenthiran Navaratnam¹, Darwina Bolkim¹, Rhema Sundram¹, Norfazlina binti Jaafar¹, Farah Wahidah Zaimudin¹, Rosila Rebo¹, Razali Omar¹, Kantha Rao Narasamuloo², Wan Faizal Wan Rahimi Shah², Tan Bee Mee², Saravanan Krishnan², Melissa Lim Siaw Han³, Tiong Lee Len³, Ong Tiong Kiam³, Alan Fong Yean Yi³, Nor Azila binti Abdul Latif³, Chai Hui Joo³, Tan Yaw Shen⁶, Aylwin Lim Ming Wee⁹, Lim Chuen Lu⁹, Alice Chua Tien Tien⁹, Nor Syazwani bt Ahmad¹⁰, Kwong Chea Ing¹¹ Yap Lok Bin¹;

¹Institut Jantung Negara, 
²Hospital Sultanah Bahiyah, 
³Sarawak General Hospital, 
⁴Sarawak Heart Centre, 
⁵Serian Hospital, 
⁶Sri Aman Hospital, 
⁷Betong Hospital, 
⁸Sibu Hospital, 
⁹Bintulu Hospital, 
¹⁰Miri Hospital, 
¹¹Bau Hospital

BACKGROUND: Dabigatran, Apixaban and Rivaroxaban was approved for anticoagulation in atrial fibrillation (AF) in Malaysia.

OBJECTIVE: We wished to review our experience of these drugs based on multicentre data (Institut Jantung Negara, Hospital Sultanah Bahiyah and Sarawak Hospitals) in order to document baseline characteristics, reasons for selecting novel anticoagulant (NOAC) and also significant adverse effects of NOAC.

MATERIALS & METHODS: Data on 252 patients were collected. 139 patients on NOACs, (22 patients on Apixaban, 72 patients on Dabigatran and 45 patients on Rivaroxaban) and 113 patients on warfarin were identified from pharmacy records. The medical records were obtained. Data was collected on baseline characteristics, indication for use, echocardiographic data, bleeding events and adverse events.

RESULTS: The mean age of patients was 69.3 +/- 11.1 for NOAC and 64.8 +/- 11.2 for warfarin. There were 55 (39.5%) female and (60.5%) 84 male patients for NOAC and 61 (54%) female patients and 52 (56%) male patients for warfarin. All 252 patients had AF (34% paroxysmal, 36% permanent, and 30% persistent). The mean CHA2DS2-VASC score was 3.4 in apixaban group, 3.9 in dabigatran group, 3.4 in rivaroxaban group and 3.2 in warfarin group. Mean HASBLED score was 2.5 in apixaban group, 1.7 in dabigatran group, 1.3 in rivaroxaban group and 1.1 in warfarin group. Median ejection fraction on echocardiogram was 54.5% for apixaban group, 55% dabigatran group, 52% for rivaroxaban group and 59% for warfarin group. Analyzing for clinical outcome, there were 2 (2.8%) patients in the dabigatran group and 1 (2.3%) patient in the rivaroxaban group compared to 13 (11.9%) patients in the warfarin group who had ischemic stroke. Hence, the NOAC group had fewer ischaemic stroke events when compared to the warfarin group (3 vs 13 events, p = 0.014). 1 (2.3%) patient had Myocardial Infarction (MI) in the rivaroxaban group and 2 (1.8%) patients had MI in the warfarin group. A total of 9 patients had major bleeding including intracranial bleeding and upper gastrointestinal bleed (4 patients were on dabigatran, 1 patient was on rivaroxaban and 4 patients on warfarin). 15 patients experienced minor bleeding, of which: 3 patients were on apixaban, 5 patients on dabigatran, 1 patient on rivaroxaban and 6 patients on warfarin.

CONCLUSION: Our multicentre real world experience shows that NOACs as a group are more effective in stroke prevention than warfarin. There was also a low incidence of major side effects and adverse events in patients with NOAC compared to warfarin.
THE CARDIAC REHABILITATION APPROACH IN THE MANAGEMENT OF BARIATRIC PATIENTS

Anwar Suhaimi¹,², Nor Hanim Mohamad Hanapi¹, Thor Ju An¹, Phang Shu San¹, Hazwani Halil², Muhammad Badiuzzaman Farhan Mohd. Ali², Koo Jui Geok², Fauziah Baharuddin²,

¹Department of Rehabilitation Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur.
²Cardiac Rehabilitation Services, Department of Rehabilitation Medicine, UM Medical Centre.

INTRODUCTION: Obesity is a worldwide pandemic associated with increasing risks of cardiovascular disease and a host of other non-communicable diseases. 30.0% of adult Malaysians are overweight and 17.7% are obese. Bariatric surgery is indicated for severe obesity and is superior to both medical therapy and intensive lifestyle interventions to achieve significant and long-lasting weight loss. However, bariatric surgery alone is not sufficient to ensure superior post-operative functional status and quality of life (QOL). Confounding medical comorbidities, disabling musculoskeletal impairments and sustainability of lifestyle modifications especially of nutritional and physical activity to augment weight loss and improve cardiorespiratory fitness poses specific challenges to this population.

OBJECTIVE: We apply the Cardiac Rehabilitation (CR) secondary prevention model in formulating therapeutic goals and intervention plan in clients planned for bariatric surgery. Specific interventions were employed to address pre-operative prophylactic goals, post-operative rehabilitation of bariatric-associated impairments and secondary prevention targets. Clinical, biochemistry, functional and quality of life outcomes were compared to baseline measurements.

RESULTS: Favourable changes were seen in clinical parameters (weight, BMI, % of total weight loss, % of estimated body weight loss, BP, A1c, lipid profile and peak expiratory flow rates); anxiety and depression scores, level of dependency, endurance level, bariatric and generic QOL scores post operatively and sustainable up to 6 months post-op.

CONCLUSION: By adapting the CR approach towards bariatric-associated impairments, we can significantly improve cardiovascular risk factor profile, functional capacity, cardiopulmonary endurance, dietary habits, quality of life and contributed to a greater weight loss post-surgery period.
PERMANENT PACEMAKER IMPLANTATION REGISTRY IN HOSPITAL SERDANG IN YEAR 2016

Dr Hartini Mohd Yusof¹, Dr Nor Halwani Habizal¹, Prof Madya Dr Ahmad Fazli bin Abd Aziz², Dr Kamaraj A/L Selvaraj¹, Datuk Dr Abdul Kahar bin Abd Ghapar¹

¹Jabatan Kardiologi Hospital Serdang, Selangor, Malaysia
²Jabatan Perubatan (Kardiologi) Universiti Putra Malaysia, Selangor, Malaysia

BACKGROUND: Cardiology Department of Hospital Serdang is one of the government hospital in Malaysia who provides permanent pacemaker (PPM) implantation service. To date, there is no available national registry or framework for pacemaker data collection. Hence, we had collected data over 1 year period for analysis and setting up a local pacemaker registry.

OBJECTIVE: To establish local permanent pacemaker database and registry for year 2016 in Hospital Serdang

MATERIALS & METHODS: We conducted a retrospective study and the study period was between January 2016 and December 2016.

RESULTS: Total of 146 permanent pacemaker related procedure were done. Both genders are equal, 73 male and 73 female patients. Clinical indications for PPM implantation were presyncope in 78 patients (53%), syncope in 27 patients (18%), giddiness in 17 patients (12%), asymptomatic bradycardia in 4 patients (3%), breathless in 4 patients (3%), heart failure in 4 patients (3%), palpitation in 2 patients (1%), lethargy in 1 patient (1%) and others in 9 patients (6%). Majority of the ECG diagnosis was 3rd degree AV block in 73 patients (50%), followed by Sick Sinus Syndrome with bradycardia in 53 patients (36%), 2nd degree AV block in 12 patients (8%), slow AF (2 patients), AF with Sick Sinus Syndrome (1 patient), Atrial flutter with pause (1 patient), bifascicular block (1 patient), trifascicular block (1 patient), junctional bradycardia (1 patient) and ventricular stand still (1 patient). Pacemaker mode used were dual chamber pacing in 101 patients (69%), ventricular pacing in 45 patients (31%). Immediate complication of stroke was seen in 1 patient, mild pneumothorax in 1 patient and lead dislodgement in 2 patients. At one month follow up, 107 patients (73%) were reported well, 20 patients (13%) were followed up in other center, 16 patients (10%) loss to follow up, 1 patient developed heart failure, 1 patient had infected wound and 1 patient had lead dislodgement.

CONCLUSIONS: We have established permanent pacemaker implantation registry in 2016 at our center and will maintain the pacemaker registry in future years with more data.
"NEAR NORMAL" ELECTROCARDIOGRAPHIC ANALYSIS IN A PATIENT WITH PERSISTENT ANGINA: REPORT OF A DISEASE FROM CIRCUMFLEX BRANCH OF LEFT CORONARY ARTERY

Dr Ng Choon Seong,
Department of Internal Medicine & Cardiology Unit, Hospital Canselor Tuanku Muhriz (The National University of Malaysia Medical Centre), Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Wilayah Persekutuan, Malaysia

BACKGROUND: The concealed essence of the electrocardiographic analysis alone in diagnosing ischemic heart of posterior origin has long been a challenge clinically.

OBJECTIVE & CASE REPORT: Here, we report a middle-aged gentleman with risk factors of diabetes and dyslipidaemia came with typical angina pain but normal electrocardiogram. Thankfully his persistent chest pain alarms us to proceed further for angiogram with subsequent reperfusion therapy to the left circumflex coronary artery.

RESULTS / CONCLUSIONS: This case alarms clinicians to consider differential of left circumflex artery disease in a normal electrocardiographic patient presenting with typical angina pain. Early angiogram will be necessary to identify such silent lesion before prematurely excluding underlying coronary artery disease.
WILLINGNESS TO PAY FOR NOVEL ORAL ANTICOAGULANTS IN NON-VALVULAR ATRIAL FIBRILLATION AND DEEP VEIN THROMBOSIS PATIENTS

Kent Ter Lau¹, Tian Er Poh²
¹Medical Department, Hospital Miri
²Clinical Research Center, Hospital Miri

BACKGROUND: Vitamin K antagonists (VKA), such as warfarin, have been used widely for stroke prevention in atrial fibrillation and the treatment of venous thromboembolism. However, the use of the VKA have several limitations. Novel oral anticoagulant (NOAC) have been developed to overcome the many challenges with the use of warfarin.

OBJECTIVE: This study was to determine willingness to pay (WTP) among patients who are interested to convert from VKA to NOAC and to evaluate patients’ satisfaction with their current warfarin treatment.

MATERIALS&METHODS: A cross sectional study of warfarin treated patients attending the anticoagulation clinic at Miri General Hospital from November 2016 to February 2017 was conducted. Patients with contraindications to NOAC were excluded. This survey include explaining the advantages and disadvantages of NOAC, determine satisfaction with warfarin therapy and problem with warfarin.

RESULTS: A total of 43 patients completed the survey. The majority of participants were retired (72.1%), mostly male (62.8%). The average age of the participants was 63 years old, mostly Native people (58.1%). The household income mostly were less than RM1000 (79.1%). 30 patients had problem with warfarin therapy. Among the 30 patients, 26.7% of them had more than 1 type of problem with warfarin. Types of problem were food/drug interaction (30.6%), frequent visit to INR clinic (27.8%), logistic issue (27.8%), dosing regimen not fixed (16.6%) Minority of patient willing to pay the current market price in order to purchase NOAC. At the end of this study, 2 patients convert their warfarin therapy to NOAC.

DISCUSSION: Majority of the warfarin treated patients do have issues with their medication. NOACs are preferred due to their properties. Financial concern is still the main obstacles to initiate the treatment in our population. Thus, it contributes to low WTP among our studied population. However, WTP for NOAC in comparison with warfarin should not depend solely on retail price, other issues with warfarin such as psycho-social impact, patient’s logistic, cost of venepuncture, laboratory and medical personnel need to be taken into consideration. By integrating all the factors, WTP for NOAC can be increased in future study.
ALTERNATIVE FORMULA FOR PULMONARY VASCULAR RESISTANCE USING ECHOCARDIOGRAPHY IS FEASIBLE
Kong Poi Keong 1; Pathmanaban Gunasekaran 2; Muhammad Norezzuan Abu Bakar 2; Mohd Safie Mat Jusoh 2; Mohammad Nadi Nor Azemi 2; Zamharris Indra Shah Zamani 2; Omar Ismail 1
1Hospital Pulau Pinang, Georgetown, Pulau Pinang, Malaysia
2Kolej Kejururawatan Pulau Pinang, Georgetown, Pulau Pinang, Malaysia

BACKGROUND: Estimation of pulmonary vascular resistance (PVR) is important in the management of patients with pulmonary hypertension. Right heart catheterisation (RHC), although accepted as gold standard for PVR, is invasive. Echocardiography offers a non-invasive alternative.

OBJECTIVE: We aimed to correlate echocardiography-derived PVR using a validated formula (PVRecho) with RHC-derived PVR (PVRrhc) and to develop an alternative formula that uses simpler echocardiographic variable (PVRalt).

MATERIALS AND METHODS: Data from 51 patients with pulmonary hypertension (38 or 75% patients had atrial septal defect) who underwent both echocardiography and RHC from January 2011 to December 2015 were retrospectively analysed. We obtained PVRecho from machine-built-in validated Abbas formula of PVRecho = 10(TR Vmax/RVOTvti) + 0.16 in Wood units (where TR Vmax is peak velocity of tricuspid regurgitation in ms-1 and RVOTvti is velocity-time integral of right ventricular outflow tract (RVOT) flow in cm) and correlated it with invasive PVRrhc (Pearson). We then substituted RVOTvti with RVOT Vmax (peak velocity of RVOT flow in ms-1), which empirically varied together with RVOTvti and did not need manual tracing unlike RVOTvti. We performed simple linear regression on the resultant TR Vmax/RVOT Vmax with PVRrhc to obtain an alternative formula PVRalt, and correlated PVRalt with invasive PVRrhc (Pearson).

RESULTS: PVRecho using Abbas formula correlated moderately with invasive PVRrhc (r = 0.65, p < 0.001). Linear regression generated an alternative formula PVRalt = 0.84(TR Vmax/RVOT Vmax) – 1.06 that correlated moderately with invasive PVRrhc (r = 0.59, p < 0.001).

CONCLUSIONS: Within limitation of a retrospective study and non-concurrent echocardiographic and catheter measurements, non-invasive PVR using Abbas formula correlated moderately with invasive PVR. Non-invasive PVR using an alternative formula 0.84(TR Vmax/RVOT Vmax) – 1.06 that uses the simpler variable RVOT Vmax correlated moderately with invasive PVR and appeared as a feasible alternative.
PP 63

A STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICE OF VAPING AS SMOKING CESSATION TOOL AMONG GENERAL PUBLIC IN SELANGOR

KS Ibrahim, D Katiman, CW Lim, JR Ismail, NYC Chua, R Najme Khir, E Abdul Rahman, MK Arshad, HA Abidin, ZO Ibrahim, SS Kasim

Department of cardiology, Faculty of Medicine, UiTM

BACKGROUND: Vaping has gained the attention of Malaysian and worldwide population over the past few years. Its ability to simulate smoking and deliver dose of nicotine without combustion of tobacco makes it a promising tool for smoking cessation. The fact that vaping can assist smoking cessation is still questionable as studies showed contradicting results. We are conducting this study to assess vaping prevalence and understand the knowledge, attitude and practice of vaping as smoking cessation tool in Selangor population.

OBJECTIVE: To assess prevalence of vaping and evaluate level of knowledge, attitude and practice towards vaping as smoking cessation tool in Selangor population.

METHOD: Cross-sectional survey of general population in Selangor. The survey includes questionnaire assessment on knowledge, attitude and practice towards vaping. Target responders are general population in Selangor with the age of more than 17 years old, non-healthcare workers and non-students. Questionnaire will be distributed as a hard copy and online survey. The prevalence of e-cigarette use is calculated by measuring the portion of people who vape within the sample population.

RESULTS: A total of 311 responded to the questionnaire. Respondents are predominantly Malay population (77.2%), with mean age of 33 years-old. The prevalence of vapers is 24.7%. Most of vapers started at the age of 20-30s. 26% of the respondents believe that vaping is a tool for smoking cessation. They are predominantly Malay (74%) with higher educational level and believe that vaping is less harmful than smoking. Of the 311 respondents, 15.4% do not believe the idea of vaping as cessation tool. The majority is Malay (85.4%) with lower level of education. They are less expose to vape as most of their household and close friends are non-vapers. 73% of them believe that vape is not less harmful than smoking.

CONCLUSIONS: Our respondents believe that vaping is a useful tool for smoking cessation. They are from highly educated group and have a perception of vaping as less harmful than smoking. Further study is needed to assess the long-term safety of vaping.
PP 64

CARDIOVASCULAR SAFETY ASSESSMENT OF A NEW INTRABODY COMMUNICATION NETWORK
Najme Khir R1, Chua NYC1, Ibrahim KS1, Ismail JR1, Zainal HA1, Lim CW1, Arshad K1, Ibrahim ZO1, Kasim S1, Abdul Rahman E1.
1Faculty of Medicine, UiTM Sg Buloh, Malaysia.

BACKGROUND: A miniature sensor is now able to monitor human’s vital signs. Using radiofrequency (RF) transmission signal, the sensor is implanted in the human body and wireless network develops around the human body. A new standard of wireless body area network (WBAN) protocol, IEEE 802.15.6 was set in year 2012. In this standard, three schemes were outlined, where Narrowband (NB) and Ultra Wideband (UWB) are based on RF propagation technique. The third scheme, Human-body Communication is based on non-RF propagation technique known as Intra-Body Communication (IBC), centered at frequency 21 MHz. Compared to RF propagation, IBC has advantage in power consumption, where it consumes lower transmission power at below 1 mW at data rates more than 100 Kbps.

OBJECTIVE: To assess cardiovascular safety of Intra-body Communication device.

MATERIALS & METHODS: A miniVNA is calibrated to induce AC at 1 mA to the human body. This current is 20 times below the maximum allowed contact current. A pair of transmitter and receiver is connected to the subject’s right waist and right ankles with self-adhesive Ag/AgCl electrodes. 6 healthy subjects with age range between 21 to 23 years old were assessed on a treadmill at 3 different speeds of 2 km/h, 4 km/h and 6 km/h, with continuous ECG and blood pressure monitoring.

RESULTS: During the testing, the subjects did not report any symptoms such as palpitations or chest pain at the three different speeds. There were no arrhythmias recorded on the ECG monitor throughout the test at the three different speeds.

CONCLUSION: IBC centered at frequency 21 MHz shows good cardiovascular safety profile and has the advantage in power consumption, where it consumes lower transmission power which is below 1 mW at data rates more than 100 Kbps.
TRENDS IN INDUSTRY-SPONSORED CARDIOVASCULAR CLINICAL TRIALS IN MALAYSIA

Tay Wai Cheng¹, Audrey Ooi Joo Ann¹
¹Clinical Research Malaysia (CRM)

Since 2012, Malaysia has seen a rapid growth in the number of industry-sponsored cardiovascular clinical trials due to the changing clinical research landscape in the country. While there have been reports on the type of industry-sponsored cardiovascular trials of global pharmaceutical companies, only few country-specific data trend are available. This report presents the trends and types of industry-sponsored cardiovascular trials conducted in Malaysia from 2011 to 2016 and the reasons behind the changing trends. The number of industry-sponsored cardiovascular clinical trials in Malaysia was obtained from the various ethics committees that have approved them between 2011 and 2016 in Malaysia. The types of trials are divided into observational, interventional, drug-related, medical device and Phases II to IV. The local ethics committees reported a total of 70 industry-sponsored cardiovascular clinical trials which were conducted in Malaysia between 2011 and 2016, with an almost equal proportion of interventional (51%) and observational studies (49%). There was an upward trend of cardiovascular trials conducted from 2012 to 2015, with a slight drop in the number observed in 2016. A growth in both observational and interventional trials was also seen. Thirty trials were drug trials and 12 were on medical devices, which saw it first being reported only in 2014 onwards. About 37% of cardiovascular clinical trials are in Phase III, 7% in Phase II, while the remaining 56% did not fall into any categories as they are made up of Phase IV, observational and medical device studies which have different categories not characterized in this study. A country-specific trend of cardiovascular clinical trials is an important source of information to assess the capability and potential of a country in conducting industry-sponsored research. We observed a sharp increase in the volume of cardiovascular trials after 2012, explained by the efforts undertaken by the Malaysian Government to improve the local clinical research ecosystem through the establishment of Clinical Research Malaysia (CRM), a non-profit company that provides speedy and reliable end-to-end clinical research support to clinical research sites, investigators and the industry. In the last six years, there were more Phase III cardiovascular trials compared to Phase II and Phase IV, with no Phase I trials reported yet. To this end, CRM has executed various strategies to improve Malaysia’s capability to conduct Phase I trials to cater to the pipeline of new drugs/medical device from the industry. This report would be a useful source of information for pharmaceutical and medical device companies, investigators as well as patients to understand the future trends of cardiovascular trials in Malaysia.
PROVISION OF CRITICAL CARE PHARMACY SERVICES TO A CARDIAC SURGERY INTENSIVE CARE UNIT (CSICU)

Thong Choy Ping¹, Kamaleswary Arumugam¹
¹National Heart Institute, Kuala Lumpur, Malaysia

BACKGROUND: Existing literature strongly support the involvement of pharmacist as an integral part of the ICU team to improve the patients’ quality of care and reduce medication errors. We introduced critical care pharmacy services (CCPSs) in a 27-bedded CSICU in 2015 to optimize drug therapies in ICU patients.

OBJECTIVE: To analyze the pharmacist’s interventions on drug-related problems and it’s acceptance by physicians, and to evaluate the effectiveness of the CCPSs provided.

METHODS: A cross-sectional study was conducted from February 2015 to December 2016, in which pharmacist’s interventions were recorded, categorized and analyzed. Satisfaction surveys were administered to healthcare providers, including doctors and nurses, to assess their perception and satisfaction on the CCPSs provided.

RESULTS: A total of 3,162 pharmacist’s interventions were made from 94,896 medication orders reviewed. 107 interventions/month (average) were made during the first 6 months in 2015 when CCPSs was initiated, with an acceptance rate of 89.3% by the doctors. In 2016, pharmacist’s interventions accepted increased to 97.4% with an increased average of 135 interventions/month. The most common types of interventions made were related to drug selection (36%), undertreated (26%) and over or under-dosing (24%), which appeared most frequently for antimicrobial drugs (28%), drugs for the gastrointestinal tract (22%) and cardiovascular drugs (18%). The response to the satisfaction survey was positive, especially from the doctors’ point of view. Pharmacist’s interventions on drug therapies was perceived as the most satisfactory while involvement of pharmacist in the prevention and management of adverse drug reaction (ADR) as the least satisfactory among all the categories surveyed, which include timeliness/accessibility of clinical pharmacist, provision of information and quality of services. Since the introduction of CCPSs in 2015, the clinical pharmacist’s role has evolved to include non-clinical roles such as protocols and guidelines development, training and education, and drug utilization evaluation.

CONCLUSION: Critical care pharmacist is a crucial member in the CSICU multidisciplinary team, who can contribute significantly towards improved medication safety and patient management.
AN EVALUATION OF VENOUS THROMBOEMBOLISM PROPHYLAXIS AMONG SURGICAL PATIENTS AT A NON-ACADEMIC SPECIALIST HOSPITAL IN PERAK

Wan Azuati WO¹, Nur ‘Atikah Huda MR¹, Nurul Hasfizah H¹

INTRODUCTION: Hospitalized surgical patients are at an increased risk for venous thromboembolism but previous studies showed that thromboprophylaxis among surgical patients was suboptimal.

OBJECTIVES: The aim of this study was to evaluate the use of venous thromboembolism prophylaxis in a general surgical ward.

METHODS: This was a prospective observational study involved patients aged >18 years admitted to a general surgical ward in Hospital Taiping during December 2014. Data collection form contains a set of criteria based on existing clinical practice guidelines was used to collect data on demographic, patients at increased risk of developing venous thromboembolism, risk of bleeding and prophylactic agent used. Data were analyzed descriptively.

RESULTS: A total of 173 patients met the inclusion criteria and were reviewed, of which, 82% (142/173) of patients were identified as at increased risk of developing venous thromboembolism. Mean age was 50.6 (SD 19.94) years and all were males. Prophylaxis against venous thromboembolism was documented in 12.1 % (21/173) of patients, or only 14.8% (21/142) of total patients at increased risk. In total 14 patients received pharmacological prophylaxis alone, 4 received mechanical prophylaxis alone and 3 received both type. Unfractionated heparin was the only pharmacological prophylaxis prescribed. Among patients at increased risk of bleeding and having no contraindication to mechanical prophylaxis only 10.1% (7/69) were prescribed with anti-embolism stockings.

CONCLUSION: In this study, a high proportion of patients at increased risk of developing venous thromboembolism were not received thromboprophylaxis during hospitalisation. Unfractionated heparin remains the preferred pharmacological thromboprophylaxis in this institution.

Keywords: Prospective, risk factors, bleeding risk, venous thromboembolism

NMRR-15-440-24475