

**FP 1.1
INFORMATICS APPROACH TO ANSWER CLINICIAN INFORMATION NEEDS: A PROTOTYPE WITH SARAWAK GENERAL HOSPITAL (SGH)**

Then, H.H. Patrick, Sebastian, Y., Loh, C.S. Brian, Fong, AYY, KH Sim.
Swinburne University of Technology, Kuching

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COMPARISON OF LEFT VENTRICULAR VOLUMES AND EJECTION FRACTION USING 2D AND 3D ECHOCARDIOGRAPHY**

Hamdan Ibrahim CVT, Kamarul Aizan Abdul Rahman CVT and Rahal Yusoff MD.
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AN AUDIT OF PATIENT SAFETY AND COMPLICATIONS OF STRESS ECHOCARDIOGRAPHY SUPERVISED BY A CARDIOVASCULAR TECHNOLOGIST**

Noramimah Aedrus CVT, Hairulnizam Che Hassan CVT*, N. Thavarasa CVT and Rahal Yusoff MD.
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ACUTE CORONARY SYNDROMES SECONDARY PREVENTION PHARMACOTHERAPY PRESCRIBED AT DISCHARGE: THE FIRST NATIONAL MULTICENTRE PILOT AUDIT**

Yanti Nasyuhana Sani¹, LL Tiong², Lai LYH³, Fong AYY⁴, Kamarun MA⁵, Sameerah SAR⁶, Sim KH⁴ on behalf of ACS Pharmacotherapy Audit Team.
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WS Choo*, LC Loh*, TH Goh**, CT Liew**, E Safari**, SK Lim**, B Barakath**, KK Chan**, S Amardeep**, K Saravanan**, SK Ma**, I Omar**.
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PULMONARY EMBOLISM:

A COMPARISON OF DIAGNOSTIC VALUE BETWEEN SGH CRITERIA AND MODIFIED WELLS CRITERIA

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DETECTION OF LEFT VENTRICULAR DYSFUNCTION BASED ON SELF REPORTING OF FUNCTIONAL STATUS BY PATIENTS AFTER PERMANENT PACEMAKER IMPLANTATION

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ADHERENCE LEVEL AMONG CARDIAC PATIENTS BY USING SELF-REPORTED MORISKY SCORE AT SARAWAK GENERAL HOSPITAL: A SINGLE CENTRE EXPERIENCE

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QUALITATIVE ANALYSIS OF THE ETHNIC DIFFERENCES IN PATIENT PERCEPTIONS OF HEART FAILURE MANAGEMENT

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FP 1.1

INFORMATICS APPROACH TO ANSWER CLINICIAN INFORMATION NEEDS: A PROTOTYPE WITH SARAWAK GENERAL HOSPITAL (SGH)

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Background: Clinical decision support systems that were introduced and implemented in some countries in Europe, Australia and USA have encountered limited success in implementations. Main reason behind it is the lack of understanding clinician information needs, resulting in systems that were considered intrusive to clinician professional autonomy as well as irrelevant in decision making. Clinician information needs ties closely with the kind of clinical questions being asked. A clinical decision support system that gives information within the context of relevant clinical questions will potentially be most useful to clinicians in practice. The first crucial step is providing a highly ergonomic and easy-to-use system interface to capture their queries and questions. In 2008 we demonstrated the importance of cardiologist involvement prior to deployment of any clinical decision support system using prototyping approach especially. The prototype was used to ensure higher acceptance of the system by the cardiologists even as early as development phase.

Objective: We aim to demonstrate that providing a friendly mechanism for capturing cardiologist clinical questions and analyzing the structure inherent in the queries are the key to creating a usable and effective clinical decision support system.

Methods: Imaging modality datasets were collected from a local cardiology centre and were subsequently transformed into a standard data format. Cardiologists were asked to give sample clinical questions that may arise during their practice. An automatic mechanism analyzed the structure of the questions based on a coherent framework to determine the kind of information being sought after by cardiologists.

Results: It was found that a decision support system which recognizes the structure of cardiologist clinical questions has better ability to meet their information needs with higher relevance.

Conclusion: Decision support system that are developed to meet clinician (in this case cardiologist) information needs is potentially more useful and acceptable than those who are not. The first important step to understanding these information needs is the system's ability to accommodate various expressions of clinical queries and standardize it based on a consistent conceptual and technical framework.

FP 1.2

COMPARISON OF LEFT VENTRICULAR VOLUMES AND EJECTION FRACTION USING 2D AND 3D ECHOCARDIOGRAPHY

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Background: 3 Dimensional Echocardiography has become widely available in Malaysia. In the research literature, 3D volume measurements has been shown to be very accurate compared with the gold standard magnetic resonance imaging. However, these studies were done in well trained centres of 3D Echocardiography (3DE). We wanted to look at our centres experience in volume and ejection fraction calculation using 3DE and correlate it to the 2D Bi-plane Simpsons method.

Method: Patients were enrolled from the echocardiography service in IJN. 52 consecutive patients were enrolled. Images were adequate for 2D and 3D evaluation, if the endocardium can be traced adequately and confirmed by a cardiologist. The 2D and 3D datasets were obtained by an experienced sonographer. The 2D and 3D measurements were done by 2 separate sonographers whom are blinded. Two-dimensional volumes and ejection fraction (EF) was calculated using the bi-plane Simpsons technique. An average of 3 cycles was taken for patients in sinus rhythm. Patients in atrial fibrillation were excluded. 3D datasets were taken using the 4 heartbeat acquisition in apnoea and the volumes calculated using the Qlab software.

Results: Mean end-systolic volumes were 53mls +/-30mls in 3D compared to 65mls +/-33mls obtained in 2D. Mean end-diastolic volumes were 99mls +/- 40mls in 3D compared to 124 +/- 42mls in 2D. Correlations between systolic volumes obtained by 2D and 3D was excellent ($r=0.95$, $p<0.01$). As for end-diastolic volumes the correlation obtained between the two methods was also good ($r=0.86$, $p<0.01$). Measurements in the calculation of mean ejection fraction (EF) between 2D and 3D methods are 45% +/- 15% vs 50% +/- 15% respectively. The correlations were fair between the 2 methods for measurements of EF ($r=0.77$, $p<0.01$). Division into 3 groups (<30%, 30-50%, >50%) showed that in groups with ejection fraction >50%, there was good correlations between the methods. In groups <50% EF, there is a wide variation between measurements.

Conclusion: Volumes obtained by 2D echocardiography is larger compared to 3D measurements. There is good correlation in the end-systolic and end-diastolic volumes measurement between the 2 methods. However in the measurements for EF, care must be taken in the interpretation of the measurement especially in patients with impaired left ventricular function. Internal audit has to be performed regularly to validate the measurements obtained. Findings should also be correlated with standard MRI techniques if available at the centre

FP 1.3

CHANGING TRENDS IN THE PRACTICE AND MODES OF PERMANENT PACEMAKER IMPLANTATION AT THE NATIONAL HEART INSTITUTE: A RETROSPECTIVE ANALYSIS OF THE LAST 24 YEARS

Noor Asyikin S, Zunida A, Tay GS, Azhari R, Hasri S, Surinder K, Lam KH, Mohd Nasir M, Amin Ariff N, David Chew SP, Rosli MA, Robaayah Z, Azlan H, Razali O.
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Objective: To analyze if the cause of bradyarrhythmia requiring pacemaker have changed over the last 23 years, to evaluate the changing type and modes of pacing and to assess our complication rate

Methods: This registry involved 3049 patients (IJN) and 55 patients (HKL) total 3104 patients from 1984 to December 2008 and they are divided into 3 era. Group I are those implanted from 1984 to 1994, Group II from 1995 to 2000 and Group III from 2001 to 2006. They are analyzed in terms of indication, mode, venous access, types and fixation of lead; and complications of pacemaker implantation.

Results: Adult will be 87.9% and paediatric will be 12.1% of the total implant. Commonest indication for pacemaker was Complete Heart Block, Sinus node dysfunction and 2nd degree AV block. Mode of choice in Group I was Single chamber pacemaker (SC PPM) (93%), however Group III was Dual chamber (DC PPM) (58.6%). Access from left cephalic vein cut down side was preferred with cephalic vein cut down initially popular in Group I (68.5%) but in Group III, subclavian puncture (3.9%) was the commonest. The lead has also change from unipolar to bipolar in Group II and III. In Group I all the leads was passive fixation but by Group II and III most of leads were active fixation. Minor complications remain stable between 10% to 13%. Commonest complications are mild hematoma followed by pneumothorax and lead dislodgement.

Conclusion: The trend of pacemaker implantation in IJN has shown a steady change over the years with respect to increase number of devices implanted. There is preference for DC PPM over SC PPM with increase use of rate response devices. The trend also shows an increasing the non bradycardia cardiac pacing and multisided pacing. The overall complication is quite low.

FP 1.4 AN AUDIT OF PATIENT SAFETY AND COMPLICATIONS OF STRESS ECHOCARDIOGRAPHY SUPERVISED BY A CARDIOVASCULAR TECHNOLOGIST

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Background: Stress echocardiography is a recognized method of risk stratification for patients presenting with coronary artery disease. In IJN, we perform more than 1000 cases of stress echocardiography in a year. This audit was done to evaluate the side effects of stress echocardiography.

Methods: The two methods of stress echocardiography performed in IJN is exercise treadmill echocardiography(SE) and dobutamine stress echocardiography (DSE). SE is performed using the Bruce Protocol with echocardiography images obtained at rest during the pre-test period and immediately at post exercise within 15 seconds upon termination of exercise. As for DSE, intravenous dobutamine is infused at 5, 10, 20 and 40 mcg with atropine administration if target heart rate was not achieved. Side effects were tabulated.

Results: 1001 patients were enrolled from the IJN stress echocardiography service. 71% (710/1001) was for SE with 29% (291/1001) DSE. The average age was 56 +/- 9 for SE and 60 +/- 10 for DSE. More males had SE (78%) and there was a more equal distribution for gender in the DSE group (M:F, 48%:52%). The most common mild side effect was nausea and vomiting and this occurred in <0.01% (2/710) with SE and DSE (3/291) respectively. Major complications occurred in 0.01% (6/710) in SE and 0.06% (18/291) with DSE. Arrhythmia was the most common major complication: 5/790 (<0.01%) in SE vs 10/291 (0.03%) in DSE of which all are supraventricular in origin. Chest pain occurred in 5 patients (0.01%) in the DSE group and 1 patient in the SE. 1 patient in the DSE group was hospitalised with chest pain. Hypotension occurred in 3/291 (0.01%) in the DSE group and none in the SE group.

Conclusion: Complications are rare with stress echocardiography. There was more complications with DSE compared to SE. Hospitalization rates are also low. We concluded that Stress Echocardiography is safe to be performed and supervised by Cardiovascular Technologist.

FP 1.5 PRESERVATION OF LV SYNCHRONY: CONSIDERATION IN PEDIATRIC PACING

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Objective: The objective of the study is to evaluate the intraventricular (LV) synchrony pattern in children with permanent pacemaker.

Methods: LV synchrony was evaluated in 40 children with complete heart block and life-time pacemaker dependency. Their median age was 7.2 years (range 0.1 – 18.0) and all has had a minimum of 1 year post pacemaker implantation follow-up. Nineteen had epicardial LV apical pacing, 13 had RV apical (8 epicardial and 5 endocardial) pacing and the remaining 8 had endocardial Septal pacing. The lead location was confirmed by x-ray and ECG imaging. Echocardiography and velocity vector imaging (VVI) were performed (Sequoia, Siemens Medical Solutions, Mountain View, CA) to evaluate the LV synchrony in all patients. Ten normal children were also evaluated as control.

Results: LV apical paced is superior to RV septal and RV apical paced children in term of LV synchrony. The mean intraventricular mechanical delay by short axis of LV apical, RV septal and RV apical pacing were 43 ± 10 msec vs 47 ± 13 msec vs 47 ± 14 msec. Whilst the mean Septal to posterior wall motion delay were: 37 ± 10 msec vs 43 ± 8 msec vs 48 ± 20 msec. The intraventricular mechanical delay by short axis and septal to posterior wall in control group were 30 ± 10 msec and 29 ± 10 msec respectively.

Conclusions: LV apical pacing is superior to RV septal or RV apical pacing and should be considered the first option in children with life-time pacemaker dependency.

FP 1.6 INDEX OF COMBINED SYSTOLIC AND DIASTOLIC FUNCTION (TEI INDEX) MEASURED BY THE CONVENTIONAL BLOOD-POOL DOPPLER AND TISSUE DOPPLER IMAGING. A COMPARISON OF THE TWO METHODS

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Background: Tei Index is an established measurement to evaluate a patient's cardiac function. It is a combined measure of the systolic and diastolic function of the left ventricle and reflects global left ventricular function. Calculation of Tei index can be done using the conventional blood-pool Doppler or by using tissue Doppler technique (TDI) which has now become available in all echocardiography machines. We want to evaluate and correlate the measurement obtained via the two methods.

Methods: 45 patients from the IJN echocardiography service were enrolled into the study. Patients with significant shunts, severe valvular regurgitation and stenosis, prosthetic valves were excluded. Patients in atrial fibrillation were excluded. Ejection fraction was calculated using the single plane technique and bi-plane Simpsons method if indicated. Tei index via conventional blood-pool Doppler was calculated by PW Doppler of mitral inflow (MCO) and left ventricular outflow tract (LVET). PW TDI was done over the medial mitral annulus at frame rates of > 120. Tei index was calculated using the formula (ICT + IRT) / ET. Measurements were done at a sweep speed of 100cm/s. 3 consecutive cycles were averaged.

Results: Mean ejection fraction was 54% +/- 10%. Mean heart rate was 68 +/- 11 bpm. The mean Tei index obtained via blood pool Doppler was 0.52 +/- 0.13, and the mean Tei index via TDI was 0.53 +/- 0.12. There was very good correlation between the Tei index obtained via conventional and TDI ($r=0.96$, $p<0.01$). There was also good correlation between the measurement of LVET ($r=0.79$, $p<0.01$) and the ICT+IRT measurements ($r=0.74$, $p<0.01$). The measurements were independent of heart rate.

Conclusion: Calculation of Tei index can be done via PW TDI and shows good correlation with the conventional blood pool method. Conventional Doppler method can be difficult due to inadequate 2D image and Doppler tracing. By using the TDI method, the measurements are more robust, done on the same cardiac cycle, cleaner tracing and can be obtained consistently. We concluded that the TDI method is feasible and should be used consistently to calculate the Tei index.

FP 1.7 ACUTE CORONARY SYNDROMES SECONDARY PREVENTION PHARMACOTHERAPY PRESCRIBED AT DISCHARGE: THE FIRST NATIONAL MULTICENTRE PILOT AUDIT

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Background: Secondary prevention pharmacotherapy for Acute Coronary Syndromes (ACS), namely antiplatelets, beta-blockers (BB), HMG-CoA Reductase Inhibitors ('statins') and Angiotensin Converting Enzyme Inhibitors/Angiotensin Receptor Blockers ('ACEI/ARBs'), prescribed at discharge have been shown to improve cardiovascular outcomes.

Objective: To obtain specific information on these medications prescribed at discharge in patients admitted with ACS at different Ministry of Health (MoH) hospitals, in particular between Cardiology Referral Centres (CCs) and non-CCs.

Methods: Patients discharged with a primary diagnosis of ACS between 1st December 2008 until 25th January 2009 were included in this audit. Data obtained from patient case notes, discharge summaries and prescriptions was subsequently analyzed using SPSS version 16.0.

Results: 607 ACS patients from 15 hospitals were enrolled in the audit (24.9% from CCs vs. 75.1% from non-CCs). Ethnic distribution as follows: 62.1% Malay, 17.0% Indian, 15.7% Chinese and 3.0% non-Malay Bumiputera. 72.5% was male; with mean age of 59.34 ± 12.61 and mean BMI of 24.85 ± 5.30 . 34.3% of patients were smokers. 34.3% was diagnosed as STEMI, 32.1% UA, 27.3% NSTEMI and 6.3% were unspecified ACS. 57.5% had hypertension, 45.1% diabetes and 17.6% dyslipidaemia. 69.9% of ACS patients were discharged with double anti-platelet therapy with 90.7% of them from CCs vs. 62.9% from non-CCs ($p<0.01$). Aspirin was commonly prescribed at both CCs and non-CCs (94.0% vs. 89.7% respectively, $p=0.14$). 73.6% were discharged with Beta Blockers with the most prescribed being Metoprolol (46.1%). Statin prescription was common (96.2%) and the most prescribed was Lovastatin (44.2%). ACE-I/ARB prescription was 73.1% (62.3% at CCs vs. 76.8% at non-CCs, $p=0.001$) with the most commonly prescribed being Perindopril and Irbesartan respectively. Mean cost of secondary prevention pharmacotherapy prescribed per patient was $RM187.54 \pm 61.12$ at CCs vs. $RM135.15 \pm 91.77$ at non-CCs ($p<0.01$).

Conclusion: Secondary prevention pharmacotherapy for ACS was commonly prescribed at MoH hospitals, with the most prevalent groups, in order, being Statins, Aspirin, Beta-blockers and ACEI/ARBs. These medications were more commonly prescribed at CCs vs. non-CC MoH hospitals. An annual, national, audit could provide more detailed information on prescription patterns in patients admitted with ACS. (341 words)

FP 2.1

LONG-TERM OUTCOMES IN PATIENT WITH MITRAL STENOSIS TREATED WITH PERCUTANEOUS TRANSVENOUS MITRAL COMMISSUROTOMY

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Background: Rheumatic heart disease is the most common cause of mitral valve stenosis. Percutaneous Transvenous Mitral Commissurotomy (PTMC) for symptomatic mitral valve stenosis is an alternative treatment to surgical commissurotomy and mitral valve replacement. Previous studies have shown excellent short term outcome following PTMC. However, data on the long term clinical outcome of PTMC are still lacking to date.

Objective: The objective of the study was to assess the long term clinical outcome in patients with mitral stenosis after PTMC at University Malaya Medical Centre (UMMC), Kuala Lumpur.

Materials & Methods: This was a retrospective cross-sectional study on long term clinical outcome in 97 patients with mitral stenosis who underwent PTMC at UMMC from 1988 to 1994, using Inoue and Mansfield single and double balloon techniques. The long term clinical outcome was defined as clinical events i.e. life, death, repeat procedure and mitral valve replacement at least ten years post procedure. The data was collected from the medical record and via phone call mainly concentrating on the age, sex, ethnic group, initial post PTMC echocardiogram result and the current health status of the patients.

Results: PTMC was successful in 67 patients (77.0 %) while 20 (23.0 %) failed clinically. The mean age of patients in successful group was 32.68 ± 9.24 years. After a mean follow-up time of 12.53 ± 2.05 years, 66 patients (98.50%) were alive in successful group with most of them in NYHA Class I and II and there was one death (2.9%) due to septicemia secondary to end stage renal failure. Repeat PTMC was done in 5 patients (14.3%) while 7 (10.44%) underwent mitral valve replacement (MVR) surgery. In procedural unsuccessful group, at a mean follow-up time of 12.27 ± 1.79 years, 19 patients (95.0%) were alive, 3 (15.0%) went for repeat the PTMC and 2 (12.5%) went for MVR. There was a significant association between serious clinical events and longer year interval in both groups.

Conclusion: PTMC is a safe and effective procedure and is associated with good long term clinical outcome in patients with rheumatic mitral stenosis.
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FP 2.2

ACCURACY OF NONINVASIVE ESTIMATION OF PULMONARY VASCULAR RESISTANCE

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Background: Pulmonary vascular resistance (PVR) is important haemodynamic parameters that help in the management and decision making of patients with cardiopulmonary disease. The gold standard for measurement of PVR is invasive cardiac catheterization by calculation of transpulmonary pressure gradient to transpulmonary flow ratio. Several studies have looked into noninvasive measurement of PVR by echocardiography.

Objective: This study is aimed to compare the accuracy of different methods used in echocardiography for estimation of PVR compared to invasive catheterization.

Material & Methods: This is a prospective study on 14 patients who are under Penang Cardiology Department follow-up and planned for invasive right heart catheterization. Echocardiogram was done prior to or just after invasive study. Invasive measurements were used for calculation of PVR (in Wood unit) using equation $PVR = (MPAP-PCWP)/CO$. Echocardiography was performed using Philip IE33 ultrasound systems and the following measurements were obtained: by pulsed wave Doppler for right ventricular outflow tract velocity-time-integral (VTIRVOT) (cm); pulmonary systolic flow acceleration time (AT), ejection time (ET), pre-ejection period (PEP) and total systolic time (TT = PEP+ET) [all in (s)], by continuous wave Doppler for peak tricuspid regurgitant velocity (TRV) (m/s) and by tissue doppler imaging for tricuspid annulus systolic velocity (tS) (cm/s). Echocardiography estimation of PVR was calculated using the 3 different methods i.e. ratio of (TRV/ VTIRVOT), function of [(PEP/AT)/TT] and logarithmic of (tS). Linear regression and correlation coefficient for the invasive and noninvasive PVR was analysed using SPSS Program..

Results: As calculated by echocardiography, (TRV/ VTIRVOT) ratio ($r=0.80$, $P < 0.001$) and [(PEP/AT)/TT] function ($r=0.78$, $P=0.001$) correlated well with invasive PVR measurements. Logarithmic (tS) only has moderate correlation ($r=0.545$, $P 0.04$). Using the formula $PVR = 0.16 + (TRV/ VTIRVOT \times 10)$ and $PVR = -0.156 + 1.154 [(PEP/AT)/TT]$ derived by pre-existing studies, a sensitivity of 50-64% and specificity of 100% be calculated for $PVR > 2$, with accuracy between 64-71%.

Conclusions: The ratio of TRV/ VTIRVOT and function of [(PEP/AT)/TT] by echocardiography can be a reliable and accurate non-invasive tool to determine PVR.

FP 2.3 BEDSIDE ECHOCARDIOGRAM USING NOVEL HAND-HELD SCANNER IN CARDIOLOGY

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Background: Hand-held echocardiogram (HHE) refers to small, lightweight ultrasound scanner with 2-dimensional cardiac imaging. Acuson P10 ©Siemens (HHE-P10) is the latest HHE in the market, weighing 725g. It's portability is best suited to supplement bedside clinical examination.

Objective: To compare the accuracy and practicality of using HHE-P10 to conventional clinic-based echocardiography (CBE) in a cardiology setting.

Methodology: Sixty-eight patients from two Malaysian cardiac centers were included; 68% male; mean age 56 year-old. Two echo-trained cardiologists performed HHE-P10 echocardiogram during clinic follow-up and ward-rounds followed by CBE in the same day. Patients were enrolled at the discretion of the cardiologists. Inclusion criteria include evaluation of murmurs, cardiac function, and regional wall motion assessment. All patients underwent history-taking and physical examination prior to scans. Standard parasternal and apical views were performed. The assessment for left ventricular ejection fraction (LVEF) and regional wall motion abnormalities (RWMA) were semi-quantitative by visual estimation. Standard measurements include left atrial antero-posterior diameter (LA AP), LV end-systolic diameter (LVESD), interventricular systolic diameter (IVSD) and LV posterior wall diameter (PWD). These were subsequently measured with CBE by echocardiographers, who were blinded from the HHE-P10 findings. We also documented scan-time for both HHE and CBE and whether any immediate clinical management was initiated after P10-HHE scans, and any relevant misdiagnoses by HHE, but detected by subsequent CBE.

Results: The mean scan time for P10-HHE was 7 minutes vs. 17 minutes with CBE ($p < 0.05$). Measurements of heart chamber dimensions, assessment of LVEF and RWMA were as follow:

Parameters	Correlation coefficients (r)
LA AP	0.82
LVESD	0.91
IVSD	0.92
PWD	0.88
LVEF (LVEF >50% vs. 30-50% vs. <30%)	0.98
RWMA (present vs. absent)	0.92

All p values <0.005

There were instances when P10-HHE findings expedited clinical management decisions, including modification of pharmacotherapy, dose adjustments, or further investigations. However, there were no instances of the P10-HHE scans missing significant findings that were subsequently detected by CBE.

Conclusions: Bedside echocardiogram by cardiologists using the novel handheld scanner has comparable findings to conventional clinic-based echocardiography. The lightweight scanner may provide rapid, safe and reliable information, useful in real-world cardiology practice, both inpatient and outpatient settings.

FP 2.4 AWARENESS AND UNDERSTANDING OF DIASTOLIC HEART FAILURE AMONG DOCTORSSCANNER IN CARDIOLOGY

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Background: Heart failure (HF) is a common medical problem encountered in general practice and is an important cause of hospital admissions. Among patients with HF, as many as 50% have a normal left ventricular ejection fraction. Even though the concept of diastolic heart failure (DHF) is not new, awareness and understanding on this subject may remain uncertain among medical practitioners.

Objective: This study is designed to gauge the awareness and understanding of DHF among doctors.

Materials & Methods: The study was a cross-sectional survey conducted in three hospitals. A questionnaire form was designed and information about the doctors' posting and years of practice were obtained. The following questions were enquired: (1) Have you heard about the term DHF or 'heart failure with normal ejection fraction' (HFNEF), (2) Is DHF due to abnormal left ventricular filling and elevated filling pressures, (3) Is the prevalence of DHF as the cause of HF increases with age, (4) Are the symptoms of DHF similar to those of systolic HF, (5) Criteria in diagnosing DHF include (5.1) Signs or symptoms of HF, (5.2) Normal or mildly abnormal LV systolic function (LVEF >50 percent), (5.3) Evidence of LV diastolic dysfunction via invasive or noninvasive methods. Percentage, cross-tabulations and significant testing with chi-square of each question was analysed using SPSS program.

Results: 121 doctors completed the survey; 64 from medical, 17 from outpatient and 40 from other departments. Their years of practice ranging from 33.0% in year 1, 41.3% between year 2-5, 17.4% between year 6-10 and 8.3% in year >10. Correct response of each question was (1) 88.4% (2) 58.7% (3) 61.2% (4) 33.9% (5.1) 73.6% (5.2) 63.6% (5.3) 79.3%. Medical posting doctors has a significant correct response for Q1 and Q5 ($X^2 < 0.05$). A cross checking for a correct response in Q1 in relation to other questions showed significant differences in the true understanding of DHF: Q2 only 57.9% correct response, Q3 = 59.5%, Q4 = 32.2%, Q5.1 = 71.1%, Q5.2 = 62.8%, Q5.3 = 76% (all with $X^2 < 0.001$).

Conclusions: There is a significant proportion of doctors who are lack of understanding and awareness of diastolic heart failure.

FP 2.5

THE RELATIONSHIP BETWEEN PULMONARY VESSEL CAPACITANCE AND THE SEVERITY OF MITRAL STENOSIS

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Background: Mitral stenosis results in reduction of mitral valve area, causing an obstruction of flow from the left atrium to the left ventricle, eventually, leading to pulmonary hypertension. Pulmonary hypertension, in turn, results in chronic changes to the pulmonary vasculature, that includes fibrosis and thickening, which results in stiffening of pulmonary vessels. Hence, reducing its compliance and capacitance.

Pulmonary vascular capacitance (PVCAP) is a measure of the ability of the pulmonary vessels to dilate during ventricular systole, and recoil during diastole. Hence, a reflection of the workload on the right ventricle.

Several studies have demonstrated that PVCAP is a strong independent predictor of mortality in idiopathic pulmonary hypertension. However, no study has explored the role of PVCAP in predicting the outcome in secondary pulmonary hypertension, especially in patients with mitral stenosis.

Objective: This is a pilot study to determine the relationship between PVCAP and the severity of mitral stenosis, in terms of its echocardiographic and symptomatic severity.

Materials and Methods: Doppler echocardiogram was used for the measurement of PVCAP. We also analyzed patients' medical records to obtain history of admission for symptom of failure, and to update their current medications. Functional status was assessed using Minnesota Heart Failure Questionnaires and 6 minutes hall walk test.

Results: 16 patients with moderate to severe mitral stenosis were enrolled into this study. The mean PVCAP was 2.33 ml/mmHg, the highest being 4.92 ml/mmHg and the lowest 0.71 ml/mmHg. The main finding of this study was the lower the PVCAP, the more severe the mitral stenosis in terms of the mitral valve area and the mean mitral valve gradient. However, there was no association between PVCAP and the severity of symptoms in mitral stenosis.

Conclusion: PVCAP can be another parameter to consider in decision making for intervention in patients with mitral stenosis.

FP 2.6

VISUALIZATION OF LEFT VENTRICULAR THROMBUS WITH CARDIAC MAGNETIC RESONANCE IMAGING IN PATIENTS WITH CORONARY ARTERY DISEASE

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Background: Left ventricular thrombus formation is a common and dangerous complication of coronary artery disease. Transthoracic echocardiography (TTE) is usually an initial diagnostic technique for left ventricular (LV) thrombus detection.

Objective: In this study, we explored the role of cardiac magnetic resonance imaging (CMR) to detect LV thrombi.

Material and method: We reviewed 178 patients (157 males and 21 females, mean age of 53 year-old) with chronic myocardial infarction and ischemic cardiomyopathy who underwent cardiac MRI for assessment of myocardial viability and ventricular function from May 2007 till January 2009 in our hospital. All studies were analyzed for concomitant LV thrombus. The MRI protocol included steady state free precession (SSFP) cine imaging in standard long and short axis views and contrast-enhanced imaging using a late gadolinium hyperenhancement (LGE) pulse sequence with optimized inversion time (TI 180-320 ms) early and late after gadolinium administration.

Results: CMR detected 21 (11.8%) LV thrombi, presenting as black and well demarcated filling defect surrounded by bright contrast-enhanced blood. LV thrombus formation on CMR was associated with lower LV ejection fraction, higher wall motion score index, higher LV end diastolic and end systolic volume as well as the more segments of late gadolinium enhancement especially in left anterior descending coronary artery territory. TTE only detected 13 out of 21 (61.9%) thrombi identified by CMR. CMR was normal in 9 patients with suspected apical thrombus on TTE.

Conclusions: CMR is not only an excellent technique to evaluate myocardial viability and ventricular function in patients with coronary artery disease, but this study also showed that CMR is also more superior than presently used cardiac imaging such as TTE to identify LV thrombus.

FP 2.7 ECHOCARDIOGRAPHY EVALUATION OF DIASTOLIC DYSFUNCTION IN SYSTEMIC HYPERTENSION PATIENTS

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Background: Chronic hypertension with left ventricular hypertrophy (LVH) is one of the major causes of diastolic heart failure. The development of LVH with increase of LV mass is a relatively early response to hypertension due to chronic increase in left ventricular afterload. Echocardiography has become the primary tool for the assessment of diastolic function and left ventricular filling pressure.

Objective: This study looks into the echocardiography characteristic of systemic hypertension patients in relation to diastolic functions and left ventricular mass.

Materials & Methods: Systemic hypertension patients without other medical co-morbid were randomly selected from the hypertension clinic in the outpatient department. A short interview was carried out to assess patient's blood pressure control and presence of heart failure symptoms. Echocardiography was subsequently carried out to measure the following parameters: mitral valve inflow pattern, pulmonary vein inflow pattern, tissue doppler imaging of mitral annulus, left atrial volume index (LAVI), left ventricular mass index (LVMI), interventricular septum thickness (IVSd) and ejection fraction (EF). Diastolic dysfunction is identified and graded according to standard guidelines. Mean calculations and t-test was used for statistical analysis using SPSS program.

Results: Out of 30 patients who are asymptomatic, 22 (73.3%) has evidenced of diastolic dysfunction from echocardiogram (14 with Grade 1, 8 with Grade 2). In patients with diastolic dysfunction, 41% has LVH as defined by LVMI > 114 g/m² (male), > 103 g/m² (female) and 32% has increased LAVI (> 29 ml/m²); as compared to the other 8 patients without diastolic dysfunction (25% and 25% respectively). There is significant difference in IVSd between these 2 groups of patients (1.1 +/- 0.3, 0.9 +/- 0.2) (P = 0.05). However, there is no significant difference between these 2 groups in terms of BP control, age, gender, EF, symptoms and NYHA functional class.

Conclusions: Diastolic dysfunction is common among patients with asymptomatic systemic hypertension. There is significant increase in interventricular septum thickness among these patients.

FP 3.1 CORONARY ARTERY CALCIUM SCORE, AND SELECTED ESTABLISHED CARDIOVASCULAR RISK FACTORS, AS PREDICTORS OF ANATOMICALLY SEVERE CORONARY ARTERY DISEASE - A COMPUTATIONAL MODELING AND DATA MINING APPROACH

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Background: Coronary artery calcium score (CaSc) of the coronary arteries, detected by electronic beam computed tomography (EB-CT) or multidetector-row (MD-CT), is an established screening method to predict cardiovascular events. Established 'cardiovascular risk factors' (eCVRF) are associated with premature plaque development and an increased risk of cardiovascular events. Subclinical plaque development is associated with calcium deposits which is detectable by EB-CT or MD-CT. Anatomically severe coronary artery disease (CAD) patterns demonstrated on conventional coronary angiography (CCA): triple vessel disease or significant stenosis involving the left main stem and proximal left anterior descending artery segments, are associated with a poorer long-term prognosis.

Objective: Explore relationships, provide selected computational models, between CaSc obtained from MD-CT scan and severe CAD, using data mining techniques, and association of CAD with selected eCVRF.

Methods: Separate databases from 484 patients who underwent, sequentially, MD-CT and then CCA, within 1 month between 1/1/2005 till 1/2/2008, at the Department of Cardiology, Sarawak General Hospital, were utilized in this secondary data analysis project. Data mining techniques using Clementine v10.1 and SPSS v15.0 were used. Selected eCVRF were age, male gender, known medical history of hypercholesterolaemia, active smoking, diabetes and hypertension. Relationships between CaSc, eCVRF and presence of anatomically significant CAD were obtained.

Results: ANOVA revealed a relationship between CaSc and severe CAD (p=0.01). Predictive models: patients with a CaSc >999.0 and hypercholesterolaemia have a 73.4% likelihood of having severe CAD; males undergoing MD-CT have 81.0% likelihood of having at least significant single vessel CAD; females undergoing MD-CT with CaSc > 10, who also have diabetes and hypercholesterolemia, have 32.8% likelihood of having at least single vessel CAD. ANOVA also showed a relationship between age and severe CAD (p=0.05). Chi-square test showed significant relationships between gender (male) and severe CAD (p=0.03).

Conclusion: CaSc independently, and with eCVRF, can be used to predict anatomically severe CAD. Predictive models can quantify these risks of detecting severe CAD demonstrated on CCA. (317 words)

FP 3.2

SCREENING DIABETIC PATIENTS FOR ASYMPTOMATIC CAD USING MULTI-DETECTOR COMPUTER TOMOGRAPHY

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Background & Objective: Diabetic patients with coronary artery disease (CAD) may be asymptomatic. Previous studies indicated a high prevalence of silent ischemia suggesting a role for screening. To date, no data exists to prove that screening improves outcome. The aim of our study was to use multi-detector computer tomography (MDCT) to screen for asymptomatic CAD in high risk diabetic patients. Follow up was done to determine if screening affects outcome.

Method: We recruited 134 asymptomatic diabetic patients with at least 1 additional risk factor (hypertension, smoking, dyslipidaemia, family history). Presence of CAD was defined as presence of ≥ 1 lesion with $\geq 25\%$ stenosis. Significant CAD was defined as presence of ≥ 1 lesion with $\geq 50\%$ stenosis. Patients with significant CAD were offered exercise tolerance testing (ETT). Subjects screened were followed up for events (new onset angina, unstable angina, NSTEMI, AMI, CVA, TIA, claudication, heart failure).

Results: 34 (25.4%) of 134 subjects had CAD. Of these, 20 (67.6%) had significant disease, 14 (32.4%) had involvement of >1 vessel and 12 (35.3%) involved the left main stem or proximal left anterior descending artery. Patients with CAD are more likely to be older, males, active smokers, have dyslipidaemia, and had longer diabetes duration (all $P < 0.01$). They also had higher calcium scores. Blood pressures, pulse wave velocities, visceral and subcutaneous adiposity were not statistically different between those with and those without CAD. Mean follow-up was 31.2 ± 4.8 months. Of 13 subjects who underwent ETT, 7 had positive tests with 3 eventually undergoing invasive coronary angiography (ICA). There were 5 events (1 AMI, 1 unstable angina, 3 new onset angina). Overall, 8 patients (5.9%) underwent ICA. Of these, 4 had single vessel CAD ($\geq 50\%$ stenosis), 2 had double vessel CAD, 1 had minor ($< 25\%$) disease, and one was normal. 3 patients underwent PCI. There was no death, CVA, TIA, heart failure or CABG. Abnormal scans and high calcium scores were associated with subsequent events.

Conclusion: We observed a high prevalence of asymptomatic CAD in high-risk diabetic patients. Screening with MDCT is useful and may help us risk stratify patients to predict risks of future events. (350 words)

FP 3.3

CARDIAC TROPONIN I IN ACUTE CORONARY SYNDROME: THE IMPLICATION ON DIAGNOSIS OF ACUTE MYOCARDIAL INFARCTION

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Background: Cardiac troponins have been regarded as the preferred biomarkers in acute coronary syndrome (ACS). The absolute cardiospecificity of cardiac troponin T (cTnT) has been challenged, with studies documenting expression of cTnT in condition other than myocardial infarction (MI). On the other hand, cardiac troponin I (cTnI) has been shown to be 100% tissue specific.

Objective: To assess the diagnostic value of cTnI in patients with suspected ACS admitted to Coronary Care Unit and Cardiac Rehabilitation Ward, UKMMC. We also sought to compare the specificity and sensitivity of ARCHITECT STAT Troponin I assay and troponin T assay in diagnosing AMI as well as to assess the clinical performance of troponin I in early diagnosis of AMI compare to troponin T.

Material and Methods: A cross sectional, prospective and observational study was conducted involving patients admitted with acute coronary syndrome to CCU and CRW, UKMMC. Exclusion criteria included those with sepsis, pulmonary embolism and concurrent acute heart failure. measurement of cTnI and cTnT levels were performed on samples withdrawn upon presentation and at 6-9 hours after admission

Results: Of 73 patients included in the study, 22(30.1%) and 21(28.8%) were diagnosed to have STEMI and NSTEMI respectively on admission. Receiver operating characteristic (ROC) curve analysis for detection of myocardial injury on admission gave area-under-curve (AUC) values of 0.903 ± 0.035 (0.834 - 0.972, CI 95%) and 0.783 ± 0.056 (0.678 - 0.889, CI 95%) for the TnI and TnT respectively. Corresponding values based on the 6-9 hour blood-sampling period were 0.981 ± 0.013 (0.957 - 1.006, CI 95%) and 0.935 ± 0.028 (0.881 - 0.990, CI 95%) for the TnI and TnT respectively. At a cutoff value of 0.014 ng/ml, TnI assay from the admission samples had 100% specificity and positive predictive value (PPV), with 85% sensitivity and 59.09% negative predictive value (NPV). Meanwhile, TnT value of >0.1 ng/ml had 100% specificity and 43.3% sensitivity (PPV of 100% and NPV of 27%). For the assay on samples taken 6-9 hours after the presentation, TnI assay with cutoff value of 0.014 ng/ml demonstrated 100% specificity and PPV, with 94% sensitivity and 76.4% NPV. On the other hand, the cTnT assay showed specificity and PPV of 100% with 76.7% sensitivity and 48% NPV. Of those AMI patients who presented within 6 hours of symptom onset, 81.3% were identified by TnI assay at the time of presentation, compared with 15.6% by TnT assay ($p < 0.05$).

Conclusion: We conclude that cardiac TnI was significantly more sensitive with high positive predictive value than TnT for detection of myocardial infarction. TnI assay can be used to diagnose AMI in patient presented within 6 hours of symptom onset.

FP 3.4

COMPLIANCE TO DUAL ANTIPLATELET AGENT THERAPY AFTER DRUG ELUTING STENT IMPLANTATION - A SINGLE CENTER EXPERIENCE

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Background: Using drug eluting stents(DES) in coronary angioplasty reduces the incidence of in-stent restenosis and hence repeat revascularization compared with bare metal stents (BMS). DES implantation however is associated with increased incidence of late stent thrombosis(LST), a potentially fatal complication. Studies have shown LST to be strongly related to premature cessation of dual antiplatelet therapy. International cardiology bodies including the American College of Cardiology (ACC) now recommend at least 1 year of dual antiplatelet agent after DES implantation.

Objective: This primary objective of this study is to examine the proportion of patients in our local hospital with DES implanted in year 2007 that adhered to 1 year of dual antiplatelet therapy. Reasons of premature cessation were enquired. The secondary objectives are to look at the survival and the incidence of myocardial infarction and bleeding 1 year post DES implantation.

Method: Adherence to antiplatelet therapy and incidence of bleeding, myocardial infarct and death is determined by direct patient (or family member in the event of deceased) enquiry through phone contact. Details of the percutaneous angioplasty, stent usage and patient baseline clinical characteristics are obtained from the National Cardiovascular Database. (NCVD).

Results: We identified 139 patients who had DES implanted in our hospital in 2007. Only 77 patients (55.4%) are contactable. Of these, all patients except 1 completed 1 year of aspirin treatment. 46 patients (60%) received clopidogrel treatment for 1 year. 8 of the patients who prematurely ceased clopidogrel (n=30) took ticlopidine as substitute. For those that did not complete 1 year of dual antiplatelet agents(n=22, 28.6%), the reasons given were financial difficulties (n=6), physician's decision (n=9), unaware of instruction (n=5) and complications due to medication (n=2).

1 patient died of myocardial infarct 2 months after the index PCI. Another patient died of colonic carcinoma. Both patients were adherent to dual antiplatelet therapy. There were 2 patients who had minor bleed and 1 patient experienced major bleed.

Conclusion: A significant proportion (28.6%) of patients did not have 1 year of dual antiplatelet therapy after DES implantation based on our single centre experience. However, lack of dual antiplatelet therapy did not result in myocardial infarction or death in our investigation.

FP 3.5

PERCUTANEOUS CORONARY INTERVENTION WITH OFFSITE CARDIOTHORACIC BACKUP

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Background: Interventional cardiology services develop alongside with cardiothoracic services. Both services complement each others in advanced cardiology treatment and management. Cardiothoracic services are regarded as essential in the high risk cases and in supporting the management of complication arising from interventional procedures.

Objective: To assess the safety in performing percutaneous coronary intervention (PCI) in the absence of cardiothoracic backup.

Materials and Methods: Patients were selected from those underwent percutaneous coronary intervention at Hospital Sultanah Bahiyah. Since the infrastructure for interventional cardiology is ready since the opening of Hospital Sultanah Bahiyah from August 2007 and with the availability of human resources, the interventional services are offered to patients from Kedah, Perlis and Kelantan.

Results: There are about 700 cases of coronary angiogram performed from the beginning of the cardiology services at Hospital Sultanah Bahiyah from December 2007. There were 121 patients underwent PCI from March 2008 until January 2009. Predominant cases were elective PCI which constitutes 108 of the cases and the remaining were emergency cases. Death from the elective PCI cases was none. From 13 cases of emergency PCI, death was recorded in 9 of the patients (69%). Indications of emergency PCI were usually among those with cardiogenic shock especially those did not respond to inotropic therapy.

Conclusion: Interventional cardiology services with offsite cardiothoracic backup are safe especially in the elective cases. The selection of patients should be done carefully to avoid the need for emergency coronary bypass surgery. Location of lesion intervened is also important to avoid complications.

FP 3.6

A STUDY ON PATIENTS UNDERGOING CORONARY ANGIOGRAM IN HUSM CARDIOLOGY UNIT : RELATIONSHIP OF AN ANKLE BRACHIAL PRESSURE INDEX (ABI) WITH SEVERITY OF CORONARY ANGIOGRAPHY FINDINGS

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Background: Population based studies has shown that a low Ankle Brachial Pressure Index (ABI) is a consistent indicator of future mortality and cardiovascular disease.

Objective: The objectives of this study was to determine the association between low ABI (ABI < 0.9) with the presence of angiographically documented coronary heart disease (CHD) in patients who undergo coronary angiogram in Hospital Universiti Sains Malaysia, Kelantan. This study would also compare the mean difference of the ABI for the different severity of the coronary angiographic findings.

Materials & Methods: We examined 120 patients who was referred for coronary angiogram for first time. Their ABI was obtained before they undergo coronary angiogram. Association of low ABI with angiographically proven CHD was examined using chi square test and Fischer exact test. The difference in mean of ABI values between different group of CHD severity was examined using ANOVA.

Results: Of 120 subjects recruited with mean age of 55.8 (± 9.7) years, 43 (35.8%) had no significant coronary obstruction, 20 (16.7%) had 1 vessel disease, 27 (22.5%) had 2 vessel disease, 27 (22.5%) had 3 vessel disease and 3 (2.5%) had left main stem (LMS) disease. 7 (16%) of the subjects with no significant coronary obstruction and 21 (27%) of the subjects with significant coronary obstruction have low ABI. There was no significant association between low ABI and the presence of angiographically documented CHD ($p = 0.187$). However, the mean ABI value in subjects with 2 vessel disease (0.857 ± 0.193) and 3 vessel /LMS disease (0.849 ± 0.203) were significantly lower compared to subjects with no significant obstruction (1.059 ± 0.122) ($p < 0.001$ for both respectively) and compared to subjects with 1 vessel disease (1.021 ± 0.171) ($p = 0.017$ and 0.008 respectively).

Conclusions: Low ABI was not associated with the presence of angiographically documented CHD in our study population. However, the mean ABI values for patients with multi vessel / LMS disease were significantly lower compared to patients with no significant obstruction or single vessel disease and were below the normal range. The ABI examination may be used as an adjunct tool to predict the severity of CHD.

FP 3.7

PACLITAXEL-ELUTING BALLOON AND BIOENGINEERED PROGENITOR CELL-ATTRACTING STAINLESS STEEL STENT IN TREATMENT OF CORONARY ARTERY STENOSIS: A POST - MARKETING SURVEILLANCE REGISTRY (POTENT) - PRELIMINARY RESULTS

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Background: Contemporary treatment for occlusive coronary artery disease (CAD) includes percutaneous coronary intervention (PCI) using stents. Bare metal stents are associated with significant restenosis, while drug-eluting stents are associated with potentially life-threatening stent thrombosis. Paclitaxel-eluting angioplasty balloons (PEBs) and bioengineered progenitor cell-attracting stainless steel stents (BPSs) are now available to improve outcomes post-PCI.

Objective: To assess clinical outcomes using a unique PEB-BPS strategy in PCI to treat CAD.

Methodology: Consecutive patients requiring PCI providing written consent were enrolled into this Registry at a single centre between 4/12/2008 and 23/1/2009. Clinical and angiographic data was obtained; procedural, in-hospital and 30-day major adverse cardiovascular events outcomes (MACE) were measured. 'Sequent Please' PEB (BBraun) and 'Genous' BPS (Orbus Neich) were used.

Results: 20 patients were enrolled into this Registry. 100% patients were successfully followed-up at 30 days. >99% data fields were complete. Mean age was 56.4 ± 8.7 years; 25% were Malay, 40% non-Malay Bumiputera and 35% Chinese ethnic origin; 80% were elective admissions, 20% were acute admissions with myocardial infarction (MI); 25% were current, and 60% former smokers; 65% had hypertension, 65% dyslipidemia and 40% diabetes. Patients had a mean weight of 68.0 ± 17.1 kg; mean serum cholesterol 4.53 ± 1.35 mmol/l; mean left ventricular ejection fraction 52.7 ± 13.7 %; 20% had elevated Troponin T, 85% had NTproBNP >125pg/ml pre-PCI. All patients had Aspirin and Clopidogrel pre-loading. 75% of patients had PCI via radial artery; 6Fr guiding catheters used in all cases; mean fluoroscopy time was 19.6 ± 12.0 minutes. 50% patients had single vessel disease. 45% lesions were located in the proximal- and mid-left anterior descending artery segments; 70% lesions were Type B2/C; degree of stenosis 91.1 ± 7.9 %; lesion length 15.6 ± 6.3 mm. Altogether, 23 PEB and 25 BPS were used for 22 index lesions. Additionally, 18 other angioplasty balloons were utilized during the procedures (61% for pre-dilatation). Mean PEB dimensions were 2.71 ± 0.36 mm by 20.04 ± 5.26 mm; Mean BPS dimensions were 3.10 ± 0.33 mm by 16.96 ± 5.25 mm; final BPS diameter was 3.29 ± 0.45 mm. No significant procedural complications except non-flow limiting dissection noted in 3 patients. No in-hospital MACE was recorded. No 30-day MACE was recorded.

Conclusion: At 30-day follow-up, the PEB-BPS strategy for PCI is safe and effective in treatment of CAD.

FP 4.1

PREVALENCE OF ERECTILE DYSFUNCTION IN MEN WITH HEART FAILURE AND ITS ASSOCIATIONS AND IMPLICATIONS

Ramesh Singh Veriah, Sim Hui Wen, Lim Kim Meng, Muhammad Athar Sadiq, Low Wai Yun, Dinesh Singh Veriah, James Koh, Soraya Kunanayagam, Chee Kok Han, Chong Wei Peng, Imran Zainal Abidin, Wan Azman Wan Ahmad. *University Malaya Medical Centre, Kuala Lumpur*

Background: Heart failure (HF) and erectile dysfunction (ED) are disorders that frequently occur concomitantly and are thought to be closely related. Data pertaining the impact of ED in HF patients and its appropriate management are still lacking.

Objective: This study aims to establish an association between HF and ED.

Material & Methods: 123 men with HF were consecutively recruited from the cardiology clinic, University Malaya Medical Center, Kuala Lumpur, Malaysia from January 2007 to June 2007. The IIEF-5 questionnaire was used for assessment of ED. Patients were categorized into 3 groups according to ED severity: (1) Mild and No ED (2) Moderate ED and (3) Severe ED. Significant ED is classified as patients having moderate or severe ED. The New York Heart Association (NYHA) classification and echocardiographic left ventricular ejection fraction (LVEF) were documented.

Results: The prevalence of significant ED was 71.5%. There was a significant association between worsening NYHA class and increasing ED severity ($p < 0.01$). The prevalence of significant ED in patients with NYHA class I and class II was 65.3% and 75.6% respectively. All patients with NYHA class III had significant ED. There was also a significant association between patients with poorer LVEF and increasing ED severity ($p < 0.001$). The mean LVEF in patients with mild and no ED was 40.6%, whereas patients with moderate ED had a mean LVEF of 26.7% and those with severe ED only 16.9%. Interestingly, we were unable to recruit any NYHA class IV patients as their breathlessness was very severe and they were mostly admitted.

Conclusions: ED is highly prevalent in HF patients with 7 out of 10 among them warranting treatment. It is well documented that HF patients have compromised quality of life and the presence of ED further contribute towards it. This extra burden worsens morbidity and possibly mortality. This study has shown that the more symptomatic the HF, the worse of the severity of ED. Further studies are needed to assess the usefulness and safety of phosphodiesterase type 5 (PDE-5) inhibitors in these groups of patients.

FP 4.2

INCIDENCE OF ANAEMIA, CHRONIC KIDNEY DISEASE AND CARDIOVASCULAR RISK FACTORS IN HEART FAILURE PATIENTS

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Background: Heart failure is an increasingly common condition reported worldwide and accounting for about 10 percent of hospital admission in Malaysia. It has been documented that the existence of chronic heart failure with evidence of anaemia and chronic kidney disease is associated with increase morbidity and mortality and this is known as the cardio-renal-anaemia (CRA) syndrome.

Objectives: We aim to identify the incidence of anaemia and chronic kidney disease in patients with heart failure along with their cardiovascular risk factors and socio-demographic characteristics.

Materials & Methods: 61 patients admitted for heart failure were recruited from the cardiology ward, University Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia, from October 2008 to December 2008. The cardiovascular risk factors, previous history of heart failure, chest radiograph findings, electrocardiogram (ECG) findings and relevant blood indices were documented.

Results: Most patients are in the range of 60-69 years of age and 54% were women. Fifty-one percent of subjects were anaemic. Ethnic distribution is 38% Indians, 31% Malays, 30% Chinese and 1% others. Thirty-nine percent of patients admitted had newly diagnosed heart failure. Of the total number of patients, 41% had a previous history of coronary artery disease while 10% had a history of cerebral vascular disease. Eighty percent of subjects had hypertension, while 67% had diabetes and 49% hyperlipidemia. Thirty-three percent were currently smoking. Admitting ECG revealed evidence of ischemia or prior myocardial infarction in 41% of patients. Ninety percent of subjects had evidence of pulmonary congestion on chest radiograph. Chronic kidney disease was reported in 32% of subjects.

Conclusion: Anaemia is a common condition seen in heart failure patients. In addition, a third of these patients have evidence of chronic kidney disease which warrant further investigation and aggressive intervention as worsening kidney disease will eventually give rise to greater morbidity and mortality in heart failure patients.

FP 4.3

IMPACT OF BETA BLOCKERS IN PATIENTS WITH HEART FAILURE, ERECTILE DYSFUNCTION AND DEPRESSION

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Background: Heart failure (HF) and erectile dysfunction (ED) are two highly prevalent disorders. Both these disorders are closely linked and are also associated with depression. Beta blockers are clearly indicated in HF and there are concerns that this group of drugs may worsen ED and depression. However, the effect of beta blockers on ED and depression is still not well established.

Objective: This study aims to establish an association between the impact of beta blockers on ED and depression in HF patients.

Material & Methods: A total of 123 men with HF were consecutively recruited from the cardiology clinic, University Malaya Medical Center (UMMC), Kuala Lumpur, Malaysia from January 2007 to June 2007. Among the indices used were the IIEF-5 questionnaire for the assessment of ED, Mini International Neuropsychiatric Interview (MINI) rating scale and the Montgomery-Åsberg Depression Rating Scale (MADRS) for the assessment of depression. Beta blockers studied include atenolol, metoprolol, carvedilol and bisoprolol.

Results: A total of 80.5% of studied patients were on any one type of beta blocker. In the beta blocker group, 73.7% had significant ED (moderate or severe ED) whereas only 62.5% of patients in the non-beta blocker group reported significant ED. However, there was no significant association between patients with or without beta blockers with regards to significant ED ($p > 0.05$). Only 66 out of 123 patients were assessed for depression of which 9 patients (13.6%) had depression. Of these 9 patients, 6 patients were on a beta blocker. Data did not support any significant association between beta blockers and depression ($p > 0.05$).

Conclusions: From this study, it is shown that the use of beta blockers did not contribute towards ED or the incidence of depression. Therefore, beta blockers should not be withheld in HF patients for fear of developing or worsening of ED and depression. Further large scale studies are needed to establish an association between this group of patients.

FP 4.4

THE USE OF CARDIOPROTECTIVE AND CONTROL OF CARDIOVASCULAR RISK FACTORS IN ADVANCED CHRONIC KIDNEY DISEASE PATIENTS. AN AUDIT STUDY IN SINGLE CENTRE NEPHROLOGY UNIT

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Background: Cardiovascular disease (CVD) is major cause of mortality and morbidity in chronic kidney disease (CKD) population. CVD risk increases from 3-4 fold in early CKD to 17 fold in advanced CKD and 20 fold increase in dialysis population. The control cardiovascular risk factors such as hypertension, diabetes hyperlipidemia is paramount important. Angiotensin-converting enzymes inhibitors (ACEIs), β -Adrenergic blockers, acetylsalicylic acid (ASA) and 3-methylglutaryl coenzyme A reductase inhibitors (statins) all have been shown to reduce cardiovascular disease mortality in normal renal function. But the extent to which these medications are prescribed are not well demonstrated in advanced chronic kidney disease.

Material and Methods: The study was a cross sectional observational study looking at the use of these cardioprotective medications, the control of cardiovascular risk factors and the use of anti hypertensive medications in advanced chronic kidney disease patients.

Eighty two patients with creatinine clearance less 30 ml/min/1.73 m² from predialysis clinic were included in this study from September to November during routine predialysis clinic follow up. Patients with history of cardiovascular disease (CVD), cerebral vascular accident (CVA), contraindications to medications were excluded.

Results: Fifty were male (61%) and Thirty two were females (39%). Mean age was 58.64 ± 9.73 . Mean creatinine clearance was 14.64 ± 3.82 ml/min. Mean serum creatinine was 380.29 ± 102.40 μ mol/l. The aetiology of chronic kidney disease were predominantly Diabetes 54 (65.9%), unknown cause 13 (15.8%), HPT 7 (8.5%), Glomerulonephritis 2 (2.4%) others 5 (7.4%). Mean total cholesterol 4.76 ± 1.21 . Mean Fasting blood glucose 7.65 ± 3.04 mmol/l. Seventy four (90.2%) patients were hypertensive. Mean systolic blood pressure 137.19 ± 16.24 and mean diastolic pressure 80.87 ± 9.0 mmHg. Thirty four (45%) patients had blood pressure more than 140/90 mmHg. Fifty eight (78.4%) required at least 2 or more anti hypertensive medications. Calcium channel based combination remained the anti hypertensive of choice in 62 (75.6%). Forty seven patients (57.3%) were prescribed B-blockers, ACEIs or ARB in 32 (39.0%) patients with mean potassium was 4.68 ± 0.65 mmol/l. Forty one patients (50%) were prescribed statins, Aspirin 37 (42.7%). There was no significant difference between diabetes and non diabetes in prescribing cardioprotective medications.

Conclusion: Despite the high risk of cardiovascular disease in advanced chronic kidney disease the use of cardioprotective medications remained relatively low even in diabetic patients and the control of cardiovascular risk factors were still suboptimal. Given the burden of cardiovascular disease in CKD, increase use of statins and β blockers should be considered and ACEIs or ARB can still be used with minimum risk of hyperkalaemia.

FP 4.5 DEMOGRAPHIC DIFFERENCES OF FEMALE PATIENTS PRESENTING FOR EXERCISE STRESS TESTING

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Background: Exercise stress testing (EST) is the most common used non-invasive screening modality for the detection of coronary artery disease (CAD). Electrocardiographic ST segment depression is the most reliable marker eliciting ischemia during EST but it lacks sensitivity and specificity among women. Thus obtaining a valid result during EST in this group remains a challenge.

Objective: We aim to identify demographic differences in female patients.

Materials & Methods: This is a prospective ongoing study of 159 female patients (41 Malays, 73 Chinese, 45 Indians) who were subjected to EST from August 2008 to January 2009 using the Bruce protocol. Results were classified as positive, negative or inconclusive.

Results: The Chinese patients were older (mean age 57.3 ± 9.4) as compared to Indians (54.2 ± 11.8) and Malays (51.7 ± 9.5). There is a significant association between diabetes and ethnicity in which Indians have the highest prevalence as compared to Malays and Chinese (48.9% vs. 29.3% vs. 23.3%; $\chi^2=8.6, df=2, p=0.014$). More Chinese patients have hypertension (57.5% vs. 48.8% vs. 44.4%) and hyperlipidemia (63.0% vs. 53.7% vs 57.8%) as compared to the Malays and Indians. Chinese patients were least overweight (BMI 23.4 ± 3.6) as compared to the Malays ($27.8 \pm 6.6, p < 0.001$) and Indians ($27.8 \pm 4.9, p < 0.001$). Positive EST reporting was highest in the Chinese group (27.4%) compared to Indians (15.6%) and Malays (14.6%).

Conclusions: This study has identified a low prevalence of positive exercise stress testing pick up rate among women despite the presence of risk factors for CAD leading to an even lower true positive pick up rate. Therefore, should we subject women to another test with better sensitivity and specificity. The higher prevalence of positive EST in Chinese women is thought to be due to the presence of hypertension and hyperlipidemia in this study despite this ethnicity being slightly older. Further large scale studies are needed to identify if the above findings are due to hereditary variations among different ethnic groups.

FP 4.6 EVALUATION ON WARFARINISED PATIENTS' OUTCOME ON TARGET INR ACHIEVED, KNOWLEDGE AND COMPLIANCE IN MALAYSIAN GOVERNMENT HOSPITALS

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Background: Warfarin, a narrow therapeutic drug is the most commonly used oral anticoagulant in Malaysia. It requires individualized dosing and intensive laboratory monitoring. Over the years efforts have been taken to educate patient on warfarin therapy in an attempt to improve their compliance and help them to achieve their INR target.

Objective: To study the percentage of warfarinised patients who achieved the targeted INR values. In addition, their knowledge and compliance were evaluated. These objectives were conducted at 6 hospitals throughout Malaysia with two different setting, MTAC and warfarin counseling.

Methods: An observation, cross sectional study was done in January 2009. Patients' INR records were reviewed and the four latest INR values were evaluated. Patients were also interviewed on their knowledge on warfarin therapy and their level of compliance.

Results: A total of 259 patients from all the hospitals were recruited (87.6% MTAC). 54.6% were male with mean age of 58.07 ± 13.88 . Ethnic distribution as follows: 38.6% Malay, 37.1% Chinese, 12.4% Bumiputera (Sabah and Sarawak) and 10% Indian. 70.2% of them were diagnosed of AF. The percentage of patients who achieved their target INR range were 49.3% for MTAC patients and 45.3% for non-MTAC patients respectively ($p < 0.001$). Based on the expanded target INR range 70.2% of the MTAC patients fall within the range compared to only 45.3% for non-MTAC patients ($p < 0.0001$). Generally more than 70% of the patients were able to answer all the questions on warfarin therapy except for INR and side effects. Overall 81.8% patients were compliant based on Morisky Score.

Conclusion: Patient under MTAC tends to fall within range more than non-MTAC patients. Patient education on INR target, side effects and compliance should be emphasized at the point of counseling.

FP 4.7

ASSESSING A CARDIAC INR CLINIC PERFORMANCE WITH OUTCOME MEASURES AND ADVERSE EVENTS

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Background: The prevalence for oral vitamin K antagonist(VKA) warfarin use is increasing as the population increases or ages with the benefit of stroke risk reduction but accompanying risk of bleeding.

Objective:

- To evaluate a cardiac INR clinic with diverse ethnicity background using 4 INR clinic outcome measure parameters.
- To evaluate the incidence of bleeding and serious adverse events(SAE) and possible association with warfarin use.

Materials & Methods: A single center non-randomised observational analytical cross-sectional study of 360 consecutive patients attending the cardiac INR clinic. 3 main outcome measures recommended by the British Committee for Standards in Hematology(BCSH) ie mean INR, proportion of tests within therapeutic range(PoT), point prevalence (PP) and other minor outcome measure- mean warfarin dose were used. Major and minor bleeding and SAEs were documented with recall experiences.

Results: There were 186(51.7%) males with mean age of 54 years (range 15-89). They consisted of 41.1% Malay, 36.1% Chinese and 21.4% non-Malay Bumiputera. Only 3.1% had university education and 74.7% came from lower socioeconomic group. Warfarin was indicated for mechanical prosthetic valve(38.1%), non-valvular atrial fibrillation(AF) (33.9%) and mitral stenosis(MS) with AF(15.8%). Among the non-valvular AF subgroup, 46% with CHADS score > 1 were on warfarin. Mean INR 2.4+/-0.3, PoT 31.3+/-14.2%, mean warfarin dose 2.9+/-1.1mg and PP 34.5% (95% CI 23.7-54.3%). 26(6.4%) and 156(43.3%) patients recalled having experienced at least one episode of major and minor bleeding respectively. The most common minor bleeding was skin bruising (23.3%). 46(16%) developed SAEs-(5% ischemic stroke and 0.6% hemorrhagic stroke).

Conclusion: Bleeding events were relatively frequent with almost half of the patients having some bleeding episodes especially minor bleeding. Mean warfarin dose could be affected by the intended target INR and ethnicity and mean INR by extreme values. The PoT and PP were generally below recommended 60%. Perhaps PoT and PP truly reflected the subaverage performance of the INR clinic and might explain the relatively high frequency of bleeding and SAE. This would also become benchmark reference for future INR clinic audit and better clinical governance in Malaysia.

FP 5.1

PULMONARY EMBOLISM: A COMPARISON OF DIAGNOSTIC VALUE BETWEEN SGH CRITERIA AND MODIFIED WELLS CRITERIA

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Background: The limited availability of current diagnostic standards (MSCT pulmonary angiography and ventilation perfusion scan) complicates the management of patients presented with suspected acute PE. Acute PE has variable and non-specific clinical presentations but could have serious complications, or be fatal.

Objective: The purpose of this study was to evaluate the diagnostic value of SGH criteria as compared to Modified Wells criteria in assisting the diagnosis of acute pulmonary embolism (PE).

Methodology: We examined a cohort of 360 patients evaluated for pulmonary embolism in a tertiary hospital from January 2006 till December 2008. Patient demographic and clinical data were used to calculate the pretest probability for acute pulmonary embolism using modified Wells Criteria and SGH Criteria. 68 patients with suspected acute pulmonary embolism were successfully enrolled.

Results: The pretest probability using Modified Wells criteria and SGH criteria was 63% and 79% respectively for likely PE; 57% and 70% respectively for unlikely PE. Wells and SGH criteria have sensitivity of 66.67% and 78.95% respectively; specificity of 56.67% and 75.00% respectively. The negative predictive value for SGH criteria was higher as compared to Modified Wells criteria (84.00% and 70.83%, $p < 0.001$). Correlation for SGH and Modified Wells criteria with CT proven PE were 0.378 ($P = 0.006$) and 0.201 ($P = 0.154$).

Conclusion: With the combination of our clinical model and investigational data, SGH criteria was shown to be more sensitive and specific than Modified Wells criteria in prediction of acute PE. In addition, SGH criteria had a higher negative predictive value than Modified Wells criteria. SGH criteria correlated better with CT proven PE.

FP 5.2

DETECTION OF LEFT VENTRICULAR DYSFUNCTION BASED ON SELF REPORTING OF FUNCTIONAL STATUS BY PATIENTS AFTER PERMANENT PACEMAKER IMPLANTATION

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Background: Permanent pacemaker (PPM) implantation may lead to left ventricular (LV) dysfunction. Echocardiography during PPM follow-up is not routinely done. It may be indicated in some patients depending on functional capacity.

Objective: To evaluate the ability of self reported functional capacity to detect LV dysfunction post PPM implantation.

Method: 43 patients (mean age 63.8±15.8 yrs, 95% in NYHA Class I or II, 84% Single Chamber Pacing) from the Pacemaker Clinic between 23/9/08 and 3/2/09 were enrolled. They all underwent a clinical examination and functional capacity assessment using the Veterans Specific Activity Questionnaire (VSAQ) followed by echocardiography. LV ejection fraction (EF) was assessed using the modified Simpson's method. In addition, we looked for evidence of diastolic dysfunction (DD) using standard echocardiographic parameters such as the isovolumic relaxation time, deceleration time, E/A ratio, E' velocity, E/E' ratio and LA volume index. We also looked for valve abnormalities and calculated the total valvular abnormality (TVD) using a score of 1 for mild disease, 2 for moderate and 3 for severe. Pearson correlation and paired T test were used for data analysis.

Results: Our study population had a mean EF of 55±10%. 88% had ≥2 features of DD. 74% had a TVD score of at least 1. There was a non-statistically significant trend towards lower functional capacity based on VSAQ with increasing DD features (p=0.051) in particular with ≥2 DD features (p=0.061). Functional capacity was significantly correlated to the TVD score (p=0.03).

Conclusion: Self reported decreased functional capacity may indicate LV diastolic dysfunction and valvular incompetence in stable PPM patients. VSAQ may be a useful screening tool to decide which patients should undergo echocardiography.

FP 5.3

INITIAL EXPERIENCE OF FIRST CARDIAC ELECTROPHYSIOLOGY SERVICE BY THE MINISTRY OF HEALTH, MALAYSIA

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Background: Cardiac electrophysiology service has only recently been offered by the Ministry of Health at Hospital Serdang, Selangor.

Objective: We report our initial experience and short term outcome.

Materials & Methods: We reviewed all consecutive patients from 23rd October 2008 to 12th February 2009 who underwent cardiac electrophysiology study with a view to radiofrequency ablation. All patients required documented narrow complex tachycardia which could be terminated abruptly with vagal manoeuvres or with AV nodal blocking agents.

Results: Radiofrequency ablation was performed in all 16 cases (mean and median age 40yrs; range 22-70yrs, 9 female and 7 male). Among the patients, 11 were Malay, four were Chinese while one was of Indian origin. AV node reentrant tachycardia (AVNRT) was diagnosed in 9 patients, whereas AV reentrant tachycardia (AVRT) was diagnosed in 7 patients including 6 patients who had overt preexcitation. Of the patients with AVRT, three had left-sided accessory pathways which were approached transseptally. Acute success was achieved in 15 of 16 patients. One patient who had initial acute success required a repeat procedure due to early recurrence of arrhythmia. No acute complications were observed.

Conclusions: Our initial experience of the cardiac electrophysiology service has been encouraging with favourable success rates and no acute complications.

FP 5.4 CENTRAL AORTIC PULSE WAVE ANALYSIS AMONG OFFSPRING OF PATIENTS WITH HIGH CARDIOVASCULAR RISK AND SYMPTOMATIC CORONARY ARTERY DISEASE

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Introduction: Arterial stiffness determined by central aortic pressure indices such as augmentation pressure, augmentation index and central pulse pressure has been shown to be associated with the risk and severity of atherosclerosis in patients with coronary artery disease (CAD). However, arterial stiffness among the offspring of high risk and symptomatic CAD patients has not been previously evaluated.

Objective: To determine arterial stiffness using a non-invasive assessment of central aortic pulse wave among the offspring of patients with high risk and symptomatic CAD.

Methodology and Results: We studied a total of 203 individuals. Central aortic wave analysis was quantified non-invasively using a commercially available applanation tonometry. Their mean age was 21.1 ± 1.2 years. 49.5% were male. 20.6% of their parents were known to have CAD, 41.1% had diabetes mellitus, 37.9% had high LDL cholesterol, 48.1% were hypertensive and 20.6% had more than 3 risk factors. However, none of the study subjects had any of these risk factors. The mean β 12312augmentation pressure (AP) for those with and without family history of CAD was 10.9 ± 4.6 mmHg and 4.5 ± 3.8 mmHg respectively, $p < 0.0001$. The mean augmentation indices (Alx) were 22.3 ± 4.8 mmHg and 6.1 ± 3.6 mmHg respectively, $p < 0.0001$. After normalization of heart rate at 75 bpm (Alx@75) the difference remains significant ($p < 0.0001$). There were no significant differences in central aortic pressure indices between individuals with and without family histories of hypertension and diabetes. However, one way Anova testing showed $p = 0.001$, $p = 0.002$ and $p = 0.04$ for AP, Alx and Alx@75 respectively if their parents had more than 3 cardiovascular risk factors.

Conclusions: The offspring of patients with coronary artery disease and high cardiovascular risk factors were found to have early abnormalities in arterial stiffness determined non-invasively using measurements of central aortic pulse pressure indices. Hence, non-invasive assessment of arterial stiffness might be useful to detect early atherosclerosis and to risk stratify these individuals.

FP 5.5 EFFECT OF TRANSCORONARY ABLATION OF SEPTAL HYPERTROPHY ON SYSTOLIC AND DIASTOLIC FUNCTION

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Background: Transcoronary ablation of septal hypertrophy (TASH) induces a controlled septal infarction to reduce the high left ventricular outflow tract gradient (LVOT) and systolic anterior motion (SAM) of the mitral valve in hypertrophic obstructive cardiomyopathy (HOCM). The long term effect of TASH on systolic and diastolic function remained unknown.

Methods: From 2005 to 2009, 14 patients underwent TASH for symptomatic hypertrophic obstructive cardiomyopathy. Alcohol was injected into the septal perforator(s) to cause myocardial stunning and infarction. Systolic and diastolic function were assessed with echocardiography before and after the procedure and on every follow up over a 5 year period.

Results: Mean age was 38.6 ± 17.2 years; 72% man. 3 patients had ICD due to high risk of sudden cardiac death and 2 patients had atrial fibrillation. Maximum septal wall thickness was 3.8 cm. The systolic function as determined by ejection fraction had a non significant drop soon after procedure ($p: 0.70$). On long term follow up, there were no significant changes to systolic function. There were also no significant changes to diastolic function. The left ventricular size and volume were preserved. There were no admissions for heart failure in the same period.

Conclusion: TASH is efficacious in relieving symptoms and LVOT gradient. It did not worsen systolic and diastolic function to cause congestive cardiac failure over long term follow up.

FP 5.6 ADHERENCE LEVEL AMONG CARDIAC PATIENTS BY USING SELF-REPORTED MORISKY SCORE AT SARAWAK GENERAL HOSPITAL: A SINGLE CENTRE EXPERIENCE

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Background: Compliance or adherence to cardiovascular medicines has often been debated due to an increasing number of evidence based medicines for treatment of coronary heart diseases. Compliance influenced by many barriers and the environments in which patients live, and health-delivery care system.

Objective: The aim of our study was to evaluate adherence level among coronary heart disease (CAD) patients that follow-up at our hospital using self-reported Morisky tool. The second objective was to identify patients' characteristic from the highest risk of noncompliance.

Materials and Methods: Selection of participant is based on convenience sampling method. Sixty three patients (mean age 54.5 + 13.5) with at least 3 months on treatment for heart disease from cardiac clinic were consented and agreed to be interviewed. Quality of life tool with visual analog scale and Morisky scale were applied in the questionnaire. We analyzed compliance, medications, patient's backgrounds, and quality of life outcomes.

Results: Using Self-Reported Morisky Scale, 44.4% patients in the study had scored the highest compliance level. 52.3% of patients were moderate score, and 3.20% were non-compliant patients. Forgetfulness (47.6%) and carelessness (27.0%) are the main barriers in non-compliance. High compliance rate were found to those were found to have a formal educational background 80% (n=36). Elderly aged (81%) between 60-79 years old, and female (84%) have scored the highest compliance level. In addition, having more than 5 medications per day 87% (n=19) were more comply compare to those who having less than 5 medication per day 60% (n=24). Poor quality of life score ($p < 0.05$) have significant correlation with adherence ($r = -0.278$) to treatment.

Conclusion: Compliant level among CAD patients still very low. Incidences of non-adherence among cardiac patients are frequently happen may due to patient's attitude and perception of their health related outcomes.

FP 5.7 QUALITATIVE ANALYSIS OF THE ETHNIC DIFFERENCES IN PATIENT PERCEPTIONS OF HEART FAILURE MANAGEMENT

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Background: Heart failure (HF) or HF symptom related admission is prevalent in Malaysia. There are established differences in cardiovascular disease in different racial groups. However, no study was done to closely examine if ethnicity could be a characteristic that potentially influence medication and treatment adherence.

Objective: To explore the health beliefs, attitudes, practices, and social relationships of HF management among patients readmitted into cardiology ward and to investigate the hypothesis that ethnic groups would have different perceptions of HF and its treatments.

Methods: A qualitative approach was used. A purposive sample of readmitted Malay, Chinese and Indian patients with HF was interviewed using a semi-structured interview guide. Patients were identified by cardiologists as having symptomatic HF (New York Heart Association functional class of II, III, or IV).

Results: Common coping styles and emotional experiences of HF included hopelessness and despair, and reliance on family as a means of support. More Malay patients were less aware of their primary diagnosis of HF. All races felt that HF were severe and affect their daily lives yet exude desire to be healthy. Many were taking their drugs because their doctors told them to and the positive response from medication. Patients stated that they did not have enough information about their drug. Among study participants, regardless of races, all preferred to be treated by physicians as they suffered badly after trying traditional methods of healing. Participants connected knowledge of their illness and their symptoms with their medication's effectiveness in reducing these symptoms. Connection to health care provider and family enhanced treatment adherence. Common barriers to HF care included poor knowledge of HF, poor physician-patient relations, dietary changes and fluid restriction.

Conclusions: The recruitment, retention, and adherence of multiethnic patients to HF management are affected by an array of psychosocial and socio-cultural factors. Interventions might be improved by offering participants accurate and detailed information about heart failure, particular symptoms and how medications help them. Regardless how short the duration is, a positive relationship with the healthcare provider may result in improved adherence.