YIA 1

IMPACT OF MYOCARDIAL VIABILITY ASSESSMENT WITH CMR ON MANAGEMENT STRATEGY AND 5 YEARS OUTCOME IN PATIENTS WITH TRIPLE VESSEL DISEASE AND IMPAIRED LV FUNCTION

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Background: Patients with dysfunctional but viable myocardium benefit from myocardial revascularisation while revascularising non-viable myocardium is unlikely to derive prognostic benefit and subject patients to unnecessary procedural risks. The impact of cardiac magnetic resonance imaging (CMR) to guide revascularisation strategy, utilizing coronary types surgery (CABS), percutaneous coronary intervention (PCI), or medical therapy only (MT), in patients with triple vessel disease (TVD) and significant left ventricular dysfunction (LVD) was not established.

Study Objectives: To compare the rates of management strategies (CABS vs PCI vs MT) in patients undergoing CMR before revascularisation, against those who did not, and their survival outcomes at 1 year.

Method: Patients with non-left main TVD and significant LVD (defined as LV ejection fraction <40%) and no significant valve disease, diagnosed by coronary angiography between 2004 and 2009 at Sarawak General Hospital were enrolled. Patients were grouped into CMR and non-CMR arms. The rates of CABS, PCI, and MT, and 1-year survival outcomes were compared between the groups.

Results: 34 patients were enrolled into the CMR group, and 32 patients into the non-CMR group.

Mean age was 57.75 ± 10.14 and 57.19 ± 10.32 years in the CMR and non-CMR groups respectively (p = 0.7).

There were no significant differences between both groups in baseline clinical, ischaemic, and echocardiographic characteristics. Among patients who underwent CMR, 50% were treated with CABS, 17% PCI and 33% medical therapy, compared to the non-CMR group, with 53% treated with CABS, 22% PCI and 15% medical therapy. Overall, 1-year survival was 96% and 94% in the CMR and non-CMR groups respectively (p = 0.6).

Conclusions: While CABS remained the predominant treatment strategy for patients with TVD and significant LVD, the addition of CMR to guide revascularisation strategy resulted in a 20% reduction in CABS, and a 3-fold increase in MT, with no significant difference in survival outcomes between the 2 cohorts in subsets of CABS (p = 0.041), PCI (p = 0.482) and MT (p = 0.411).

YIA 2

PERCUTANEOUS TRANSESTER MIRAL VALVE COMMISSUROLYSIS: PAST 20 YEARS EXPERIENCE OF OVER 1800 PATIENTS IN AN ASIAN HEART CENTRE

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Background: Mitral valve stenosis(MVS) is characterized by the narrowing of the mitral valve, with stenosis causing the commissure cause. While the incidence of rheumatic fever has decreased in developed countries, the occurrence in developing countries remains substantial. As such, Percutaneous Transcatheter Balloon Mitral Commisurotomy (PTMC) to treat MVS remains an important treatment in many Asian heart centers.

Objectives: We reviewed our experience of performing PTMC in National Heart Institute Malaysia for the past 20 years.

Methodology: A retrospective cohort study. Data was reviewed and collected from 1014 patients who underwent PTMC in National Heart Institute hospital from 1990 to 2010.

Results: PTMC was performed in 1514 patients between 1990 to 2010. The mean age was 30.8 ± 11.9 years. Mean Wilkins score was 7 ± 4. Females made up 1960.78.6%, with 7.9% being pregnant at time of procedure. 3% had previous surgical valve replacement and 4% had previous PTMC, 38.7% had co-existing hear failure. Immediate success was achieved in 97.5% of patients. 362.2% had complications with 9 deaths. Mean mitral valve area calculated by echocardiogram Pressure Half Time improved from 0.6 ± 0.7 to 1.5 ± 0.4 (p < 0.001). Mean Diastolic Pressure time was 15.7 ± 11.9 and post was 1.2 ± 4.4 mmHg (p < 0.001). At 1 year follow up, 80% were free from repeat procedure.

Conclusions: PTMC remains a routine procedure in our heart centre with high immediate success and good long term results.

YIA 3

ECHOCARDIOGRAPHIC INDICES FOR RIGHT VENTRICULAR (RV) ASSESSMENT IN PATIENTS WITH POST TETRALOGY OF FALLOT (TOF) REPAIR WITH FREE FLOW PULMONARY REGANULATION (PAS): A COMPARISON STUDY WITH CARDIAC MAGNETIC RESONANCE (CMR)

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Background: Long standing free flow Pulmonary Reguration (PR) in post Tetralogy of Fallo (TOF) repair patients will cause Right Ventricular (RV) dilatation and dysfunction. Cardiac Magnetic Resonance (CMR) is the current accepted standard for RV function assessment. Automated Function Imaging (AFI) based on 2D speckle strain, new echocardiographic indices is a validated tool for the assessment of LV function, LVM quantification and global RV function and strain.

Objectives: To assess RV systolic function in patients post TOF repair with free PR using the echocardiographic parameters and to correlate the findings with CMR indices and New York Heart Association (NYHA) Functional Class.

Methods: 18 patients post TOF repair and free flow PR were retrospectively reviewed. Mean age was 27.8 ± 15.7 years and mean duration post TOF repair was 17.4 ± 8.8 years. RV AFI, other RV parameters, LV AFI were compared to CMR RV and LV indices and NYHA Functional Class.

Results: CMR LV Ejection Fraction (EF) correlated with RV AFI (r = 0.245), echocardiographic indices correlate with CMR RV EF as follows: RV isorotomic Acceleration slope (iV) (r = 0.251), Pulse Wave Phase Doppler Imaging x (PW PDI x) (r = 0.043), RV index of Myocardial Performance (RIMP) (r = 0.227), TAPSE (r = 0.07), RV Functional Area Change (RV FAC) (r = 0.095), Color TDI based RV wall peak e (r = Color TDI e) (r = -0.023), and RV Systolic Wall Longitudinal Peak Strain by Doppler (RVPLSD) (r = 0.013), with CMR End Diastolic Volume (EDV) index as follows TAPSE (r = 0.213), PW PDI x (r = 0.182), RIMP (r = 0.119), RVPLSD (r = 0.116), Color TDI e (r = 0.085), RV FAC (r = 0.042), RV FAC (r = 0.085), with NYHA Functional Class in as follows PW PDI x (r = 0.229), Color TDI e (r = 0.129), TAPSE (r = 0.083), RV FAC (r = 0.085), RV FAC (r = 0.085), RV FAC (r = 0.085), RV FAC (r = 0.085), RV FAC (r = 0.085).

Conclusions: Echo RV TAPSE correlated with CMR RV EDV index with statistically significant (p = 0.024). There appears to be a correlation trend between CMR RV indices to other echo indices RV AFI, PW PDI x, RIMP, RV FAC although statistically not significant. There may be potential use of these echo indices in severe monitoring of RV function in this group of patient. However more studies with larger number of patients are needed.
Abstracts

National Heart Association of Malaysia

YIA 5

LONG TERM SURVIVAL RATE POST ELECTRICAL STORM IN PATIENT IMPLANTED WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATOR (ICD)


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Background: Implantable Cardioverter Defibrillator (ICD) is highly effective in prevention of life threatening ventricular arrhythmias. Approximately 52% - 70% of patient treated with an ICD received appropriate device based therapy within the first 2 years. Some patient may need more than one therapy in short period of time to treat ventricular tachyarrhythmias. This condition calls electrical storm. This study may lead to high mortality for these patients.

Objective: To determine the impact of electrical storm (ES) on overall mortality. To evaluate Electrical storm survival rate in ischaemic and non ischaemic group.

Methodology: This retrospective analysis of UN cohort consisting of 697 patients who treated with ICD from 1998 to Nov 2010 for various indications. Electrical Storm is defined as ventricular tachycardia or fibrillation resulting in device intervention ≥2 times during a single 24h period. There are 578 patients (82%) from (ischaemic) group compared to a total of 119 patients (18%) who experienced a total of 247 episodes of ES (median 2 ES per patient, range 1-18 ES/patient). This group then divided into ischaemic, non-ischaemic patients (59.0%) and Non-technical Heart Disease (NTHD) patients (40.9%) median duration for the first 6 ES occurrence was 470 days (min 1-18, max 603 days) with median follow-up of 823 days (range 189-1969 days).

Result: ES occurred in 109 patients (15.6%). IS/male group has higher mortality (59.4%/C 1.44-4.0, p<0.01/HR 2.09) compared to NTHD/patient group.

There is no significant different in survival rate for ischaemic and non-ischaemic Heart Disease at 10 years follow up.

Conclusion: ES is an independent predictor of mortality. Mortality rate is higher with Holter rate ≥ 2.09 for the IC patients who experience ES. Electrical Storm may reflect a serious underlying heart disease.

O1

PULMONARY VEIN ISOLATION WITH A MULTIELECTRODE ABLATION CATHETER USING DUTY-CYCLIC BIPOLAR AND UNIPOLAR RADIOFREQUENCY ENERGY

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Background: Traditional coronary catheter ablation of atrial fibrillation (AF) requires long procedure times and high level of operator skill. A novel multielectrode catheter (PVI, Atritech, France) combining circumferential mapping and dual splined bipolar and unipolar radiofrequency energy delivery has been developed to map and ablate the pulmonary vein orificer.

Objectives: The aim of this study was to evaluate the efficacy of PVI for pulmonary vein isolation in paroxysmal AF ablation. A brief overview of this unit in Asia

Methodology: A prospective observational study with historical control group. 50 consecutive patients with paroxysmal AF who had failed at least 1 anti-arrhythmic drug and eligible for catheter ablation were included in the study. AF pulmonary veins were isolated and confirmed absence of pulmonary vein with PVI. At months and 12 months, 45 hours follow up monitoring was performed to determine freedom of AF. 26 consecutive patients with paroxysmal AF who underwent catheter ablation using a conventional method (ES) were included in the historical control group.

Result: All patients had abnormally normal hearts with mean duration of AF of 4.7±4.65 years. The mean procedure time was 107.2 ± 21.4 minutes compared to historical control using ES method of 202.6 ± 71.1 minutes. Mean fluoroscopy time was 29.4 ± 12.2 minutes compared to 73.4 ± 20.8 minutes with ES method. Mean number of RF applications were 27.7 ± 13.8 minutes. The mean follow up duration was 23 ± 4.9 months. After AF ablation with PVI 26 patients completed 6 months follow up and 25 patients (96.2%) were in sinus rhythm. No procedure related complications was observed.

Conclusion: A novel method of pulmonary vein isolation using the PVI system has a success rate of about 70% with the first ablation, with procedure times and fluoroscopy times significantly shorter than conventional technique. It is also safe.

O2

CARDIAC RESYNCHRONIZATION THERAPY WITH OR WITHOUT DEFIBRILLATOR IN HEART FAILURE PATIENTS WITH NARROW QRS AND ITS IMPACT ON MORTALITY

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Introduction: Cardiac resynchronization therapy (CRT) are restricted to heart failure patients with a QRS >120ms. Implantable Cardioverter Defibrillator (ICD) is indicated for heart failure (HF) patients with left ventricular dysfunction (LV dysfunction). Without CRT, HF patients with narrow QRS <120ms may pursue from risk of sudden cardiac death (SCD) but not from HF. Unfortunately, CRT devices are expensive.

Aim: The aim of this study was to evaluate if implanting a CRT-p would be just as effective as CRT-p 0 in patients with narrow QRS complex < 120ms.

Method: 98 heart failure patients with narrow QRS < 120ms. 47 (48.5%) had CRT-p (defibrillation) while 52 (51.5%) had CRT-p (pacing) implanted.

Time to first anticoagulation therapy (AHT) or defibrillation (shock) confirmed as appropriate ICD intervention was evaluated to determine the prevalence of ventricular tachyarrhythmias.

The overall survival rate and left ventricular function were evaluated to assess the effectiveness of CRT.

Result: CRT-p group: 42 male (85.4%), 28 ischemic (57.9%), mean age 51.7 ± 12.9 years, mean follow-up 22.4 ± 14.4 months. 13 patients had appropriate ICD therapy (27.3 %, p = 0.008 vs ischemic (92.2%)). CRT-p group: 53 male (86.6%), 21 ischemic (40.4%), mean age 62.1 ± 14.8 years, mean follow-up 18.8 ± 29.6 months. All cause mortality, 14 deaths, 7 in each group (7.1% vs 0.009, CRT-p, 0.003 vs ischemic (22.9%). LV function at baseline and 12months: EF from 25 ± 6.5% to 32.9 ± 8% (p < 0.009). LVEF from 51.7 ± 6.9% to 53.2 ± 0.0% (p < 0.009).

Conclusion: CRT-p is beneficial in heart failure patients with narrow QRS <120ms and LV dysfunction. CRT-p did not demonstrate a better survival than CRT-p even with the potential to reduce the sudden arrhythmic death rate. CRT-p may possibly be more cost effective than just an ICD therapy with poor EF > 35%.

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Cardiac Event Rate in Brugada Patients

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Background: ICD implantation can prevent sudden cardiac death (SCD) in Brugada patients. However, selecting patient to receive an ICD for primary prevention is challenging. ICD implantation also carries some risks, including inappropriate shocks.

Objectives: The aims of this study: (1) To evaluate the incidence of VT as surrogate endpoint for SCD in Brugada patients implanted with ICD. (2) To evaluate the mean duration to the first appropriate shock. (3) To evaluate the incidence of inappropriate shock.

Methodology: Retrospective analysis from the registry of 29 ICD implantations for Brugada patients over the past 16 years in UK, categorized into 3 groups of patients: 1. Asymptomatic (n=7), 2. Syncope (n=11), and 3. Those with documented VT/ VF or survivors of resuscitated SCD (n=11).

Results: During mean follow-up time 53.6 months, mean (16) months, none of group 1 died-related cardiac event. 1 patient in group 2 (9%) developed VF and got inappropriate shock. 10 patients in documented VT/VF or resuscitated group (8.3%) had VF and inappropriate shock. 1 patient in asymptomatic group had inappropriate shock.

Conclusion: Although the number of patient is small but with good duration of follow up, this study demonstrated that the risk of SCD is low in asymptomatic Brugada patients. This will help physician to stratify Brugada patients better.

Cardiac Event Rate in Hypertrophic Cardiomyopathy Patients

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Background: ICD implantation can prevent sudden cardiac death (SCD) in high risk hypertrophic cardiomyopathy (HCM) patient. However, selecting patient to receive an ICD for primary prevention is challenging. ICD implantation also carries some risks.

Objectives: The aims of this study: (1) To evaluate the incidence of VT. (2) To evaluate the mean duration to the first appropriate shock. (3) To evaluate the incidence of inappropriate shock.

Methodology: Retrospective analysis from the registry of ICD implantations for 51 HCM patients over the past 10 years in UK with primary preventions (group 1) and secondary preventions (group 2).

Results: Mean follow up duration time in group 1: 44.3 ± 20.9 months, 6 patients developed VT with appropriate shock (17%), mean duration time to first shock: 34.7 ± 22.0 months. 2 patients developed electrical storm (5.8%). In group 2 with follow up duration: 36.4 ± 23.8 months, 5 patients developed VT with appropriate shock (10%), mean duration time to first shock: 37.0 ± 20.8 months. 5 patients developed electrical storm (15%). No patient developed VF.

Conclusion: Although the number of patient is rather small but with good follow up duration, the study demonstrated high incidence of VT in HCM patients even in primary prevention. Secondary group has higher incidence and shorter duration time to develop event.

Microvascular Reactivity, Arterial Stiffness and Biochemical Markers in Women with Gestational Diabetes

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Background: Diabetes is associated with impaired vascular function. Gestational diabetes (GDM) is a condition with transient impairment of glucose tolerance. However, women have increased risk of developing diabetes later in life. It is currently not known if impairment in microvascular function and increased arterial stiffness also occurs in GDM.

Objectives: The study aims to compare microvascular reactivity, arterial stiffness, inflammatory and metabolic markers between gestational diabetes mellitus (GDM) and age and gestational age (GA) matched pregnant controls.

Methodology: This cross sectional study involved 21 pregnant women with GDM and 27 pregnant controls without GDM in their early third trimester of pregnancy. GDM was diagnosed if fasting blood glucose (FBG) > 100 mg/dL and/or 2-hour post-glucose intake > 140 mg/dL. Arterial stiffness was assessed using pulse wave analysis and pulse wave velocity (PWV). Laser doppler fluxmetry and post-constriction skin reactive hyperemia (PRH) were used to assess microvascular reactivity. Bloods were taken for tumor necrosis factor (TNF-α), high sensitivity CRP, plasminogen activator inhibitor type 1 (PAI-1), hBA, and insulin levels. Insulin sensitivity was determined by homeostasis model assessment of insulin resistance index (HOMA-IR).

Results: Mean age of subjects were 32 ± 7.6 years. There were no significant differences between GDM and controls in their age, GA, BP, serum total cholesterol and hBA. FBG and 2-hour post-glucose levels were higher in GDM (3.9±0.3 vs 5.0±0.3 mmol/L, 7.7±0.2 vs 8.0±0.2 mmol/L, p<0.05). GDM has higher baseline TNF-α, PAI-1 and hBA levels. Baseline skin perfusion, and maximum change in perfusion with PRH were not significantly different between groups. However, time to reach peak perfusion post-constriction was significantly lower in GDM compared to controls. PAI-1 and arterial augmentation index were not different between the groups. Fasting insulin was lower in women with insulin sensitivity lower in GDM.

Conclusion: Time to reach peak perfusion with skin PRH is longer in GDM indicating impaired microvascular function. This is associated with higher insulin levels and lower insulin sensitivity, higher blood TNF-α, PAI-1 and hBA compared to controls.
TICLOSPERONE TICLOSPERONE MIXED-FRACTION SUPPLEMENTATION HAS NEUTRAL EFFECT ON INFARCTION IN ESTABLISHED Atherosclerotic

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Background: This study investigated the effects of ticlosporine on atherosclerotic lesions in atherosclerotic rabbits. Experimental animals received ticlosporine for 8 weeks to determine the effect on atherosclerotic lesion area.

Methods: Nineteen male New Zealand rabbits were divided into two groups, with one group receiving ticlosporine for 8 weeks and the other group serving as a control. Atherosclerotic lesions were evaluated using histological staining techniques.

Results: The atherosclerotic lesions in the ticlosporine group were smaller than those in the control group. The results suggest that ticlosporine has a neutral effect on atherosclerotic lesions.

Conclusions: Ticlosporine supplementation has a neutral effect on atherosclerotic lesions in rabbits.

MARKERS OF INFLAMMATION, ENDOLIMINAL DYSFUNCTION AND PLATELET ACTIVATION IN ACUTE CORONARY SYNDROME, AND THEIR RELATIONSHIP WITH CONVENTIONAL CARDIOVASCULAR RISK FACTORS

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Background: The identification of markers of inflammation, endoluminal dysfunction, and platelet activation in acute coronary syndrome is important for improving the management of this condition.

Methods: A prospective study was conducted to assess the relationship between these markers and conventional cardiovascular risk factors in patients with acute coronary syndrome.

Results: The study found that the markers of inflammation, endoluminal dysfunction, and platelet activation were significantly associated with conventional cardiovascular risk factors, providing insights into the pathophysiology of acute coronary syndrome.

Conclusions: Further research is needed to explore the implications of these findings for the management of acute coronary syndrome.

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Abstracts

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O11

HOME-BASED ADVANCE CARE PROGRAM IS EFFECTIVE IN REDUCING HEALTHCARE UTILIZATION OF END STAGE FAILURE PATIENTS

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Background: Chronic heart failure (CHF) is associated with high morbidity and mortality. In and stage HF not eligible for destination mechanical assist device or heart transplant, palliative care within a chronic disease management programme serves to maximize symptom control and quality of life.

Aims: To evaluate the impact of home-based advance palliative care programme (ACP) on healthcare utilization in end stage HF patients.

Methods: Prospectively collected registry data on all end stage HF recruited into ACP between July 2008 and July 2010 was analyzed. Chart reviews were conducted on heart failure database and hospital electronic records. Relevant phone interviews and home visits done by ACP team were used to complete the dataset. HF and all cause hospitalizations were defined as events. Standard statistical analysis was employed.

Results: Forty-four patients, mean age 79.3yrs, 39% men, were followed up 158.4months. 51% had diabetes, 66% hypertension, 60% ischemic heart disease, 36% atrial fibrillation, 60% chronic kidney disease, and 32% had stroke. All but two were in functional class III and IV at enrolment. Laboratory tests showed mean sodium 130.6 mmol/l, creatinine 166.2 (120 mmol/l), and hemoglobin 11.9 g/dl. 39% were on long-term, and mean time to death from ACP recruitment was 5.6 months. Mean all causes and cause specific hospitalisations were 2.8 and 2.6 per patient before enrolment, but improved to 1.0 and 0.6 per patient after recruitment to ACP. 39 (71%) patients experienced reduced number of hospitalization, while 2 (4%) had more frequent admissions. While only the surviving patients were considered (n=14), 10 (71%) and 9 (64%) experienced reduced HF hospitalisations (<1.0 per patient) and all cause hospitalisations (<2.0 per patient) respectively, in mean follow up duration of 18 months.

Conclusion: Home-based advance care program is effective in reducing healthcare utilization of end stage heart failure patients, primarily by reducing heart failure hospitalizations.

O13

ROLE OF ENDOTHELIN-CONVERTING ENZYME-1 INHIBITION IN PULMONARY VEIN REMODLING DURING DEVELOPMENT OF SECONDARY PULMONARY HYPERTENSION

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Background: Pulmonary arterial hypertension (PAH) is characterized by an elevation of pulmonary venous pressure which can progress to right-sided heart failure. PAH is a progressive disease, with a mortality rate of 15-55% per year. It is a rare disease, and its incidence is estimated to be 0.05-0.12 per 10,000 population.

Aims: To evaluate the role of endogenous eNOS in the development of pulmonary vascular remodeling.

Methods: Endothelin-1 (ET-1) is a potent vasoconstrictor, which is thought to play a role in the pathogenesis of pulmonary hypertension. We assessed the role of endogenous eNOS in the development of pulmonary vascular remodeling.

Results: In acute experiments, ET-1 induced vasoconstriction, which was significantly reduced by the eNOS inhibitor L-NNAME. The in vivo experiments showed that ET-1-induced vasoconstriction was reversibly inhibited by L-NNAME.

Conclusion: Endogenous eNOS plays a crucial role in the development of pulmonary vascular remodeling.

O14

ENDOTHELIAL CELL-DERIVED ENDOTHELIN-1 CONTRIBUTES TO PULMONARY VASCULAR REMODELING IN MICE MODEL OF PULMONARY FIBROSIS

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Background: Pulmonary fibrosis (PF) is a devastating disease that can progress to the development of secondary pulmonary hypertension (PH). The main pathogenic feature of chronic PF is pulmonary vascular remodeling, which is also observed in PF. Endothelin-1 (ET-1) has been implicated as an important mediator in the progression of PF and subsequent pulmonary vascular remodeling in the lung. ET-1 is mainly released from endothelial cells as well as epithelial and vascular smooth muscle cells.

Objectives: We hypothesized that endothelial cell-derived ET-1 contributes to pulmonary vascular remodeling in PF.

Methods: We generated an intratracheal bleomycin-induced model of pulmonary fibrosis in mice. We assessed pulmonary vascular remodeling using morphometric analysis of smooth muscle actin (SMA) (a pulmonary vascular medial collagen deposition in pulmonary arterioles). We also assessed pulmonary vascular remodeling in the lungs of mice treated with ET-1 receptor antagonist.

Results: Endothelial cell-derived ET-1 contributed to pulmonary vascular remodeling in PF.

Conclusion: Endothelial cell-derived ET-1 contributes to pulmonary vascular remodeling in PF.

O16

EFFECT OF HYPERTENSION AND ITS REVERSE ON SERUM NEUTRAL OXIDE CONCENTRATION AND VASCULAR PERMEABILITY IN TWO KIDNEY ONE CLIP HYPERTENSION RATS

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Background and Objectives: Hypertension is associated with vascular abnormalities. The aim of this study was to evaluate the effect of hypertension and its reverse on serum nitric oxide (NO) concentration and vascular permeability in two-kidney one-clip (2K1C) hypertensive rats.

Methods: 24 male rats were divided into groups: 2K1C for 12 weeks; (a) sham-operated for 12 weeks, (b) 2K1C for 12 weeks, (c) sham-operated for 12 weeks, and (d) 2K1C for 12 weeks. Blood samples were taken before experiment. 12h and 24h after (g) a group of 3-4 rats. Coronary and aorta vascular permeability were determined by extravasation of Evans blue dye method.

Results: Serum NO level was significantly lower in hypertensive group compared with norma rats (4.7±1.3 μg/ml vs 4.1±1.3 μg/ml, p<0.05). Reduced blood NO level improved serum NO concentration in 2K1C group (4.7±1.3 μg/ml vs 4.3±1.4 μg/ml, p<0.05). Coronary vascular and aortic vascular permeability were determined by extravasation of Evans blue dye method.

Conclusion: Lower serum NO concentration in 2K1C hypertensive rats even after reversal of hypertension suggested that in addition to NO, other mechanisms could be involved in surgical reversal of hypertension and its reverse didn't change vascular permeability at least in this model of hypertension.

Keywords: Hypertension, two kidney one clip, NO, Endothelium, Permeability

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Q20

OSTEOPOROSIS RISK LEVELS PREDICT MORTALITY IN SYMPTOMATIC AORTIC STENOSIS

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Background: Osteoporosis (OPG) is a member of the tumer necrosis factor super family with antagonistic effects on bone metabolism, bone turnover and the immune system. It could therefore be involved in the progression of aortic stenosis (AS)

Objective: The aim of the present study was to examine the relationship between OGP and measures of AS and heart failure, and to explore the prognostic value of elevated OGP levels in relation to all-cause mortality.

Methodology: We studied plasma OGP levels in 140 patients evaluated for aortic valve surgery due to symptomatic severe AS and in 20 age- and sex-matched healthy controls as well as the relationship of OGP to transaortic gradients, valve area, valve dilatation (backscattered analysis) and measures of heart failure. Finally, we assessed the prognostic value of elevated plasma OGP in relation to all-cause mortality in these patients.

Results: OGP was significantly increased in patients with symptomatic AS compared with controls. Elevated OGP was strongly correlated with degree of AS but was associated with increased backscattered measurements and deteriorating cardiac function. Furthermore, OGP was predictive of all-cause mortality in patients with symptomatic AS independent of conventional risk markers. The strongest risk prediction was obtained by using a combination of high OGP and high left-heart pro-brain natural peptide (NT-proBNP), suggesting that these markers may reflect distinct pathways in the development and progression of AS.

Conclusion: Circulating OGP is increased in patients with severe symptomatic aortic stenosis, reflects impaired myocardial function, and is a strong predictor of all-cause mortality alone and in combination with NT-proBNP.

Q21

PRIVILEGE OF PREEMINENT CARDIOLOGIST IN UNIVERSITY MALAYSIA MEDICAL CENTER, TEN YEARS' EXPERIENCE

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Introduction: Peripatetic cardiology (PPCM) is an uncommon form of congenital heart failure afflicting obstetric patients around the time of delivery. It is defined as (i) development of cardiac failure in the last month of pregnancy or within 5 months after delivery, (ii) absence of a demonstrable cause for the cardiac failure, (iii) absence of demonstrable heart disease before the last month of pregnancy, and (iv) documented systolic dysfunction. Prevalence of this condition is largely unknown in Asia-Pacific region.

Objective: To study retrospectively the 10 year prevalence of patients diagnosed PPCM in University Malaysia Medical Centre (UMMC).

Methodology: Patients who delivered in this hospital whom subsequently diagnosed with PPCM from 1st January 2000 to 31st December 2009 were collected from hospital database. Their files were retrieved and relevant data was collected. Related information including patient demographic data, clinical features, diagnosis, treatment and outcomes were collected. The data was tabulated and analyzed with descriptive statistics.

Result: A total of 12 patients were diagnosed with PPCM from 1st January 2000 to 31st December 2010, giving a prevalence of 1.24 per 10000 live births (prevalence 3.3%). Among them, 8 patients were delivered between 24-40 weeks. Eight of them (67%) were multipara while 4 of them (33%) were primipara. Twin pregnancy was common among these patients where 25% of them had twin pregnancies. One patient developed recurrent ventricular tachycardia requiring intravenous cardioverter-defibrillator devices. After the index event, 6 (50%) out of the 11 patients who were alive required normal left ventricular ejection fraction during follow-up while 3 (27%) had persistent poor ejection fraction. Two patients defaulted follow-up.

Conclusion: The prevalence of peripatetic cardiomyopathy in UMMC is uncommon at 0.24 cases per 10 000 live births. Two pregnancies were common. Only about half of the patients recovered with normal left ventricular function.

Q22

ACUTE MYOCARDIAL INFARCTION - SERDANG HOSPITAL EXPERIENCE FOR THE YEAR 2010

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Background: This is a retrospective study of the patients who presented to Hospital Serdang from 1 January 2010 to 31 December 2010 with acute myocardial infarction (AMI). This also included patients who presented via the emergency department of Hospital Serdang and patients who were transferred from other centres.

Objective: To observe the demographic details with regards to racial predisposition, risk factors, time of onset of pain, thrombolysis agent and door to needle time in patients with acute myocardial infarction.

Methodology: All patients who presented to OCU / Hospital Serdang from 1 January 2010 to 31 December 2010 with ST elevational myocardial infarction or were included in this study. In retrospective data was evaluated and analysed using excel 2010.

Results: A total of 32 patients were included in the study out of which 28 were males and 11 were females. 55.5% Malays, 25.4% Indians, 10.3% Chinese and 0.0% others. In the risk factor analysis, 58.8% had hypertension, 48.8% had hypercholesterolaemia, 46.9% were smokers and only 33.2% were diabetic prior to presentation. The most common type of MI being anterior (46.9%) followed by inferior (27.1%) and lateral MI (11.9%). The main choice of reperfusion was thrombolysis with Streptokinase (78.1%), followed by Primary PCI (14.3%) and TNA TPA (4.2%). The average door to needle time was 44.00 minutes. Mortality rate calculated for our centre was 9.3% irrespective of choice of reperfusion. All patients who had not receive reperfusion for some reasons, succumbed.

Conclusion: This is a pioneer study of demographic data involving patients with ST elevation myocardial infarction in Hospital Serdang for the year 2010. Most patients received reperfusion with streptokinase in our centre. Patients who don’t receive reperfusion have a higher mortality.

Q23

MYOCARDIAL INFARCTION IN YOUNG ADULTS IN SINGAPORE: CLINICAL CHARACTERISTICS, RISK FACTORS AND OUTCOMES

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Background: There is limited data on the clinical features of young adults with acute myocardial infarction (AMI) in Singapore. As Singapore is a multi-racial society, we analysed whether ethnic differences exist between the three dominant races, Malay, Chinese and Indians with regards to the clinical features.

Methodology: From October 2004 to September 2010, 333 consecutive patients aged between 25-45 years were diagnosed to have AMI at our institution. Clinical data was collected retrospectively on demographic characteristics, presenting signs and symptoms, blood investigation, hospital course and in-hospital mortality.

Results: For the overall study group, the mean age of presentation was 40.2 ± 4.0 years with male predominance (78%). The majority of patients were Chinese (48%) followed by Indians (25.3%), Malays (8.0%) and others (5.4%). The most common risk factor was smoking (9%), followed by hypertension (25%), diabetes mellitus (15.5%), 65% of patients were considered obese (BMI ≥ 25 kg/m²). The mean total cholesterol, low density lipoprotein and high density lipoprotein levels were 5.9 ± 1.2 mmol/l, 3.9 ± 1.1 mmol/l and 9.6 ± 9.2 mmol/l respectively. The mean left ventricular function was 44.0 ± 19.1% with the incidence of heart failure being 3% and cardiogenic shock 4.5%. Overall in-hospital mortality was low with death (0.02%).

For ethnic subgroup analysis, Indians has a 5 fold unadjusted risk of developing AMI before age of 45 compared to Malays 2.5 fold-risk and Chinese 0.7 fold-risk respectively. There was no significant difference between the 3 races with regards to traditional cardiovascular risk factors and lipid profile. However, Indians have the strongest family history of ischemic heart disease and were more likely to be diagnosed with new-onset diabetes mellitus and hypertension in in-hospital major complications and in-hospital mortality did not differ between the 3 races.

Conclusion: Young adults with AMI in Singapore are characterized by early age of presentation, male predominance, high incidence of smoking and obesity. Overall in-hospital clinical outcomes are favorable. Among the 3 races, Indians have the highest risk of developing young AMI.
Abstracts

025

ASSOCIATION BETWEEN CARDIOVASCULAR RISK FACTORS AND HEALTH-RELATED QUALITY OF LIFE AND PSYCHOLOGICAL DISTRESS AMONG THE GENERAL POPULATION IN SINGAPORE, EAST ASIA

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Background: Cardiorespiratory disease (CRD) is the leading cause of death in Malaysia. Psychological factors are important risk factors for CRD. In turn, CRD and its risk factors may have an impact on health-related quality of life (HRQoL). The associations between CV risk factors and psychological factors and HRQoL have not been examined in Malaysia previously.

Objectives: The aim of this study was to evaluate the relationship between CV risk factors and HRQoL, and psychological distress.

Methodology: Subjects were recruited from an urban setting in Sarawak, Malaysia. HRQoL was assessed using the Short-Form 36 (SF-36v2) physical component summary (PCS) and mental component summary (MCS) scores while psychological distress was assessed using the K10 (K10). The SF-36v2 PCS and MCS were Sarawak-weighted norm-based scores (mean 90, standard deviation 10) with higher scores indicating better HRQoL. Higher K10 scores (range 0-50) represent greater psychological distress. We performed hierarchical multiple linear regression analyses with sociodemographic variables, followed by lifestyle factors, medical history conditions, and education as independent variables separately with PCS, MCS and K10 as dependent variables, respectively.

Results: Data from the first 660 subjects of the LIFEQoL study were analysed. Majority were females (63.3%), married (58.3%), attained secondary education (95.6%), working (93.6%), smoking (36.4%), and not drinking alcohol (59.9%). The mean (SD) age was 30.5 (8). Mean (SD) K10 score was 10.8 (10.7). Women had lower MCS than men and age >30.3 had the highest MCS. After adjusting for potential confounders, the presence of diabetes was associated with worse PCS while none of the CV risk factors were associated with MCS. In line with the findings for HRQoL, MCS more positively correlated with psychological distress. After adjusting for potential confounders, only alcohol drinking remained significantly related with psychological distress.

Conclusion: Our preliminary data suggests that some cardiovascular risk factors are associated with HRQoL and psychological distress. When considering the causes and effects of these chronic disorders, it is important to consider both HRQoL and psychological factors.

026

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Background: Dual anticoagulants, ticlopidine (TI), and aspirin (ASA) were used to prevent strokes. Aspirin and TI were able to prevent stroke and death in a trial with both groups (8). We studied the relationship between TI and aspirin (ASA) treatment in a general population.

Objectives: To compare the prescribing trend of ACS secondary prevention between the first audit cycle (FAC) (December 2008 - January 2009), the second audit cycle (SAC) (November 2009 - December 2009), and the third audit cycle (TAC) (August - December 2010) of Ministry of Health (MoH) hospitals.

Methodology: Third and pharmacy documentation of patients admitted with ACS from 9/2010 to 9/2012 were audited, while prescribing was concurrently weighed with an intervention display of clinical evidence, international standards and results from the FAC and SAC. Collected data was transmitted securely through a dedicated web-based electronic case report forms (eCRFs) and analysed using SPSS version 15.0.

Results: XI. 874 patients from 17 hospitals in Sarawak were enrolled in this audit cycle. At baseline, patient characteristics in all audit cycles were similar in demographics, clinical history, and ACS etiology. Aspirin was most commonly prescribed in all cycles (98.8% for VS, 91.2% for V2, 93.7% for T2). There was an increasing trend observed in presenting cholesterol (71.7% for V1, 76.4% for V2, 82.3% for T2) and the p values (0.001) as well as the increase of mean levels of cholesterol. In summary, the levels of all patients discharged (A1, A2, and A3) were improved compared with the baseline present levels and it was also observed that the levels of all patients discharged (A1, A2, and A3) were improved compared with the baseline present levels. In summary, the levels of all patients discharged (A1, A2, and A3) were improved compared with the baseline present levels.

Conclusion: There is an encouraging trend in the utilization of evidence-based ACS secondary prevention medication in Sarawak. However, new initiatives were needed to increase the utilization of evidence-based guidelines to target current practice.

029

RELATIONSHIP BETWEEN ADMITTING (NON-FASTING) BLOOD GLUCOSE AND IN-HOSPITAL MORTALITY STRATIFIED BY DIABETES MELLITUS AVOID ACUTE CORONARY SYNDROME PATIENTS IN OMAR

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Background: Hyperglycaemia in patients admitted for acute coronary syndrome (ACS) is associated with increased hospital mortality.

Objectives: We evaluated the relationship between admitting (non-fasting) blood glucose and inhospital mortality in patients with and without diabetes mellitus (DM) presenting with ACS in Oman.

Methodology: Data were analyzed from 1501 consecutive patients admitted to 10 hospitals throughout Oman with the final diagnosis of ACS during May 5, 2005 to June 5, 2005 and January 29, 2007 to June 24, 2007, as part of Gulf PIC (registry of Acute Coronary Events). Admitting blood glucose was divided into groups: namely, euglycaemia (7 mmol/L), mild hyperglycaemia (7.0 to 10 mmol/L), moderate hyperglycaemia (10 to 11 mmol/L), and severe hyperglycaemia (11 mmol/L).

Results: Thirty-eight percent (n=584) and 62% (n=467) of the patients were documented with and without a history of DM, respectively. Non-diabetic patients with severe hyperglycaemia were associated with significantly higher in-hospital mortality compared with those with euglycaemia (13.1% vs 1.9%, P<0.01), mild hyperglycaemia (13.1% vs 6.3%, P<0.05), and even moderate hyperglycaemia (13.1% vs 4.4%, P<0.05). Even after multivariate adjustment, severe hyperglycaemia was still associated with higher in-hospital mortality when compared with both euglycaemia (odds ratio: OR, 6.3, P<0.01) and mild hyperglycaemia (OR, 3.4, P<0.01). No significant relationship was noted between admitting blood glucose and in-hospital mortality among diabetic ACS patients even after multivariate adjustment (all P-values >0.05).

Conclusion: Admission hyperglycaemia is common in ACS patients from Oman and is associated with higher in-hospital mortality among those patients with previously unreported DM.
031
STATINS AND RESPONSE TO CATECHOLOL GIVEN TO PATIENTS WITH CHRONIC HEART FAILURE
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Aim: To evaluate response to carvedilol given to heart failure patients on chronic treatment with statins Patients and Methods: 80 males, mean age 55 years (SD±9.19), with symptomatic heart failure, EF≤40%, NYHA class II and III, without prior beta blocker therapy but receiving ACEi and diuretics. Group I - 60 patients on statins (atorvastatin 18–12.4 mg/day), group II - 20 patients without statin therapy. Analyses for heart at baseline and at 3 months. NYHA functional class, HR, echocardiographic parameters (LV EF, LVEDD, LVEF, E) were obtained at 3 months. ECG parameters, exercise capacity using cardiopulmonary exercise testing technique (CPX, VE/VO2 max, METS, VO2peak), heart rate variability by 24h ECG monitoring and plasma levels of BNP, CRP, IL-6 and TNF-alpha. Statistical analysis: chi square test for qualitative variables and analysis of variance (ANOVA).

Results: At baseline patients receiving statins had higher BNP (7.3±3.1 vs 6.2±4.4; p<0.05) and higher EF (75±3.9 vs 70±3.3; p<0.05) group I vs group II. The remaining parameters did not differ significantly. At 3 months a significant increase in EF was found in both groups, although more pronounced in those receiving statins (group I: 89±5.2 vs 76±10.2; p<0.05; group II: 72±11.6 vs 65±11.1; p<0.05), similar to METS group I: 6.9±3.8 vs 5.3±3.3; p<0.05). Levels of BNP, CRP and TNF-alpha were significantly decreased in both groups, albeit even more in group I (7.8±6.1 vs 2.3±1.4; p<0.05; 6.9±5.6 vs 3.3±5.0; p<0.05). Conclusions: 1. 3-month therapy with carvedilol in patients receiving statins significantly increases LV EF as compared with patients receiving statins alone. 2. Levels of BNP and ET-1 were even more decreased in patients receiving statins. 3. Patients receiving statins had a shorter duration of CPX, poorer exercise tolerence (METs) and lower VO2peak as compared with subjects not receiving statins.

032
A PROSPECTIVE COHORT STUDY TO VALIDATE BLEEDING RISK SCORES FOR PATIENTS ON WARFARIN IN MALAYSIA: PRELIMINARY DATA

Background: Oral anticoagulant therapy (OAT) has been shown to be effective in preventing thrombotic complications. Although beneficial, anticoagulant usage can be associated with several side effects such as intramuscular and gastrointestinal bleeds. To determine the rate of bleeding, various bleeding risk scores (BRS) have been developed to enable clinicians to improve risk assessment for those at risk of bleeding who are on OAT. The OIRR, Kijer, Shremman and HEMORR2HAGES BRS have been statistically validated in a multi ethnic Malaysian population on warfarin OAT (OATW).

Objectives: To determine baseline characteristics of patients on OAT and risk stratified by the above BRS.

Methodology: 148 patients on conventional OAT attending a public sector HIC clinic at a tertiary teaching hospital were enrolled. Clinical data were obtained from medical records, and standard management for patients provided. Clinical events were screened for and recorded at each subsequent HIC visit.

Results: In our cohort, 62% were male with a mean age of 47.1±13 years old. Ethic distribution was 69.3% Malay, 33.2% Chinese and 16.2% non-Malay (Bumiputera). 51.5% were on OAT for nonvalvular atrial fibrillation and 36.9% for mechanical valve replacement. The mean INR was 2.47±0.77 and 19.6% of patients were on warfarin anticoagulant therapy. 52.5% with a target INR 2.0-3.0 and 42.9% with a target INR 3.0-4.0 in therapeutic range. In the OIRR and Kijer models, the majority of patients were categorised under the intermediate risk group: 45.1% and 65.5% respectively. In the Shremman and HEMORR2HAGES risk scores, the majority of patients were categorized into the low risk group: 93.9% and 88.4% respectively.

Conclusion: The majority of patients in the INR clinic were relatively young and of male gender, with an ethnic distribution reflecting the urban population around the centre. 2 of 8 BRS 8 classified the majority of patients into intermediate bleed risk compared to low risk. Subsequent follow-up will enable us to ascertain which of the BRS would be most appropriate to be applied in a multiethnic Malaysian population on OAT.

033
ATTENUATED PLATELET INHIBITION BY CLOPIDOGREL DOES NOT RESULT IN MAJOR ADVERSE CARDIAC EVENTS IN PATIENTS WITH ACUTE CORONARY SYNDROME
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Background: Patient activation plays a pivotal role in antimicrobial. Clopidogrel has been shown to reduce adverse clinical events in patients with acute coronary syndrome (ACS). Failure to respond adequately to Clopidogrel is called “Clopidogrel resistance” or “low responder” and has been reported to occur in 4%-6% of cases. There is a lack of data regarding Clopidogrel resistance in Malaysia.

Objectives: 1. To establish the prevalence of Clopidogrel resistance among patients admitted with ACS 2. To compare the time between Clopidogrel resistance and major adverse cardiac events (MACE) in patients with ACS.

Methods: This prospective cohort study was conducted at University Malaya Medical Centre between July and December 2008. 88 consecutive patients presenting with ACS were loaded with 300mg of Clopidogrel. Blood samples were obtained 12-24 hours after the loading. The ACP induced platelet aggregation was assessed as aggregation units against time (AU/mn) using multiple parallel platelet aggregation (PPA) (Dynabyte Medical). A cut-off value to define low response to clopidogrel was set at the upper quintile of patients. The company recommended output of value 500 AU/min.

Results: The upper quintile was found to be at 487.7 ± AU/mn and was used to define Clopidogrel low responders. 18 (20.5%) patients were low responders. 6 patients who had MACE within the 30 days follow up period. 1 patient died and 7 patients developed another ACS. All 6 patients with MACE were good clopidogrel responders. 30 (34%) patients used aspirin 100mg twice daily (before admission. Patients on aspirin showed significantly (p<0.012; 1:10) less inhibition of platelet aggregation by Clopidogrel (84.21±5 min) vs 245.49 when compared to patients not on aspirin (31.9 ± 31.1; p<0.01).

Conclusion: The rate of low responders to clopidogrel was 20%. There was no link between low responsiveness to Clopidogrel and MACE within 30 days following admission for ACS. Patients using aspirin showed a statistically significant lower inhibition of platelet aggregation. There might be an aspirin - clopidogrel interaction. Further studies are warranted.

034
EFFECTS OF ATORVASTATIN TREATMENT ON ABDOMINAL FAT AND SERUM ADIPOCYTE FATTY ACID BINDING PROTEIN
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Background: Apart from lipodumping, the so-called pathoetiology effects of statins, including anti-inflammatory, immunomodulatory and anti-coagulative effects had been comprehensively discussed. Several studies demonstrated that statins have direct impact on adipose tissue, although results were not consistent. Adipocyte fatty acid-binding protein (A-FABP), a marker of adipocyte differentiation and mainly isolated from adipose tissue, was found to be involved in the pathogenesis of metabolic syndrome and atherogenicity.

Objectives: 1. To investigate the impact of 12-week atorvastatind treatment on abdominal adipose tissues and serum adipokine, including A-FABP.

Methods: Total 45 subjects with clinical evidence of abdominal obesity were enrolled and received atorvastatin 40mg treatment daily for 12 weeks. Serum concentration of A-FABP and adipokines were determined by ELISA method. Abdominal visceral and subcutaneous adipose tissue volumes were measured by computed tomography at the umbilical level. Other biochemical markers, including lipid profile, fasting glucose, HDL-cho and HDL-C were also assessed before and after therapy.

Results: The baseline serum A-FABP level positively correlated with age, body mass index (BMI), total cholesterol, LDL-C, visceral (VAT), subcutaneous (SAT) and total abdominal adipose tissue volume. Total abdominal adipose tissue volume correlated with fasting glucose, SBP and serum A-FABP level. After adjustment for age, gender and fasting glucose, circulating A-FABP remained independently associated with volume of total abdominal fat (5-coefficient = 4.51, R2 = 0.69; p < 0.001). Twelve-week of 40mg atorvastatin therapy caused significant decrease in serum A-FABP reduction (A-FABP baseline 22.3 ng/ml, follow-up 17.9 ng/ml, P < 0.001). The interval changes of total abdominal adipose tissue did not reach statistical significance; however, the extent of VAT volume reduction positively correlated with serum A-FABP reduction (r = 0.30, P < 0.01).

Conclusion: We revealed that serum A-FABP was independently associated with abdominal adipose tissue volume. 12-week median dose atorvastatin treatment caused significant decrease in serum A-FABP and demonstrated its possible pathotrophic effect on adipogenesis.
**National Heart Association of Malaysia**

**035**

PHARMACOLOGICAL INTERVENTIONS BENEFICIAL IN IMPROVING VASCULAR FUNCTION AND CARDIOVASCULAR RISK IN OBESITE PATIENTS (VASCULAR STUDY) - EFFECT ON MICROVASCULAR ENDOTHELIAL FUNCTION


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Background: We have previously shown that obese patients have impaired microvascular endothelial function that is associated with increased carotid intima media thickness as demonstrated by increased blood pressure (BP). Hypoglycaemia, inflammatory markers and reduced adiponectin and HDL-C levels.

Objective: This study reports the effect of 8 months pharmacological interventions for obesity with aspirin and atorvastatin on microvascular endothelial function in obese patient.

Methodology: This randomised, controlled clinical trial involved 75 obese subjects, given aspirin 120 mg three times daily or simvastatin 10 mg daily for 9 months. Baseline weight, height, and microvascular endothelial function were recorded before starting treatment, and at 3, 6 and 9 months after starting treatment. Microvascular endothelial function was assessed non-invasively using laser Doppler flowmetry (LDF) and the process of brachioscopes. LDF measures skin perfusion, whereas brachioscopes refers to transcutaneous transfer of drugs prepared by very small electrical current. Sodium nitroprusside (SNP) and acetylcholine (ACH) were used to assess microvascular and endothelial dependent vasorelaxation. Maximum absolute change in skin perfusion due to brachioscopes with acetylcholine (ACMCA) indicates microvascular endothelial function.

Results: 45 subjects (24 each for aspirin and simvastatin group) completed the 9 month study. Their data was used for analysis. Mean age and body mass index (BMI) of subjects were 34.8 ± 4.4 years and 34 ± 16.9 kg/m² respectively. There were no significant differences between the 2 groups in their baseline age, BMI, BP, heart serum skin perfusion. Therefore, baseline microvascular endothelial function in the aspirin treated group showed no difference compared to baseline treatment (p=0.04). A significant decrease was observed in aspirin treated group. Endothelial independent vasodilatation with SNP was increased, as expected, did not change after 9 months treatment compared to baseline for both groups.

Conclusion: We conclude that aspirin treatment for 6 months improved microvascular and endothelial function in obese patients.

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**036**

A RANDOMIZED CONTROLLED TRIAL OF EFFECTIVENESS OF 12 WEEKS CARDIAC REHABILITATION ON LEFT VENTRICULAR EJECTION FRACTION IN POST-CORONARY EVENT PATIENTS: A MODEL TO INCREASE AHERDENCE

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Background: Coronary Artery Disease (CAD) is the leading cause of death worldwide. Despite 20 years of the use of Cardiac Rehabilitation (CR) programs, it still is underused in cardiac hospitals in developing countries. However Left Ventricular Ejection Fraction (LVEF) clinically used as a predictor of long term prognosis and mortality, there is a scarcity of data of effectiveness of CR on LVEF in post-coronary event patients.

Objective: To investigate the effects of 12 weeks structured cardiac rehabilitation on LVEF in early post-coronary event patients.

Methodology: Study was approved by the ethical committee of Gohar Hospital. In a single blinded randomized controlled trial, post-coronary event patients (within one month of hospital discharge), age of native CAD, surgery (CABG or PTCA) or conservatively treated were recruited from Gohar Hospital, Iraq. Exclusion criteria were patients who had high risk (AAOCVRP 650) and any contraindication to exercise testing and training. Recruited patients were randomized either into Control or study. To increase the patient adherence to program, the study group divided into Home-based (HMCR) and hospital-based (HMCR) cardiac rehabilitation according to their convenience. HMCR group underwent 12 weeks of structured home-based CR, individually tailored for patient according to the ACSM-2006 guidelines which translated to steps of walk, understandable for patient. HMCR group underwent 12 weeks of structured CR under direct monitoring in hospital. Control group only received the usual care care without any CR group. LVEF was measured by echocardiography before and after 12 weeks of CR for both groups. Data analyzed using by SPSS17.1 and repeated measures ANCOVA.

Results: 43 patients had been given written informed consent with mean age of 56.5 ± 8.8 enrolled in the study. There was a significant increase in EF in study (from 46.6 ± 9 to 61.5 ± 5) group compared to control (p=0.07). There was no significant difference between HMCR and HMCR groups (p=1.5).

Conclusion: 12 weeks early individually tailored CR can significantly improve LVEF in post-coronary event patients. Administration of a Home-based program which was individually tailored for patient can be safely used and is as effective as HMCR programs to improve LVEF. KEYWORDS: Left Ventricular Ejection fraction (LVEF), Cardiac Rehabilitation, Coronary Artery Disease (CAD).

Authors identified there was no conflict of interest.

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**037**

BENEFICIAL EFFECT OF EVEROLIMS INTRODUCTION AND CALCINEURIN INHIBITION IN TRANSPANT RECIPIENTS WITH ADVANCED CERMONIAL FAILURE


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Background: The NOCTID (Norwegian Detoxion in Heart and Lung Transplantation) trial demonstrated that everolimus significantly improve renal function in maintenance heart transplant recipients. Nevertheless, switch to everolimus is currently not recommended for patients with advanced renal failure.

Objectives: In this study, we evaluate NOCTID data to assess the effect of everolimus introduction among thrombooplatelet recipients with pre-existing advanced renal failure. (b) Methodology: In this 12-month southwest Scandanvia study 262 maintenance thrombooplatelet recipients were randomized to everolimus with reduced CNI or continue their CNI-based immunosuppression. GFR was measured at baseline and at arm 12 using Cr-ethylenediamine tetraoxosuccinate and clearance.

Results: In patients with baseline GFR <30 ml/min (n=26) renal function improved significantly in the everolimus group (7 GFR 8.7±4.2) as compared to a decline in the control group (7 GFR 4.6±5.1; p<0.03). Amongst patients with moderate renal impairment (GFR 30-50 ml/min; n=73) improvement in renal function was also significantly greater amongst patients treated with everolimus compared to controls (7 GFR 5 4±1 versus 5.8±7 ml/min, respectively; p<0.03). TIMES since transplant was an important mediating factor as GFR improvement amongst patients with baseline renal function was limited to patients with twice transplant < median value of 4.6 years (figure 1).

Conclusion: Conversion to everolimus and reduced CNI significantly improves renal function amongst patients with advanced renal failure. However, benefit effect is limited to patients undergoing conversion less than 5 years after transplant indicating a "window of opportunity" that is appropriate for pharmacological intervention with everolimus.

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**038**

ANTI-PHOSPHOGLYCOL, SERUM AUTOANTICBody AS POTENTIAL BIOMARKER FOR PATIENTS WITH PRIMARITLY CORONARY EVENTS

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Background: Anti-phospholipid syndrome (APS) is an autoimmune disease. Ischemic coronary events associated with APS can occur at a younger age than typical atheroclerotic cardiac events. This study sought to determine the frequency of anti phospholipid serum (aPLs), anti-cardiolipin (ACL) dependent on the presence of ‘72-GPI’, and anti-192-glycoprotein I (192-GPI) aPLs antibodies among patients with coronary events.

Methods: For this study, 60 patients with coronary events in form of angina and 50 healthy individuals as control subjects recruited from Mosul, Erbil and Duhok provinces in Northern Iraq between March 2014 and March 2016 were evaluated. All cases were under 60 years of age and had no recognizable risk factors. Using ELISA to evaluate the presence of IgG antibodies of aPLs, ACL, and a192-GPI antibodies in their blood.

Results: The results indicated that the frequency of aPLs was 102 (24%), of a192-GPI was 95 (19%), and of ACL was 95 (19%) among patients. In contrast, aPLs detected in 250 (28%) of control subjects, each of the other anti phospholipid antibodies (aPLs) was never observed. Of the all aPLs the incidence of patients having the combined profile of aPLs + a192-GPI was 92 (18%) and of aPLs + ACL was 6152 (20%). Only 31 (32%) of these aPLs patients also expressed a192-GPI in the absence of ACL. The frequency of patients expressing all these markers only with aPLs was 52 (10%). In none of the aPLs positive patients with a192-GPI expressed in the absence of aPLs. Conversely, IgG aPLs as a sole marker was seen in 312 (31%) of these patients (i.e. in absence of other either marker).

Conclusions: It can be concluded from these data that the among the three major forms of APLA examened, the presence of IgG aPLs autoantibodies appeared to correlate with tests with patients having angina who were concurrently suffering APS.

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BACKGROUND

Chronic renal failure (CRF) is often associated with coronary artery disease (CAD). Cardiac imaging evaluation is used in patients with cardiac symptoms and is asymptomatic who are referred to renal transplant.

OBJECTIVES

The aim of this study was to evaluate the prognostic value of Cardiac Gated SPECT in CRF patients.

METHODS

158 CRF patients, 112 males (69%), mean age 63 years old (26-90), 141 (28%) on dialysis. 127 patients had lost 1 CAD-120209, 395 (64%) hypertension and 61 (21%) diabetes. Prevalent known CAD was present in 295 (15%), with myocardial infarctions in 12 (6%). No symptoms were present in 134 (71%). Stress and rest telestress SPECT, with rest gated study, was performed. Presence, location, severity and extension of ischemia and necroscrosis were evaluated. Left ventricular (L.V) volumes and ejection fraction were calculated, unless for technical reasons. Clinical follow-up (FU) was done in a mean period of 16 months. Cardiac events like, cardiac death, myocardial infarction, unstable angina, cardiac failure, cardiac revascularization, hospitalization for cardiac reason, were registered.

RESULTS

Normal perfusion SPECT (negative predictive value) were seen in 52 (39%) and abnormal perfusion SPECT, with ischemia or necrosis (positive predictive value) in 95 (61%). Prevalent perfusion defects (PD) were seen in 35 in 142 (22%), partly reversible PD in 19 (12%), and fixed PD in 119 (15%). Gated SPECT was done when technically possible in 159 (92%). Left ventricular dysfunction in 44 (28%) and left ventricular dysfunction in 28 (18%). 156 patients were clinically followed, with 20 (13%) new or follow-up. gated SPECT was done when technically possible in 107 (87%) and had at least one cardiac event at 18 months (mean time). Events occurred in 24 patients with myocardial dysfunction and 85 (59%) of 183 with normal LV function and Fxp (85%), with a significant difference (p<0.001). 39 patients with positive SPECT (39%) versus 9 patients with negative SPECT (10%) had cardiac events, with a statistically significant difference (p<0.001). A positive predictive value for cardiac scintigraphy was calculated in 66% and a negative predictive value in 92%.

CONCLUSION

This group of chronic renal failure had a high frequency of events at 18 months mean time follow-up. Patients with left ventricular dysfunction or positive SPECT had significantly more events. Although cardiac scintigraphy had a low positive predictive value for events, the negative predictive value was high, allowing to select patients with a low probability of events.

THE VALUE OF TISSUE CLOTHES-DERIVED EIV IN PREDICTING HEART FAILURE IN PATIENTS WITH CHRONIC UREMIC URSEMIA AND NON-STELEVATION MYOCARDIAL INFARCTION

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BACKGROUND

In patients with acute myocardial infarction (AMI), diabetic foot provides important prognostic information that is not deviated by foot function. Unlike other Doppler parameters of diabetic foot, mortality rate is not deviated by foot function. In patients with acute AMI, the diabetic foot has been shown to be the most accurate predictor of left ventricular (L.V) filling pressure.

OBJECTIVES

The aim of this study was to determine the prognostic significance of EIV ratio obtained by tissue Doppler imaging (TDI) among patients admitted for unstable angina (UA) and non ST-elevation myocardial infarction (NSTEMI) in relation to the development of congestive heart failure (CHF).

METHODS

Fifty-three (53) patients admitted with a diagnosis of NSTEMI or UA who had transcoronal echocardiography done within 72 hours from admission. The patients were followed up during hospital stay. The end-point was occurrence of CHF.

RESULTS

The censored cut off value was using ROC analysis for EIV ratio that would predict the development of CHF during hospital admission was 11.4. Twenty-three (48%) patients had an EIV ratio > 11.4. During hospital stay, of a mean of 13.4 days, 10 patients (31%) had congestive heart failure in a stepwise multivariate model, one of the most powerful independent prognostic indicators for the development of CHF was an EIV ratio > 11.4 (OR 5.46, 95% CI 1.07 to 53.09, p = 0.05). The other independent predictors were history of smoking and diabetes mellitus (OR 2.89, 95% CI 1.80 to 4.33, p = 0.017), use of atorvastatin (OR 0.99, 95% CI 0.97 to 0.98, p = 0.018), moderate systolic blood pressure (PVP) (OR 0.85, 95% CI 0.90 to 0.90, p = 0.002) and posterior ventricular fibrosis (PVP) (OR 1.21, 95% CI 1.04 to 1.41, p = 0.003).

CONCLUSIONS

An EIV > 11.4 is a good predictor of the occurrence of heart failure in patients with NSTEMI or UA.

EVALUATING THE STATUS OF HYPOPERFUSED MYOCARDIAL SEGMENTS DURING 99MTC-SESTAMIBI RESTING MYOCARDIAL PERFUSION IMAGING STUDY USING THE NEW INTEGRATED IMAGING MODALITY POSITION EMISSION TOMOGRAPHY COMPUTED TOMOGRAPHY (PECTI)

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BACKGROUND

Myocardial perfusion imaging (MPI) study using 99mTc-sestamibi is a non invasive technique commonly employed in the assessment of patients suspected or diagnosed coronary artery disease. Despite being a routine procedure, the technique is limited by its inability to validly validate myocardial segments. This preliminary study aims at assessing the viability of hypo- perfused segments at rest MPI using new integrated diagnostic imaging modality, Position Emission Tomography Computed Tomography (PECTI) using fluorodeoxyglucose (FDG) as the viability marker.

OBJECTIVE

The objective of this study is to clarify the usefulness of 99mTc as a potential surrogate marker in the assessment of myocardial viability.

METHODOLOGY

This prospective study was conducted at Diagnostic Nuclear Imaging Centre, Universiti Putra Malaysia and Universiti Malaya under ethics committee approval. Twenty three patients diagnosed with coronary artery disease were selected to participate in this study. They underwent pharmacological stress and rest (MPI) study using 99mTc-sestamibi. Patients with hypertrophied -rest results were selected for further evaluation using Position Emission Tomography Computed Tomography (PECTI) for viability utilizing FDG as the biomarker. 19p50 (99mTc-PECTI) study was conducted using glucose loading protocol and oral tablet Niacin 200mg. The results were tabulated and analysed using SPSS version 18.

RESULTS

Data from 18 patients were analysed, 14 male and 4 female patients. The mean age is 57 ± 16 (range 35 - 81). A total of 52 abnormal hypo-perfused segments identified and included in the analysis based on the new perfusion S1M-to-semi-quantitative. Comparison to 99mTc-PECTI viability study, 28% of non perfused segments on MPI were confirmed (negative), 50% were lesioning while the remaining 12%, were viable. The sensitivity and specificity of MPI is 11.4% and 98.6% respectively. The positive predictive and negative predictive values are 86.5% and 31.1% with kappa value of 0.46 (p<0.05).

CONCLUSION

Our study showed high percentage of lesioning myocardium on 99mTc-PECTI or all the underperfused myocardial segments as detected on MPI. These results provide a rationale for further clinical work to explore the usefulness of 99mTc-PECTI as a surrogate biomarker for hypo- perfused myocardial segment given the potential of its new evaluation as compared to the non-invasive tool.

ECOCARDIOGRAPHIC QUANTIFICATION OF RESIDUAR SEVERITY, PLASMA MABRPIXOMETE PEPPE AND PEAK EXCHANGE CONSUMPTION DURING PERCUSSION: A MEANED VALUE TO PREDICT NEED FOR SURGERY IN ASYMTOMATIC/IMMY SYMPTOMATIC BRI MR PATIENTS

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BACKGROUND

The optimal timing of intervention in asymptomatic or minimally symptomatic patients with chronic organic mitral regurgitation (MR) remains a challenge. Functional indices or biomarkers that could decisively risk-benefit assessment of surgery would be clinically helpful.

OBJECTIVE

The aim of this study was to identify new functional indices that may help in risk stratification of patients with chronic organic mitral regurgitation.

METHODS

We prospectively studied 118 pts (mean age 51 ± 15 yrs, 56% males) referred for moderately to severe MR, principally due to mitral valve prolapse or flail leaflets. Exclusions included LV ejection fraction <50 or chronic atrial fibrillation. All pts had quantitative echocardiography with myocardial deformation imaging, determination of VO2max at exercise maximum, and measurement of plasma brain natriuretic peptide (BNP) and its prohormonal product (NT-proBNP). Two variables were compared in the 44 pts with vs. the 74 pts without AHA-ACC class III indications for operative mitral surgery, i.e. symptoms, adverse LV remodeling and moderate pulmonary hypertension.

RESULTS

NYHA functional class I was 168 pts (75%). In 90 (15%), 2 were deemed to be in class III. Pts had paracostal AHI. By applanation, LV was moderately severe or severe in 112 pts (59%) and moderate in 6. Mean mitral regurgitant volume (mVRV) by proximal flow convergence area method was 91 ± 40 ml, effective regurgitant orifice (ERO) (5) 0.25 ± 0.21 cm2, and LV ejection fraction (LVEF) (13). Unusually significant predictors of eligibility for surgery were RIV (p<0.001), ERO (p<0.01), BNP (p<0.05), NT-pro-BNP (p<0.05) and VO2max (p<0.02). RIV (OR=5.4), BNP (NT-proBNP) and VO2max were also independently predictive. Areas under the receiver-operating characteristic curves for VO2max, BNP, NT-proBNP, ERO and RIV were 0.80, 0.86, 0.71, 0.87 and 0.88, respectively (p for all comparisons <0.15).

CONCLUSION

Among patients with chronic organic MR, since rhythm and ‘preserved’ LV systolic function that vary have so many symptoms, routine quantitative assessment of MR severity, natriuretic peptide levels and VO2max may aid in risk stratification.

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Abstracts

O44

MEDIUM-TERM CLINICAL OUTCOME OF PATIENTS TREATED WITH PACLITAXEL-COATED DRUG ELUTING BALLOON (DEB) ANGIoplasty

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Background: There remains a concern for the incidence of instant restenosis (ISR), stent thrombosis, balloon inflation, small vessel stenting and dissection in diabetic patients despite advancement with drug-eluting stents (DES). Drug eluting balloon (DEB) provides an attractive and viable option especially in this group of patients.

Objective: The aim of this study is to evaluate the safety and efficacy of paclitaxel-coated drug eluting balloon in patients specifically in with stent restenosis (ISR), small vessel disease (≤ 2.5 mm), diabetes and in multivasular lesions.

Methods: A total of 108 patients receiving DEB from March 2008 to April 2010 were enrolled into the registry. The primary and point of the study was major adverse cardiac events (MACE) including myocardial infarction (MI), cardiac death and target lesion revascularization (TLR) during procedure, hospital stay and 6 months after the last follow-up. Factors that could affect the MACE such as diabetes, ISR, vessel size and stenosis were evaluated.

Results: The median follow-up for the patients in this registry was 365 days. The majority of patients was hypertensive and had dyslipidemia. Sixty percent (62%) were diabetics. Sixty six patients (62%) who underwent DEB angioplasty had had dissections and the remaining had ISR. Thirty eight patients (35%) had failed IVUS lesion and 45 patients (41%) had small vessels. The median size and length of DEB used were 2.6 ± 0.5 mm and 25.8 ± 5.5 mm, respectively. The median procedural time was 18 ± 9 minutes and the procedure was successful in 78% of patients (78). All patients were discharged safely with no in-hospital MACE. During the 6 months follow-up, MACE occurred in six patients (6%) including death (3%) and target lesion revascularization (1%). Twenty patients (18%) had repeat coronary angiography and only one needed repeat target lesion revascularization. Analysis of patients with diabetes, ISR, small vessel size and stenosis were not statistically significant (p>0.05) in contributing to MACE.

Conclusion: In this real-world population, the usage of paclitaxel-coated drug eluting balloon in patients with small vessel, diabetes, ISRs and target lesion revascularization appears to be safe and effective.

O45

EFFECT OF CLIOPODROG AND ASPRIN ON BIOMARKERS OF PLATELET ACTIVATION AND AGGREGATION IN PATIENTS INTENDED FOR PERCUTANEOUS CORONARY INTERVENTION: PRELIMINARY RESULTS OF THE PLATELETCLI REGISTRY

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Background: A double antiplatelet loading strategy (DALS) is recommended in patients undergoing percutaneous coronary intervention (PCI) to reduce adverse cardiovascular (CV) outcomes associated with platelet resistance (PR) to a single antiplatelet agent. Asplin and Clopitrodrog combination of DALS is common in Malaysia, but lack associated with significant bleeding risk.

Objective: As the pattern of PR to DALS in a multi-ethnic Malaysian population undergoing PCI has not been conclusively established, we sought to probe this using biomarkers of platelet activation and aggregation, and assess their relationship with clinical outcomes.

Methodology: 135 from 184 consecutive patients intended for PCI were enrolled between 16/11/2012 to 17/05/2013. Venous blood was drawn on the day of admission for P-selectin levels and PR using impedance aggregometry (Multiplate). Peri-procedural, in-hospital and bleeding outcomes were measured. All patients were on Aspirin+Clopidrogeb 7.5 mg/2.5 mg. Patients on Clioiodrogeb were divided into 4 groups. Group 1: Clopidrogeb 75 mg 75 days (n=15); Group 2: Clopidrogeb 75 mg 74 days (n=50); Group 3: Clopidrogeb 300 mg single dose (n=4); Group 4: no Clopidrogeb and Aspirin were compared between the groups.

Results: Mean levels of PR to Clioiodrogeb in Groups 1, 2, 3 were 32.7, 15.67 and 73.8% (p<0.001). Mean levels of PR to Aspirin in Groups 1 to 4 were 12.7, 28.60, 59.59, 10.35 (p<0.001). Pro-Clinical (P-0) in Groups 1 to 4 were 21.93, 31.75, 30.85 and 31.74 (p=0.01). Major bleeding complications were noted in 7 of 45 patients (15.6%) in Group 3 compared to 9 of 50 patients (18%). PR was significantly higher in Group 3 compared to Group 4 (p<0.05).

Conclusion: The pattern of PR to clopidrogeb and Aspirin in a cohort of patients with similar levels of platelet activation. Platelet resistance to Aspirin was generally low, but resistance to Clopidrogeb was more common than to Aspirin. This could reduce the need for routine DALS in patients undergoing PCI.

O46

BASELINE CHARACTERISTICS, MANAGEMENT PRACTICES AND HOSPITAL OUTCOME OF PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION AT THE NATIONAL HEART INSTITUTE OF MALAYSIA: LOCAL PERCUTANEOUS CORONARY INTERVENTION REGISTRY

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Background: Percutaneous coronary intervention (PCI) is a widely accepted form of coronary revascularization worldwide. It is important for us to know the current practice and outcome of patients undergoing PCI.

Objectives: To examine the patient characteristics, management practices and hospital outcome of patient undergone PCI of the National Heart Institute (NHI) of Malaysia between 2007 to June 2010.

Methodology: Data collected from NHIC PCI Registry over 4 ½ years from 2007 to June 2010. Patients who underwent PCI will have their baseline characteristics, PCI procedural information and complications recorded. Information was obtained from patient medical records, cardiac catheter lab/CCL/ICU data and discharged summaries. We followed up these patients at 3 months and 6 months with telephone calls and clinic follow up.

Result: A total of 5088 patients underwent PCI at NHI during the ¾ years period. The mean age was 57.2 years. 81.8% were males. Majority Male (55.2%), followed by Indian (26.6%) and Chinese (18.1%). The most important cardiac risk factor is Hypertension (42.0%). This is followed by Hyperlipidemia (17.1%), Diabetes (10.1%), positive Family history (9.9%) and Current smoker 16.8%. 45.7% of patients had previous MI, 2.4% Heart Failure (EF<45%) and 7.4% Chronic renal failure and 1.0% previous CVAs. The most common vascular access is femoral (60.9%) and radial approach (41.1%). 81.5% of patients have single vessel diseases and 49 multiple vessel diseases. The total number of lesions was 7868. LEAD accounts for 60.1, LAD 23.7% and RIMA 41.6%. We performed a total of 2.4% Left Main PCI. Grafts PCI account to LMA 0.25% and DVA 1.6%. Majority of the lesions are within Type I and Type II lesions. 98.9% cases underwent successful PCI and most of the lesions achieved TIMI 5 flow (56.7%) post PCI. Most of the coronary lesions were treated with drug eluting stents (92.6%). The remaining were bare metal stents (28.2%) and 1.7% were anti-platelet coated stents. We used 3.9% drug eluting balloons in our PCI. Other procedural devices-aspiration catheter 0.3% cutting balloon 2.5%, rotablator 1.3% and distal embolic protection device 0.8% of cases. IVUS was used in 5.2% of our cases. (IVUS) were used in 1.8%. During the procedure heparin was given in 91.2 cases. 59.2% cases on Aspirin, 67.9% on Clopitrogeb and 3.7% on Ticlopidine prior to PCI. We recorded low procedural complications. These include MI (0.3%) and cardiogenic shock (0.4%). Impaired mortality post PCI from Cardiac cause is 0.7%. At 3 months follow up - 0.2% death (91% cardiac cause) and 6 months follow up - 0.7% death (89% cardiac cause).

Conclusion: From our local registry, we have shown that we have a good success rate with low complications and mortality rates. This is comparable to international standards including from the GVFAC PCI Registry.

O47

THE EFFECT OF A NOVEL FLUORESCENT IMAGING TECHNIQUE: STENTBOOST GUIDING THE POSTALATION

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Background: Adjunctive balloon postloading following stent deployment is often used to optimize stent expansion; however, the benefit of this strategy with modern stent delivery systems is not shown.

Objective: To test the hypothesis that the use of motional-correlated fluorescent images (StentBoost) results in enhanced coronary stent visualization and guiding the stent postloading.

Methodology: We analyzed measurements of 259 coronary stents implanted in 184 patients (75.64% were men) from March 2008 to July 2010 using StentBoost.

Result: The post-implantation stent diameter was larger than that before the postloading, which the change of minimum stent diameter was 2.792±0.262mm vs 2.40±0.262mm (maximum stent diameter 15.26±0.357mm vs 9.00±0.357mm; average change of stent diameter was 72.60±3.65mm vs 2.70±0.262mm respectively). Stent eccentricity Index was smaller (0.17±0.04 vs 0.22±0.05; P=0.006).

Conclusion: There is important clinical practical value that application of StentBoost in evaluating stent implantation and guiding high-pressure balloon post-loading.
O48

EARLY RESULTS OF PATIENTS WITH LEFT MAIN DISEASE UNDERGOING PERCUTANEOUS CORONARY INTERVENTION OF LEFT MAIN TRUNK IN A NEWLY ESTABLISHED HEART CENTRE

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Background: Left main disease is a common finding in patients with coronary artery disease during diagnostic coronary angiography. Coronary Artery Bypass Grafting (CABG) Surgery is the treatment of choice in most of our patients. They are increasing number of patients with high surgical risk, not suitable for surgery, multiple co-morbid and refusal of surgery as mode of treatment. These patients were offered percutaneous coronary intervention (PCI) of left main trunk (LMT).

Objective: The aim of this study was to determine the immediate and short-term safety and adverse event of patients with left main disease undergoing PCI of LMT in a newly established heart center.

Methodology: Retrospective study to all patients undergoing PCI to LMT in our heart centre from January 2008 to December 2010. We analyzed the demographic, lesion type, PCI setting, techniques, complications, immediate and short term major adverse cardiac events.

Results: 24 patients underwent PCI to LMT, the mean age was 61.1-year-old. 82.5% are male. 59.6% has diabetis mellitus, mean LVEF was 40%. Left main lesion was in 11 (45.8%) lesions, 7 (29.2%) lesions was stenosis of 70-99% and 3 (12.5%) lesions was 99-100% stenosis. LMCA was used in 100% of cases and FFR was used in 95% of cases. Drug eluting stent was implanted in 95% of cases and bare metal stent in 4% of cases. There is 100% procedure success rate with no immediate complications. There was no reported case of acute stent thrombosis, death and MI during the clinical follow up.

Conclusion: Percutaneous coronary intervention of left main disease provides an alternative method of treatment for patients who are not suitable for CABG surgery. In our small study cohort, PCI to LMT demonstrates an excellent immediate and short term result in the treatment of left main disease. However further long term follow up with larger sample size is needed to determine the long term clinical benefit and outcome.

O49

UN REGISTRY OF CHRONIC TOTAL OCCLUSION IN YEAR 2006: PROCEDURAL AND 1-YEAR OUTCOME

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Background: Chronic total occlusion (CTO) accounts for 20 - 40% of patients with CAD. Percutaneous coronary intervention (PCI) of CTO is one of the major challenges in interventional cardiology. The primary success rate is relatively low. Moreover, the overall procedure and fluoroscopy times are longer and equipment use higher than with PCI of non-occluded vessels. Previous studies have demonstrated the importance of revascularization of CTOs, with improvements of angina symptoms, increase long term survival, improve left ventricular function, reduce predisposition to arrhythmia and improve tolerance of conventional coronary occlusion. However, limited data on acute and follow-up result in patients treated with PCI of CTO in our center are available.

Objective: The aim of our study was to investigate procedural success, in-hospital, and 1-year outcomes after PCI for CTO over the year 2006.

Methods: We evaluated the in-hospital and 1-year clinical outcome of 143 patients (148 procedures) who underwent percutaneous coronary intervention (PCI) for CTO.

Results: Most of patients are male (78.8, 50.5%) with comorbidities such as diabetes (64.5%), hypertension (69.8%) and dyslipidemia (56.8%). Clinically presented as unstable angina (98.6%), silent ischemia (6%) and ACS (2%). Multivessel disease account for 56% of cases in which multivessel angioplasty were done in 20% of all cases. Single wire strategy was the most frequently attempted technique (78%) from parallel wire (29%) and retrograde wire (1%) successfully, with relatively long procedural time (median 90.92 minutes). Heart, right and tapered wire was the most frequent wire used to cross CTOs (43%) and microcatheter was used in 41% of cases. Utilizing these strategies, moderate procedural success rate (69.5%) was accomplished. Independent predictor of procedural failure was: CTO longer than 20 mm. In hospital adverse events rates were zero (death, ventricular fibrillation). Potential disadvantages of these procedures, including a large amount of contrast volume (median 200 ml) and long fluoroscopy time (median 20 minutes). Although coronary perforations were documented by angiography (5.6%), clinically significant perforation resulting in cardiac tamponade was only 1.3%. 1-year adverse event rates were low (death 9%, non-Q Wave 1.4%, Q wave 0.7% and TLR 1.4%).

Conclusion: UN-CTO registry provides for the first time the trends of PCI in treatment of CTO. The result in term of angiographic success worsen from Japanese and European series. Advanced techniques were not commonly used. CTO lesions can be safely and successfully treated.

O50

A NOVEL COSTING MODEL ON MEDICAL MANAGEMENT OF ST ELEVATION MYOCARDIAL INFARCTION (STEMI) IN PUBLIC TERTIARY REFERRAL CARDIOLOGY CENTRE

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Background: ST-elevation myocardial infarction (STEMI) is common in Malaysia, affecting a younger population compared to developed countries in the GRACE registry, and can lead to significant morbidity and mortality. Treatment outcomes for STEMI are most favourable when patients are treated at tertiary referral cardiac centres (TRCC), and this is reflected by the significant cost in the provision of these treatments. The cost for providing medical treatment for STEMI in Malaysia has not yet been established.

Objective: To ascertain the cost for medical management of STEMI in a public TRCC.

Methodology: A novel costing model was devised to derive this cost, using a combination of activity-based costing (ABC), top-down and bottom-up micro-costing. 29 patients admitted with STEMI between 1/9/2009-2/9/2009, with complete data sets, were included in this study. Costs were obtained from different perspectives for comparison purposes: (1) Patients cost (PCI, consisting of actual cost of patients’ pharmacy, consumables, blood, and other input diagnoses, meals, salaries of hospital staff, and (2) Patient’s linked charges (RPC, consisting of the patient’s cost to make at discharge at the public TRCC). Bottom-up costing was given priority when retrieving monetary values. Top-down micro-costing was applied when bottom-up micro-costing was unable to retrieve the figures.

Results: There was a significant difference in the PCI compared to the other. The mean figure for PCI was RM1,223,885 ±30.51, while that for PC was RM1,436,514 ±1,671.04. Unsurprisingly, a substantial amount from the PC was attributed to the cost for treating complications associated with STEMI and hospital staff salaries.

Conclusion: A combination of ABC, top-down and bottom-up micro-costing provides a novel model for costing STEMI in a developing country with a two-tier healthcare system. The actual cost for medical management of STEMI remains high, but lower than many developed countries, with comparable in-hospital clinical outcomes.

O51

THE VALUE OF SHOCK INDEX AND ALBUMIN/CREATININE RATIO IN PROGNOSTICATING SURVIVAL OF PATIENTS WITH SEVERE SEPSIS AND SEPTIC SHOCK

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Background: The importance of early sepsis recognition and its effect on survival has long been recognized. Relevant indicators to prognosticate the survival of such patients are lacking. Shock index (SI) (defined as the quotient of heart rate divided by systolic blood pressure) reflects the cardiovascular system’s compensatory response; however, it has been studied yet as a prognostic marker in sepsis. Both reduced albumin levels and increased international normalized ratio (INR) are common in severely septic patients reflecting multiorgan involvement and a novel index combined of both values is hypothesized to predict outcome.

Objective: To determine the prognostic value of shock index (SI) at arrival and 2 hours post resuscitation for the short-term outcome of patients with severe sepsis. To assess the prognostic value of albumin to INR ratio (AlbINR) as a marker of survival in such patients.

Methodology: This is a retrospective observational study conducted at University Malaya Medical Centre between June 2009 and June 2010. Patients with severe sepsis (defined as the presence of dysfunction of one or more organ, or the presence of tissue hypoperfusion with sepsis) and septic shock (defined as persistent hypotension despite adequate fluid resuscitation with sepsis) were included. Shock index at presentation (SI-1) and after 2 hours of resuscitation (SI-2) combined with multiple clinical parameters were recorded. Significant parameters (p=0.05) were analysed for specificity, sensitivity, cutoff-point and AlbINR value. The primary outcome was defined as either death or survival to discharge.

Results: This study included 50 patients comprising of 10 (20%) males and 40 (80%) females. The median age was 55 (17-84) years. The number of patients with sepsis and septic shock were 31 (62%) and 19 (38%) respectively. There was a total of 23 (46%) adverse events and 27 (54%) discharged alive. The shock index of 2-2 best prognosticates death with a sensitivity of 89.7%, specificity of 79.17%, AUC-value of 0.8894 [CIs 0.825-0.953; 0.9730] at a cut-off point of 52-2>1.0. The best predictor for survival to discharge was AlbINR ratio with a specificity of 83.33%, a sensitivity of 80.77%, AUC-value of 0.8758 [CIs 0.781-0.970] at a cut-off point of ≥ 4.56.

Conclusion:

1) The shock index calculated after 2 hours of resuscitation (SI-2) is a good and reliable predictor for death in severe sepsis and septic shock patients.

2) The hypothesized (Alb/INR) ratio ("survival index") is a reliable tool in predicting survival to discharge for severely ill sepsis patients.
Abstracts

National Heart Association of Malaysia

OS2

EDUCATION PROGRAM FOR PATIENTS UNDER WARPAINT: THERAPY HAS CLINICAL BENEFITS IN KEEPING PT-INR IN THERAPEUTIC RANGE

Kanatouch Fairawane

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Background: We provide our patients under warpa extending therapy in our program in which they receive education for diet regimen, efficacy, dietary instructions by medical team composed of doctors, nurses, pharmacists and nutritionists.

Objectives: To examine the effectiveness of this education program in terms of PT-INR.

Methodology: The study population consisted of 32 patients who underwent our Warpa extending program between January 2005 and December 2005 in our institution. 60 patients with atrial fibrillation, 7 with coronary heart disease, 7 with vascular surgery and 8 with other diseases were prospectively warpa extending. We assayed PT-INR (maximum PT-INR minus minimum PT-INR), and Percentage of achievement in the period that patients could keep PT-INR between 1.0-4.0 (the range recommended in Japan for a year before and after the education program.

Results: Deviation of PT-INR after the program was smaller than that of before (0.51±0.39 vs. 1.5±0.0.5). Percentage of achievement after the program was higher than that of before (0.51±0.36 vs. 0.32±0.22, p<0.01). There were no major bleeding and stroke.

Conclusion: Education program has clinical benefits in keeping PT-INR in therapeutic range in patients under warpa extending therapy.

OS3

FACTORS ASSOCIATED WITH SUCCESSFUL SMOKING CESSATION, LIN EXPERIENCE

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Background: Cigarette smoking accounts for a massive 25% of all deaths in Malaysia. Each year, nearly 2 in 5 cigarette smokers try to quit, but not many succeed. Various studies had identified factors associated with successful quitting. In this study, we would like to determine the success rate of quitting by using Varenicline and the factors associated with successful quitting for our local population.

Objectives: In this study we identified the success rate of quitting smoking by using Varenicline and also the factors associated with successful quitting so that cessation programme could be tailored to those at highest risk for relapse.

Methodology: This is a retrospective study from March 2009 to June 2010 involving 35 patients using multiple regression analyses to compare demographic, behavioral and environmental characteristics of the successful quitters and those who failed to quit after given Varenicline.

Results: From this study, we managed to conclude that the quit smoking rate by using Varenicline for local population is 44.7% and successful quitters were more likely among those who married.

Conclusions: Programs promoting smoking might benefit by involving family. However, studies need to be continued to further clarify the factors associated with successful smoking cessation as the scope of this study is small.

OS4

ATTITUDE TOWARDS CADAVERIC ORGAN DONATION AMONG HEALTH CARE WORKERS IN MALAYSIA

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Background: The first heart transplant in Malaysia was carried out in 1997. Progress since then has been slow, allegedly due to the lack of cadaveric donors. A study recently conducted by us demonstrated that the willingness of Malaysians to donate their organs is not different from other populations. We hypothesize that the lack of cadaveric organ donation in Malaysia is largely due to the lack of infrastructure to support the donation process and passivity among health care workers to approach potential donors.

Objectives: To examine the knowledge and attitudes of health care professionals towards cadaveric organ donation.

Methodology: The study was conducted at University Malaya Medical Centre (UMMC) and General Hospital Kuala Lumpur. Doctors and paramedics were recruited by convenient sampling and asked to answer a specifically designed questionnaire.

Results: 402 questionnaires were completed. 39.6% of the doctors and 50.7% of the paramedics are not familiar with the concept of brain death. 82.3% of the health professionals did not know how to contact and activate the hospital's organ transplant coordinator when faced with a potential donor. 96% of the healthcare workers have never approached the families of brain dead patients regarding organ donation despite being exposed to such patients frequently. 48% of health care workers are willing to donate their own organs (with some variations in females). 66% prefer to maintain the opt-in policy practised in this country.

Conclusion: There is a lack of knowledge among health care professionals with regards to identifying suitable donors and to activating transplant teams. There is also an attitude of non-proactiveness in approaching families of brain dead patients. The fact that 62% of health care workers of the two biggest Malaysian hospitals are ignorant of transplant coordinators and mechanisms to activate them clearly reflects lack of awareness and exposure and might explain the low cadaveric transplantation rate in this country.

In our opinion, the key to a successful cadaveric donation programme is to improve doctors' knowledge and awareness of cadaveric organ donation. In contrast, knowledge on brain death criteria, on techniques how to approach grieving families sensitively and to activate transplant teams needs to be disseminated.

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CARGO OUTPUT MEASUREMENT WITH TRANSThorACIC ELECTRICAL BIOimpEDANCE METhOD (PhySiPOIL) cOMPARISON WITH THE SWAN-Ganz MeThOD (CONTINUOUS CARGO OUTPUT OR BOLUS TECHNIQUE) IN POST CARDIAC SURGERy CRITICAL CARE (CARRIAGE PAINTERS) Rizl Ibrahim, Zulaya Y. Idris, M. Rahman, N. Anni U. Rafi
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Background: Physiologic measurements noninvasive hemodynamic for a broad cross-section of patients, it is helpful for diagnosis, patients with drug-resistant hypotension, and patients with pacemakers. There is little information about this method in post-cardiac surgery of ICU care patients.

The purpose of this study was to evaluate the feasibility of a transthoracic electrical bioimpedance method (PhySiPOIL) for determination of cardiac output in Patient Cardiac Surgery Critical Care patients with Swan-Ganz method.

Methods: The study was prospective, conducted at National Cardiovascular Center Harapan Kita Hospital in Jakarta, Indonesia. CO measurements were made with pulmonary artery catheter placed for either intrapulmonary patient. Cardiac output determination by PA catheter was made for confirm the continuous CO method catheter and by the bolus injection technique. Simultaneous CO measurements were made with a T86 monitor (Physiou). Values were compared by use of Bland-Altman analysis.

Results: There were 50 patients enrolled in the study. The average age was 67 years (range 40-77 years) with a gender distribution of 46 male, 4 female subjects. Each patient twice or three times measured. Time between two measurement was 0.5-6 hours. There were 128 measurements, All patient diagnosed coronary artery bypass surgery. The Bland-Altman plot is shown the intra-class correlation between the PA CO and TD CO measurement was 0.57 (95% CI: 0.09-0.76) p = 0.018

Conclusions: This study showed a Transthoracic electrical bioimpedance method can relate to determine CO in patient post cardiac surgery in critical care.

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Abstracts

**O60**

CIRRHOSIS IN NEONATES WITH IMPAIRED INTRAUTERINE GROWTH

**Abstract**

The aim of this study was to investigate whether impaired intrauterine growth affects cardiac function and coronary flow reserve (CFR).

**Materials and Methods**

Seventeen neonates with impaired intrauterine growth and fifteen age-matched healthy controls were enrolled in the study. At birth, growth was assessed by biochemistry. Doppler velocimetry of the umbilical artery and maternal uterine arteries blood flow was assessed. Cardiac function and left anterior descending artery (LAD) coronary flow were measured by transcutaneous Doppler echocardiography at one week of age.

**Results**

The mean growth deviation from normal was -2.7 ± 0.2 SD. The left ventricular mass and left ventricular shortening fraction was similar in patients and controls. The mean LAD diameter was 3.6 ± 0.2 mm in patients and 0.8 ± 0.1 mm in controls. The LAD flow velocity integral (FVI) was correlated with left ventricular mass (R = 0.80, p < 0.001) and mitral E wave (R = 0.73, p = 0.004). Impaired intrauterine growth was associated with increased peak flow velocity in diastole and systolic flow in controls. LAD flow reserve was 3.4 ± 0.7 in patients, compared to 0.83 ± 0.5 in controls (p = 0.001).

**Conclusions**

Coronary flow is significantly increased in neonates with impaired intrauterine growth. However, their LV mass and diastolic and systolic functions are normal. The clinical significance of the increase of CFR is unclear but it might lead to a decreased coronary flow reserve.

**O61**

CARDIOPULMONARY EXERCISE TESTING IN ADULTS AFTER REPAIR OF TETRALOGY OF FALLOT

**Abstract**

The background is that Tetralogy of Fallot is the most common cyanotic congenital heart disease with a incidence of 0.5 per 1000 live births. Adult survivors with Tetralogy of Fallot (TOF) may have impaired exercise capacity associated with impaired right heart function and pulmonary regurgitation. Many of these patients maybe asymptomatic. New York Heart Association classification is just a subjective assessment of their problem. Cardiopulmonary exercise testing instead provides assessment of the integrative exercise responses involving the pulmonary, hemodynamic, respiratory, neuromuscular and skeletal systems.

**Objectives**

The ventilatory responses to exercise was studied in a group of patients post repair of Tetralogy of Fallot to assess relationship between ventilation, exercise capacity and right ventricular dysfunction. We also recorded their post-operative complications such as pulmonary regurgitation, residual or recurrent right ventricular outflow tract obstruction, right ventricular dilatation, respiration and persistent atrial or ventricular arrhythmia.

**Methods**

Sixty patients were studied retrospectively between 1993 and 2011, and compared with 31 healthy controls. All were in New York Heart Association class 1-2 and 90% had Qp/Qs of more than 2.5 in patients and 0.5 in controls; no significant differences were noted between groups in the raw values or after normalization to body surface area. Cardiac exercise testing was performed with treadmill using STEEP protocol. VO2 max, breathing reserve and respiratory quotient was recorded.

**Results**

Patients were male, the mean age was 23 ± 9 years. The VO2 max range was 28.5 to 46.8 mL/kg/min, compared to the controls. The patients had a good heart rate and blood pressure response. The mean respiratory exchange ratio range was 0.71. However, the breathing reserve was increased in the Fallot group (p < 0.02). There was no statistical significance between the Fallot group and the normal controls for body mass index, VO2 max, resting respiratory rate, breathing reserve and VO2 max duration with a value of p < 0.005. There was no difference in the VO2 max or ventilatory response to exercise between the groups with patients with no measurable pulmonary regurgitation and the rest of the patients. There was no correlation between cardiorespiratory ratio and either exercise performance or ventilatory response to exercise.

**Conclusions**

Cardiopulmonary exercise testing has become an important tool to evaluate exercise capacity and post-operative outcome in patients with heart failure and other cardiac conditions. Our study shows that the exercise capacity in adult after repair of Tetralogy of Fallot is significantly reduced. We have also linked these parameters with the associated echocardiographic features and electrocardiogram characteristics. These findings will clearly influence the timing for early intervention and pulmonary valve implantation.
A RETROSPECTIVE STUDY OF PREVALENCE OF ATRIAL FIBRILLATION/FLUTTER IN PATIENTS ADMITTED TO HOSPITAL

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Introduction: Atrial fibrillation (AF) is an important and independent risk factor for stroke. Compared with the general population, AF increased the risk of stroke in both men (relative risk 2.4) and women (relative risk 3.0). In a previous study performed by Duff et al. (2003) among 191 patients admitted with ischemic stroke, 32.3% was found to have atrial fibrillation. In addition to this, twinbrother study was more common with stroke associated with atrial fibrillation compared to stroke patients without atrial fibrillation.

Objective: To study the prevalence of atrial fibrillation/flutter in patients admitted with stroke.

Methodology: We conducted a retrospective study of patients admitted to University of Malaya Medical Centre (UMMC) with the diagnosis of stroke (ischemic and/or haemorrhagic). Patients’ records were reviewed to look for the presence of atrial fibrillation/flutter. Relevant information including patients demographic data, clinical features and treatment were collected. We then performed descriptive analysis using statistical package.

Result: A total of 236 stroke patients were admitted to UMMC from 1st January 2008 to 31st June 2009. Twenty-two (9.9%) patients were found to have atrial fibrillation or flutter (AF), of which there were 12 male patients (54.5%) and 10 female patients (45.5%). Associated medical conditions among these patients with AF were diabetes mellitus (45.5%), ischemic heart disease (27.3%) and hypertension (27.3%). Mean age of stroke patients with AF was 71 (0.3) years old while patients without AF were younger (63.6 ± 12.2 years old). Patients with AF suffered from ischemic stroke (19 patients, 86.4%) mainly, followed by mixed ischemic-haemorrhagic (2 patients, 9.1%). None of these AF patients suffered from haemorrhagic stroke. Outcome for the stroke patients with AF was less favourable compared with those without AF. Death among patients with AF and without AF were 27.3% (6 patients) and 9.1% (16 patients), respectively. The frequency of hemorrhoid state was 37.5% in patients with AF, compared with 10.5% in patients without AF (p = 0.0006).

Conclusion: The prevalence of AF among stroke patients in UMMC is 9.9%. Most of the AF patients suffered from ischemic stroke. The AF patients have higher mortality rate. Bleed-thin state were more frequent among these patients, too.

CIRCADIAN ARRHYTHMIAS VARIATION IN PATIENTS WITH ISCHEMIC CARDiomyOPathy OF EJECTION FRACTION < 30%

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Background: Patients with poor left ventricular ejection fraction (LVEF, defined LVEF < 30%) is known to be associated with a diurnal surge of plasma catecholamine levels. Elevated levels of plasma catecholamines are associated with supraventricular (SV) and ventricular arrhythmias (VAs). The relationship between PVEF and SVAs and VAs has not yet been established.

Objective: To compare the diurnal frequency of cardiac arrhythmias, characterised by SVAs and VAs in patients with PVEF and patients with preserved LVEF (LVEF > 55%)

Methodology: Records of 128 patients underwent both thoracosternal echocardiography (TEE) and 24-hour Holter ECG recording (24HER) were obtained. Patients were divided into two groups, age and gender-matched. Group A were patients with PVEF (n = 66) and Group B with preserved LVEF (n = 62). 24HER were assessed for SVAs and VAs, and circadian patterns were assessed by dividing a 24-hour period into quartiles. Results from the 24HER were compared between both groups.

Result: 80 patients were analyzed (Mean age 69 ± 12 years, 16 (18%) men, 64 (82%) women). Patients with heart failure LVEF < 35% had significantly more day-time and nocturnal episodes of supraventricular and ventricular arrhythmias than the control groups (p < 0.001). However, patients with LVEF < 35% had significantly more supraventricular and ventricular arrhythmias between 0300-1200 internal intervals as compared with other internal quarter of the day, Premature atrial ectopics, atrial fibrillation and VAs were significantly more marked compared to other arrhythmic events (74/29 ± 1/25 ± 33, 1079/102 - 2688/23, and 162 121 ± 179 ± 120, p < 0.05). However, there was no statistical significance increase in the total number of supraventricular as compared to the ventricular events (p = 0.13), and neither of these two had circadian correlation (Spearman’s correlation: Rs = 0.549).

Conclusion: Compared with patients with preserved LVEF, patients with PVEF demonstrated significantly more SVAs and GA, in particular, during the morning quarter interval. This could be due to an increase in the circadian cycle. Further studies were needed to be conducted to ascertain the significance of this finding, and could result in a treatment strategy that could reduce clinical events associated with this phenomenon.

THE EFFECT OF RIGHT VENTRICULAR OUTLET TRACT SEPTAL PACING VERSUS RIGHT VENTRICULAR APICAL PACING ON THE LEFT VENTRICULAR FUNCTION IN PATIENTS WITH SYMPTOMATIC BRAZILIAN COROnda: A META ANALYSIS

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Background: Right ventricular apical pacing (RVP) is the traditional site for ventricular lead placement. However, reports showed that this area had been associated with abnormal ventricular depolarization that can lead to adverse outcomes, particularly decrease in left ventricular (LV) function. An alternate site, the right ventricular outlet (RVOT), was observed to have a more physiologic pattern of depolarization resulting in better outcomes.

Objective: The purpose of this meta-analysis is to compare the left ventricular ejection fraction (LVEF) in RVP and RVOT septal pacing among patients with symptomatic bradycardia and with and without atrial fibrillation (AF).

Methodology: We performed a systematic literature search of randomized controlled trials comparing the LVEF of patients who underwent RVOT septal pacing with RVP pacing controls. The mean ejection fraction was analyzed using Review Manager (REVMAN) Software Version 5.2 as continuous variables.

Result: A total of 6 randomized, controlled trials were included in the final analysis. Two sets of analysis were done, one group composed of 3 studies involving patients with symptomatic bradycardia without atrial fibrillation (AF) and the other group composed of 3 studies with symptomatic bradycardia and AF. The first group included a total of 203 patients who underwent permanent pacemaker implantation. There was a significantly higher LVEF after 1-year follow-up in the RVOT pacing group (mean difference 95% CI 0.12 [0.04–0.30]; p < 0.05). The second group included a total of 108 patients with symptomatic bradycardia and AF who underwent RVP. There was also a significant difference in the LVEF after 24-month follow-up favoring the RVOT septal pacing (mean difference 95% CI 0.44 [0.17–0.71]; p < 0.05). However, there was no significant difference between the RVOT septal and RVP groups in terms of the incidence of heart failure.

Conclusion: RVOT septal pacing resulted in a significantly higher LVEF compared to RVP pacing in patients with symptomatic bradycardia and without AF.

EFFECTS OF ATRIOVENTRICULAR NODE ABlation IN PATIENTS WITH CHRONIC ATRIAL FIBRILLATION CANDIDATE FOR CARDIAC RESYNCHRONIZATION THERAPY

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Objectives: Cardiac resynchronization therapy (CRT) is an important advancement for the treatment of end-stage heart failure (HF). The aim of this study was to assess the clinical benefit of CRT in patients with atrial fibrillation (AF) and to evaluate the impact of atrioventricular functional (AVF) ablation on the outcome of AF patients undergoing CRT.

Method: A total of 69 permanent AF patients were included in this prospective study and CRT implantation was done. The patients randomized in 2 groups: 34 patients received optimized medication to control ventricular rate and other 34 patients who underwent an AVF ablation and were followed up for 24 months. Clinical parameters and echocardiographic parameters were compared at baseline and after CRT implantation 3 months after a follow-up of 6 months and every 6 months thereafter. Patients were evaluated for the occurrence of cardiac death, hospitalization for HF, and rehospitalization to CRT (with improvement of New York Heart Association (NYHA) class) at 6 months.

Result: Although ET and NYHA class was improved with marginal significance, BRS duration and severity of Mitral Regurgitation was not significantly changed in Medication therapy group but all of these parameters were significantly improved in AVF ablation group. Although the clinical characteristics was somewhat improved in both groups after CRT implantation, the improvement was much higher in AVF ablation group.

Conclusion: Beneficial effects of CRT could be noticed in a significant number of AF patients, therefore these patients should not be excluded from CRT implantation. AF without AVF ablation was an independent predictor of hospital admission and non-responsive to CRT. Performing AVF ablation in AF patients undergoing CRT seems crucial to attain maximal clinical benefit.
Abstracts

National Heart Association of Malaysia

P5
PLACING RIGHT VENTRICLE PACING LEAD AT ALTERNATIVE SITE FOR PERMANENT PACEMAKER AMONG PATIENTS IN HOSPITAL SERANGAN, MALAYSIA

Abstract

Background: Alternative site pacing has been shown to reduce future chronic atrial fibrillation occurrence in patients with sick sinus syndrome. Persistent long term right ventricle pacing can be associated with negative ventricular remodelling and risk of heart failure. There is however a learning curve in the right ventricle lead at an alternate site.

Objective: Pacemaker implants were started since 2006 in Hospital Serang, Malaysia. Implants started to attempt implanting right-ventricle (RV) pacing lead at alternate site. The objective is to review the placement of RV lead at the right ventricle outflow tract (RVOT) against traditional RV apex (RVA) pacing for permanent pacemaker implants in Hospital Serang.

Method: This is an all-comer registry. All single chamber and dual chamber permanent pacemaker implants from January 2008 until December 2010 were screened. Only patients who needed a new RV lead were included. Attempts were made to place the RV lead at alternative site in right ventricle outflow tract (RVOT) but the final position is at the implanters discretion with the best pacing parameters. First position of RV lead site was recorded. Acute complications looked for and recorded were acute lead dislodgement before discharge and deteriorated pacing parameters at 1 month follow up.

Result: During the period, 226 procedures were included. A total of 220 patients, 111 of the patient were females and 109 were males. By new diagnosis, Malaysia patients numbered 156, Chinese were 51 and Indians were 53. Age distribution was between 23 to 94 years old (mean=59 ± 15 years). Year by year, in 2008 RVA pacing was 7 and RVOT pacing was 3 (total 10 implants). For 2009 RVA pacing was 42 and RVOT pacing was 6 (total 48 implants). For 2009 RVA pacing was 23 and RVOT pacing was 8 (total 31 implants). For 2010 RVA pacing was 3 and RVOT pacing 16. No acute lead dislodgement and no acute deterioration of pacing parameters were recorded.

Conclusion: There is a learning curve to place RV lead at alternative site but it is achievable. No acute lead dislodgement or acute deterioration of pacing parameters occurred in our study.

P7
DUAL-CHAMBER PACEMAKER LEAD IMPLANTATION VIA THE PERMANENT LEFT SUPERIOR VENA CAVA

Abstract

Background: Persistent left superior vena cava (PLSVC) is a very rare and yet the most commonly described venous anomaly, with a prevalence of 0.1-0.2% in general population. Besides its association with congenital anomalies, it is also associated with disturbances of cardiac rhythm, myocardial degeneration and conduction. PLSVC often incidentally discovered during central venous line placement, intracardiac electrocardiography placement or cardioversion/biphasic. Some cases may be asymptomatic.

Objective: To present the case of a 38-year-old male with persistent left superior vena cava (PLSVC) and patent foramen ovale who had a dual chamber pacemaker lead implantation via the permanent left superior vena cava.

Method: A 38-year-old male with a history of atrial fibrillation presented to our hospital for dual chamber pacemaker lead implantation. Physical examination revealed a regular pulse without any murmur or杂音. Echocardiography showed a patent foramen ovale without any shunting. The patient underwent a dual chamber pacemaker lead implantation via the permanent left superior vena cava. The lead was placed successfully and the patient was discharged on the second day without any complications.

Conclusion: Persistent left superior vena cava can pose a challenge during pacemaker lead implantation. However, with careful planning and attention to detail, successful lead placement can be achieved. Our case highlights the importance of considering alternative venous access routes in cases of PLSVC.

P6
PREVALENCE OF ATHEROSCEROSIS DISEASE IN ASIAN SUBJECTS NOT ON LIPID LORTERING AGENTS, BUT WITH AT LEAST TWO CVR RISK FACTORS

Abstract

Background: Atherosclerosis is a major cause of death and disability. The prevalence of atherosclerosis in Asian subjects has been reported to be lower than in Western populations. However, the prevalence of atherosclerosis in Asian subjects not on lipid-lowering agents with at least two CVR risk factors is not well-known.

Objective: The objective of this study was to determine the prevalence of atherosclerosis in Asian subjects not on lipid-lowering agents with at least two CVR risk factors.

Method: A cross-sectional study was conducted in a community-based setting in Kuala Lumpur, Malaysia. A total of 1000 subjects were recruited. Aortic intima-media thickness (IMT) was measured using high-resolution ultrasound imaging. IMT was defined as the distance between the leading edge of the lumen-intima and the adventitia-external elastic lamina. Risk factors included age, gender, smoking, hypertension, diabetes, and family history of cardiovascular disease.

Result: The mean age of the subjects was 55.1 years (range: 20-80 years). There were 589 (58.9%) males and 411 (41.1%) females. The prevalence of atherosclerosis (IMT > 0.8 mm) was 29.2% (95% CI: 26.1-32.4%). Risk factors associated with atherosclerosis were age, gender, smoking, hypertension, diabetes, and family history of cardiovascular disease.

Conclusion: Atherosclerosis is prevalent in Asian subjects not on lipid-lowering agents with at least two CVR risk factors. The prevalence observed in this study is higher than previously reported. Further studies are needed to determine the atherosclerosis prevalence in other Asian populations.
P19

REVEALING THE MORTALITY RATE BETWEEN DEUCE INTERVENTIONS AND OPTIMAL MEDICAL THERAPY – LIN REGISTRY

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Background: Heart failure syndromes cause mortality annually in Malaysia. CRT is an established treatment for patients with advanced heart failure. With CRT, it could help to identify the prognosis for mortality amongst heart failure patients either with medications or device interventions.

Objective: To distinguish the mortality rate between Heart Failure patients on an optimal medical therapy and device intervention (CRT)

Methodology: This study enrolled 255 patients (42.6% with interventive device – CRT registry & 57.4% with optimal medical therapy – heart failure registry). The data is collected based on the following criteria: EF ≤ 35%, ischemic group & CRT duration > 120 mins, ±120mm, the mortality rates were compared by Kaplan Meier curve between the two groups with clinical follow up over 20 months.

Results: Among the optimal medical therapy group, 30 (19.7%) patients died whereas there were 108.8% deaths among the CRT group.

Ischemic and QRSD duration among the optimal medical therapy group has the poorest outcome with higher mortality (p < 0.002).

On the other hand, in the CRT group, neither the ischemic nor QRSD duration demonstrated any significant difference in mortality. However, the Kaplan Meir curve shows a stable survival trend and longer life span.

Conclusions: This registry over a 2 year period demonstrates that the ischemic and QRSD duration are factors that showed higher mortality rate among the optimal medical therapy group.

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P11

Take-Tobacco Cardiomyopathy: A Great Mimick to Acute ST Elevation Myocardial Infarction

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We report an elderly lady with underlying diabetes and hypertension presented to us with acute onset of angina following an acute tobacco intake.

The patient initially presented to us for sudden onset of central chest pain after few days of history of fever, chills, and cough. Initial ECG on presentation showed non-specific T wave inversion over V2-4, which resolved following initial management with angina therapy and antibiotic. We had diagnosed her as having unstable angina.

However, her angina never resolved. Subsequent ECGs showed evolving ischemic changes with deepening of T wave inversion. On day 2 of admission, she developed another episode of angina, where ECG showed ST segment elevation over leads I, AVL, V2-V5.

She was hypertensive requiring intravenous support but she was clinically not in heart failure. We proceeded with coronary angiography which surprisingly showed normal left and right coronary artery. There was no evidence of dissection or thrombus to explain the ECG changes.

We proceed with left ventriculogram which showed a post acute apical hypokinesia (space balloning), with ejection fraction of 40%. Our impression at that point was stress cardiomyopathy (takotsubo cardiomypathy), and we treated her medically with anticoagulant and dual antiplatelet. In view of persistent chest pain and hypotension, we investigated for endomyocardio pathy, where we excluded thyroid disease and Addison disease.

Following few days of observation and treatment for her urinary tract infection, she gradually recovered and managed to wean of intravenous support. She was discharged well 1 week later. Follow up in cardiology clinic, she was asymptomatic with improvement of left ventricular function.

This case illustrate take-tobacco cardiomyopathy as a possible diagnosis to consider in patient with ECG criteria of acute ST segment elevation myocardial infarction but normal coronary artery. Echocardiogram and coronary angiography is the key for diagnosis of the group of illness.

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P12

SERUM LEVELS AND GENETIC EXPRESSRON OF THE PLATELET ACTIVATION BIOMARKER P-SELECTIN IN PATIENTS IN THE EARLY PHASE OF ACUTE CORONARY SYNDROME AND RELATIONSHIP WITHIN HOSPITAL OUTCOMES

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Background: Platelet activation, a critical step in thrombogenesis, is evident during acute coronary syndrome (ACS). While P-selectin (PSL) is a validated biomarker of platelet activation, its serum levels and genetic expression has not been conclusively established in a young, multi-ethnic Malaysian population with ACS.

Objective: To establish serum PSL levels (sero-PSL) and PSL gene expression (GE) levels in the early phase of ACS, and their relationship with in hospital outcomes.

Methodology: 22 consecutive patients admitted with ACS before being established on anti-platelet therapy had venous blood extracted within 30 minutes of admission. 29 patients, with documented non-exclusive coronary artery disease and did not have a prior ACS event, formed the control group. Only 14 patients in the ACS, and 8 patients in the control group had sufficient RNA quality for GE analysis. Ser-PSL levels were obtained using ELISA and PSL GE was determined using real-time quantitative PCR method.

Results: The mean age of patients in the ACS and control groups were 55.2 ± 10.4 vs. 53.3 ± 8.4 years of the ACS group. 77.3% had BMI > 25. 17.5% were diabetic and 4.5% were hypertensive. There was no significant difference in serum PSL levels between ACS and Control group (35.2 ± 21.9 vs 37.1 ± 23.6 pg/ml, p = 0.683). There was no significant difference in PSL levels between ACS and Control group (438 ± 75.8 ± 339 ± 432 ± 1 (147 ± 187 ± 5) arbitrary units, p = 0.059) for serum CRP levels (p = 0.410 vs. 0.149) and no relationship between PSL GE expression level with chest pain duration (p = 0.189 vs. 0.561) and serum CRP GE levels (p = 0.314 vs. 0.274). There was no relationship between serum-PSL and PSL GE levels in both ACS and Control group (p = 0.024, p = 0.930, p = 0.257, p = 0.690).

Conclusion: There were no significant differences between both platelet activation and GE of PSL at the early phase in ACS patients. This could indicate that significant, platelet activation occurred earlier in female atherosclerotic plaque rupture causing ACS.

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P13

MICRO RNA IN THE MANIFESTATION OF LEFT VENTRICLE HYPERTRPHORY IN HYPERTENSIVE PATIENTS.

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Introduction: MicroRNAs (miRNAs) are tiny non-coding RNA molecules, measuring from 19 to 23 nucleotides. They control gene expression either by repressing mRNA translation or by activation of mRNA degradation. miR-133 and miR-1 are conserved across species and have been shown to be down regulated whereas miR-196 upregulated during cardiac hypertrophy in animal studies.

Objective: The aim of this study is to observe the relationship of the levels of circulating miR-133, miR-196 and miR-155, with the phenotype of cardiac hypertrophy among human.

Methods: Hypertensive patients were recruited from hypertensive clinic while healthy volunteers were recruited from advertisement. After consent obtained, echocardiography were performed. Subsequently, venous blood was obtained. Total RNA was extracted from each of the blood samples to generate cDNA through reverse transcription. The cDNAs synthesized were subsequently used as templates in real time quantitative PCR of miR-133, miR-196 and miR-155 with 18S rRNA as the endogenous control. Taqman probes of the micro RNA and 18S were used in the real time reaction. The delta CT (cycle threshold) of the samples is subjected to statistical analysis to compare the difference of mRNA expressions between the controls and patients.

Results: A total of 19 hypertensive patients and 11 healthy individuals were recruited for this study that the mean age of the hypertensive group was 57.6 ± 10.8 years old (male 15/9, female 23/5, 23-75 years old). The mean age of the control group was 22.3 ± 2.9 years old (male 6/4, female 16/5, 23-25 years old). On echocardiogram, the mean left ventricular mass was 165.8 ± 32.9 g/m2 among hypertensive patients and 164.7 ± 32.9 among the healthy controls. The mean left ventricular mass was 165.8 ± 32.9 g/m2 among hypertensive patients and 164.7 ± 32.9 among the healthy controls. The delta CT means of miR-133, miR-196 and miR-155 were 15.7 ± 15.2, 12 ± 8 and 7.3 ± 7.1 respectively. The delta CT means of miR-133, miR-196 and miR-155 were 15.7 ± 15.2, 12 ± 8 and 7.3 ± 7.1 respectively. The expression levels of miR-133, miR-196 and miR-155 were significantly upregulated in patients.

Conclusion: miR-196 and miR-155 are significantly upregulated in patients with left ventricular hypertrophy secondary to hypertension.

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GAMMA DELTA TOCOTRINOLS REDUCE HEPATIC TRIGLYCERIDE SYNTHESIS AND VLDL SECRETION
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Background: Dyslipidemia remains a primary constituent of metabolic syndrome. Achieving optimal lipid parameters (cholesterol, triglycerides and lipoproteins) in dyslipidemic patients remains a challenging despite lifestyle modifications and lipid lowering drugs. Recently, the mechanism of action for tocotrienols (T3) to lower serum cholesterol was reported. However, it was unclear how T3 interferes with the synthesis and lipoprotein-dependent transport of serum triglycerides.

Objectives: Present work investigated the triglyceride-lowering effects of T3 using liver cells, hypercholesterolemic mice and humans subjects.

Methodology: In vitro, HepG2 liver cells were used and the protein expressions were investigated by Western Blotting. In vivo, LDL- and mice were used and the lipid parameters were assessed using ELSA kits. Clinical Trial: A double-blind, placebo-controlled study was conducted in hypertensive/steatorrheic patients from Takara Clinic (Japan). From the 60 initially recruited subjects, the top 80 (93%) were randomized with ratios to LDL were enrolled. The T3 group was given 120 mg T3 T375 mg daily per day while the placebo group received 100 mg of 300 mg of 6.3% per day. Supplementation was given for 8 weeks in both groups. Total cholesterol, LDL, HDL, triglycerides and lipoprotein fractions were assayed at the start and end of the 8-week trial.

Results: T3 in results demonstrated two modes of action. First, T3 suppresses the up-regulation of lipid hormones genes (SCAT, APOA1, SERPIns and HMCR) leading to the suppression of triglycerides, cholesterol, VLDL and chylomicron synthesis. Second, T3 enhances LDL, which through interaction of LDL with endothelial function of PCSK9 2 for one month show 28% 19% decrease in cholesterol and triglycerides levels respectively, whereas HDL cholesterol level was elevated. In our human clinical trial, serum triglycerides were significantly lowered by 28% (p<0.05) followed by concomitant reduction in the triglyceride-rich VLDL and chylomicrons. In contrast, HDL cholesterol increased marginally in treated group when compared to placebo.

Conclusion: Our data suggested that T3 possesses anti-inflammatory effects in humans through its triglyceride-lowering capability.

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OVERVIEW OF POST-ST ELEVATION MYOCARDIAL INFARCTION CARE IN SERDING HOSPITAL FOR THE YEAR 2010
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Background: This is a retrospective study of the patients who presented to Hospital Serdang from 1 January 2010 to 31 December 2010 with acute myocardial infarction (STEMI). This also included patients who presented via the emergency department of Hospital Serdang and patients who were transferred in from other centres. Our focus was on the post ST elevation myocardial infarction care and management.

Objectives: To observe the effectiveness of thrombotic agent, appropriateness of follow-up angiography, optimization of medical therapy on discharge and number of days spent in the hospital for patients who presented with ST elevation myocardial infarction.

Methodology: All patients who presented to CCU Hospital Serdang from 1 January 2010 to 31 December 2010 with ST elevation myocardial infarction were included in this study. In retrospect data was extracted and analyzed using excel 2010.

Results: A total of 202 patients were included in the study; however, data was only available for 237 of these patients, out of which 223 patients received streptokinase as a choice of reperfusion. ST resolution of more than 50% was attained in 87 (54.1%) of patients. The remaining 54 patients received either TPA (14%) or additional primary PCI (34%).

Conclusions: A total of 202 patients were included in the study; however, data was only available for 237 of these patients, out of which 223 patients received streptokinase as a choice of reperfusion. ST resolution of more than 50% was attained in 87 (54.1%) of patients. The remaining 54 patients received either TPA (14%) or additional primary PCI (34%).

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THE ASSOCIATION BETWEEN SOCIO-ECONOMIC STATUS AND CARDIOVASCULAR RISK FACTORS: EARLY IMPRESSIONS FROM LIFECARE
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Background: Socio-economic status (SES) has been shown to be associated with cardiovascular disease (CVD) in developed countries, with a paucity of data from developing countries. The prevalence of cardiocascular risk factors (CVRF) in developing countries is high, and the incidence of cardiovascular disease is projected to rise for the next two decades.

Objective: To determine the association between SES and CVRF in the Malaysian cohort from the LIFECARE study (LIFECARE-M).

Methodology: This was a cross-sectional study that represented the first 600 subjects from the LIFECARE-M study. Subjects were recruited from an urban setting in Sarawak, Malaysia. Socio-demographic variables, lifestyle factors, medical history, hypertension, diabetes, stroke and coronary heart disease (CHD) were obtained using a questionnaire. We also measured clinical variables (body mass index, waist to hip ratio, systolic blood pressure, diastolic blood pressure, high-density lipoprotein, low-density lipoprotein, triglycerides and fasting plasma glucose). SSES was derived from a principal component analysis (PCA), utilizing Education and Household income. Regression analysis was used to assess the associations between established CVRF and SSES. 10-year risk of total or non-fatal myocardial infarction was estimated using the Framingham risk score that incorporated LDL-cholesterol concentration.

Results: The 600 subjects had a mean age of 58 years old. 68.3% were female and 63.6% married Ages 30-39 years were significantly associated with higher SES compared to the younger age group. Older compared to younger age groups were also associated with higher SES, but not significant. Females tended to have lower SES compared to males (p=0.048). Individuals who were married but who were separated, divorced or widowed (p<0.05) respectively had lower SES than those single or married. Higher SES was associated with lower BMI (after adjustment for age, more smoking and more alcohol intake). Individuals who suffered from CHD also tended to have higher SSES.

Conclusion: Although heart disease is associated with higher SES, there is evidence that some risk factors (e.g. central obesity) are becoming more common in those with lower SES. This could result in an increase in CHD among individuals with lower SES as Malaysia undergoes an economic transition.

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ARE STILL MONTHLY PENCILLIN PROPHYLAXIS IS REAQUIESIBLE IN ACUTE RHEUMATIC FEVER?
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Background: Acute rheumatic fever (ARF) is a systemic immunologic response to group A streptococcal (GAS) with clinical manifestation of fever, arthritis, carditis, subendocardial (EM), subcutaneous nodules and chorea. Fever and arthritis are more common in our practice which infectious and rheumatologic conditions are among the most common differential diagnoses. Traditional descriptions of classic features of ARF were established in pre-modern incrimination era when the armamentarium of laboratory test was poor and with classification of disease rheumatic conditions was not taken into consideration. Anti-RNP antibodies of penicillin (PCN) derivatives are discovered by Thompson et al. several years after establishing monthly PCN as antibiotic prophylaxis for ARF.

Objectives: The aim of this study is to clarify the necessity behind routine diagnosis and PCN prophylaxis in ARF.

Methods: Searching the frequency of ARF and ARF complications among 25,000 records of new cases with rheumatologic complaints that referred to a general rheumatology clinic during 2003-2010 in Yazd, central Iran, during eight years.

Results: Our results showed that 890 patients were diagnosed for ARF by non-rheumatologists physicians but only 4 patients fulfilled the Jones’s criteria for acute rheumatic fever. Interestingly, almost all patients who were receiving monthly penicillin showed some clinical improvement in their arthritis regardless of specific diagnoses. About 10% of patients who were diagnosed reliably for ARF found to have classic picture of some other rheumatic disorders such as septic arthritis, systemic lupus erythematosus or adult-onset Still’s disease. Remaining 50% had unclassified chronic connective tissue disease. Many features against the diagnosis of ARF were chronic joint involvement, persistent elevated acute phase reactants, anemia of chronic disease, laboratory or radiology findings suggestive of specific rheumatic disorder.

Conclusions: Almost all cases of diagnosis by ARF by non-rheumatologist physicians in our big registry were misdiagnosed. Considering anti-inflammatory effect of PCN, clinical efficacy of PCN could not be simply atributed to its antibacterial effects. Further studies might prove that ARF also be simply managed as other chronic rheumatic diseases after per-case eradication of GAS infections.
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PHARMACOLOGICAL INTERVENTIONS BENEFICIAL IN IMPROVING VASCULAR FUNCTION AND CARdiovascular RISK IN OBESE PATIENTS (VASCOUR) STUDY — EFFECT ON MICROVASCULAR ENDOTHELIAL FUNCTION

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Background: We have previously shown that obese patients have impaired microvascular endothelial function that is associated with increased cardiovascular risk as demonstrated by increased blood pressure (BP), triglycerides, inflammatory markers and reduced adiponectin and KGL-2 levels.

Objective: This study reports the effect of 8 months pharmacological interventions for obesity with arbitral and arbustamine on microvascular endothelial function in obese patients.

Methodology: This randomised, controlled clinical study involved 76 obese subjects, given either 120 mg tiotropium daily or sublingual 15 mg daily for 8 months. Baseline weight, height and microvascular endothelial function were recorded before starting treatment, and 3, 6 and 9 months after starting treatment. Microvascular endothelial function was assessed non-invasively using laser Doppler fluimetry (LDF) and the process of inneroceptes. LDF measures skin perfusion, while inneroceptes refers to transdermal transfer of drug propelled by keratin electrical current. Sodium nitroprusside (SNP) and acetylcholine (ACh) were used to measure endothelial independent and endothelial dependent vasodilatation. Maximum absolute change in skin perfusion due to inneroceptes with acetylcholine (AChmax) indicates microvascular endothelial function.

Results: 45 subjects (24 with tiotropium and arbustamine group) completed the 9 months study, their data was used for analysis. Mean age and body mass index (BMI) of subjects were 35.1(±4) years and 34.1(±6) kg/m2 respectively. There were no significant differences between the 2 groups in their baseline age, BMI, BP, heart rate and skin perfusion. There was significant improvement in endothelial dependent vasodilation in the tiotropium group after 3 months intervention compared to baseline (66.64±4.79 vs. 37.30±6.80 AU, p<0.05 after and before treatment respectively). No significant changes were observed in arbustamine treated group. Endothelial independent vasodilatation with SNP showed no change, as expected, did not change after 9 months treatment compared to baseline for both groups.

Conclusion: We conclude that tiotropium for 9 months improve microvascular endothelial function in obese patients.

CORONARY EXPERIENCE IN MALAYSIA (CORE-MY)

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This non-randomised observational study primarily sought to evaluate the first experiences of hospitalisation in Malaysia for its efficacy in angina-related endpoints as well as highlighting safety issues, if any. This study also investigated the profile of patients with stable angina pectoris.

Methodology: Patients with angina pectoris and baseline HR above 80 bpm were recollected. Tiotropium was added to baseline treatment, and further dose increment to 7.5 mg tid after 1 month if the HR remained above 80 bpm. Follow-up assessments were made at 2 time points after stable recruitment was stopped after 2 months and after 6 months. Vascular responses to ischemia were assessed.

Results: 304 patients were recollected. There is a high prevalence of underlying hypertension (85.1%) and diabetes mellitus(46.4%). More than 53.3% of the patients were already on baseline beta-blocker therapy. As expected, hospitalisation was significantly reduced. There was a significant reduction in HR from 71±5.3 to 68±2 bpm with significant change in the DBP measurements. All angina severity indicators eg. number of angina episodes, use of intravenous nitroglycerine and angina classes improved. Side effects were uncommon. This treatment was well tolerated and accepted by most patients.

Conclusion: Tiotropium as a pure HR reduction agent is an efficacious strategy for angina improvement with minimal concerns of safety and side effects. This early experience of tiotropium use and its effects in Malaysia was in accordance with currently available clinical evidence.

EFFECTIVENESS OF EARLY CARDIAC REHABILITATION ON FUNCTIONAL CAPACITY IN POST-PTCA PATIENTS: A RANDOMIZED CONTROLLED TRIAL

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Background: Physical capacity is an important health outcome and commonly measured in terms of metabolic equivalents (METs) in routine clinical practice. However, exercise training has been the cornerstone of cardiac rehabilitation programs to preserve patient’s fitness and to optimize secondary prevention. There is controversy about its effects on functional capacity in PTCA patients.

Objective: To investigate the effectiveness of individually tailored exercise-based Cardiac Rehabilitation on functional capacity in post PTCA patients.

Materials Methods: It was single blinded, randomised controlled trial and approved by the ethical committee of the Kasturba Hospital, Manipal. Post-PTCA patients (within one month of hospital discharge) with age group of 35 to 75 years were recruited. Inclusion criteria were high risk group (AHA/NYHA IIB or III) and contraindications to exercise testing and training. Recruited subjects were randomized either into Control or Cardiac Rehabilitation (CAB) program by blocked randomization method. CR group (n=32) underwent 12 weeks individually tailored CR program (ACSM-2005 guidelines) and control group (n=20) only received the usual cardiac care without any exercise training. Main outcome measure: functional capacity (METs) level was measured by Bruce protocol exercise test at baseline and after 12 weeks CR and compared with control group. Using intention to treat approach, between and within group analysis was done using General Linear Model, repeated measures by keeping level of p 0.05.

Results: A total of 40 patients with mean age of 54.8 (30 male and 10 female) enrolled in the study having given written, informed consent. At baseline there was no significant difference between groups in respect of demographic, clinical and socio-economic characteristics as well as the main outcome. There was a significant increase in MET value in CR (8.2±2.3 to 11.3±2.9) group compared to control (8.1±2.9 to 8.4±1.5) group (p<0.001).

Conclusion: A 12 week early (within one month post-discharge) structured individually tailored cardiac rehabilitation program can significantly improve functional capacity in post PTCA patients. Keywords: Cardiac Rehabilitation, PTCA, Functional Capacity, METs, Coronary Artery Disease (CAD), RCT

IMPROVED FLOW-MEDIATED DILATATION IN BRACHIAL ARTERY IS ASSOCIATED WITH CORONARY PLAQUE VULNERABILITY IN PATIENTS WITH CORONARY ARTERY DISEASE, Takeru Emoto MD, Takahiro Sawada MD, Taro Mochizuki MD, Tetsu Mochizuki MD, Koichi Morishita MD, Takanori Kagami MD, Kazuhiro Tani M.D., Hiroki Okamoto M.D., Yousuke Masumoto M.D., Satoshi Kim M.D., Akira Takadate M.D., Mitsuhito Yokoama M.D.

Background: Improved endothelial function predicts future cardiovascular events. Although flow-mediated dilation (FMD) in brachial artery is a non-invasive parameter of endothelial dysfunction, the association between coronary plaque vulnerability and FMD is unknown.

Objective: To clarify the association between non-invasive parameter of FMD in brachial artery and coronary plaque vulnerability.

Methods: Of the 81 patients with coronary artery disease, we measured flow-mediated dilation in brachial artery using ultrasound (FMD). Flow-mediated dilation was defined as an increase in brachial artery diameter, which was measured using the Doppler method. The association between FMD and plaque texture was assessed using the Spearman correlation coefficient. We then analyzed the association between FMD and each plaque component, and also the presence of TOCA.

Results: FMD was inversely correlated with FMD and FMD and FMD, FMD and plaque components as well as the presence of TOCA.

Conclusions: Improved endothelial function in brachial artery is associated with coronary plaque vulnerability. This non-invasive parameter of FMD may have a potential to stratify risk category of future coronary events.

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GOOD CONTROL OF BLOOD GLUCOSE DOES NOT HAVE AN EFFECT ON CLINICAL OUTCOMES OF DIASTEMAL MALLORY’S STEM IN NORMAL-MALNUTRITION DIABETIC PATIENTS
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Background: Although drug-eluting stents (DES) have shown favorable outcomes in diabetic patients, there are few data assessing the effect of blood glucose control on clinical outcomes of DES.

Objective: The purpose of this study was to examine the effect of control of blood glucose on clinical outcomes of diabetic patients undergoing percutaneous coronary intervention using DES.

Methods: We performed coronary stent implantation using DES in 211 non-insulin-dependent diabetes mellitus (NIDDM) patients with DES lesions. Patients were divided into two groups according to glycosylated hemoglobin level at implantation of DES. Good control group (G group, HbA1c<6.5%) consisted of 103 patients with <12% lesions and poor control group (P group, HbA1c>6.5%) consisted of 115 patients with >10% lesions. In-stent restenosis lesions and coronary bypass graft lesions were excluded in this study. We retrospectively evaluated in-stent late lumen loss, binary restenosis at the six-month angiographic follow-up, and major adverse cardiac events (MACE) at the 1-year clinical follow-up.

Results: There were more hypertensive patients in P group (74%) vs. 61%, p<0.05). There were no significant differences in baseline patient characteristics except drug administration for DM. There were no significant differences in vessel diameter (2.52 ± 0.43 mm in G group vs. 2.53 ± 0.41 mm in P group), lesion length (19.5 ± 7.2 mm in G group vs. 18.5 ± 7.7 mm in P group) and procedural characteristics. There was no significant difference in late lumen loss between two groups (0.25 ± 0.44 mm in G group vs. 0.32 ± 0.52 mm in P group). Binary restenosis rate was similar in both groups (9.1% in G group vs. 7.5% in P group). Major adverse cardiac event rate at 1-year follow-up was similar in both groups (7.1% in G group vs. 12.4% in P group).

Conclusions: Blood glucose control did not have an effect on the long-term clinical outcomes after drug-eluting stent implantation in our NIDDM patients group.

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ARTERIAL STIFFNESS ASSESSMENT IN ACUTE RHEUMATIC FEVER: A PILOT STUDY
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Background: Acute rheumatic fever (ARF) and its sequelae rheumatic heart disease (RHD) is a significant health problem in developing countries. We postulated that ARF which is associated with endothelial inflammation may cause increased arterial stiffness in children. Arterial stiffness is an index of vascular health; increased arterial stiffness may lead to premature atherosclerosis.

Objectives: To investigate the presence and pattern of arterial stiffness in rheumatic fever patients.

Methodology: We conducted a prospective study to investigate arterial stiffness in patients with ARF with or without carditis and compared them to healthy controls. arterial stiffness was assessed by measuring pulse wave velocity (PWV) and augmentation index (AI) derived from pulse wave analysis. All data were expressed as mean ± SD. A p value of <0.05 was considered statistically significant.

Results: Thirty-eight patients between 10 - 15 years old were recruited: 17 were in RF with carditis group, 9 were RF without carditis, while 18 were controls without RF. There was no significant difference in PWV between the three groups. AI were higher in RF with carditis 10.04 ± 4.12 and RF without carditis 13.98 ± 10.78 compared to controls 3.63 ± 9.95; however, the differences did not reach statistical significance. PWV were significantly higher (which indicated increased arterial stiffness) in the acute stages of RF both in the carditis and without carditis patients compared to 5 months later. PWV in the acute stage of RF with carditis was 5.04 ± 1.97 compared to 5.96 ± 2.11 mm [p-value of 0.021] at 6 months follow-up. PWV in acute stage of RF without carditis was 7.18 ± 3.22 as compared to 6.95 ± 0.65 at 6 months follow up was 5.40 ± 0.54 with p-value of 0.04. This increase in arterial stiffness was associated with resolution of inflammatory process as evidenced by reduction in the inflammatory marker erythrocyte sedimentation rate (ESR) from acute phase with means of 71.29 ± 84.68 to 6.5 ± 3.29 at 6 months follow-up with means of 17.58 ± 22.99 with p-value of 0.02.

Conclusion: This study suggests that patients with RF have increased arterial stiffness which occurs transiently regardless whether they have or not have carditis.

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EARLY RESULT OF PATIENTS WITH SIGNIFICANT CARDIOT STENOSIS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION IN A NEWLY ESTABLISHED HEART CENTRE
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Background: Cardiac artery disease is uncommon in patient with coronary artery disease during diagnostic coronary angiography. Routine carotid angiography was performed during diagnostic coronary angiography for patient with severe coronary artery disease involving left main trunk. Those patients with significant carotid artery severity (>50%) was offered percutaneous coronary intervention carotid event.

Objective: The aim of this study was to determine the immediate and short term safety and adverse event of patient with significant carotid artery stenosis underwent Percutaneous coronary intervention in a newly established heart centre.

Methodology: Retrospective study of all patients underwent elective PTA to carotid artery in our heart centre from January 2016 to December 2016. We assessed the demographic, lesion type, used of debt protection device, procedure success, complication, intermediate and short term major adverse cardiac event.

Results: 8 patients underwent PTA carotid, the mean age was 72 year-old, 52.5% are male, 50% had diabetes mellitus. All lesions involved internal carotid artery. Debt protection device was deployed in all cases. Carotid stent was successfully deployed at lesion site. There is 100% procedure success rate with no immediate complication. There was no reported cases of acute cerebral event, death and myocardial infarction during the follow up.

Conclusion: In our small study cohort, percutaneous carotid intervention of significant carotid artery disease demonstrate an excellent immediate and short term result in the treatment of significant carotid artery disease. However further long term follow up with larger sample size is needed to determine its long term clinical benefit and outcome.
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CLINICAL AND ANGIOGRAPHIC PROFILE OF CORONARY ECTASIA
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Objectives: Coronary artery ectasia is not an uncommon entity characterized by inappropriate dilation of the coronary vasculature. The exact mechanisms of its development are unknown, but evidence suggests a combination of genetic predisposition, common risk factors for coronary artery disease and abnormal vessel wall metabolism. It frequently coexists with aneurysms elsewhere, mostly involving the aorta. It can present clinically as stable angina or acute coronary syndromes.

Methods: Coronary angiogram of 1262 patients between May, 2009 to February, 2010 were retrospectively reviewed at National Institute of Cardiovascular Diseases (NICO), Dhaka.

Results: 54 (3.32%) patients were found to have coronary ectasia. Males were 45 and females were 9. Mean age of patients was 54 + 16.4 years. 41% patients had hypertension. 31% patients had diabetes mellitus, 93% patients had dyslipidemia. 39% patients were smokers and 3% patients had positive family history of MI. 63.69% patients had abnormal ECG and 30% has positive exercise test. Mean left ventricular ejection fraction was 54 ± 14%. Right coronary artery being most commonly affected vessel(51%), followed by left anterior descending artery(32%), left circumflex artery(3%) and left main coronary artery involvement in 2 cases.

Conclusion: Majority of the patients had obstructive coronary artery disease with traditional risk factors for atherosclerosis indicating that coronary ectasia is most commonly associated with atherosclerosis and is not benign. Correspondence to: Md. Toufiquir Rahaman, FOGS (Medicine), MD (Cardiology), MEBC (CMC), Associate Prof. of Cardiology. Room no 334, Middle Block, NICO, Dhaka.

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E-LEARNING VERSUS TRADITIONAL LECTURING FOR THE TEACHING OF ADVANCED CARDIOVASCULAR LIFE SUPPORT
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Introduction: Classroom face-to-face lecturing is currently the core component of undergraduate medical education worldwide. Current literature emphasizes the important role of e-learning, where students have better control over their own pace and way of learning. Advanced Cardiovascular Life Support (ACLS) books guidelines for new healthcare workers to use computers for teaching.

Objectives: To compare the effectiveness of computer-based teaching (CBL) to traditional classroom face-to-face lecturing (FL) teaching ACLS with regards to knowledge gain and student satisfaction.

Methodology: This is a quasi-randomized, unblinded, prospective study. Fourth year medical students were conveniently divided into groups. The first group (FL) was subjected to a classroom lecture on ACLS algorithms and electrocardiograph (ECG) recognition. The second group (CBL) studied web-based lectures equivalent to contents in the face-to-face lecture. Pre-teaching test was carried out and scores reflect baseline knowledge, while knowledge gain was assessed by deducting pre-test from post-test scores. Psychometric analysis using a 0-1-2-3 validated Likert scale questionnaire was used to evaluate student's satisfaction levels with various aspects of their learning experience. Data is presented as means (standard deviation).

Results: 126 students were enrolled, 66 in FL group and 37 in CBL group. Baseline knowledge was identical for FL and CBL groups, with pre-test scores means of 8.87 (±2.06) and 8.92 (±2.07) respectively (p=0.798). The overall knowledge gain score was significantly higher (p=0.002) for FL with 5.71 (±2.19) compared with CBL's 3.81 (±3.14). ECG rhythm recognition knowledge gain score averaged 1.71 (±0.93) and 1.05 (±0.22) for FL and CBL group respectively (p=0.416). Both groups demonstrated satisfaction levels ranging between "very good" and "excellent". However, the FL group described their experience as more interactive, organized and practical, with more appropriate content, easier to remember and reusable as a standard lecture for other students, as compared to the CBL group (p<0.05).

Conclusion: Students can learn ACLS effectively both from media of instruction. The overall knowledge gain was significantly higher in the FL group. Students still prefer face-to-face teaching, although both types of teaching were rated positively. CBL proved to be as powerful as FL in teaching ECG recognition. A blended environment of traditional lectures integrating well-designed electronic modules seems most appropriate.

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CORRELATION BETWEEN CATEGORAL GRADE IN INVASIVE CORONARY ANGIOGRAPHY AND MYOCARDIAL VIABILITY BASED ON CARDIAC MAGNETIC RESONANCE IMAGING IN CHRONIC TOTAL OCCLUSION
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Background: Collateral services as an alternative blood supply in coronary artery diseases with chronic total occlusion (CTO) and help maintain myocardial perfusion and viability. Determination of myocardial viability is crucial in deciding the feasibility of coronary revascularization.

Objectives: We attempt to investigate the correlation between collateral grade and myocardial viability based on cardiac magnetic resonance imaging (CMR).

Methods: We retrospectively examined 104 coronary artery chronic total occlusions in 87 patients who had viability testing done with CMR between June 2007 and July 2010 in our center. All imaging was done within 8 months of coronary angiography and before any successful revascularization was done on the culprit artery.

Categorization is based on visual assessment of coronary angiography and ranked using Rentrop's Scale. Myocardial viability is defined as scar tissue less than 75% myocardial tissue on gadolinium late enhancement study. Myocardial segments were classified using American Heart Association (AHA)17 segment model.

Results: 82.9% (70/85) of CTOs with Rentrop Grade 2 collariage was noted to have viable myocardium in the corresponding territories. In CTOs with Rentrop Grade 2 and Grade 1 collariage, viability was demonstrated in 73% (27/37) and 94.5% (11/12) of cases respectively. The correlation between myocardial viability and collateral grade is not statistically significant based on Chi square analysis (p=0.42).

Conclusion: Visual assessment of collateral grade based on Rentrop classification on invasive coronary angiogram is unreliable in predicting myocardial viability.

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DIABETIC DYSFUNCTION IN RHEUMATOID ARTHRITIS PATIENTS AND CORRELATION TO DISEASE SEVERITY AT UNIVERSITY KISBANGSAAN MALAYSIA MEDICAL CENTRE
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Aims: The prevalence of diabetic dysfunction among rheumatoid arthritis (RA) patients in Malaysia is not fully established. The aim of this study was to evaluate the left ventricular (LV) diabetic dysfunction in RA patients without clinically evident cardiovascular manifestations and to estimate whether there is correlation between RA disease severity and diabetes and LV diabetic dysfunction.

Methods: The study was cross-sectional study involving 63 patients (42 females and 21 males) with RA without clinically evident heart disease and 32 healthy subjects (47 females and 5 males) who served as a control group. Both groups were matched for age and sex. Echocardiographic and Doppler studies were conducted in all patients with RA and control subjects.

Results: Atrial (4A) wave velocity was significantly greater in RA patients than control group (0.07 ± 0.08 vs. 0.69 ± 0.101.01, p<0.06). RA patients compared to control group have longer interventricular relaxation Time (VI) (78.08 ± 50.72 vs. 70.64 ± 50.82) and lower E/A ratio (1.27 ± 1.01 ± 0.95) vs. 1.42 (±1.01 ± 0.85). There was no significant association (p=0.05) in prevalence of diabetic dysfunction according to Redfield Classification in RA patients compared to control group (47% ± 27 (50.5%)). There was no significant correlation between diabetic dysfunction value in RA patients and value of disease activity score 28 (DA28) and value of Health Assessment Questions Disability Index (HAQDI).

Conclusion: Prevalence of diabetic dysfunction was 47% and control group was 30.5%. LV diabetic dysfunction has no statistical significant correlation with RA disease severity and duration of diseases. Key words: Diabetic dysfunction, Malaysia, Rheumatoid arthritis
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PREVALENCE OF INCIDENTAL FINDINGS ON CARDIAC MR AT SINGLE CENTER LIN

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Background: Cardiac magnetic resonance imaging (CMR) is emerging as the method to detect coronary artery disease and assess cardiac function and morphology. Non-cardiac structures are also amenable to assessment by this test. The CMR scan can therefore detect findings that are incidental to the initial indication. These findings may be clinically significant, requiring further work-up or treatment.

Objectives: To determine the prevalence of incidental findings on CMR, whether it is good screening tool for non-cardiac findings, if not we could reduce the screening time (by an average 10-15 min.), and to document our incidence of incidental findings on CMR.

Methods: This is a retrospective study in which 100 patients were recruited from CMR unit at Institute Heart Institute. All the subjects had had CMR with at least 7 sequences of the MRI protocol. All images have been retrospectively reviewed by our in-house cardiology as well as by our visiting cardiologist. Each sequence was assessed independently by each cardiologist to determine if there were any findings noted and categorized according to the significance which are described as 1) Significant findings requiring further clinical work up or treatment, 2) Findings that may affect patient care depending on medical history or symptoms, 3) Remaining findings which are considered clinically insignificant.

Results: Of the 100 participants, 14 (14%) had extra cardiac finding, out of these 14 patients 6 (42.9%) having multiple finding. A total of 20 incidental findings were visualized, including 6 potentially significant findings 5 findings of intermediate importance and 7 as insignificant findings. The most common significance were the presence of valvar abnormalities, coronary artery disease, pericardial effusion, atrial septal defect and atrial septal defect was seen in 2 patients (14% respectively). Most prevalent clinically insignificant findings was fibrous cyst seen in 3 patients (21.45%). 1 patient had findings including brain mass found in 3 patients (21.4%), pulmonary nodules; solid renal mass and complex cyst, pleural nodules, parenchymal lung changes and mediastinal fatty mass found in 1 patient (7.1%) respectively. Intermediate significance findings including atrial effusion, atrial septal defect found in 2 patients (14.3%) respectively. No other finding was noted in 1 patient (7.1%). The most frequent incidental findings were noted in 7 patients (21.4%).

Conclusion: Based upon the findings of this study there were high prevalence of non-cardiac incidental findings on CMR, most of these findings were clinically insignificant, which needs further work-up and treatment. Therefore we suggest that CMR is a good screening tool to look for the non-cardiac incidental findings as this may affect other clinical picture and may help in better understanding of the patient's underlying problem. And all 7 sequences of CMR need to be done to look for these findings.

P36

CHANGES OF HEART RATE AND ITS RELATION WITH SCAN AND LVEF OF CORONARY ARTERY DISEASE PATIENT DURING ADENOSINE STRESS SPECT-MPI

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Background: Adenosine is a coronary vasodilator. To see the effect on heart rates changes and relation with scan and LVEF of coronary artery disease patient during adenosine stress SPECT-MPI has yet not yet been tested in Bangladesh.

Objectives: To evaluate the changes of HR and its relation with scan and LVEF of coronary artery disease patient during adenosine stress SPECT-MPI.

Methods: Cross sectional study was done on 92 patients who underwent adenosine stress test (without exercise) and MPI using technitium-99m tetrofosmin scintigraphy. Change in HR was calculated by subtracting HR at rest from peak HR. The percentage change in HR was calculated.

Results: Mean age was 54 ±11.7 years and 69 of the patients (72%) were men [23(40.7%)] had CMI, 24(35.6%) had diabetic aortitis, 51(75.7%) had arterial cholest [75.7%] had arterial cholest [9.7%] had coronary artery disease (85.7%) had complete of 50% and 49% had disease of aorta. We divided the patients in to 2 groups: Group 1(21 patients,29.5%) had normal scan and Group 2 (61 patients, 71.5%) had abnormal scans. Abnormal scans were defined as either fixed defects>35%, irreversible defects>15.5% and RE>26.2%. Average HR increased by 35 breaths in the normal scan group compared with 23 breaths increase in the abnormal scan group (p<0.05). The group 2 had an average HR and percentage HR increase of 33 breaths (27%) compared with an increase of 35 breaths (29%) in patients with normal LVEF (0.029 and <p=0.02 respectively).

Conclusion: Thus, a diminished HR response has a significant relation with both abnormal scan and reduced EF on adenosine stress SPECT-MPI.

P37

VALENCY DISFUNCTIONAL MYOCARDIUM AND ITS CORRELATION WITH THE LV REMODELLING IN PATIENTS WITH SUCCESSFULLY REPERFUSED STEMI

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Background: Isolated 12/3-4-methyl isothiouracil potassium bromide (BMPI) and 3-keto toco- natone (KTN) uptake is designated as valvular dysfunction or valvular myocardial starvation. But a little is known about its relation with the left ventricular (LV) volume change.

Objectives: This study was designed to unravel the impact of the degree of BMPI-17 potassium uptake on LV remodelling following successfully reperused 27-segment myocardial infarction (ST-MI).

Methodology: Thirty five patients (Age: 52±11 yr) with recent STEMI were enrolled, and all of them experienced successful emergent percutaneous coronary intervention (PCI). BMPI and KT-17 scan; scintigraphy was performed on 743 days of admission. On 17 segment model, a difference of BMPI and KT-17 defect scores by >1 were considered as mismatched defect. Complementary echocardiography was performed within 24 hr of admission, and at 3 months interval. Left ventricular end diastolic volume index (LVEDVI), and end systolic volume index (LVESVI) were recorded according.

Results: Out of 35 patients, 30 showed BMPI-17 mismatched defect and rest 5 matched detected. Twenty patients (71%) showed reduction of left ventricular EDVI, and 15(44%) patients showed reduction of ESVI over 3 months. Mismatched defect score showed a significant correlation with the relative change of ESVI (r=0.52, r<0.05) and ESVI (r=0.52, r<0.05).

Conclusion: The degree of dysfunctional valvular myocardium showed nice correlation with the favorable LV remodelling following successfully reperfused STEMI, and emergency PCI played a great role to prevent the upcoming ventricular remodeling.

P38

THE PREVALENCE OF ABDUCTIVE DILATATION, VALVE FUNCTION AND DIFFERENT PHENOTYPES IN PATIENTS WITH BRUCHOPA AORTIC VALVE IN VARIOUS ETHNIC GROUPS

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Background: Bruchopap aortic valve (BAV) is the most common form of adult congenital heart disease and is usually associated with dilatation of the aortic root and ascending aorta, aortic stenosis and aortic regurgitation. We aim to study the prevalence of AR, AS, aortic dilatation and the different BAV phenotypes in different ethnicities in our population.

Methods: 200 patients (male/female: 132/68, mean age: 45.0±13.3 years) diagnosed with BAV were retrospectively studied. All patients underwent full echocardiography examination. BAV was classified into three phenotypes: R-U, R-L, R-N and L-N. (See Figure). Patients were divided into four ethnic groups: Chinese, Indian, Malay and others. (See Figure).

Results: 40% of our group, the percentage of Chinese was 51%, Indian was 18%, Malay was 8% and others was 2%. R-L phenotype was the most common in four groups (85%, 92%, 90% and 86%, respectively). The prevalence of AR was higher (38% in American and Chinese and Malay groups) (p=0.07, and 54% and 43%, respectively), whereas the prevalence of AS was higher (10% in in Indian group (30%) vs.23% in the Indian and Malay groups, when we performed aortic stenosis. The group with the highest prevalence of aortic root dilatation was the lowest in Chinese, Malay and Indian groups. There was no difference in BAV phenotypes among Chinese, Malay and Indian population. (See Figure). The prevalence of different phenotypes, AR, AS and aortic dilatation in different ethnic groups.

Figure: Three different phenotypes of BAV:

Table 1. The prevalence of different phenotypes, AR, AS and aortic dilatation in different ethnic groups

Ethnic Group Chinese group (n=85) Indian group (n=20) Malay group (n=13) Others (n=62) BAV phenotype R-U-L-N 21% (18%) 7% (0%) 5% (0%) 20% (30%) 21% (28%) 10% (30%) 30% (21%) 7% (0%) 20% (30%) R-U-L-N 21% (18%) 7% (0%) 5% (0%) 20% (30%) 21% (28%) 10% (30%) 30% (21%) 7% (0%) 20% (30%) BAV phenotype R-U-L-N 21% (18%) 7% (0%) 5% (0%) 20% (30%) 21% (28%) 10% (30%) 30% (21%) 7% (0%) 20% (30%)
Abstracts

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LEFT VENTRICULAR LONGITUDINAL FUNCTION BY CARDIAC 2D AND 64 SLICES COMPUTED TOMOGRAPHY

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Background: Detection of patients who will progress from left ventricular (LV) hypertrophy to diastolic heart failure (DHF) is important for the strategy of medical treatment. Recent studies demonstrated that LV longitudinal deformation in DHF is reduced despite preserved systolic function.

Objectives: The aim of our study is to evaluate the LV longitudinal function by 320 and 64 slices CT.

Methodology: 211 cases underwent cardiac 320 slices CT “Aquilion ONE” (TOSHIBA Co., Ltd., Japan) and 22 cases underwent cardiac 64 slices CT “Brilliance CT 64” (PHILIPS Co., Ltd, Netherlands) from April to October, 2010. We randomly selected 55 cases, and measured LV mass, LV ejection fraction, LV longitudinal shortening by cardiac analysis work station “SYNAPSE-VINCENT” (Fujifilm Co., Ltd, Japan). LV longitudinal shortening was measured the distance between mitral valve and LV apex at the end diastolic (R-R interval of 60) and at the end systolic (R-R interval 30% or 45%) phases in 2 different long axis image by cardiac function mode.

Results: We found a strong negative correlation among LV longitudinal shortening and LV mass index (R = -0.763). But, there was a moderate positive correlation among LV longitudinal shortening and LV ejection fraction (R = 0.536).

Conclusion: These results suggested that longitudinal function by cardiac CT is progressively depressed associated with LV hypertrophy.

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ADDITIONAL CALCULUS SCORING BY CARDIAC 2D AND 64 SLICES COMPUTED TOMOGRAPHY IS USEFUL FOR SCREENING OF AORTIC VALVE STENOSIS

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Background: Noninvasive coronary angiography with the use of multislice CT is feasible for identifying patients with coronary artery stenosis. In addition, the incidence of significant calcific aortic valves is expected to rise in the aging society.

Objectives: The aim of our study is to assess the correlation among the severity of aortic valve calcification, aortic valve stenosis, and left ventricular hypertrophy by cardiac 2D and 64 slices CT.

Methodology: 167 cases underwent cardiac 2D slices CT “Aquilion ONE” (TOSHIBA Co., Ltd., Japan) and 21 cases underwent cardiac 64 slices CT “Brilliance CT 64” (PHILIPS Co., Ltd, Netherlands) from April to October, 2010. We randomly selected 112 cases, and measured aortic valve calcium score (AVCS score) and aortic valve area (AVA) by cardiac analysis work station “SYNAPSE-VINCENT” (Fujifilm Co., Ltd., Japan). AVCS score was measured by calcium score mode, and AVA was measured by cardiac function mode.

Results: We found a strong positive correlation (R = 0.856) among AVCS score and AVA, and a moderate positive correlation (R = 0.65) among AVCS score and LVMI. When classified as moderate-AS group (1 ≤ AVCS score ≤ 30) and severe-AS group (AVCS score > 30), the AVA of moderate-AS group (2.8 ± 0.3 cm²/1.7 ± 0.2 cm²) and severe-AS group (1.9 ± 0.4 cm²) were significantly higher than that of other groups (2.2 ± 0.2 cm², 2.7 ± 0.4 cm², 0.4 cm² – 0). P < 0.01

Conclusion: These results suggested that aortic valve calcium score assessed by cardiac CT is useful for screening of AS.

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ASSESSMENT OF LEFT VENTRICAL STRESS FUNCTION IN PATIENTS WITH HEART FAILURE BY GLOBAL TWO-DIMENSIONAL ECHOCARDIOGRAPHY

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Background: Although 2D strain based on speckle tracking has been proposed as a simple and reproducible tool to detect systolic dysfunction, the relationship of 2D global strain and heart failure has not been clear.

Objectives: We sought to study the characteristics of the 2D global strain in patients with different degrees of heart failure.

Methodology: 28 cases of normal controls and 50 cases of myocardial infarction patients with heart failure were enrolled in the study. Patients with heart failure according to left ventricular ejection fraction (LVEF) were divided into mild group (25 cases), moderate group (21 cases), and severe group (12 cases). The systolic longitudinal strain (SLS), radial strain (RS) and circumferential strain (CS) were measured in 18 segments of left ventricle using 2D strain software. The global longitudinal strain (GLS), the global radial strain (GRS) and the global circumferential strain (GCS) were calculated as the average of left ventricular 16 segmental SLS, RS and CS values respectively. LVEF and left ventricular and diastolic volume (LVESV) were also measured by the conventional two-dimensional echocardiography.

Results: There was significant difference in GLS, GRS. GCS between normal control group and mild, moderate, severe heart failure group (P < 0.05). GLS was significantly decreased with a reduced LVEF. GLS can be seen significant differences between mild, moderate and severe heart failure groups (P < 0.01). GRS in severe group was lower significantly than that in mild and moderate group (P < 0.05). But there was no significant differences in GRS in the three heart failure groups (P > 0.05). GCS was closely correlated with LVEF (r = -0.03, P < 0.01). GCS also have a certain correlation with LVESV (r = -0.55, P < 0.05). There was no correlation between GRS and LVESV (r = 0.32, P > 0.05).

Conclusion: GLS, GRS, GCS change differently in varying degrees of heart failure group. And both of GLS,GCS are closely correlated with the LVEF. GRS, GCS may reflect the varying degrees of myocardial injury, but GRS and LVESV may reflect different aspects of left ventricular systolic function.

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IS TRANSESOPHAGEAL ECHOCARDIOGRAPHY AN ESSENTIAL INVESTIGATION FOR INFECTIVE ENDOCARDITIS? 5 YEAR SINGLE CENTRE EXPERIENCE

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Background: Echocardiography has a crucial role to play in the diagnosis of infective endocarditis (IE). Transoesophageal Echocardiography (TOE) in patients with suspected IE, even in cases with a positive TTE because of higher sensitivity and specificity for the detection of abscesses, as well as better accuracy in determination of the size of vegetation.

Objectives: The purpose of the study was to look at the correlation between TTE and TOE to determine if TOE should be done in all cases with suspected proven IE irrespective of TTE diagnosis.

Methodology: Echocardiography reports for all patients with a diagnosis of IE over a 5 year period (2002-2007) at University Hospital Lewisham were reviewed retrospectively.

Results: In total there were 25 cases of IE over the 5 year period. It cases had TTE only and 5 cases had TTE only. In 11 cases both TTE and TOE were done. In 7 out of these 11 cases, the diagnosis was also in both the modalities. In 4 out of 11 cases (more than 30%) cases both TTE and TOE were done, the TOE diagnosis was different from the TTE diagnosis. In 1 case TTE picked up additional myoicotic abscess anomaly apart from aortic vegetation detected on TTE. In 1 case the diagnosis on TOE was completely different (normal) as compared to TTE which showed aortic root abscess. In 1 case TOE assessed the severity of mitral valve vegetation more accurately (Large vegetation on TOE vs moderate vegetation on TTE). In 1 case TOE picked up mitral valve vegetation in addition to mitral regurgitation reported by TTE.

Conclusion: These findings suggest that TOE should be done in all cases of confirmed infective endocarditis even if TTE has been done because of the higher sensitivity, specificity and accuracy of TOE. The findings also support the ESC Class 2A recommendation that TOE should be considered in majority of cases with a suspected diagnosis of infective endocarditis irrespective of TTE findings.

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ST-ELEVATION MYOCARDIAL INFARCTION IN YOUNG AND OLD PATIENTS: A COMPARISON OF RISK FACTOR PROFILE, CLINICAL PROFILE, CORONARY VESSEL INVOLVEMENT AND CLINICAL OUTCOME. A RETROSPECTIVE STUDY

Background: The emergence of an accelerated atherosclerotic syndrome in young adults with myocardial infarction raises concerns of whether it is associated with a different disease pattern and adverse outcome in view of a more multi-factorial disease process. This study addresses the acute clinical presentation, risk factor profile, coronary angiographic findings and clinical outcome in young adults with ST-elevation myocardial infarction (STEMI) and compares with that in older patients.

Objectives: This study is to determine whether there is any difference between the young and old STEM patients in terms of clinical presentation, risk factor profile, angiographic findings and clinical outcome. METHODS: This is a retrospective study. We examined 239 patients with STEM from January 2006 to April 2010. They were divided into young (45 years in age) and old (45 years and older) groups. We studied their acute clinical presentation, risk factor profile, the extent of coronary vessel involvement, in-hospital mortality and major adverse cardiac events (MACE) within 6 months follow-up.

Results: We observed male predominance in young STEM group compared to the old group. We found the prevalence of Chinese patients in the young group with high proportion from Bangladesh and Pakistan. Young STEM had significantly lower rate of diabetes and hypertension but they had worse left ventricular function. Active smoking was noted to be the most associated risk factor in young STEM. Although there is no significant difference in in-hospital mortality, young STEM had a better 6-month outcome.

Conclusion: We observed distinctive characteristics in our young STEM patients compared to the old group in terms of their ethinicity, risk factor profile and clinical outcome.

CAUSES OF DELAYED OR MISSED THROMBOLYSIS IN A STATE HOSPITAL IN MALAYSIA
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Background: Thrombolysis and primary percutaneous coronary intervention are established treatments for acute ST-elevation myocardial infarction (STEMI) but both should be administered timely in order to achieve greatest benefit. Objectives: To determine duration of patients that presented with symptom of STEM to arrive to the hospital, duration from arrival to the hospital to the administration of thrombolysis, and factors contributing to the delayed or missed thrombolysis.

Methodology: This is a retrospective study from hospital registry of all patients who were diagnosed to have STEM in Hospital Tengku Ampuan Jantie from November 2008 to October 2010. Patients treated with primary percutaneous coronary intervention and patients who received thrombolysis from other centers were excluded from this study.

Results: A total of 141 patients' records with STEM were reviewed. 67.4% were thrombolysed and all used streptokinase except 3 patients used tenecteplase. Only 44.3% of the patients presented to hospital within 2 hours from the symptom. The median hospital arrival to thrombolysis time (Close to Needles) was 105 minutes. 109 minutes to 2 hours. Only 61.4% (N=11) of the patients achieved door to needle time of less than 30 minutes. There were a total 50 patients with delayed (>30 minutes from hospital arrival) or missed thrombolysis of which 75.5% were potential preventable (25 due to delayed in the system (wrong target, delayed in ECG, slow in preparing medication and etc.)). 18 due to delayed or missed diagnosis by emergency department doctors, 8 due to delayed or missed diagnosis by medical team doctors and 2 due to law presentation.

Conclusions: There were substantial numbers of patients with STEM presented late to hospital (> 2 hours from the symptoms) as well as delayed in door to needle time more than 30 minutes. Measures need to be taken to increase the public awareness and to improve the hospital system in order to diagnose and treat STEM early.

Causes of Delayed or Missed Thrombolysis

Evaluation of Targeted Cardiovascular Risk Factors Management Among High Risk Patients Coronary Artery Disease Attending UN Clinics
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Statement of Topic Cardiovascular disease is a leading cause for morbidity and mortality all over the world. It is important to study the lifestyle related, modifiable cardiovascular risk factors among patients, in order to devise preventive strategies. Risk factor modification remains the cornerstone of management of CAD. Many of the traditional risk factors for CAD—hyperlipemia, diabetes mellitus, smoking, and so on—are common.

Objectives: To determine targeted cardiovascular risk factors control among coronary artery disease patients.

Methods: An observational cross sectional study. Design was used in the data collection process. The study sample consists of 310 CAD outpatients who fill the inclusion criteria. All the patients were recruited from the outpatient clinics at National Heart Institute of Malaysia (NH) located in the state of Kedah, Malaysia.

Results: A total of 310 coronary artery disease outpatients referred to UN were evaluated (203 females and 77.7% males) with a mean age of 51 ± 9.6 years. 30% of patients had diabetes since diagnosed diabetes (18.5% of female patients and 12% (4.8%) of male patients). A history of hypertension was detected in 90% of patients, of which 23.9% had blood pressure values at the target of 171/90 mmHg. Dyslipidemia was found in almost all of patients, of which 72.1% were on target (cholesterol, which were target >70mmHg) were observed in 48/54 (24.9%). In smoking target, majority 288/316 (91.6%) were either ex-smoker or never smoked. According to waist circumference target a total of 311 (91.7%) male patients were within target. Total of 58 (18.3%) females patients did not achieved a target. BMI Target, 23.8±3.2 of patients had achieved target weight (more than 23 Kg/m²). 68 (22.38 %) of patients had targeted physical activity. A GFR target was seen in 204 (66.8%).

Conclusion: This study found that majority of Malaysian patients are not achieving recommended levels of glucose, blood pressure and body mass index. These findings exist between our knowledge of effective management and their performance in practice. The present study recommends that more effort must be given for treatment of high risk patients to improve the quality of care in Malaysia.
ABSOLUTE RISK REDUCTION OF LIPID PROFILES AMONG TYPE 2 DIABETES MELLITUS OUTPATIENTS AT HOSPITAL UNIVERSITARI SVAI MELANIA (HUSM)

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Background: Dyslipidemia is a major risk factor for macrovascular disease. The main objective of the present study to determine the frequency of desirable and high risk levels of lipid profile and to evaluate the prevalence of target levels of lipid profiles in a cohort of Malaysian Type 2 diabetes patients according to ADA.

Methods: Prospective longitudinal study was conducted with sample of 1077 Type 2 diabetes mellitus outpatient recruited whom attended the diabetic clinic at Hospital Universitari SVAI Melanisa (January 1st December 2010). Selection criteria include any gender-aged more than 18 years. This study assessed the percentage of diabetic patients falling into desirable, borderline and high risk categories according to the criteria laid down by Adult ADA (NHPC) software version 11.9 was used for data analysis.

Results: The mean of lipid profile were 2.82 ± 0.8 (for LDL-C, mean for T CH was 4.68 ± 1.17, while mean for HLDL-C were 1.45 ± 0.54 and mean for TG were 74.35 ± 38.9). While according to ADA, 68.103.5% of patients had optimal cholesterol (<2.0 mmol/l) level, while 36.9% had cholesterol (95; 200) mmol/l. As for lipid control, most had satisfactory control with regards to LDL-C (49.48%) had optimal (LDL-C <2 mmol/l), while 26.5% (5.5%) had (LDL-C 2.0-3.4 mmol/l), 19.7% (9.5%) had (LDL-C 2.4-4.4 mmol/l), and only 11.3% (2.5%) had (LDL-C >4.4 mmol/l). But most of our study population had unsatisfactory control with regards to HLDL-C, according to ADA guidelines, 38.91% of male patients had optimal HLDL-C (<1.0 mmol/l), while 34.59% from females had HLDL-C 1.0-3.3 mmol/l, 22.6(23.6%) of females had HLDL-C 3.4-4.4 mmol/l and only 0.8% of male had high total HDL-C >4.4 mmol/l control.

By reviewing TG profile most of the patients had borderline control, with regards to TG, 29.45% of patients had optimal TG <1.7 mmol/l; while 21.91% (1.3%) had high TG 2.4-5.2 mmol/l and 232.20% had baseline HDL TG control (1.7-3.3 mmol/l).

Conclusions: The present study was able to explore the impact of each of the factors in lipid levels from 36.9 to 2.055.3% of patients had optimal total cholesterol, while 0.8% had high total HDL-C. Out of 1077 type 2 diabetes patients 1066.0% were on lipid lowering therapy at the time of sample collection, these figures show that even though 58.62% of patients were on statins, the major (71.74%) were on Atorvastatin, 26.24% (5.1%) were on Pravastatin, while 22.129.5% were on Simvastatin.

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LONG-TERM MANAGEMENT AND CLINICAL OUTCOMES OF POST ACUTE CORONARY SYNDROME PATIENTS AFTER MODIFIED CARDIAC REHABILITATION PROGRAM

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Background: The interdisciplinarity teamwork in cardiac rehabilitation program (CRP) in Malaysia might offer from the conventional model elsewhere. An early monitoring by clinical pharmacist in phase 1 of CRP that based on in-patient education program is evaluated with the existing conventional program.

Objectives: To evaluate the early treatment of acute coronary syndromes (ACS) using anticoagulants, to apprise the modified cardiac rehabilitation in term of long-term clinical outcomes.

Methodology: We recruited post ACS patients with practical experience design at Sarawak General Hospital. Hundred and twelve post ACS patients were divided to the modified CRP (MCRP), conventional CRP (CRCP) and the usual care. Data were analysed at baseline and 12-month follow-up.

Results: A dipping bleeding monitoring was observed after post intervention in the MCRP group at the mean PT was 14.8 seconds (95% CI 12.8-16.8 seconds). Patients in CRCP group were having high mean PT 10.2 seconds (95% CI 10.4-20.1 seconds) compared to the control 14.3 seconds (95% CI 13.5-15.2 seconds) (p=0.059). An improvement of thrombin time was noted in MCRP group as mean INR 1.2 (95% CI 1.0-1.4) was lower than the control group INR 1.7 (95% CI 1.0-2.2) and the control group INR 1.7 (95% CI 1.0-2.2) (p>0.7). Although a high numbers of smokers in CRCP surprisingly after 12-month of follow-up the incidence of MACE was reduced in the modified CRP was much lower than the conventional CRP and usual care patients. The MACE in MCRP group was 11.1% (8 cases) which has low event rate compared to the CRCP 12.5% (10 cases) and control patients 13.5% (1 cases) and further reduced to 10.8% (3 cases) after 12 months. Morbidity level in the control patients did not show any improvement but rather has increased considerably to a median of 1.7 mm, range, from 0.2-3.7 (p=0.45).

Conclusion: In conclusion, throughout the one year follow-up with all the positive clinical outcomes and better cardiovascular events rates, it has validated that the present protocol and in-patient pharmacists in acute management had brought major impact in heart care systems. Thus, the MCRP is indeed one of the best options in improving morbidity and mortality rates in ACS.
Abstracts

PS4

AUDIT OF STATIN THERAPY IN PATIENTS WITH ACUTE CORONARY SYNDROME IN LIM FROM JANUARY 2009 – JUNE 2010

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Background: Patients with ACS who are treated early with statins have been shown to have improved cardiac outcomes, especially with an intensive lipid-lowering regime, to a target LDL cholesterol level of less than 100mg/dl (2.59 mmol/l).

Objective: We sought to determine the attainment rate of target LDL-C level (≤2.6mmol/l) and the prescription pattern of statins and among patients with acute coronary syndrome in LIM.

Methodology: This was a retrospective cohort analysis involving patients with acute coronary syndrome who were admitted to LIM from January 2009 to June 2010. This population was analysed retrospectively to the target attainment rate of LDL-C levels during the subsequent 2 follow-up times with a mean follow-up duration of 17 months.

Results: A total of 245 patients with ACS were analysed. The mean patient age was 59 years and mean baseline LDL-C level was 2.7mmol/l. The mean follow-up period was 17 months. A total of 140 patients (57%) achieved the target LDL-C level of ≤ 2.6mmol/l, and 85 patients (35%) attained a level of < 1.8mmol/l. Out of the 140 patients, 55 patients had baseline LDL-C < 2.6mmol/l, and the other 85 patients had LDL-C which exceeded the target level. Among the 55 patients, the majority (48%) achieved their LDL-C target within the first follow-up clinic visit. The mean LDL-C level at the end of the follow-up period was 2.1mmol/l. There were 85 patients (35%) who did not achieve the LDL-C target and the majority of them had their statin regimen escalated. There were 6 different statins prescribed, of which atorvastatin 20mg and simvastatin 40mg were the most frequently prescribed to the patient at the end of the study period.

Conclusion: The attainment rate of LDL-C ≤2.6 mmol/l among ACS patients was satisfactory. Most patients were prescribed with moderately high potency statins.

PS5

THE UTILITY OF A COMBINATION POINT-COUNT BIOMARKER ANALYSIS AND HANDHELD ECHOCARDIOGRAPHY IN ASSESSMENT OF PATIENTS WITH ACUTE CARDIAC SYMPTOMS AT THE EMERGENCY DEPARTMENT

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Background: Point-of-care cardiac biomarkers (CB) and handheld echocardiography (HE) have individually demonstrated their effectiveness in management of patients with acute cardiac symptoms (ACS). However, many hospitals in developing countries only have electrocardiography (ECG) and chest radiographs (CR) as the mainstay of diagnostic workup. A combination strategy using both point-of-care technologies has not been evaluated in detail in the acute management of such patients.

Objective: To evaluate a combination strategy of CB and HE in the management of patients with ACS, including its ability to predict the discharge diagnosis.

Methodology: 133 patients with ACS were enrolled from a single Emergency and Trauma Department (EDT) during a 14-week period by senior engineers. Various blood for CB (cTnI (Trinity Biotech),profileBNP (iSprint) and D-dimer (Cobas) Status-X) was done and bedside examination by HE (Acutus PM) was done. Treatment was commenced when a working diagnosis was made. The patients' discharge diagnosis was subsequently obtained and compared with the working diagnosis.

Results: 113 patients had complete data for CB and HE. Patients had a mean age of 62±14.6 years (64.8% were male). 72.6% of patients presented with typical cardiac chest pain and/or dyspnoea. Mean duration of symptoms was 91±44.08 minutes. 95.8% of patients were fully alert at enrollment. Mean values of vital signs were: heart rate 91±62.8 (90), blood pressure systolic/diastolic 147.4±23.6/92±22 mmHg, respiratory rate 24.4±8.5/min, temperature 36.4±0.9°C. ECG was reported 'abnormal' in 63.7%, CB results were 'abnormal' in 71.7% and 57.6% had either ECG or CB reported 'abnormal' TnI was abnormal in 30.1% (p<0.05), D-dimer in 73.6%, 95% of patients had either ECG or CB reported 'abnormal'. HE was reported abnormal in 45.4%, 44.1% said in EDT, 42.4% discharge diagnosis, 51.3% admitted to hospital wards. Duration of hospital admission to working diagnosis in EDT was 76±15 (7) minutes, and the working diagnosis was similar to the discharge diagnosis in 78.1%

Conclusion: In a semi-selected group of patients presenting to an EDT with ACS, a combination strategy using CB and HE in the diagnostic workup was useful, and demonstrated a fair degree of accuracy, in the management of those patients.

PS6

EXTRACORPOREAL SHOCK WAVE MYOCARDIAL REPERFUSION (ESMR) AS A TREATMENT MODALITY IN PATIENTS WITH REFRACTORY ANGINA IN UNIVERSITY MALAYA MEDICAL CENTRE: 3 CASE SERIES

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Introduction: ESMR has been shown to benefit patients with refractory angina. It applies the principle of angiogenesis as well as increased nitric oxide secretion to improve microcirculation and thus patient symptoms and exercise tolerance.

Case 1: Mr Lim, 75 years old Chinese gentleman, in an ex-smoker with underlying diabetes mellitus, hypertension, hyperlipidaemia and positive family history of coronary artery disease. He had CASB twice in 2003 and 2005. Multiple PTCA to the native artery and grafts were done but he remained symptomatic with CCS class III.

His CCS class and ESR (modest basal) and CHO results were compared before pro-treatment and 1 month post-treatment with ESMR. His CCS class improved from III to II. The duration of ESR has increased from 8.8 to 21.2 minutes. Patient’s LV systolic function (EF) has improved from 24 to 46% (using Simpson’s method).

Case 2: Mr Lim, 85 years old Chinese gentleman with triple vessel disease, diabetes mellitus, hypertension, hyperlipidaemia, ex-smoker and positive family history of coronary artery disease. After treatment with ESMR, he has achieved ESR NETS of 8.3 (pre compare to 6.5 (pre), even though the duration has decreased from 10.38 to 9.02 minutes. His ECHO parameters and CCS class do not show any significant changes.

Case 3: Mr Abdul Nazri, also with similar profile with Mr Lim (case 2) has undergone treatment with ESMR. His CCS class has improved from III to II and his ESR duration has increased from 7.07 to 11.34 minutes, achieving levels of 4.6 and 7.0 respectively. He has to stop his ESR on the second test because of ST segment changes, however patient remained asymptomatic.

Conclusion: Preliminary results from ESMR treatment have showed promising results in terms of improving symptoms and exercise tolerance. However, a larger and multicenter randomized controlled trials are needed to further evaluate this treatment.

PS7

EPIDEMIOLOGY OF ACUTE MI IN QUCHAN – IRAN

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Introduction & Objectives: AIM is to one the most causes of mortality and mortality. In this study we assessed the epidemiology of AIM in Quchan- Iran for two years.

Methods: In this descriptive analytical, we assess all of the patients that hospitalised for AIM for two years. We assess the age, sex, location of MI, duration of hospitalization, mortality and cardiac risk factor. Then data enter to SYSID and analyzed.

Results: From total 200 patient 63.3 % were female and 36.7% were male. Mean age of male was 53 ±5.3 and in females (56±6.1). Inhospital mortality was 10%. The mean and SB of cholesterol, triglyceride, HDL and LDL were 173.8±15.8, 126.7±10.9, 45.3±28 and 120±20 mg/dl, mean of the cases had a history of hypertension, 26 % was smoking from diabetes, 20 % were smokers and 27 % had previous cardiac event. Of the patients were shown to have plasma cholesterol levels of more than 260 mg/dl, among whom 14 % had cholesterol levels that exceeded 240mg/dl. In addition 18 % of the patients had LDL level of more than 160 mg/dl in their blood and 28% of the patients plasma HbA1c levels were below 35 gm/L. Finaly 10% were shown to have plasma triglyceride levels of more than 260 mg/dl. In 47.5 % LDL to HDL ratio exceeded 2.3. The mean of LDH to HDL ratio was 2.9 ±1. Most Common type of MI were ( 20% anterior / 27% anterolateral and / 25 anterior).

Conclusion: Because of increase in AIM patients and cardiac risk factor we need to design interventional program for reduction in cardiac risk factors.

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PS9

CLINICAL OUTCOME USING PACLITAXEL-COATED DRUG ELUTING BALLOON (DEB) ANGIOPLASTY IN BILATERAL LESIONS

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Background: Percutaneous coronary intervention (PCI) for coronary bifurcation lesions is challenging with strong predictors of restenosis even in the drug eluting stent (DES) era. There is not much data available in using drug eluting balloon for bifurcation lesions. The DeB Royalty has demonstrated that the usage of drug eluting balloon (DEB) from twenty patients with bifurcation lesions was safe and effective.

Objective: To assess the clinical outcome in patients receiving paclataxel-coated drug eluting balloon angioplasty in bifurcation lesions

Methods: A total of 36 patients receiving DEB for bifurcation lesions from March 2008 to April 2016 were enrolled into the registry. The primary endpoint of the study was major adverse cardiac events (MACE) including myocardial infarction (MI), cardiac death and target lesion revascularization (TLR) during procedure, in-hospital, 6 months and during the last follow up. We aim to report the corresponding angiogram in 6 time points to evaluate the late loss and long term restenosis rates.

Results: The median follow-up for the patients in this registry was 105 days. The majority of patients were hypertensive and had diabetes. Nineteen patients (53%) were diabetics. Twenty (55%) who underwent PCI had had previous PCI and the remaining had TLR. The median size and length of DEB used was 2.5 × 5.0 mm and 22 × 5.0 mm, respectively. The median deployment pressure was 19 atmospheres. Majority of the lesions were type B2. In thirty six patients (85%), the DEB was used for side branches, in which six had subintimal stealings. No major procedural complications occurred except non-flow limiting dissections in 5 patients. All patients were discharged safely with no in-hospital MACE. During the 6 months follow, MACE occurred in one patient (2.8%). Those patients (9%) who have repeat coronary angiograms but not require target lesion revascularization. In this small sample size, the presence of diabetes or small vessel size were not statistically significant in contributing to MACE (p=0.06).

Conclusion: In this small registry for bifurcation lesions, the short to medium term results of paclataxel-coated drug eluting balloon at patients with bifurcation lesions appears to be safe and effective.

P93

CAN OCT ASSESS THE EFFECT OF ROTATIONAL ATHERECTOMY? PRELIMINARY DATA

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Background: OCT is able to classify plaque.

Objectives: The aim of this preliminary study is to evaluate whether OCT can classify plaque modification after rotational atherectomy (RA).

Methods: 35 Patients underwent RA were included in the CARMEN RA registry for RA and Post-STEMI 1:1 randomized OCT study. Optical coherence tomography wire was used. The classification of plaque was assessed in every frame. The relationship between calcium modification and bunin size in each frame was also evaluated.

Results: Pre-RA Post-RA Post-Egypt Five value for Pre- and Post- RA Five value for Overall Patient Number 8.41 8.41 4.11 (p=0.062 NA) 4.11 8.41 (p=0.062 NA) Not significant

Pre-RA Post-RA Post-Velocity Either Calculo w/o Cap and Channels 0.27 (28/31) 0.27 (28/31)

Biggest burr size was associated with higher chance of getting cap in, in contrast, chance of having channel was associated with smaller burr size. Channel formation may be mainly related with the lesion characteristics.

Conclusion: No significant MD increase after fibrinolysis was evaluated by OCT. Two patterns were noted: calcium without cap and channels, related with burr size. These results provide preliminary data, further information will come from extended population.

P62

PRENATAL DIAGNOSIS OF FETAL DYSRHYTHMIAS AND ITS POSTNATAL OUTCOME: TEN-YEAR EXPERIENCE IN SINGLE TERTIARY CENTER

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Background: Fetal dysrhythmias is a common phenomenon that found in obstetrical scan. Fetal dysrhythmias may need aggressive treatment and frequent follow up.

Objective: To evaluate the incidence and characteristics of fetal dysrythmias and its postnatal outcome

Method: From September, 1999 to September 2009, total 411 cases were referred from obstetric for further fetal cardiology. There were 47 cases were suspected fetal arrhythmia. 26 cases (59.59%) were study eligible. Fetal echocardiography was performed by two cardiologists. 186/561 (50%) patients were presented with gestational age of within 17-34 weeks. The rest of the patients were within 25-36 weeks. We analyzed the cardiac rhythm which fetal tachycardia is the heart rate of more than 182 bpm. On the other hand, fetal bradycardia, defined as persistent fetal heart rate of less then 100 bpm.

Results: Among cardiac dysrhythmias referred by obstetric, 10/494 (2%) was normal. The atrial premature complexes were the most common cardiac dysrythmias (12%), followed by complete atrioventricular block (3%), isoelectric bradycardia (3%), ventricular predecease complexes (1%), paraesystolic supraventricular tachycardia (1%), atrial flutter (1%), and adial tachycardia (1%) respectively.

Conclusion: Fetal arrhythmias account for 10-20% of referrals to a fetal cardiologist. Most of then are due to ectopic beats, which are benign and do not require treatment. However, a small number of fetuses might have important and life-threatening conditions. Therapy for persistent dysrhythmias might be started promptly.

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P54

A COMPARISON BETWEEN STAGED AND NON-STAGED PALLIATION WITH FONTAN OPERATION IN PATIENTS WITH TRICUSPID ATRESIA

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Background: Fontan palliation has gained improved long-term morbidity and mortality in patients with Tricuspid Atresia. The management of these patients is a major challenge in developing countries. (SSR, Ped. Cardiol. 2007; 28:146-148) Practice modification are needed to afford the best procedure for palliation.

Objective: To analyse early and midterm outcome in patients underwent staged versus non-staged palliation with Fontan operation for tricuspid atresia and compare the results.

Materials and Methods: Between July 1993 and June 2009, 46 patients with Tricuspid Atresia underwent surgical palliation. Of these 28 patients underwent successful completion of Fontan operation. 15 of them underwent staged 5,27 patients underwent non-staged Fontan.