Acute coronary syndromes, myocardial infarction, thrombectomy and vulnerable plaque

[PP-001]

Discriminative ability of raised brain natriuretic peptide level in detecting acute coronary syndrome in opium-addicted versus non-addicted patients

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Background: Current study hypothesized that the discriminative power of brain natriuretic peptide (BNP) may be different in opium addicted and non-addicted patients with acute coronary syndrome (ACS) and therefore opium addiction may affect the discriminative role of BNP in confirming coronary disease.

Methods: The study population consisted of 80 consecutive patients with first appearance of non-ST segment elevation ACS or unstable angina admitted within 6 hours of the onset of diseases manifestations. Participants were classified into opium addicted patients (n = 23) and non-addicted patients (n = 57). Opium addiction was defined on the basis of the DSM-IV Criteria for Substance Dependence. Serum BNP level was quantified using an electrochemiluminescence immunoassay method with a Roche modular analytics E170 immunoassay analyzer.

Results: Discriminatory power of BNP for non-ST segment elevation ACS from unstable angina using the area under the ROC curve was 0.883 for addicts group and 0.704 for non-addicts ones that showed a consistent better discrimination of the model with BNP in opium addicts than non-addicts group. Also, BNP level in addition to opium addiction (Hosmer–Lemeshow; $\chi 2 = 3.999$, $p = 0.857$) indicated better calibration for non-ST segment elevation ACS than the pure BNP index (Hosmer–Lemeshow; $\chi 2 = 7.173$, $p = 0.518$).

Conclusion: The relatively higher discriminative ability of raised BNP level in detecting ACS in opium-addicted versus non-addicted patients reflects the fact that the near-patient BNP testing in those with presenting ACS manifestations may have more ability in opium-addicts as a confirming or rule out test.

Acute coronary syndromes, myocardial infarction, thrombectomy and vulnerable plaque

[PP-002]

B-type natriuretic peptide as a major determinant of serum lipid profiles in patients with acute coronary syndromes

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[2]*Cardiology Department, Kerman University of Medical Sciences, Kerman, Iran*

Introduction: Brain Natriuretic Peptide (BNP) hormone play an important role in lipid metabolism, however a few evidences are available for confirming this mechanism. We hypothesized that the level of plasma BNP effectively influences the plasma levels of lipid profiles in patients with acute coronary syndrome in the presence of patient's characteristics and coronary disease risk factors.

Methods: Eighty consecutive patients (40 women/40 men; mean age of 57.59 years) admitted with non-ST segment elevation acute coronary syndrome (nSTE-ACS, n=40) or unstable angina (UA, n=40) in the emergency wards of referral hospitals in the city of Kerman were included into the study. Lipid profiles were estimated by enzymatic, CHOD/PAP method and BNP plasma level was measured using Elecsys 2010 fully automated immunoassays system. BNP levels >125.0 pg/ml were considered as higher or increased risk.

Results: A significant adverse correlation was found between serum triglyceride concentration and plasma BNP level (r= - 0.249), but this significant correlation were not found between the level of this peptide and other biomarkers. Multivariable regression analysis showed that the BNP <= 125 pg/dl was a strong predictor of hypertriglyceridemia (Odd Ratio = 10.207, 95% CI: 1.387 – 75.133, p = 0.023).

Conclusion: BNP release can improve lipid metabolism, results in a significant reduction of triglyceride level. Testing for this hormone provides a useful adjunct to routine assessment for hyperlipidemia and can be an initial valuable test for patients with suspected ACS.

[PP-003]

Is the pepper spray a triggering factor in myocardial infarction? A case report

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Fourthy years old man was admitted to emergency department with chest pain and shortness of breath that sudden onset. After the first evaluation was understood that he was exposured to oleoresin capsicum that known as pepper gas. There was no any chest pain and risk factors for coronary heart disease in his medical history. On electrocardiogram 5 mm ST elevation on derivations V1-6 and 1 mm ST depression on derivation D2, D3, AVF were observed. On physical examination, general condition was intermediate, consciousness was clear. Blood pressure and pulse rate were measured as 110/70 and 95/minute, respectively. The patient had tachypnea and dysphnea. The levels of myoglobin, troponin I, creatin kinase and CKMB were detected above normal ranges (455 mg/dl, 17 ng/ml, 345 U/ml, 67U/ml, respectively). The patient was diagnosed with acute myocardial infarction and redirected to catheter laboratory for primary coronary intervention. Angiography showed that normal right coronary artery and circumflex artery, plaques on proximal of the left anterior decending artery and total occlusion on distal of the thirth diagonal branch. The prosedure was finished by the decision of the research for viable tissue in area supplied by LAD. Syntigraphy was showed no viable tissue in area supplied by LAD.

Discussion: Pepper gas includes Oleoresin capsicum at a rate of 1-10% in a repulsive solution.

Left anterior decending artery total occlusion on distal of the thirth diagonal branch.

[PP-004]

Diagnosis and treatment of AMI based on clinical and electrocardiographic findings

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Department of Cardiology, Mustafa Kemal University, Antioch, Hatay, Turkey

Case presentation: A 64 year old man was admitted to the emergency department 25 minutes after initiation of the compressive chest pain.He had been a heavy smoker for 40 years.At the time of admission the BP was 114/60 mmHg,his pulse was 73 beats/minute.ECG showed incomplete RBBB, ST segment elevation in V1-V4 which was consistent with acute anteroseptal MI.The patient was diagnosed as acute anteroseptal MI based on clinical and electrocardiographic findings and was treated with streptokinase at the time of 40 minutes of the initiation of chest pain.Cardiac enzyme values remained in normal ranges. The ST elevations regressed after initiation of thrombolitic therapy and T wave became negative one day later.Despite dynamic course of the ECG findings,we detected persistent normal cardiac enzyme levels during follow-up.His chest pain resolved gradually after the treatment.Echocardiography which was performed on the third day after the admission revealed LVDD, 1 degree mitral regurgitation.Echocardiographic evaluation also showed that anteroapical myocardial function was completely preserved despite a localized mild hypokinesis on midseptum.The patient was referred to angiography which revealed a critical eccentric stenosis on the bifurcation of proximal LAD and first diagonal artery by LAO and irregular distal lumen by RAO.The patient was underwent successful bypass surgery.

Discussion: MI was ruled out in some patients based on persistent normal enzyme levels. Nevertheless,majority of those were diagnosed as acute coronary syndrome after database inquiry and thrombolytics were suggested for prevention of myocardial damage.In our case,echocardiographic and angiographic findings may support transient complete occlusion and early effective thrombolytic treatment without severe myocardial damage.

LAO

RAO

[PP-005]

Acute coronary syndrome secondary to diclofenac induced anapylaxis: Case report

Mehmet Akif Çakar, Hüseyin Gündüz, İbrahim Kocayiğit, Duygu Fidan Binak, Mehmet Bülent Vatan, Ali Tamer

Sakarya Education and Research Hospital Department of Cardiology, Sakarya

The hypersensitivity reactions with the symptoms and signs of coronary arteries involvement (Kounis Syndrome) might seen.We presented a patient with ECG changes after intake of diclofenac(DP).

Case: A 74-year-old woman was referred to the emergency room(ER) after oral intake of DP.30 minutes after drug intake,she experienced flushing and multiple pruritic rashes on her neck instantly followed by dizziness and chest pain.Physical examination revealed generalized erythema of skin and blood pressure was 60/35 mmHg.ECG showed 1 mm ST elevation in inferior derivations,reciprocal ST depression up to 4 mm in precordial leads and 3th degree AV block (Fig.1). Intravenous(iv) antihistaminic,prednisolone and saline administered.Serial ECG's showed regression of ST elevation and T wave abnormalities.The AV block turned normal sinus rhythm (Fig.2). Cardiac enzymes measurement showed no elevation. Serum IgE level (197 IU/mL) showed significant elevation.Coronary angiography demonstrated %70 stenosis of right coronary artery and a non-critical lesion in the left anterior descending artery (Fig.3a,b). She underwent successful PCI.One month later the serum Ig E level showed a significant decrease (15 U/l).Two months later she applied to ER with flu like symptoms.After first evaluation (the physician didn't alert about drug allergy) iv diclofenac has been administered.She has felt chest pain and the ECG showed same findings as observed at her first application (Fig.4). After iv antihistaminic and steroid therapy control ECG recordings showed the regression of ST elevations(Fig.5).Dipyridamole myocardial perfusion scintigraphy showed no ischemia.

Discussion: NSAID anaphylaxis can lead to acute coronary vasospasm.Early recognition of ECG is essential for diagnosis of coronary artery spasm,and immediate treatment may prevent any possible myocardial necrosis.

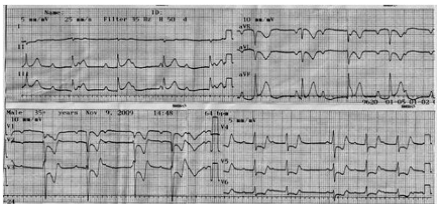

Figure 1. ECG recording showed approximately 1 mm ST elevation in inferior derivations and reciprocal ST segment depression up to 4 mm in entire precordial leads and showed third degree AV block.

Figure 2. After first therapy, ST segment elevations were resolved.

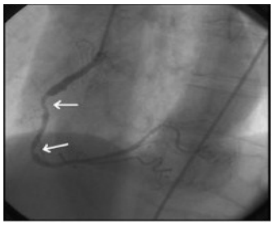

Figure 3a. Two sequential %70 stenosis of right coronary artery.

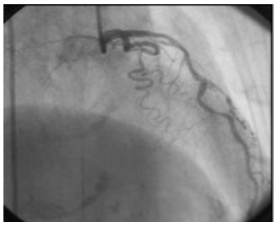

Figure 3b. A non-critical lesion in the left anterior descending artery.

Figure 4. The first ECG recording on patient's second admission.

Figure 5. ECG recording after the treatment on second admission.

Acute coronary syndromes, myocardial infarction, thrombectomy and vulnerable plaque

[PP-006]

An unusual primary angioplasty

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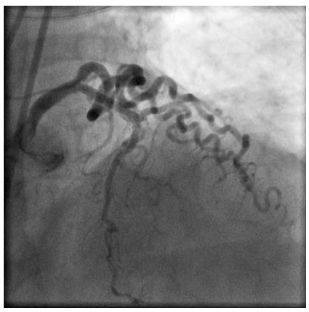
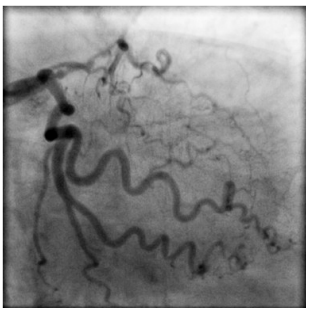
A 71/F presented with anterior wall STEMI and cardiogenic shock.She had previous PCI 4 years back, details of which were not available. Bedside screening echo revealed LVEF 25%, severely hypokinetic septum and anterior wall, akinetic and aneurysmal apex.

She was immediately shifted to the cath lab. IABP was inserted, coronary angiography revealed 90% long segment ostial to proximal LAD stenosis with ulceration, 90% ostial stenosis of a large septal and 70% stenosis of a large diagonal. Mid LAD was totally occluded and distal LAD was filling via collaterals from circumflex which was free of disease. The RCA had 2 patent stents with TIMI 3 flow. Immediate decision to revascularize the LAD was taken. However mid LAD CTO could not be crossed. Wirewas negotiated into the septal and balloon angioplasty followed by stenting from the ostial LAD into the septal with a Xience V 2.5*28 mm drug eluting stent performed. Patient dramatically improved with LVEF improving to 35%. Her old records suggested that she had similar LAD disease 4 years back that was left on medical management and 2 lesions of 90% and 70% stenosis in RCA that were stented with 2 Taxus DES. She continued to have recurrent episodes of angina requiring nitrates despite RCA revascularization and finally had a life threatening MI due to LAD disease. This case underscores the importance of proper evaluation of patient prior to partial revascularization and that emergent management in the above scenario could be revascularization from ostial LAD to the septal.

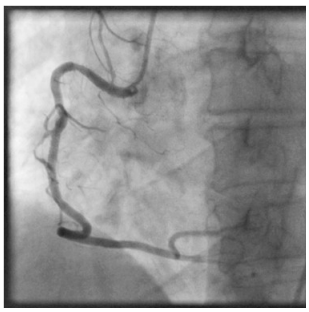
Angiographic picture showing LAD and septal stenosis



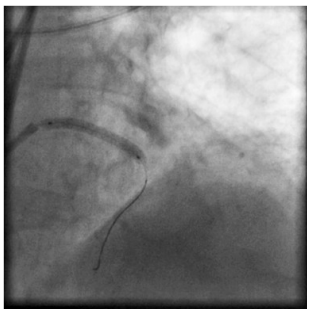
Final post PCI result



Normal Circumflex artery



RCA angiogram



Stent inflation

[PP-007]

Clinical characteristics, mode of presentation and hospital outcome in young Egyptian patients (pts.) with acute coronary syndromes (ACS)

Gamal Mohamed Aboul Nasr, Reda Ahmed Aboul Atta, Mohamed Ramadan Ali, Akram Fathy El Desoky

Cardiac Department, National Heart Institute, Cairo, Egypt

During last years, our community has witnessed increasing prevalence of CAD (in both its stable & unstable phases), more than the traditional rheumatic heart disease. However, ACS in young Egyptian patients have been poorly described. The clinical characteristics, presenting features, treatment patterns, & hospital outcome (H.O.) were analyzed in a sample of young (aged < 40 years (y)) Egyptian pts admitted with ACS to the National Heart Institute (NHI) who were included in the ongoing NHI-ACS registry.

Methods: 968 pts with ACS, the definition included STEMI, NSTEMI & UA.

Results: 118 pts (12%) were <40 y old (102 males). Compared to older pts. they were more smokers (71% vs. 56%; P<0.001), hypertensives (52% vs. 38%; P<0.01) with higher prevalence of overweight (64% vs. 47%, P<0.02). Dyslipedimia & +ve family history were high (55% & 62%). Younger pts were more likely to present with STEMI (71% vs. 57%, P<0.02), however were less likely to present with H.F. (Killip class II to IV in 6.4% vs. 22%; P<0.001). Younger pts. were more likely to receive early Invasive management (76% vs. 43%; P<0.001) & had better H.O. with fewer major cardiac events (hospital mortality 3.1% vs. 4.7%;P<0.01).

Conclusions: The present data suggest that Young Egyptian pts. with ACS have higher cardiovascular risks profile than older pts., more likely to present with STEMI & receive early aggressive treatment when available, with favorable H.O.. Health measures against smoking, dyslipidemia, hypertension & overweight should be more aggressively promoted in our community especially to younger population.

Acute coronary syndromes, myocardial infarction, thrombectomy and vulnerable plaque

[PP-008]

Outcome of primary percutaneous coronary intervention at public sector tertiary care hospital in Pakistan

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[1]*Karachi Institute of Heart Diseases, Karachi, Pakistan*

[2]*National Institute of Cardiovascular Diseases (NICVD), Karachi, Pakistan*

[3]*Chandka Medical University, Larkana, Pakistan*

Object: determine the outcome of Primary PCI in our setup and compare the results with the west.

Materials-Methods: This study was conducted at a tertiary care teaching Hospital (National Institute of Cardiovascular Diseases Karachi, Pakistan) during January 1st, 2008 to December 31st, 2008. A total of 113 patients were enrolled. We excluded the patients who had history of Thrombolytic therapy within 24 hours, presented with Non ST-elevation Myocardial Infarction (NSTEMI) and coronary angiogram revealed significant left Main or equivalent disease. All Patients received Aspirin, Clopidogrel and Platelet Glycoprotein IIB IIIA Inhibitor. After Primary PCI patients were planned to follow at 1, 3, and 6 month. Primary end point was to document death, MI, CABG and re-hospitalization.

Results: Immediate success achieved in 111 (98.2%) cases. In hospital mortality was 5.3 % (3.5 % in cardiogenic shock, 1.7 % in non-shock patients). Mean Door to Balloon time remained 98.4 minutes. 12 patients had lost follow up. Therefore at 6 months, out of 101 patients 8 (7.9 %) were died, 5 (4.9 %) patients went for Coronary Artery Bypass Graft (CABG) surgery and 5 (4.9 %) had been re-hospitalized either for recurrent myocardial infarction or heart failure.

Conclusion: Optimal results of primary percutaneous coronary intervention can be achieved for acute STEMI in a developing country at a tertiary care public sector hospital. The results are comparable and nearly similar to west.

[PP-009]

Acute myocardial infarction due to antiphospholipid antibody syndrome in a young pregnant woman

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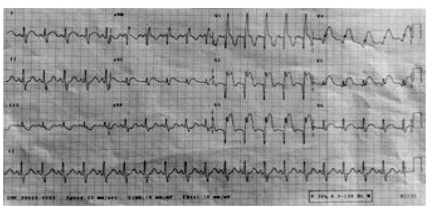
Antiphospholipid antibody syndrome is associated with arterial and venous thrombosis and recurrent pregnancy loss. Here, we report a pregnant woman who developed acute myocardial infarction associated with antiphospholipid antibody syndrome.

Twenty two year old, twelve weeks pregnant woman was admitted with acute anterior myocardial infarction. An immediate coronary angiography showed a subtotal occlusion of left anterior descending artery. Although the initial strategy was balloon recanalization only and to avoid stent implantation, the distal perfusion of the vessel was suboptimal afterballoon recanalization, therefore a bare metal stent was implantated. Seven days later the patient referred to obstetric department for termination of pregnancy. Clopidogrel was stopped 5 days prior toabortion, aspirin continued and subcutaneous enoxaparine was started. Two days after the abortus the patient had a reinfarct due to stent thrombosis documented with immediate angiography. Unfortunately thrombus aspirations, balloon recanalization attemps and finally intracoronary thrombolysis failed due to heavy thrombus burden. Later, the patient was consulted with rheumatology department and had a diagnosis of antiphospholipid syndrome. Management of pregnant patients with acute STEMI is controversial. Thrombolytic agents are not recommended due to risk of hemorrhagic complications as spontaneous abortion and postpartum hemorrhage. In patients undergoing percutaneous intervention, stent implantation should be avoided if possible because of the detrimental effects of clopidogrel discontinuation for abortus or delivery. In case of stent implantation, cessation of clopidogrel may cause catastrophic outcomes.



CASE ECG

In conclusion, AMI in pregnant patients is a life threatening incident with a complicated course which requires prompt and appropriate diagnosis and management.

CASE PHOTO 1

CASE PHOTO 2

[PP-010]

Six months clinical efficacy and safety study on acute ST elevation myocardial infarction patients undergoing primary percutaneous coronary intervention using endeavour resolute stent versus driver bare metal stent: A single centre

Vern Hsen Tan, Sea Hing Ong, Kok Soon Tan, Jayaram Lingamanaicker, Yew Seong Goh, Jeremy Chow, Siang Chew Chai, Ping Ping Goh, Chong Hiok Tan

Department of Cardiology, Changi General Hospital, Singapore

Background: There is limited data on Endeavor Resolute Stent (ERS) usage in acute ST Elevation Myocardial Infarction (STEMI) setting. We examined the clinical efficacy and safety up to 6 months of ERS versus(vs.) Driver bare metal stent (BMS) in STEMI patients undergoing primary percutaneous coronary intervention (PPCI).

Methods: This is a retrospective cohort study based on STEMI registry from June 2008 till October 2009. These two groups of patients were following up to 6 months for major adverse cardiovascular events (MACE) including cardiac death, target lesion revascularization (TLR), recurrent myocardial infarction(MI), stroke, in-stent thrombosis (ST).

Results: 33 and 66 consecutive STEMI patients implanted with ERS and BMS respectively were identified and followed up. Baseline demographic were similar except all male in ERS group(100% vs. 86.4%, p=0.02).

Mean duration of dual antiplatelets usage at 6 months ERS group was 6.0±0.0 months vs. BMS group 3.3±1.7 months(p<0.001).

Cumulative MACE at 6 months were lower in ERS group (3.0%) vs. BMS group(18.2%), p=0.06. There were total of 1 death(3.0%) in ERS group vs. 6 deaths(9.2%) in BMS group at 6 months, p=0.42. At 6 months, there were 6 patients (9.2%) in BMS group underwent TLR, 2 patients(3.0%) had recurrent MI and one patient (1.5%) had stroke compare to no MACE in ERS group. Time to MACEs was shorter in BMS group(median 152.1±7.8days; 95% CI 136.9,167.3) vs. ERS group(median 174.6±5.3 days; 95% CI 164.1,185.0), p=0.04.

Conclusion: ERS usage in STEMI patients undergoing PPCI is safe with no repeat procedure at 6 months compare to BMS.

157 nolu bildirinin kurumu yok???

[PP-011]

Effects of nutrition in development of coronary artery obstruction on patients who undergone coronary - Angiography

Hicran Yıldız, Neriman Akansel, Aysel Özdemir, Gülseren Çıtak Tunç, Bülent Özdemir, Nevin Güdoğdu

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Aim: The aim of this study was to determine correlation with patients' eating habits and degree of coronary artery obstruction

Material and method: This study was done with 52 patients who undergone coronary angiography. Data collection scale used for this study included information on socio demographic variables, cardiovascular state, patients' eating habits. Patients' eating habits were questioned with likert type scale and maximum score of this scale is 105. High scores indicate good eating habits.

Results: Mean age of patients was 60.50±9.21 years. 25% of the patients were smokers and reported using alcohol. Mean systolic blood pressure calculated as 140.01 ±15.47 mmHg, diastolic blood pressure was 83.36±10.51 mmHg. Body Mass Index of patients who undergone coronary angiography was 28.70 ± 4.86. According to coronary angiography report, percentage of patients with occluded arteries were as fallows; one (36.5%), two (26.9%), three (23.1%), more than three (13.5%). The percentage of occlusion was 77.61±14.34 in arteries with high degree of occlusion Mean scores obtained scale nutrition habits scale were 63.92±16.75.While no correlation was found between nutrition habit scale scores and number of diseased arteries (p>0.05);correlations were found between nutrition habit scale scores and percentage of artery (p<0.05).No correlations were found between scores obtained scale nutritional habit form and diastolic blood pressure, systolic blood pressure, body mass index, waist/hip ratio, cholesterol, triglycerides, HDL and LDL(p>0.05).

Conclusion: Increase in wrong eating habits effects coronary arterial occlusion. It is recommended that education on good eating habits should be done on regular basis to protect heart diseases.

Acute coronary syndromes, myocardial infarction, thrombectomy and vulnerable plaque

[PP-012]

Late bare-metal stent thrombosis in a patient with Crohn's disease

Hüseyin Uğur Yazıcı, Kadir Uğur Mert, Aydın Nadiradze, Necmi Ata

Department Of Cardiology, Osmangazi University, Eskişehir, Turkey

Late stent thrombosis after implantation of bare metal stent is uncommonly seen. A 42-year-old male was admitted to our clinic with acute anterior myocardial infarction. He had a positive history of smoking and Crohn's disease. Coronary angiography revealed total occlusion in the middle segment of the left anterior descending artery (LAD) and insignificant stenosis in the right coronary and circumflex coronary arteries (Fig. A). A bare metal stent, sized 2.75x15 mm, was implanted in the LAD (Fig. B). In November 2009, he readmitted to the emergency department with acute anterior myocardial infarction. The patient was still on antiplatelet therapy with clopidogrel 75 mg/day and aspirin 100 mg/day. He was accepted emergently to percutaneous coronary intervention and coronary angiography revealed total in-stent thrombosis in LAD (Fig. C). Thrombotic occlusion was successfully passed with a floppy guide wire and balloon angioplasty in size 3.0x15 mm resulting in Thrombolysis In Myocardial Infarction (TIMI)-III flow and dissipation of the thrombus (Fig. D).

Inflammatory bowel disease may be associated with impaired stent endothelization and increased tendency to thrombosis. To our knowledge, late bare metal stent thrombosis associated with Chrohn's disease has never been reported before. In the present case, late stent thrombosis may be related to delayed endothelization. We advised indefinite dual antiplatelet therapy with aspirin and clopidogrel to overcome this problem and to prevent further events.

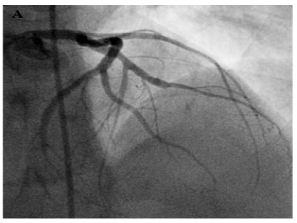

Figure A. Coronary angiogram revealed total occlusion in the middle left anterior descending coronary artery.

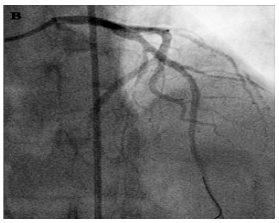

Figure B. A bare-metal stent (2.75×15 mm) was successfully implanted in the occluded left anterior descending coronary artery.

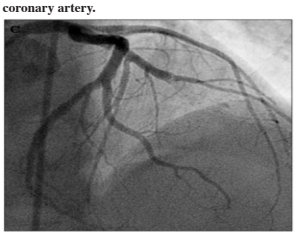

Figure C. Coronary angiogram revealed total occlusion of the middle left anterior descending coronary artery due to stent thrombosis.

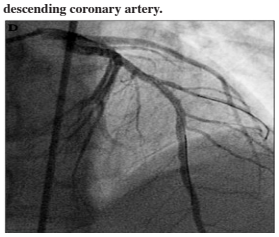

Figure D: Balloon angioplasty was performed using a 3.0/15 mm balloon and final coronary angiogram showed TIMI III flow with dissipation of the thrombus.

[PP-013]

ST segment elevation in leads V1 to V6 due to isolated right ventricular branch occlusion caused by thrombosis migration after right coronary artery angioplasty

Enbiya Aksakal, Sinan İnci, Fuat Gündoğdu, Şule Karakelleoğlu

Department of Cardiology, Faculty of Medicine, Atatürk University, Erzurum, Turkey

Objective: We present a patient with anterior ST-segment elevation due to isolated right ventricular brunch (RVB) occlusion after right coronary artery (RCA) angioplasty.

Case: A 67-years-old male was admitted to hospital due to chest discomfort. The ECG demonstrated an inferior acute myocardial infarction (AMI). The coronary angiogram (CAG) showed total occlusion of the RCA. No significant stenosis was observed on left anterior descending coronary artery (LAD). Primary angioplasty and stent was implemented to the RCA. After two days, he complained of chest pain. Control CAG showed stent occlusion and extensive thrombus in the RCA (Figure 1) but LAD was normal. Angioplasty and thrombus extraction was performed to the RCA. Optimal patency was achieved. ST-segment elevation was seen in lead V1-V6, 30 minutes after angioplasty (Figure 2). RVB occlusion due to thrombus migration without RCA lesions were shown in control CAG (Figure 3). Tirofiban infusion was started to the patient. RCA and RVB were without lesion and thrombus was present in second control CAG, 12 hours after tirofiban infusion. ST segments turned to isoelectric line in ECG and it showed T wave inversion in leads V1-V6 seven days after intervention.

Conclusion: Isolated RVB occlusion may be accompanied by ST-segment elevation in precordial leads. This should not be assumed to be indicative of anterior AMI in patients presenting with inferior AMI. It is important for physicians and especially interventional cardiologists to be aware of this entity and protect the patients from unnecessary interventions.

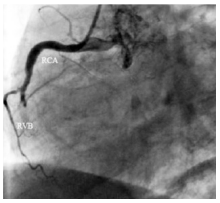

Figure 1. RCA: right coronary artery, RVB: right ventricular brunch.

Figure 2.

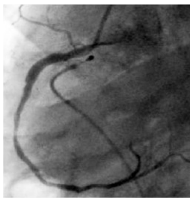

Figure 3.

[PP-014]

Impact of pre-hospital direct notification to cardiologist and activation of catheterization laboratory on door-to-balloon time for patients with ST-segment elevation myocardial infarction undergoing primary percutaneous coronary intervention

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Backgraund: Primary percutaneous coronary intervention (PCI) is recommended if patient is to be transported from non-PCI-capable hospitals. This transport strategy is associated with an increased treatment delay. We implemented direct notification to cardiologist from the Emergency Medical Information Center in our city to reduce inter-hospital delay and to activate catheterization laboratory (Cath Lab) simultaneously.

Methods: We implemented 24-hr hotline system between cardiologists at our institution and the Information Center in our city. A total of 178 consecutive STEMI patients who underwent primary PCI from January 2009 through June 2010 were included for analysis. Time interval parameters, clinical, and procedural characteristics were compared between patients with or without pre-hospital notification and activation of Cath Lab.

Results: Pre-hospital notification to cardiologist and activation of Cath Lab was performed in 74 (42%) patients and associated with a significantly shorter median door-to-balloon time (DTB) (53.5 vs. 69.5 min, p = 0.007), a difference that was particularly pronounced during 'off-duty' hours (54 vs. 82 min, p <0.001). Patients with pre-hospital notification and activation of Cath Lab achieved an 87.8% rate of DTB <=90 min (vs. 73.1% in patients without pre-hospital notification, p = 0.024).

Conclusion: Pre-hospital direct notification to cardiologist and activation of Cath Lab significantly reduced DTB and significantly increased the rate of DTB <=90 min in patients with STEMI when patients were transported from non-PCI-capable hospitals. These findings suggest that regional organization of STEMI-receiving center network is needed to ensure quality STEMI care and to delineate the ideal reperfusion strategy for the community.

[PP-015]

Impact of timing of intervention on one-year clinical outcomes in non-ST-segment elevation myocardial infarction: Analysis from the korea acute myocardial infarction registry

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[4]*The Korea Acute Myocardial Infarction Registry*

Background: Optimal timing of intervention for non-ST-segment elevation myocardial infarction (NSTEMI) is uncertain.

Methods: A cohort of 4,929 patients with NSTEMI from a prospective study, the Korea Acute Myocardial Infarction Registry, was stratified according to timing of intervention. RESULTS: Percutaneous coronary intervention (PCI) was performed in 3,584(73 %) patients at median of 26.1 hr (<=12 hr [n = 936], 12 to 24 hr [n = 643], 24 to 48 hr [n = 671], 48 to 72 hr [n = 431], and 72 hr to 30 days [n = 724]). Composite of major adverse cardiac events(MACE; death or myocardial infarction or revascularization) at 12-month was significantly better in PCI group than in non-PCI group (11.1% vs. 28.3%, p <0.0001). Timing of PCI was significantly associated with 12-month composite of MACE (12.9%, 10.6%, 12.4%, 7.2%, and 10.5%, respectively; p = 0.041) with a linear association. In multivariable analysis, timing of PCI was an independent predictor of 12-month composite of MACE after adjusting significant factors, age, pulmonary edema or cardiogenic shock, and TIMI risk score. The adjusted ORs in <=12 hr, 12 to 24 hr, 24 to 48 hr, and 48 to 72 hr groups were 1.57, 1.29, 1.52, and 0.78, respectively.

Conclusions: This study demonstrated the benefit of invasive strategy in reducing 12-month clinical outcomes in NSTEMI, and suggests that, in most patients with NSTEMI, urgent PCI is not mandatory and timing of PCI can be flexible and determined on an individual basis, depending on the patient's risk profile and clinical course.

[PP-016]

The prevalence of the metabolic syndrome and its impact on the left ventricular systolic function in the patients with non-diabetic first ST elevating myocardial infarction

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Background: The aim of this study was to evaluate the prevalence of MS and its impact on the left ventricular systolic function in patients suffering from the non-diabetic first ST elevating myocardial infarction using various echocardiographic methods.

Methods: This study was conducted prospectively in three different centers. We included 234 consecutive patients presenting with non-diabetic first acute ST elevating myocardial infarction. The systolic functions of the left ventricle were assessed through the ejection fraction determined with modified Simpson method and the wall motion score index (WMSI) calculated according to American Echocardiography Association Model. This model takes 16 left ventricular segments into account using the tissue Doppler S wave velocities measured from four different locations in the left ventricle. The diagnosis of MS was done based on the Adult Treatment Panel III clinical definition of the MS. Echocardiographic features of the patients were also compared in relation to MS status.

Results: Among the 234 patients, 87 patients (37.2%) possessed the MS but 147 patients (62.8%) were free of the MS. The patients in the MS group were older and the prevalence was higher among the females. Mean myocardial S wave velocities were significantly lower in the patients with the MS in comparison to the patients without the MS (6.75±1.68 vs. 7.29±1.64; p=0.016). LVEF and WMSI were similar in two groups.

Conclusions: Our results demonstrated that the MS was highly common in non-diabetic patients with acute ST elevating myocardial infarction (STEMI) and left ventricular systolic function were more severely impaired in this patients.

The echocardiographic parameters of patients with and without metabolic syndrome

	Patient Without Metabolic Syndrome (n=147)	Patient With Metabolic Syndrome (n=87)	P value
LVEF (%)	49.9±8.8	48.5±9.1	0.25
WMSI	1.58±0.35	1.55±0.36	0.55
Mean Sm(cm/sec)	7.29±1.64	6.75±1.68	0.016

LVEF: Left ventricle ejection fraction, WMSI: Wall motion score index, Sm: Mitral annuler systolic velocity

[PP-017]

The relationship between hemoglobin level on admission and left ventricular systolic function in patients with first ST elevating myocardial infarction

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Objectives: Anemia is common in patients with myocardial infarction (MI). The degree of left ventricular systolic dysfunction is associated with poor prognosis after MI. The goal of this study is to evaluate the relationship between hemoglobin levels at the first admission to coronary intensive care unit and the degree of left ventricular systolic dysfunction in patients with first ST elevating myocardial infarction (STEMI).

Method: 482 patients presented with the first STEMI in 3 tertiary-medical centers were included. Left ventricular systolic functions were assessed by ejection fraction (EF) determined with modified Simpson method, wall motion score index (WMSI) calculated according to American Echocardiography Association Model taking 16 left ventricular segments into account and by tissue Doppler S wave velocities measured from different localizations in left ventricle Anemia was defined according to World Health Organization (WHO) criteria (hemoglobin <13.0 g/dl in men and <12.0 g/dl in women). Echocardiographic characteristics of patients were compared according to anemic status.

Results: Anemia was detected in %14.3 of the patients. Anemia was found to be more frequent in women (%21) than in men (%12.5). EF in the anemic group was lower than the patients without anemia but this difference did not statistical significance. There was no difference in WMSI between groups. The Sm velocities were lower in the anemic group globally but only septal mitral annular Sm velocities reached statistical significance.

Echocardiographic characteristics of patients according to anemic status

	Patients With Anemia (n=67)	Patients Without Anemia (n=416)	P Value
EF (%)	47.5±8.3	48.5±9.75	0.46
WMSI	1.59±0.38	1.58±0.35	0.78
Anterior Sm (cm/sec)	6.47±1.97	6.8±2.1	0.24
İnferior Sm (cm/sec)	6.65±1.92	7.1±1.8	0.064
Lateral Sm (cm/sec)	7.2±2.4	7.65±2.2	0.135
Septal Sm (cm/sec)	5.9±1.6	6.36±1.7	0.048

EF: Ejection fraction, WMSI: Wall motion score index, Sm: Systolic mitral annular velocity

Conclusion: We found that anemia has no deleterious effect on systolic function in patients with first STEMI.

[PP-018]

Stenting of aortic coarctation in adults: Single group three center experience

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Background: Surgery, Percutaneous angioplasy and stenting are treatment modalities for Aortic Coarctation (AoC) in adult patients. Here we have presented our single group experience about AoC stenting by covered stents between 2008 and 2010.

Methods: We have prospectively followed our 4 patients (21 to 58) who underwent AoC stent implantation since 2008 until now (NUMED CP stent) for moderate-severe native AoC Table 1.

Results: All patients have hypertension and mild to moderate cardiac dysfunction before stenting. Avarage systolic blood pressure was 175±15 mmHg, and mean diastolic blood pressure was 115±15. Pressure gradient proxymal and distal to AoC was between 40 to 100 before the stenting. All patients have significant collaterals from proxymal to the distal aorta. Precedures were performed under local anesthesia and successful. Invasive gradient decreased below the 10 mmHg in all patients. There was not any complication except in one patient whose sub-clavian artery was occluded without any clinical finding. 1 patient had a totallly occluded lesion, needing perforation for acquired interruption using 0.35 inch hydrophilic wire under the balloon supporting. All patients were followed up (mean 8 months, 3 to 15), and undergone non invasive imaging. There was not any aneurysm or restenosis at follow-up. All patients discontinued the antihypertensive therapy. Left ventricular functions recovered within one month completely in all patients. No stent fracture was observed. Figure 1.

Conclusion: In adult patients, Aortic Coarctation stenting using covered stent is safe in moderate-severe native CoA, and provides excellent transcoarctation gradient and clinical hypertension and left ventricular functional relief.

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[PP-018] devam

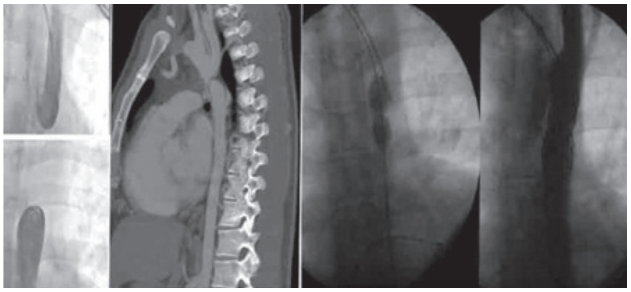

Figure 1. Figure Shows an example of stent implantation.

Table 1

Patients	Age	Hypertension	Diabetes	LVEF%	Pressure Gradient Before	Final Gradient	Stent Length	Stent Diameter
EIH	21	190/110	-	50	40	6	28	20
ER	55	180/120	+	20	55	32	22	5
ALM	23	170/130	_	45	100	4	32	22
GOK	25	160/100	_	55	70	8	36	24

Table 1 shows patients characteristics

Adult congenital

[PP-019]

Recurrent gastrointestinal bleeding in patient with eisenmenger syndrome secondary to atrial septal defect, a case report

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This report presented recurrent gastrointestinal (GIS) bleeding in a patient with Eisenmenger syndrome.

Case: A 54-year old man admitted to hospital with blood in his stool.Nine years ago,his right heart cateterization showed decreased left to right shunt (Qp/Qs:1.1), high pulmonary vascular resistance (10 woods/m^2).He was considered inoperable.His history revealed recurrent GIS bleeding five times on the period of six years and hemorrhagic serebrovascular event 4 years ago.The physical examination showed cyanosis with 80% oxygen saturation. ECG demonstrated right-axis deviation. Coagulometric tests revealed platelet count was 180 × 103/μL,prothrombin time was 16.6 seconds,and partial thromboplastin time was 32.3 seconds.In vitro bleeding time (kollagen epinefrin), factor IX 71%(60-150), and vWF-ristosetin cofactor activity 120%(50-150) was normal. Levels of antitrombin III 66%(80-120), protein C 60%(70-130),protein S 51%(60-140) and Factor VII 39%(70-130) were decreased.vWF antigenic activity 184%(50-160) and factor VIII 153%(60-150) was increased.Transthoracic echocardiography demonstrated large secundum ASD with size 37 mm (Fig.1), and severe pulmonary hypertension. Contrast echocardiography showed right to left shunt (Fig.2). A gastroscopy revealed ulcer at the anterior wall of bulbus and bulky ulcer margins (Fig.3). On the 6-minute walking test he was able to walk only for 2.5 min and covered a distance of 80 m. The test was ended because of aggravation of cyanosis and decrease in oxygen saturation from 80% to 70%. Bosentan treatment was started,together with diltiazem and furosemid treatment.

Discussion: This is the first case report of recurrent GIS bleeding due to eisenmenger syndrome. Frequency of bleeding complications may be increased according to hemostatic defects in Eisenmenger sydrome. In our opinion, detailed assesment should be performed particularly in cyanotic patients with recurrent bleeding episodes.

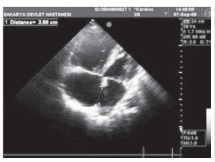

Figure 1. Two-dimensional echocardiographic view demonstrating atrial septal defect, right atrial and ventricular enlargement.

Figure 2. Contrast echocardiography demonstrating right-to-left shunt.

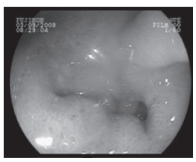

Figure 3. Endoscopic imaging of ulcer on the anterior wall of bulbus.

[PP-020]

Transcatheter closure of secundum atrial septal defect in the elderly

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Background: Transcatheter device closure is an effective treatment in secundum atrial septal defect (ASD). However, chronic left to right shunt which result in pulmonary hypertension, arrhythmia and heart failure often discourage treatment in elderly. As there are not many reports on the outcome of device closure in these patients. we retrospectively reviewed the outcome in our institute.

Methods: From May 2003 to April 2010, 557 patients underwent successful ASD device closure in Severance Cardiovascular Hospital. Among them, 40 patients were over the age of 60. In these 40 patients, we reviewed the clinical outcome and compared the echocardiographic parameters before and after the device closure.

Results: The device size was 23.8±6mm and pulmonary to systemic flow ratio (Qp/Qs) was 2.35±0.8. Pulmonary hypertension was evident in 18 patients (45%) prior to the device closure and 11 of them (27.5%) was normalized immediately after the closure. 12 patients (30%) showed arrhythmia before the procedure, 8 of them had persistent atrial fibrillation, and there was no change in rhythm after the procedure. 4 patients developed paroxysmal atrial fibrillation right after the device implantation, but all recovered. 19 patients had co-morbidity prior to device closure.

After the procedure, cardiac geometry was remodeled. The right ventricle showed decreased volume overload and transient decrease in function but recovered. The left ventricle showed mild restrictive pattern due to volume loading, but myocardial function did not show significant change.

Conclusion: Trasncatheter closure of secundum ASD is technically feasible, efficacious, and safe in elderly patients.

[PP-021]

The safety and feasibility of transcathater closure of atrial septal defect without balloon sizing

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Objectives: To evaluate the safety and feasibility of transcatheter closure of atrial septal defect without balloon sizing.

Method: The size of atrial septal defect was measured by transesophageal echocardiographic images. The size of device selected was generally 4-7 mm larger than the maximal diameter of defect. 158 patients (106 male, 56 female) aged 14-76 (mean:32±16) underwent transcatheter closure without balloon sizing was been followed respectively for 6 month with acceptance of patients.

Results: Mean procedure period was 28±11.3 minutes, mean atrial septal defect diameter 22.6±8.1 (12-40 mm). Total of 158 septal occluders were deployed in 153 patients. 3 patients were found to develope embolization of a device in the early period. Through following period 3 patients were found to develope residual minimal shunt. Successful closure rate was 94.9 %.

Conclusion: At result balloon sizing can not be necessary in transcatheter closure of ASD defects, TEE maybe using as guiding for transcathater closure with high success rate and low complication risks.

Features of study population

	Study population (n=165)
Sekondum type ASD, No. (%)	165 (100%)
Closure with balloon sizing, No. (%)	7 (4.2%)
Closure without balloon sizing, No. (%)	158 (95.8%)
Device embolization, No. (%)	3 (1.96%)
Residual shunt, No. (%)	3 (1.96%)
Successful Closure without balloon sizing, No. (%)	150 (94.9%)
Successful Closure with and without balloon sizing, No. (%)	160 (96.9%)

[PP-022]

Markers of progenitor cell Recruitment and differentiation rise early during ischemia and continue to rise during resuscitation in a porcine acute ischemia model

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Background: Clinical administration of bone marrow derived stem cells in the setting of acute myocardial infarction (AMI) leads to improved left ventricular function. ThymosinB4 (TB4) and vascular endothelial growth factor (VEGF) are linked to adult epicardial progenitor cell mobilization and neovascularization and is cardioprotective after myocardial ischemia. We investigated the time course of TB4 and VEGF during AMI, cardiac arrest, and resuscitation.

Methods: Fifteen anesthetized and instrumented domestic swine underwent balloon occlusion of the proximal LAD. Venous blood samples were collected from the right atrium at 5 min intervals until 15 minutes after the onset of CPR. Plasma levels of TB4, VEGF, and MMP-9 (matrix metalloproteinase-9, selected as a marker for remodeling and repair) were measured by ELISA. Generalized linear mixed models were employed to model the time dependent change in plasma concentration. All variables were natural log transformed, except TB4 values, to normalize distributions.

Results: 15 animals successfully underwent balloon occlusion and samples were collected. TB4, VEGF, and MMP-9 demonstrated a statistically-significant, time-dependent increase in concentration during ischemia. MMP-9 had an unchanged rate of rise when compared to the pre-arrest, ischemic period while VEGF showed a deceleration in its time-dependent concentration trajectory and TB-4 demonstrated an acceleration.

Conclusions: Endogenous TB4 and VEGF increase shortly after the onset of AMI and increase through cardiac arrest and resuscitation in parallel to remodeling proteases. These markers continue to rise during successful resuscitation and may represent an endogenous mechanism to recruit undifferentiated stem cells to areas of myocardial injury.

Molecule	ΔConcentration/minute Ischemic Period (p value)		ΔConcentration/minute Resuscitative Period (p-value)	
TB4	0.08 pg/mL	(p=0.0006)	0.16 pg/mL	(p<0.0001)
ln(ET-1)	7.0%	(p<0.0001)	same	
ln(MMP-9)	6.2%	(p<0.0001)	same	
ln(VEGF)	8.0%	(p<0.0001)	5.1%	p=0.02

[PP-023]

The safety and efficacy of using drug-eluting stent in coronary lesions with chronic total occlusion

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Objectives: We investigated the safety and efficacy of using drug-eluting stent in coronary lesions with chronic total occlusion.

Method: One hundred and fourteen patients with chronic total occlusion between 2006 and 2009 were included in this study. Coronary lesions with chronic total occlusion were passed with different techniques. Drug-eluting stent in the appropriate size was implanted after balloon angioplasty. After six months, control coronary angiography was performed to evaluate the angiographic restenosis.

Results: Clinical and angiographic characteristics of the patients were evaluated before the percutaneous coronary intervention (Table 1). Immediate procedural success rate were obtained in 101 patients (91.2%). Percutaneous coronary intervention was unsuccessful in 13 patients (8.8%). Mean after six months, control coronary angiography was performed in 56 of 101 patients to evaluate the angiographic restenosis. Stent restenosis was detected in 12 (21.4%) patients. There was no early and late stent thrombosis in study population. There was no death, acute myocardial infarction and acute stroke in periprocedural period. Contrast nephropathy was developed in 16 (14.4%) patients, but the renal functions returned to normal values after hydration in all patients (Table 2).

Conclusion: We have reported results of percutaneous coronary intervention in patients with chronic total occlusions. Our results showed that treatment with drug eluting stent implantation can be applied with high success and low complication rates in coronary lesions with chronic total occlusion.

Clinical and angiographic characteristics of the patients

	Patients (n=114)	Percent (%)
Age (years)	63±10.1	-
Sex (men), No. (%)	90	78.9%
Hypertension, No. (%)	80	70%
Family history of CAD, No. (%)	30	26%
Diabetes mellitus, No. (%)	39	34%
Hyperlipidemia, No. (%)	66	52%
Current smoker, No. (%)	66	52%
Previous myocardial infarction, No. (%)	64	50.6%
LVEF <%50, No. (%)	74	64.9%
LMCA lesion, No. (%)	2	% 1.8
LAD lesion, No. (%)	53	% 46.5
Cx, No. (%)	34	% 29.8
RCA, No. (%)	25	% 21.9

CAD: Coronary artery disease, LVEF: Left ventricle ejection fraction, LMCA: Left main coronary artery, LAD: Left anterior descending artery, Cx: Circumflex artery, RCA: Right coronary artery.

Periprocedural complications

	Numbers (n=114)	Percent (%)
Death, No. (%)	o	0%
MI, No. (%)	0	0%
CVE, No. (%)	0	0%
ST, No. (%)	0	0%
Contrast nephropathy, No. (%)	16	14.4%
Coronary dissection, No. (%)	4	3.8%
Cardiac tamponade, No. (%)	0	0%
Hematoma or Pseudoaneurysm, No. (%)	6	5.8%
Major hemorrhage, No. (%)	7	6.7%
Coronary perforation, No. (%)	0	0%
emergency re-PCI, No. (%)	1	0.8%

MI: Myocardial infarction, CVE: Cerebrovascular event, ST: Stent thrombosis, PCI: Percutaneous coronary intervention

[PP-024]

Hybrid approach to thoracic aortic aneurysms and dissections: clinical outcomes at a single center

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Background: Endovascular approach to the thoracic aortic aneurysm or dissection is an appealing alternative solution. However, this technology alone is often not suitable to complex lesions. We sought to investigate the technical and clinical outcomes of hybrid approaches in complex thoracic aortic aneurysms or dissections.

Methods: Fourteen patients (9 male, 62±14 years) underwent hybrid approaches for the lesions, including 2 cases of stent-graft implantations due to recurrent dissections of aortic arch and descending thoracic aorta (DTA), following a prior surgery. Twelve patients (6 aneurysms and 1 dissections of aortic arch, 3 aneurysm and 2 dissections of DTA) underwent adjunctive surgery to overcome the limitation of endovascular procedure due to inadequate proximal landing zone. Among them, 4 patients received left common carotid artery bypass and 10 patients received aortic arch reconstructions or debranchings before endograft placement, including 3 cases of elephant trunk creation.

Results: During a mean follow-up of 12±15 months, technical success was achieved in all patients. There was one perioperative death caused by cerebrovascular accident. 4 patients had endoleaks on follow up CT scans. 1 patient had immediate type II endoleak, which were resolved by the 2 months follow up. However, 3 patients, who had persistent type I endoleak, received another stent graft implantation. The clinical success rate was 86 % (12/14).

Conclusions: Our study showed that the hybrid approach to complex thoracic aortic lesions was feasible and effective. However, additional experience and longer follow up is needed before expanding current indications for this approach.

Endovascular and peripheral interventions (Including neurovascular and carotid)

[PP-025]

Results of percutaneous transluminal treatment in infrarenal total aortic obstruction

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Background: Surgery is the standard therapy for total obstruction of aorta. However, percutaneous transluminal therapy is less invasive and also feasible in treating this disease.

Method: Transluminal treatment was attempted in total of 54 patients (44 men; mean age 64.4±11.0 years) with infrarenal aortic total occlusion between January 1995 and December 2009. We investigated procedural and long-term clinical outcomes of transluminal therapy of total infrarenal aortic obstruction.

Results: Technical success was achieved in 48 (88.9%) patients. Of the 48 successful cases, 16 (33%) patients received thrombolytic agents during the procedure. Procedure-related major complications occurred in 5 (10.4%) patients. One died due to aortic rupture the day after the procedure. There were 2 serious neurologic complications: spinal cord and cerebral infarction. There was one with iliac artery rupture after balloon dilation which was treated with a graft-stent. One patient required embolectomy using Fogarthy catheter due to bilateral distal embolism. During the follow up period (mean 32.4±26.3 months), 5(10.4%) patients required repeat intervention (n=2) or bypass surgery (n=3). Primary patency rate was 95% at 1 year, 85% at 2 year and 81% at 3 year.

Conclusion: Technical success rate and long-term outcome of transluminal treatment for aortic total occlusive lesions are acceptable. However, more preventive measures to avoid complications may be required for the transluminal therapy of aortic infrarenal aortic obstruction.

[PP-026]

The utility and safety of antegrade punctures in combination with mynx vascular closure device in patients undergoing outpatient percutaceous peripheral interventions

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San Antonio Endovascular Heart Institute

Objectives: The aim of the study was to evaluate the utility and safety of percutaneous interventions with the Mynx Vascular Closure Device and antegrade femoral access.

Background: An operator's experience, anatomical conditions and also accompanying diseases determine vascular access strategy for patients undergoing peripheral endovascular intervention. An awareness of technical nuances, relative safety and indications for obtaining percutaneous arterial access at all potential sites is essential. However in some cases the antegrade femoral approach may be the only available access to perform percutaneous revascularization of lower extremity arterial disease.

Patients and Methods: Thirty one antegrade common femoral artery punctures access procedures were performed under fluoroscopic angiographic guidance alone in 28 consecutive patients.

Hemostasis was obtained with Mynx Closure Device. Primary end point was major vascular complications (MVC) defined as: hematoma>5cm, severe and moderate GUSTO bleeding, arteriovenous fisula, pseudoaneurysm, ecchymosis>20cm, hospitalization. Secondary end point was minor vascular complications defined as: ecchymosis<20cm, hematoma<5cmm, adjunctive manual compression. Follow up was performed four times, prior to discharge, next morning after procedure, 7 (+/-2) and 21 (+/-4) days after procedure.

Results: Hemostasis was achieved in 31 (100%) patients. No MVC occurred within 21 days observation. Minor vascular complications (1 hematoma<5cm, 2 ecchymosis<20cm, 2 adjunctive compression) were observed after 5 (16.1%) procedures. Six (19.3%) patients complained of groin discomfort at follow up visit.

Conclusions: The antegrade puncture in combination with the Mynx closure device seem to be safe and effective method to obtain femoral artery access and successfully allows patients to go home the same day.

[PP-027]

The same day discharge after coronary and peripheral interventions utilizing a bivalirudin and vascular closure devices. Go home study

R Stefan Kiesz[1], Radoslaw Szymanski[1], Szymon Wiernek[1], Barbara Wiernek[1], Charlotte Merritt[1], Jack L Martin[1], Pawel Buszman[2]

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Objectives: The aim of study was to evaluate the safety and the feasibility of The Same Day Discharge After PCI (percutaneous coronary intervention) and PTA (percutaneous transluminal angioplasty) and analysis of factors influencing the risk of cardiovascular events in the early an long term observation.

Background: Previous studies showed that Bivalirudin decreases bleeding complication in comparison to heparin. We hypothesized that by combining Bivalirudin with Vascular Closure Devices we can safely discharge patients within 5 hours after coronary and peripheral interventions.

Patients and Methods: Between 20th of Dec 2007 and 13th of Apr a total of two hundred and fourteen elective patients were scheduled for 159 PCI and 258 PTA. Average time of observation was 14 (7.35) months. Primary end point (MACCE) was: death, myocardial infarction, stroke, repeat revascularization (TLR). Secondary end point was: ecchymosis, hematoma, retroperitoneal bleeding, pseudoaneurysm, urgent hospitalization in a three-week observation. During a 21-day observation the primary end point (MACCE) occurred in 8 (2%) cases, composite end point (AE) was noted in 73 (17,5%) cases. The frequency of MACCE in early observation was higher in peripheral intervention group vs cardiac group but it was not statistically significant 3,1% vs 1,8% p=0,54. In long term follow-up primary end point occurred in 36 (16,8%) patients however composite end point was noted in 96 (44,8%) patients.

Conclusions: The same day discharge after coronary and peripheral interventions in accordance with our protocol in a selected group of patients appears not to increase the risk of post procedural events.

[PP-028]

Diabetes predicts failure of percutaneous renal revascularization in the treatment of atherosclerotic renal artery stenosis

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Objective: The purpose of this study is to assess the predictive role of diabetes on outcomes after percutaneous renal revascularization for atherosclerotic renal artery stenosis (ARAS).

Materials-Methods: Between 2006 and 2010, 87 patients underwent renal stenting for ARAS at our institution. 35 of those patients were diabetics (40 %). Pre-procedural systolic blood pressure (SBP), diastolic blood pressure (DBP), blood creatinine levels and estimated glomerular filtration rates (eGFR) were compared with one year after the procedure values of these parameters. eGFR calculation was made using the Cockroft-Gault formula.

Results: There were 52 non-diabetics (60 %) and 35 diabetics (40 %) in our patient cohort. In the non-diabetic group SBP (154.17±29.1 mmHg vs 129.89±20.2 mmHg; P<0.05), DBP (74.91±11.5 mmHg vs 69.95±10.32 mmHg; P<0.05) and blood creatinine levels (1.87±1.1 mg/dl vs 1.47±0.67 mg/dl; P<0.05) decreased, eGFR increased (42.28±23.9 ml/min vs 51.12±25.2 ml/min; P<0.05) significantly, one year after the procedure (Figure). However diabetics showed no significant changes regarding to SBP (141.06±27.55 mmHg vs 138.21±21.9 mmHg; P=0.5), DBP (69.97±9.6 mmHg vs 70.67±9.12; =0.72), blood creatinine levels (1.68±0.82 mg/dl vs 1.93±0.85 mg/dl; P=0.08) and eGFR (50.53±24.01 ml/min vs 43.29±22.05 mg/dl; P=0.08). A trend, which did not reach statistical significance, for worsening renal functions despite the procedure was observed in diabetic patients in our study (Figure).

Conclusion: Presence of diabetes predicts failure to achieve clinical improvement after the percutaneous renal revascularization procedure. However, non-diabetics significantly benefited from the procedure. Diabetes should be a consideration when selecting patients for percutaneous renal interventions.

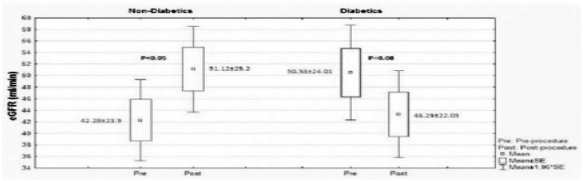

Figure. Changes in eGFR after the procedure in non-diabetics and diabetics.

[PP-029]

Percutaneous renal revascularization of atherosclerotic renal artery stenosis does not prevent clinical deterioration in patients with long-standing diabetes

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Objective: The purpose of this study is to assess the effect of duration of diabetes on clinical outcomes after percutaneous renal revascularization treatment for atherosclerotic renal artery stenosis (ARAS) in diabetic patients.

Materials-Method: Between 2006 and 2010, 35 diabetic patients underwent renal stenting for ARAS in our institution. Patients were grouped into three categories based on the changes in their estimated glomerular filtration rates (eGFR), one year after the procedure. While any change <=10 % in the eGFR has been considered as "no-effect" (group I, n=12), >=10 % increase has been considered as clinical improvement (Group II, n=7) and >=10 % decrease has been considered as clinical deterioration (Group III, n=14). eGFR calculation was made using the Cockroft-Gault formula. One-way ANOVA was used to detect the significance of difference between the groups.

Results: Mean pre-procedural eGFR values in group I, II and III were 51.82±24.69 ml/min, 35.79±12.39 and 54.84±23.01 respectively and the difference between the groups were statistically insignificant (P>0.05). The mean age of the diabetes was least in Group II (33.43±10.66 months) and highest in group III (87.71±7.54 months). Group II patients had a mean diabetes duration of 59.64±8.5 months and the difference between the three groups were statistically significant (P<0.05) (Figure).

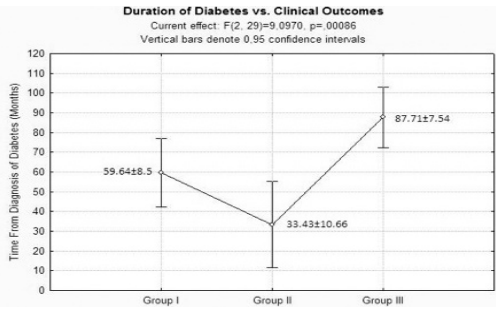

Figure. Procedural outcomes and duration of diabetes.

Conclusion: Increased duration of diabetes significantly decreases the chance of clinical improvement after percutaneous renal revascularization for ARAS. In patients with long-standing diabetes, the procedure has no effect on ongoing clinical deterioration.

[PP-030]

Evaluation of coronary artery plaques and nonalcoholic fatty liver disease by 64-detector multislice computed tomography

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Bacground: Nonalcoholic fatty liver disease (NAFLD) is associated with an increased risk of cardiovascular disease. Multislice computed tomography (MSCT) is a reliable noninvasive method in demonstrating coronary plaque. The aim of study is to evaluate the association between coronary artery plaques and NAFLD.

Methods: This retrospective study enrolled 339 consecutive asymptomatic subjects who had both coronary angiography by MSCT and hepatobiliary imaging. Patients with an alcohol intake exceeding 20 g/day or with a history of known liver disease were excluded from the study. Liver steatosis and coronary artery findings, including lipid core plaques, calcified plaques, mix plaques and narrowing of lumen, were assessed.

Results: In the study, patients with NAFLD, lipid core plaques were significantly increased than without NAFLD but there was no correlation between calcified plaques, mix plaques and narrowing of lumen.

Conclusion: Besides the traditional risk factors, such as diabetes mellitus, hypertension, NAFLD is a novel risk factor for lipid core plaques in the coronary artery.

[PP-031]

Giant left atrial thrombus in mild mıtral stenosis without embolic complication

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Background: Thrombus in the cardiac chambers is frequently associated with atrial fibrillation, valvular heart disease and acute myocardial infarction. Mitral stenosis is associated in up to 17% with atrial thrombus.

Case: A 71-year-old woman was admitted to our clinic because of progressive dispnea. She was in New York Heart Association functional class III and her electrocardiography showed atrial fibrillation with rapid ventricular response. Transthoracic echocardiography revealed mild mitral stenosis (mitral valve area was measured 1.7 cm2 by planimetric measuring) and a large crescent-shaped homogenous mass in the left atrium with a size of 30X75 mm. Transthoracic echocardiography also revealed normal left ventricular dimension and function and left atrial dilatation. Transesophageal echocardiography identified a giant atrial thrombus expanding a large percent of left atrium filling left atrial appendage (fig-1). The patient referred to the surgical department urgently.

Conclusion: Left atrial thrombi are seen most frequently in the left atrial appendage, but in 2% of all mitral stenosis the auricular thrombus extends to the left atrial cavity. Left atrial thrombi are not seen frequently but can have catastrophic outcome but can be readily treated when recognized. Atrial fibrillation and left atrial size are independent predictors of clot formation in the left atrium in patients with mitral stenosis. Large atrial thrombi are rarely seen such as in our case. Emergency surgery is considered the best treatment option. Surgery produces a long term survival rate of 90%.

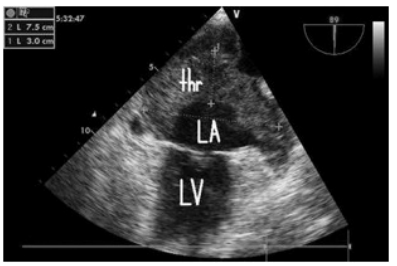

Figure. Transesophageal echocardiography revealed a giant atrial thrombus expanding left atrial appendage. LV, left ventricul; LA, left atrium; thr, thrombus.

[PP-032]

Evaluation of cardiac functions with tissue doppler imaging in prediabetic subjects

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Objective: Diabetic cardiomyopathy has been described in diabetics without coronary artery disease, hypertension and valvular heart disease. In early stage of the disease systolic functions are preserved and diastolic dysfunction develops. Although diabetic cardiomyopathy develops in patients with overt diabetes mellitus,the stage of this condition has not been clarified in prediabetic period. The aim of the present study was to evaluate left ventricle (LV) systolic and diastolic functions, using tissue Doppler echocardiography (TDE), in relation to blood glucose status in prediabetic patients who had no evidence of heart disease by conventional echocardiography (CE).

Materials-Methods: We included 60 patients (30 female, 30 male) and 20 healthy controls (10 male,10 female). All participants were randomised into four groups according to their OGTT. Group-I consisted of the patients who have only impaired fasting glucose (IFG),group-II consisted of patients who have only impaired glucose tolerance (IGT) and group-III consisted of patients have both IFG and IGT so-called combine glucose intolerance (CGI). Group-IV included healthy controls. All subjects underwent both CE and TDE.

Results: No significant difference was found among four groups in terms of CE findings (Table 1). There was no significant difference between group-IV and group-I with respect to early peak diastolic velocity (Ea) of medial mitral annulus (11.65±0.66 vs 9.72±1.58,p> 0.05),whereas a statistically significant difference was found between group-IV and group-II (11.65±0.66 vs 9.06±1.07, p< 0,001); group-IV and group-III (11.65±0.66 vs 9.74±1.09,p< 0.05) (Table 2).

Conclusions: Diastolic myocardial dysfunction in prediabetic patients may be identified by quantitative TDE before the onset of clinical signs of cardiomyopathy and before the appearance of CE indices of systolic myocardial dysfunction.

Conventionel echocardiographic (CE) Parameters of Groups

CE	Group1	Group I	Group II	Group III	Group IV
LVEDD (mm)	51,35 ± 2,08	50,16 ± 1,96	49,60 ± 2,25	52,20 ± 1,73	NS
LVESD (mm)	31,75 ±1,67	31,23 ± 1,90	30,75 ± 1,77	32,40 ± 1,73	NS
LAD (mm)	35,15± 2,30	33,87± 1,56	34,45 ± 1,84	36,70 ± 1,55	NS
IVS (mm)	9,14±0,67	9,53 ± 0,49	9,40 ± 0,54	9,45 ± 0,52	NS
PW (mm)	9,12± 0,82	8,87 ± 0,65	9,35 ± 0,51	9,50 ± 0,56	NS
LVEF (%)	68,15 ±2,61	66,89 ± 2,73	67,30 ± 3,05	67,45 ± 2,68	NS
IVRT (msn)	77,75 ±3,33	82,30 ± 3,55	79,85 ± 4,49	76,70 ± 4,33	NS
Evel (mm/sn)	0,77 ± 0,08	0,76 ±0,15	0,70 ± 0,09	0,87 ±0,08	NS
Avel (mm/sn)	0,64 ± 0,09	0,70 ± 0,09	0,63±0,08	0,68± 0,05	NS
E/A ratio	1,18 ± 0,24	1,07 ± 0,13	1,14 ±0,22	1,29 ± 0,11	NS
Edec (msn)	169,95 ± 21,52	200,05± 25,64	179,65± 38,06	186,70± 14,01	NS

LAD: Left atrial diameter, LVEDD: Left ventricle end-diastolic diameter, LVESD: Left ventricle end-systolic diameter, IVS: Interventricular septum thickness, PW: Posterior wall thickness, LVEF: Left ventricular ejection fraction, IVRT: Isovolumetric relaxation time, Evel: Transmitral early peak diastolic flow velocity, Avel: Transmitral late peak diastolic flow velocity, Edec: Deceleration time

Tissue Doppler echocardiographic (TDE) Parameters of Groups

TDE					
Sa:	7,77 ± 0,91	8,39 ± 0,60	7,67 ± 0, 89	7,90± 0,57	NS
Ea:	9,72±1,58	9,06±1,07	9,74±1,09	11,65± 0,66	<0,05
Aa:	10,34± 0,99	10,19 ±0,95	10,16 ±1,07	9,06± 0,66	NS
Ea/Aa:	0,99±0,22	0,93±0,19	1,02 ± 0,24	1,35 ± 0,11	<0,05

Sa: Mitral medial annulus peak systolic velocity Ea: Mitral medial annulus early peak diastolic velocity, Aa: Mitral medial annulus late peak diastolic velocity, Slat A: Mitral lateral annulus peak systolic velocity, Elat A: Mitral lateral annulus early peak diastolic velocity, Alat A: Mitral lateral annulus late peak diastolic velocity.

[PP-033]

Asemptomatic aortic dissection late after aortic valve replacement

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Acute aortic dissection (AD) in patient with prostetic aortic valve is a rare but potentially fatal complication. We presented a case of asemptomatic AD that was seen in routine control echocardiographic examination in patient with a history of aortic valve replacement (AVR).

Case: A 76-year-old male patient who had undergone a mechanical prostetic AVR fifteen years ago,was admitted to hospital for measurement of coagulation parameters.He had no complaint.On physical examination the pulse was of 86 bpm, blood pressure was 130/80 mmHg. Cardiac examination revealed a systolic 2/6 murmur that is loudest at the left sternal border and click sounds from the mechanic prosthetic valve were audible. Peripheral pulses were palpable. Examination of the other systems were normal. The electrocardiogram showed an atrial fibrillation. Chest X-ray showed an enlargement of the ascending aorta and mediastinum (Fig-1). Transthorasic echocardiograpy imaging showed an aneurysm of the ascendan aorta as 88 mm with intimal flep suspicion and mild aortic regurgitation (AR). Function of the aortic valve prosthesis was normal.The transesophegeal echocardiography (TEE) revealed type A aortic dissection starting from the ascending aorta with an intimal flap arising 2.5 cm above the aortic valve prosthesis (Fig-2). The thoracoabdominal CT confirmed double-barrelled aorta,intimal flep extending from ascending aorta to the level of the common iliac arteries (Fig-3). He was referred to the surgical department for emergency operation.

Discussion: AD occurs as one of the most serious complications late after AVR.Predictors for the occurrence of AD after AVR include fragility and thinning of the ascending aorta,aortic dilatation,AR and high blood pressure before AVR operation. Aortic dissections are generally symptomatic, but rarely asymptomatic patients were reported.

Figure 1. Chest X-ray showed an enlargement of the ascending aorta and mediastinum.

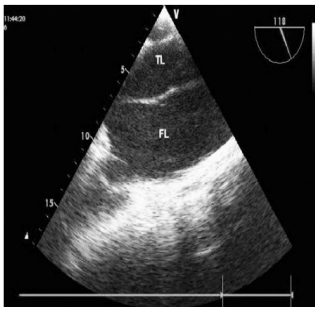

Figure 2. Transesophageal echocardiography revealed double-barrelled aorta and dilatation in ascending aorta. TL (True lumen) FL (False lumen).

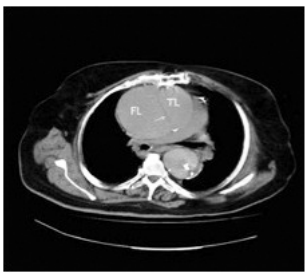

Figure 3. Torax CT showed the dilatation and dissection of ascending and descending aorta. Arrow shows the intimal flap.

[PP-034]

Cerebral embolism caused from left atrial myxoma

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Cardiogenic embolism is observed in about 20% of patient with stroke.We present a rare case of stroke caused by the embolism of left atrial myxoma.

Case: 45-year-old male patient presented to emergency room with sudden observed confusion and left-sided weakness.He had a history of the right lower extremity artery embolism two years ago.On neurological examination he was confused and had left-sided hemiparesis with right-sided ocular deviation.A MRI of the brain revealed a wide low density area in the right temporoparietal region (acute infarct) (Fig 1). The MRI angiography of the brain demonstrated no stenosis or abnormal flow in the visualized vessels of the Circle ofWillis,the carotid arteries and vertebral arteries (Fig 2). The transthoracic echocardiography revealed a 6.4x2.7 cm lobulated mass in the left atrium (Fig 3). TEE demonstrated a mass was orginated from the interatrial septum,lied to the left ventricle and composen relatively mitral stenosis in diastole (Fig 4). The patient undervent emergency surgery and the mass excised successfully.Macroscopic examination showed that the mass was covered with trombus (Fig 5). The histopathological examination confirmed the diagnosis of myxoma.He recovered with minimal neurological sequela after rehabilitation programme on the 30'th day of operation.

Discussion: Myxomas are the most common primary tumor of the heart that present 50% of all benign cardiac tumors. Clinical manifestations may present with systemic embolism, sudden cardiac death, acute myocardial infarction,arrhytmias or mitral stenosis. Our patient had a history of lower extremity artery embolism two years ago. This case demonstrated the importance of investigation the cardiogenic source as a possible cause of peripheral artery embolism and stroke.Early diagnosis and surgical excision are very important to prevent possible complications.

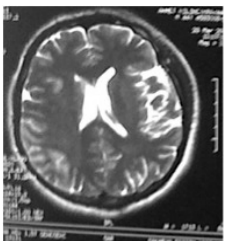

Figure 1. MRI of the brain.

Figure 2. MRI angiography of brain.

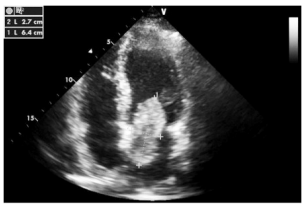

Figure 3. Transthoracic echocardiography.

Figure 4. Transesophageal echocardiography.

Figure 5. Macroscopic view of the myxoma.

[PP-035]

Repeated prolonged thrombolytic therapy after initial unsuccessful thrombolysis in massive pulmonary embolism: A case report

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We report a patient with cardiogenic shock due to massive pulmonary embolism who was effectively treated with repeated prolonged thrombolytic therapy. She was presented with shortness of breath and syncope. Her transthoracic echocardiogaphy revealed right ventricular dilatation and hypokinesia. Chest tomography with contrast demonstrated filling defects in both main pulmonary arteries consistent with obstructing thrombi (Figure 1). Thrombolytic therapy with recombinant tissue plasminogen activator was given initially but shock was not resolved. Repeated thrombolytic was given with streptokinase and infusion was extended upto 48 hours. Successful clinical result was obtained at the end of the repeated thrombolytic therapy without hemorrhagic complication (Figure 2).

Repeated prolonged thrombolytic therapy after initial unsuccessful thrombolysis in massive pulmonary embolism can be considered as an alternative option.

Figure 1. After repeated thrombolysis, thoracic CT image.

Figure 2. Massive pulmonary embolism in thorax CT.

Intravascular imaging (IVUS) physiology

[PP-036]

The impact of lesion length on the functional severity of coronary stenosis determined by fractional flow reserve

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Background: In clinical practice, percutaneous coronary intervention (PCI) is frequently performed solely on the basis of the angiogram. Studies indicated that in patients referred for PCI, approximately one-third of coronary lesions are hemodynamically not significant. Fractional flow reserve (FFR) is well-established method to evaluate the functional severity of coronary lesions. We evaluated the impact of the lesion length on the physiological significance of a coronary stenosis in patients referred for PCI on the basis of the angiogram.

Methods: The study consisted of 33 angiographically significant lesions (70-90% diameter stenosis) in 28 patients. FFR measurements for each lesion just prior to the planned PCI were obtained at baseline and during maximum hyperemia which was induced by intracoronary adenosine (90-240 μg). Coronary lesions were categorized as <5 mm (n=5), 5-10 mm (n=15) and >10 mm (n=13). Patients with >=2 lesions in FFR vessel, previous coronary bypass grafting, colleteral vessels to FFR vessel and acute coronary syndrome within 6 months were excluded from the study.

Results: Mean FFR values for the lesions <5 mm, 5-10 mm and >10 mm were 0.94±0.06, 0.81±0.1 and 0.71±0.2 at baseline and 0.84±0.05, 0.73±0.1 and 0.61±0.2 during hyperemia, respectively. Correlation analysis showed statistically significant negative correlation between lesion length and FFR values at baseline (r= -0.44, p=0.01) and also during hyperemia (r= -0.40, p=0021).

Conclusions: Lesion length may have an impact on the functional severity of a coronary stenosis. Physiologic lesion assessment by FFR seems to be important in the evaluation of angiographically short and significant coronary lesions.

[PP-037]

Comparison of intravascular ultrasound and angiographical guided drug-eluting stent implantation

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Objectives: Use of drug eluting stents in the treatment of coronary artery disease has reduced rates of restenosis. But, no procedure can prevent restenosis completely. Restenosis and thrombosis are the most important problem related to stents. Intravascular ultrasound (IVUS) has a key role in stent implantation. The aim of this study was to evaluate the impact on anjiographic results of using IVUS during stent implantation.

Method: Forty-six patients were enrolled in this study (mean age; 60,1 ± 10, 32 male). The IVUS-guided stenting was applied to 23 patients (Group-I) and conventional angiographic technique to 23 patients (Group-II). From cineangiograms, initial (after stenting) and late (follow-up) lumen diameters were evaluated. After six months, control coronary angiography was performed to evaluate the angiographic restenosis.

Results: There were no differences between groups with respect to age, gender, lesion length and coronary risk factors. Minimal lumen diameter after stent placement was significantly higher in group 1 than group 2 (3.2±0.34 mm vs. 2.9±0.48 mm; p=0.03). Stent restenosis was detected in 1 of 23 patients in group-I and 3 of 23 patients in Group-II (p=0.3). Early or late stent thrombosis did not observed in any patients in group 1. But, acute stent thrombosis occured in one patient in group 2 (Table 1 and 2).

Conclusion: IVUS guided stent implantation is associated with a decrease in the stent thrombosis and rates of restenosis. The anjiographic procedural success can improve with IVUS guided stent placement.

Table 1. Clinical and laboratory parameters in study groups

	Group 1 (n=23)	Group 2 (n=23)	P value
Age (years)	62±11	58.1±8.5	0.2
Sex (men), No. (%)	17 (%73.9)	15 (%65.2)	0.37
Hypertension, No. (%)	19 (%82.6)	17 (%73.9)	0.36
Family history of CAD, No. (%)	5 (%21.7)	6 (%26)	0.5
Current smoker, No. (%)	7 (%30.4)	9 (%39.1)	0.37
Diabetes mellitus, No. (%)	7 (%30.4)	7(%30.4)	0.62
hyperlipidemia	15 (%65.2)	13(%56.5)	0.38
Ejection fraction (%)	45±4.5	47±5.3	0.9

Table 2. Angiographic parameters in study groups

	Group 1 (n=23)	Group 2 (n=23)	P value
Lesion length (mm)	20.9±6.6	18.4±4.7	0.15
Percent stenosis (%)	92.3±9.4	94.1±6.6	0.46
MLD before procedure (mm)	0.27±0.28	0.21±0.29	0.13
MLD after stenting (mm)	3.2±0.34	2.9±0.48	0.03
Late lumen loss (mm)	0.4±0.6	0.53±0.7	0.7
Restenosis (n)	1	3	0.3
Acute ST (n)	0	1	0.5
Late ST (n)	0	0	-

MLD: Minimal lumen diameter, ST: Stent thrombosis

[PP-038]

Clinical outcome after implantation of drug-eluting stents in unprotected left main coronary artery bifurcation lesions with the mini-crush technique in patients with acute coronary syndrome

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Background: Current studies demonstrated that provisional stenting approach is preferable to treat most of bifurcation lesions. However, this strategy has potential to occlude side branch after main vessel stenting, might develop circulatory collapse in patients with unprotected left main coronary artery (ULMCA) bifurcation lesion, especially acute coronary syndrome because of hemodynamic instability. The aim of this study was to determine the clinical outcome of these patients treated with drug-eluting stents (DES) with the mini-crush technique.

Methods: We identified 39 consecutive patients with ULMCA bifurcation lesions who received DES implantation with the mini-crush stent technique from April 2004 to July 2009. From this cohort, 21 patients who presented with non-ST-elevation myocardial infarction (NSTEMI) and unstable angina (UA) were included in the present retrospective analysis.

Results: All lesions were categorized as true bifurcation according to Medina classification. Sirolimus-eluting stents were implanted for all lesions finalized by final kissing balloon inflation. All patients achieved acute procedural success and survived to hospital discharge. Although follow-up angiography was completed only 14 patients at 9.0±2.2 months, binary restenosis was present in 5 patients involving left circumflex ostium without symptom. During a median clinical follow-up of 34±18 months, hard cardiac event defined as cardiac death and non-fatal MI occurred in only one patient due to subacute stent thrombosis of non-LMCA lesion.

Conclusion: Although restenosis rate remains high, the mini-crush technique of ULMCA bifurcation stenting with DES in patients with NSTEMI and UA provided favorable in-hospital outcome, and it also provided acceptable long-term outcome.

[PP-039]

Retrospective analysis of the maximum exercise double product (Robinson index) during the treadmill test as an exact predictor of coronary artery disease

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Background: The aim of the study is to compare the predictive value of the maximum exercise double count with ECG changes and chest pain during the exercise test to reveal the obstructive coronary artery disease.

Methods: We studied the patients who underwent exercise treadmill test followed by coronary angiography within a month. Chest pain during the test, Robinson index, ST-segment deviation and coronary artery stenosis were evaluated.

Results: Data from 2826 treadmill tests were studied. Finally 104 patients (94% male, mean age 54.6 ± 8.8) were selected and divided into two groups. The first one included 79 patients with at least one coronary artery stenosis. The second group included the rest of 25 patients without coronary artery disease. Mean age of patients in the first group was higher as compare to the second group 56.1±7.8 and 49.8±10.3 respectively (p=0.001). Chest pain was observed in 30 patients in the first group and in 4 patients from the second group (38.0% vs. 15.4%; p=ns). ECG changes were noted in 64 patients from the first group and in 16 consecutive patients from the second group (81.0% vs. 64.0%; p=ns). In the group of coronary stenosis mean Robinson index was 224.3±56.1 and 272.1±85.0 in the second group respectively (p=0.001).

Conclusion: We found Robinson index has higher predictive value in prediction of obstructive coronary artery disease displayed by selective coronary angiography, as compared to chest pain and ECG changes during the exercise test.

Data & Results

Criteria	Group A	Group B	Analysis
Number of patients	79	25	104 Total
Mean age	-	-	54.6 ± 8.8
Sex	-	-	94% Males (98 Males and 6 females)
Chest pain present	30 (38%)	04 (15.4%)	p= NS
Positive ECG Changes	64 (81%)	16 (64%)	p= NS
Robinson Index	224.3± 56.1	272.1 ± 85	p= 0.001

104 patients (94% male, mean age 54.6 ± 8.8) were selected and divided in two consequent groups A & B. NS= not significant

[PP-040]

Clinical experience with novel 6 french intra aortic balloon catheter for the patient who underwent percutaneous coronary intervention

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Aims: Access site limitation and complication is a concern with intra aortic balloon pumping. Recently, a 6 F intra aortic balloon chather is available in Japan, and in this study we evaluate feasibility and efficacy of this intra aortic balloon for the patients who underwent percutaneous coronary intervention.

Method: We used a 6 F compatible intra aortic balloon catheter, TAKUMI (ZEON MEDICAL INC, Tokyo, Japan). The volume of this balloon is 30ml and inner lumen is 0.020 inch guidewire compatible which cannot be used for pressure lumen. From January 2007 to December 2009, 48 patients including 27 Acute coronary syndrome and AMI patients underwent percutaneous coronary intervention with support of a 6 french intra aortic balloon. Male gender was 45.5%, and the mean age was 76.3+-9.8 years old. Percutaneous coronary intervention was undergone with transradial approach in 62.5% of the patients.

Results: The insertion and driving of balloon catheter was achieved in all the patients including 4patients of transbrachial approach. However, in two patients, incomplete dilatation of the balloon which required the exchange of balloon catheter was observed and in one patient, balloon rupture occurred. No major complication related to accsess site including large hematoma, vessel closure, lower limb ischemia was oboserved.

Conclusions: By its minutualized property, a 6 F intra aortic balloon catheter was cosiderted to be useful to improve the approach site limitation and complication for the patients who underwent percutanious coronary intervention.

[PP-041]

Does telemetry predict need for repeat coronary angiogram after percutaneous coronoary intervention?

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Background: It is a standard of care to place patients on overnight telemetry monitoring after Percutaneous Coronary Intervention (PCI). We sought to determine the utility of telemetry as a determinant for Repeat Coronary Angiogram (RCA) after elective PCI.

Methods: We reviewed the charts of all patients who underwent RCA, during the same hospital admission at Sparrow Hospital, between the dates of 1/1/2005 and 12/31/2005. Acute coronary syndromes and staged interventions were excluded. 2,759 PCIs were performed, out of which 149 patients had RCA during the same admission. Indications for RCA were determined, including changes in heart rate, blood pressure, oxygen saturations, telemetry, and symptoms.

Results (Table A): Of the 149 patients, 7 (4.7%) had unplanned, RCA. All 7 patients had chest pain. Only one had concurrent ST changes on telemetry-noted after symptoms. All patients, except one were hemodynamically stable. No arrhythmias were detected. In all 7 patients, the decision to do RCA was based on patient's symptoms alone.

Conclusions: After elective PCI, it was patients' symptoms and not telemetry data that determined the need for repeat coronary angiogram.

Table A

Patient	BP	Heart Rate	Arrhythmias	ST changes	O2 Sats	Symptoms
1	125/80	55	None	None	95%	Chest Pain
2	105/65	85	None	ST elevation in Lead II	96%	Chest Pain
3	130/65	75	None	None	100%	Chest Pain
4	145/70	80	None	None	96%	Chest Pain
5	100/60	70	None	None	96%	Chest Pain
6	Shock	110	None	None	90%	Chest Pain
7	130/70	80	None	None	97%	Chest Pain

[PP-042]

The electrocardiographic changes that mimicking acute myocardial infarction due to lightning strike

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Introduction: Lightning strike is the leading cause of sudden cardiac arrest and death from natural events.We present a case of lightning strike with the electrocardiographic findings that are mimicking acute inferior myocardial infarction.

Case: A 40-year-old female patient with any medical history admitted to the emergency room after lightning strike. She was unconscious, cyanosed with dilated pupils, apneic and pulseless. She was intubated and cardiopulmonary resuscitation (CPR) was started. During CPR,DC cardioversion and defibrilation was applied for the development of venticular tachycardia and fibrillation. Normal sinus rhytm and pulse was obtained on the 10th minutes of CPR.The vital signs of the patient were as follows after CPR: blood pressure; 80/50 mmHg, heart rate; 130 bpm. On physical examination flash burns were visible over left side of the patient. The electrocardiography revealed ST segment elevation in leads D2,D3 and AVF with reciprocal ST segment depression in leads V1-V3 (Fig-1). The emergency coronary angiography showed normal coronary arteries (Fig 2,3). The control electrocardiography revealed resolution of inferior ST segment elevations and T wave inversions in inferior leads (Fig-4). Biochemical analysis showed creatinin kinase (CK) and CK/MB form levels were as high as the limit of measurement done, troponin I;50.000 ng/ml, creatinin 2.1mg/dl.Despite of the vasopressor treatment and fluid resüscitation the patient's shocked condition remained critical and she developed an asystolic arrest on the 10'th hours of admission.

Discussion: The electrocardiography changes such as ST segment elevation or depression,T wave inversions and prolongation of QT distance can occur after lightning strike. The myocardial trauma and severe systemic adrenergic stimulation as a result of high electrical voltage after the lightning strike can be the causes of the electrocardiographic findings.

[PP-043]

The zwolle score – an underutilised resource to reduce length of hospital stay after primary PCI

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Background: The Zwolle score (ZS) is a quantitative clinical tool for risk-stratification of patients after primary PCI (PPCI), with the potential to decrease the length of hospital stay (LOHS) and the associated costs by allowing early discharge(at 48–72h) of patients with ZS<3 who are at low risk of death. We set out to see whether our practice is in line with the application of ZS.

Setting: Tertiary cardiac centre performing approx. 250 PPCI /year.

Methods: We identified consecutive PPCI patients over three and half months who survived to discharge, and calculated their ZS using electronic and paper records, which was then correlated with their LOHS. The variables included in ZS are: Killip class, TIMI flow post PPCI, age>60y, presence of 3V CAD, anterior STEMI, and ischaemia time>4h.

Results: We included 57 patients (46 (81%) M, mean age (SD) 61(12) years). The average ZS was 3.04(3.2), range 0-13; the average LOHS was 4.3 (3.4) days, range 1-24. Overall there was a moderate (R= 0.51) and highly significant (p< 0.01, ANOVA) correlation between LOHS and ZS.

Of 40 patients with ZS<=3, 14(35%) had LOHS > 72hrs, and of 17 with ZS>3, 7(41%) had LOHS <= 72 hrs (p=ns, chi2). Overall 21/57 (36%) patients had LOHS that deviated from ZS.

No deaths were reported at one month interval.

Conclusions: In 'the real world' a substantial proportion of patients are discharged 'too early' as well as 'too late' after PPCI. Applied rigorously, the ZS has the potential to shorten LOHS in selected patients.

☞

[PP-042] continued

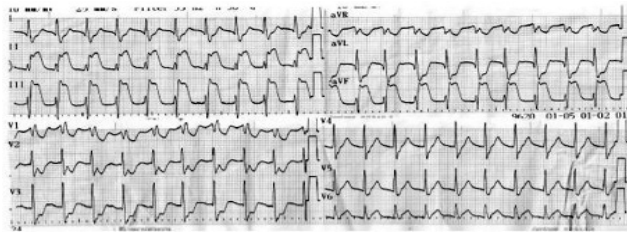

Figure 1. Electrocardiogram on admission.

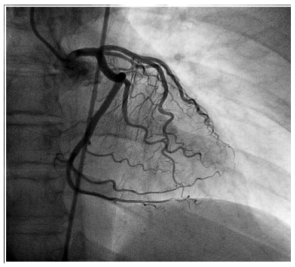

Figure 2. Coronary angiography (left coronary system).

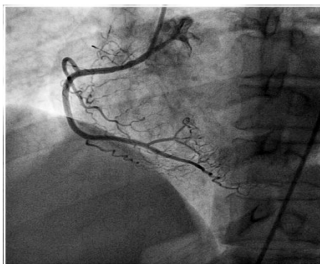

Figure 3. Coronary angiography (right coronary system).

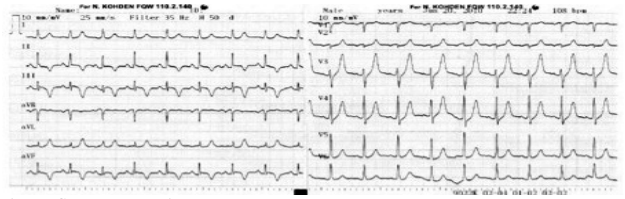

Figure 4. Control electrocardiogram.

Pediatric

[PP-045]

Stenting of major aorto-pulmonary collaterals in non-surgically corrected patients with pulmonary atresia, ventricular septal defect and major aorto-pulmonary collaterals

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Introduction: Pulmonary atresia (PA) with a ventricular septal defect (VSD) and major aorto-pulmonary collaterals (MAPCAs) is a complex congenital heart disease. Surgical results remain limited, an interventional approach with stent implantation into stenosed collaterals presents a valuable option.

Patients and procedures: Between April 2007 and June 2010, 9 interventions with stenting of MAPCAs were performed in 5 patients. Patients median age was 19 years (5 months to 33, 5 years), patients median weight was 61 kg (5, 8 to 69 kg). Implanted stents: PalmazGenesis, MultiLinkVision and Andrastent.

Results: All procedures were successfully performed without complications. In 2 patients, the capillary blood saturation increased significantly (from 72 to 83% and from 61 to 81%), in 2 patients saturations remained unchanged with an amelioration of clinical status. In 1 patient, coronary stents were not open even with a balloon inflated on 22 atmospheres. An Andrastent was implanted into a previously implanted and disintegrated PalmazGenesis stent with a stabilisation of the stent and good final result.

Conclusion: Stent implantation into MAPCAs in patients with PA, VSD and MAPCAs represents a therapeutic option in surgically not corrected patients. This procedure remains a palliative procedure, but can significantly improve the quality of life. Interventional procedures are feasible, however the presence of a skilled interventionalist is mandatory and frequently special equipment is necessary. A test of the expansibility of the stenosis with a balloon pre-dilation is important. In the case of pulmonary hypertension in post stenotic segment of the MAPCA, the stenting is not indicated.

[PP-044]

Coronary percutaneous intervention and its outcome in octogenerian. An experiance from teritary care centre in south asia

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Background: Octogenarics are defined as those aged 80 years. There is controversial data of PCI available

Methods: This was cohort study conducted on 887 consecutive cases of PCI at Aga khan Hospital from 2000-2008. We divided the patients according to age into two groups Younger (<80 years) and Octogenarics (>80 years). The total number of octogenerics were 138. Data included information on demographics comorbids, procedure detail, in hospital outcomes were collected by our PCI database. Primary end point was In-hospital mortality and MACE. The secondary end points were rates of procedural success, CVA, the composite of death/MI/CVA. The six month outcomes were also compared.

Results: The mean age of octogenarians was 82 +/- 2 with 80% and 20% while that of the controls was 52 +/- 9 with 70% males and 30% females. Significant association was also found in the risk factors when octogenarians were compared with controls which included STEMI, LVEF < 35%, cardiogenic shock, prior CABG and diabetes. There was no significant association found in the success rate as well as complications. Mortality was high (p=0.004), significant association predictor of mortality in octoganarics were cardiogenic shock, STEMI, LVEF < 35%. At 6 month FUP no significant association was in secondary end points except deaths (p=0.004).

Conclusion: PCI is a safe and effective procedure in octogenarians with angiographic success rates comparable to that in younger cohorts. Procedural complications and mortality in octogenarians were strongly influenced by co- morbidities such as left ventricular impairment, prior MI and prior CABG.

demographic detail

Risk factors	Younger (n=749)	0ctogenaricsn (n=138)	P value
Gender Male% Female%	80 20	70 30	0.03
Mean age (yr)	52+9	80+4	0.01
hypertension%	50	68	0.001
PVD%	0.6	4	0.05
Prior stroke%	1.5	6	<0.001
Prior PCI%	12	17	0.01
Prior CABG%	8	15	0.05
COPD%	2	8	0.01
Prior CCF%	2.4	6	0.06
Mean LVEF%	54+10	45+9	0.01
Diabetes %	34	34	NS
Prior MI%	25	23	NS
Renal failure%	2	4	NS

because it showed the difference in comorbids in two group

IN HOSPITAL PCI COMPLICATION

COMPLICATIONS	OCTOGENARICS	YOUNG	O.R (95% C.I)	P value
DEATH	7%	2%	2.3(1.6-4)	<0.001
VASCULAR	7%	1.5%	4.1(2.4-6.4)	0.001
EMERGENCY CABG	8%	2%	2.9(1.8-4.3)	0.001
ARRYTHEMIAS	5.6%	1.5%	1.2(0.9-1.7)	0.01
RENAL FAILURE	2.5%	1.5%	1.4(0.5-3.2)	0.68
PERI- MI	2.5%	1.5%	1.4(0.4-3.2)	NS
STROKE	1.5%	0.5%	1.0(0.8-1.0)	NS
CCF	1.5%	1%	NS	NS

will tell difference in PCI results in both groups.

Multivariate Predictors of Mortality in Octogenarics

Risk Factors	OR 95% C.I	P Value
Cadiogenic Shock	4,1(2.1-4.8)	0.001
STEMI	2.8(1.6-3.6)	0.03
LVEF<35%	2.4(1.6-3.4)	0.04
Age>80 yrs	2.5(1.2-3.6	0.05

PREDICTOR OF MORTALITY

Univariate Analysis of In-Hospital Mortality in Octogenarics

Risk Factors	O.R 95% C.I	P Value
Age>85 yrs	I.6(.9-3.1)	0.05
STEMI	2.6(1.2-4.1)	0.02
LVEF <35%	3.1(1.8-5.4)	<0.001
Cardiogenic shock	4.2(2.5-6.2)	<0.001
Prior CABG	2.3(1.3-3.4)	0.02
Diabetes	1.3(0.6-2.3)	0.06
hypertension	0.6(0.4-1.7)	0.68
Female gender	0.7(0.5-1.8)	0.8
Prior MI	0.9(0.6-1.7)	0.68

PREDICTORS OF MORTALITY

[PP-046]

New "Bioabsorbable" septal repair implant for percutaneous closure of atrial septal defect: First experiences

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Introduction: Transcatheter atrial septal defect (ASD) closure has become one of the most common interventional angiography application in childhood. Most of the closure devices are permanent synthetic implants and expected to persist for life long in their young recipients. Arrhythmia, persistent low-grade inflammation, erosion of adjacent tissue, thrombus formation and allergic reactions are serious side effects and common for all devices. Therefore, development of a "bioabsorbable" device came to the fore. Here we present our first experiences about ASD closure with a bioabsorbable device.

Cases: From September 2009 to June 2010, 8 patients (3 male, 5 female, mean age 9,8 years, ranged 4-16) with ASD underwent transcatheter closure with the BioSTAR septal repair implant. The mean ASD diameter measured by transesophageal echocardiography was 9,1 mm (7-11). The device size was 23mm in 5 patients, and 28 mm in others. Succesfull device implantation and complete occlusion was achieved in all patients. There were no procedure related complications.

Results: All of the current devices used for transcatheter ASD closure are permanently implanted into the tissue. Once the defect is effectively closed the device function has become redundant. Therefore biodegradable implants might be advantageous. The first commercially available example of this type devices is "BioSTAR" septal repair implant. It utilizes natural healing process in the host tissue rather than formation of scar tissue. Moreover, it has other advantages like earlier shunt closure, high closure rate and less complication. Considering these promising features, new generation bioabsorbable devices has emerged as an important alternative.

[PP-047]

Transcatheter closure of coronary artery fistula using the Amplatzer Duct Occluder II

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Introduction: Although rare, coronary artery fistula (CAF) is the most common coronary artery anomaly. It is characterized by an abnormal communication between the coronary arteries and the cardiac chambers or great vessels. Surgery used to be the treatment of choice, but transcatheter occlusion has emerged as a succesfull alternative to surgery.

Here we describe our experience in two cases with a large congenital coronary-cameral fistulae, succesfully treated by implantation of Amplatzer Duct Occluder II (ADO II) device.

Cases: Two children, aged 2 and 4 years-old, with a CAF underwent cardiac catheterization for occlusion. The CAF was originated from the left coronary artery and drained to the right ventricle in one case and from the right coronary artery to the right atrium in other one.

Results: In both cases ADO II device was implanted for closure. Arteriovenous wire loop method preferred and the device was deployed at the most distal point accessible in the CAF. Control angiography demonstrated complete occlusion in 2 patients. At short term follow-up (8 months and 2 years) there have been no adverse events and the fistulae are closed on color Doppler echocardiography.

Conclusion: Use of ADO II for transcatheter closure of CAF may offer advantages over other devices. It is user-friendly, suitable for large fistulae with high flow and has high rate of complete occlusion. We suggest that ADO II is a safe and effective alternative for transcatheter occlusion of CAF

[PP-048]

Balloon angioplasty and stent implantation procedures in right ventricle to pulmonary artery conduit stenosis

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Objective: Invasive procedures either balloon angioplasty or stent implantation for conduit stenosis could delay conduit replacement time. We want to share our experience with invasive procedures for conduit stenosis.

Method: Symptomatic patients or patients having >= 60 mmHg peak echocardiographic gradients between RV and pulmonary artery underwent cardiac catheterization. Patients with RV pressure above 50 mmHg or 2/3 of LV pressure were treated by intervention. We preferred stent implantation if indentation disappears but it recoils immediately.

Results: 14 balloon angioplasty, 3 stent implantation totally 17 procedures were applied in 14 patients median 25 months after corrective surgery requiring conduit implantation. Median age of patients was 10 year (1-26 yr). Median echocardiographic peak gradient was 80 mmHg (66-140) and median RV pressure measured at catheter was 88 mmHg (64-225) before procedures and the median catheter gradient dropped to 40 mmHg (17-56) and median RV pressure decreased to 62.5 mmHg (41-98) after procedures. Stent implantation was performed in two patients with restenosis after BA and reballoon angioplasty applied affectively in one. In one patient stent implantation performed at first procedure because of ineffective BA. In four patients with ineffective BA conduit replacement were suggested. During follow up period of 6 month to 3 year stent implanted patients needed no additional intervention.

Conclusion: Our experience revealed BA has a limited efficacy in these patients. On the other and our results similar with literature knowledge, stent implantation is more effective and could delay reoperation time and may decrease the number of operations.

[PP-049]

Radiofrequency perforation in the treatment of pulmonary atresia IVS: challenges faced in the cath lab

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The objective of RF perforation is as a cutting procedure to create a small opening within a tissue with minimal damage to the surrounding tissue structures or bleeding. It is an "all or none" process. Pulmonary atresia with intact ventricular septum is an infrequent but enigmatic disorder with significant morphological heterogeneity. In the absence of a right ventricular– dependent coronary circulation, decompression of the right ventricle is a component of a treatment algorithm, which attempts to salvage the right heart as a component of a biventricular or so-called one-and-a-half ventricular repair. An alternative to primary surgical decompression strategies is the use of percutaneous laser or RF-assisted perforation of the atretic valve and subsequent balloon dilation. The procedure, while technically challenging, can be expected to establish antegrade flow successfully through the pulmonary valve in up to 90% of patients.

The challenges faced by the operator in the cath lab will be presented and different solutions to overcome those challenges especially in countries with less than optimal facilities. Those challenges will include the selection of patients and the different complications e.g perforation leading to pericardial effusion, presence of coronary fistulae, PDA stenting or not, different catheters to use..etc..

[PP-050]

Monitoring unfractionated heparin in pediatric patients with congenital heart disease undergoing cardiac catheterization or cardiac surgery

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The objective of this study was to determine the effect of age and congenital heart disease (CHD) on whole blood tests for monitoring unfractionated heparin (UFH) in children and to determine the correlation with anti-Xa levels in children undergoing cardiac catheterization or cardiac surgery. A prospective cross-sectional study of 211 healthy children about to have minor surgery (median age 3.5 years) and 110 CHD patients (median age 2.1 years) undergoing cardiac catheterization or cardiac surgery. Commonly used whole blood tests ACT+, ACT-LR, and APTT were obtained before procedures and after UFH in CHD patients. Data were analyzed for the effect of age and CHD and correlation with anti-Xa levels. In healthy subjects the ACT+ was lower in younger (<3 years) patients while the ACT-LR and APTT were unaffected. CHD patients exhibited an opposite trend with higher values in the younger patients. After bolus heparin the ACT+ exhibited the strongest correlation (r = 0.89) with anti-Xa levels in both locations (the APTT was too sensitive at post-bolus levels). When anti-Xa levels were below 1.0 IU/ml (range of thromboembolism therapy 0.35-0.7 IU/ml), the APTT correlation coefficient was 0.72. Some whole blood coagulation tests are affected by age in healthy children similar to laboratory tests and are variably influenced by the presence of CHD. ACT+ is the most reliable predictor of anti-Xa levels in both catheterization and surgery for pediatric patients. The APTT exhibited stronger correlation with anti-Xa than previous reports of laboratory APTT and warrants further evaluation for monitoring heparin thromboembolism therapy.

[PP-051]

Early result of stage I and II hybrid approach for hypoplastic left heart syndrome in Saudi Arabia

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Background: The prognosis of Hypo plastic left heart syndrome is bad and the results remain suboptimal for the traditional staged repair of these patients.

Utilizing surgical and transcatheter techniques, a hybrid strategy was developed to achieve the Fontan circulation.

Method & Result: Total of 15 newborns underwent hybrid stage I for hypoplastic left heart syndrome (HLHS) between May 2006 and Feb 2009, mean age is 11 days,mean weight is 3.1 kg,median hospital stay is 4 days, median ventilatory support is 4 days. Mortality is 20%.

9 patients achieved stage II, mean age is 7.9 mo, mean weight is 6.7 kg, median ventilatory support is 5 days, median hospital stay is 11 days.2 patients Complicated with LPA occlusion needingintervention. One death (11.1%). 2 patient has stage III, 6 patients are pending the stage III.

Conclusion: Though small number and short experience, the result of hybrid approach is good and comparable to other center and it can achieve acceptable short term outcomes in patient with HLHS.

[PP-052]

Hybrid approach in treating Aneurismal dilatation of DAO post residual COA ballooning in a young patient

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Introduction: Aneurismal dilatation post COA repair is well known complication with an incidence 3-5%. we used Hybrid approach in a young patient to treat this complication.

Method& Result: Between October 2009 to April 2010 3 patients underwent hybrid approach to deploy a covered stent using lateral thorocotomy, The patients were evaluated by Cardiac MRI or cardiac Ct angiography, Median age is 2.5 year, median weight is 10.5 kg, median fluoroscopy time is 10 minutes, median hospital stay is 3 days, one patient has wound infection treated with antibiotics, all discharge in good condition, no deaths, all OK in the first follow up after 3 mo, one has completed Fontan surgery.

Conclusion: Hybrid approach in treating high risk, young patient with aneurismal dilatation of COA is feasible and safe technique.

[PP-053]

Effect of oral sildinafil therapy on improvement of functional capacity and hemodynamic in children with congenital heart disease and pulmonary hypertension

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Background: Pulmonary hypertension is a serious problem in congenital heart disease and carries high operative mortality. Various pulmonary vasodilators have been used.

Objective: To evaluate effect of oral Sildenafil in congenital heart disease and pulmonary hypertension, assess improvement in heamdynamics and exercise capacity

Methods-Results: Baseline assessment by echo, 6-MWT and catheterization, oral sildenafil at 0.5 to 2 mg/kg 4 times daily to 25patients, mean age 7.12 ± 3.7 years, NYHA class ranged between I and III with mean 2.28 ± 0.5.6-MWT, and catheterization was performed pre & 6 month post treatment. Mean 6- MWT increased from 311 ± 51.7 to 410.6 ± 63.6 meters (P < 0.001) Mean PAP decreased from 70.8 ± 17.1 to 59.4 ±17.1 mm Hg (<P=0.01). Mean PVR decreased from 1451.7 ± 678 to 1170.7 ± 880 dyne.sec.cm5 (P= <0.001).PVR to systemic resistance ratio (RP/RS) decreased from 0.6 ± 0.2 to 0.4 ± 0.2 (P= <0.001). Mean PAP through the TR jet shows significant decrease from 81.7 ± 18.1 to 70 ± 21.8 mm Hg (P < 0.001).Correlation between PAP measured by echo and catherization showed significant positive correlation between the two measurements (r = 0.568, P = 0.008)

Conclusions: Oral Sildenafil showed beneficial effect in pulmonary hypertension in patients with congenital heart disease after 6 months with significant improvement of all pulmonary hemodynamic parameters with minimal effect on the systemic vascular resistance or the clinical general hemodynamic characteristics.

[PP-054]

Residual stenosis and insufficiency are not associated with balloon: annulus ratio in patients undergoing balloon pulmonary valvuloplasty

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Introduction: Pulmonary insufficiency occurs in many patients after balloon pulmonary valvuloplasty for congenital pulmonary valve stenosis. The relationship of the diameter of the balloon dilation catheter to the pulmonary valve annulus (balloon:annulus ratio, BAR) may represent the only modifiable determinant of procedural success and, in a reciprocal manner, of post-dilation pulmonary insufficiency.

Hypothesis: We examined the relationship between the BAR and the competing outcomes of procedural success and pulmonary insufficiency.

Methods: Retrospective analysis of patients undergoing pulmonary valvuloplasty for isolated pulmonary valve stenosis and their echocardiograms between 1991–2009 at UCSF. Predictors of residual pulmonary valve stenosis were assessed by linear regression. Predictors of echocardiographic moderate-severe pulmonary insufficiency were assessed by logistic regression.

Results: 135 patients met inclusion criteria. The mean BAR was 1.19±0.17. The prevalence of moderate-severe pulmonary insufficiency increased from 0% pre-procedure to 15.2% early after valvuloplasty, and was 47% at most recent follow-up (median 2 years). BAR did not predict final right ventricular outflow tract gradient or the odds of subsequent pulmonary insufficiency. Among the other predictors, only the presence of a dysplastic pulmonary valve independently predicted final right ventricular outflow tract gradient and subsequent pulmonary insufficiency. Ppatients with a dysplastic valve had higher post-dilation gradients by 8.3 mmHg (95%CI 1.5–15.1, p=0.02) and an increased odds of moderate-severe pulmonary insufficiency (OR 2.5, 95%CI 1.03–6.19).

Conclusion: Within the range of balloon sizes used for balloon pulmonary valvuloplasty, BAR does not predict procedural success. The presence of a dysplastic pulmonary valve independently predicts residual pulmonary stenosis and subsequent pulmonary insufficiency.

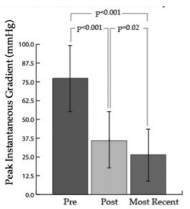

Figure 1. Peak gradient across pulmonary valve.

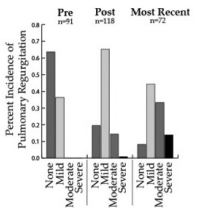

Figure 2. Pulmonary regurgitation after valvuloplasty.

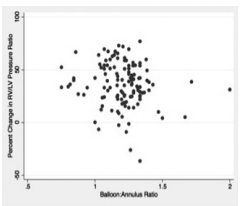

Figure 3. The effect of balloon size on procedural success

Table 1. Patient Characteristics at Cardiac Catheterization		
Age (months)	1	(1d – 37yr)
Weight (kg)	4.37	(0.7 – 97)
Body Surface Area (m^2)	0.24	(0 – 2.06)
Pulmonary valve annulus (mm)	7.65	(3.8 – 27)
Doppler RVOT gradient (mmHg)	68	(46 – 155)
Tricuspid regurgitation > mild, $_{n=135}$	24	(17.8%)
Genetic syndrome, $_{n=137}$	12	(8.8%)
Dysplastic pulmonary valve, $_{n=137}$	50	(36.5%)
PGE-dependant, $_{n=137}$	38	(27.7%)

RVOT = Right ventricular outflow tract

Table 2. Findings at Cardiac Catheterization		
Initial RVOT gradient (mmHg)	61	± 23.33
Initial RV/LV pressure ratio	1.12	± 0.45
Dilation balloon diameter (mm)	10.5	± 4.82
Dilation balloon length (cm)	2.26	± 0.71
Balloon:Annulus Ratio	1.20	± 0.18
Number of balloon inflations	3	(1 – 11)
Number of total balloons used	1	(1 – 4)
Double balloon technique, $_{n=137}$	3	(2.2%)

RV/LV = Right ventricle/Left ventricle

[PP-055]

All comer percutaneous coronary interventions with bivalirudin: Initial hellenic experience

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Background: Use of bivalirudin for percutaneous coronary interventions (PCI) has been limited outside the US, despite proven reductions in bleeding, and reduced need for glycoprotein (GP) IIb/IIIa use. We present the initial Hellenic PCI experience with bivalirudin as the antithrombotic of choice.

Methods: In-hospital and 30-day clinical outcomes are presented for 130 consecutive patients undergoing PCI with bivalirudin, including 38 cases of primary or rescue PCI. All patients received dual antiplatelet therapy and GP IIb/IIIa use was at the operator's discretion. MACE comprised of death, MI, stroke or urgent revascularization. Bleeding complications were according to ACUITY criteria, while thrombocytopenia was defined as platelets <50K.

Results: The population comprised of 28% (n=36) stable CAD and 72% (n=94) acute coronary syndrome patients (38 STEMI, 22 non-STEMI, and 34 unstable angina). Overall procedural success was 95% (124/130), while in non-STEMI patients it reached 98% (90/92). Overall GP IIb/IIIa use was 40%, with STEMI at 82%, non-STEMI ACS at 23% and 3% in stable CAD. Closure devices were used when anatomically feasible (102/130, 77%). In-hospital and 30-day MACE were both at 1.5% (2/130) comprised of one death (STEMI-left main disease) and one staged in-hospital CABG. One closure device failure resulted in a >10 cm hematoma, but there were no other bleeding complications, transfusions or cases of thrombocytopenia noted.

Conclusions: Switching to bivalirudin as the antithrombotic of choice for all comer PCI can result in excellent clinical outcomes, reduction in bleeding and with the appropriate use of closure devices almost complete protection from local complications.

[PP-056]

Intracoronary reopro during PCI in acute and stable patient can influence stent thrombosis formation (IRPASST) study

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Background: In patients with acute MI or UA undergoing PCI, abciximab reduces (MACE). Most trials studied IV administration.

Intracoronary bolus abciximab causes very high local drug concentrations and reduce acute and sub-acute stent thrombosis. We studied whether IC bolus abciximab can reduce ST and TVR and therefore less MACE compared with IV route

Methods: A single center observational study, Between June 2007 -2009 We study 447 patients admitted with either ACS or stable CAD undergoing (PCI) and stenting Pt with bleeding disorder, recent major surgery and high B/P were excluded patients divided into two groups, Group 1(199) received IC bolus (Reopro) during the PCI in cath lab. Group 2 (248) received IV bolus and maintenance over 12 hrs

Results: There were no differences between the groups with regard to DM, group 1 (56%) vs. group 2(58%) p = 0.613

ACS group 1 (38%) vs. group 2 (44%) p= 0.175

DES in group 1 (66.5%) vs (57.6%) group 2 p= 0.056

BMS in group 1 (33%) vs (40.7%) group 2 p= 0.093, TVR seen in 9 pt (4%) in group 1 vs. 16 pt (6%) in group 2

ST seen in 4 pt (2%) in group1 vs 7 pt (2.8%) in group 2

Conclusions: Less ST and TVR in patients received IC Reopro both in ACS and Stable CAD,ISR less in group 1, mainly with BMS, BMS > 30% in both groups due to STEMI or large vessel, randomized trials are warranted to assess IC route in reducing ST.

[PP-057]

The genous coronary stent in the 'real world': A single-centre experience

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Background: The Genous stent is coated with antibodies against endothelial progenitor cells (EPC) allowing rapid endothelial coverage and shorter dual antiplatelet treatment (DAT). Genous is available commercially; indications are not established.

Aim: To document patterns of use of Genous in 'the real world'.

Setting: Tertiary cardiac centre; 1200 PCI procedures/year; population served - 1,000,000.

Methods: We identified electronically patients who received Genous between 24/10/2006 and 28/02/2010, documented patient- and procedure-related variables and outcomes, and identified indications for Genous vs. a BMS or DES from case notes and discharge summaries.

Results: 123 patients (93 M, mean age (SD) 66.2 (11.5) years) received 184 stents (4% of stents used; average 1.5 (0.7) /patient; average stented length 23.58 (11.02) mm; mean luminal diameter 3.19 (0.55) mm)) in 126 PCIs. 124 procedures (98%) were successful. There were 2 deaths before discharge and 4 clinically indicated re-interventions for ISR. Patients received a Genous in preference to a BMS or DES for the following reasons: perceived increased risk of bleeding with prolonged DAT (30, 24%); mandatory Warfarin (20, 16.5 %); imminent surgery (20, 16.5 %) operator preference (19, 15%), no reason given (13, 11%), other reasons (21, 17% - < 5 cases in each category).

Conclusions: The Genous stent has found a niche for use in patients in whom the perceived haemorrhagic risk of prolonged dual antiplatelet therapy is excessive. Our experience suggests its rate of clinical in-stent re-stenosis is low.

[PP-058]

Transcatheter antegrate perforation and covered stent implantation to functionally interrupted aorta; case report

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Introduction: Endovascular stent implantation has become an accepted treatment modality for coarctation of aorta (CoA) in older children and adults.

We presented a child with CoA of aorta that was functionally interrupted and successfully treated by wire perforation of luminal obstruction and covered stent implantation.

Case: An eight-year-old boy presented upon detection of a heart murmur. Transthoracic echocardiography revealed interruption image at descending thoracic aorta. Abdominal retrograde aortography were demonstrated the interruption on the descending aorta after the subclavian artery division. Through abdominal aorta to arcus aorta could not be passed, antegrade arcus aorta angiogram revealed contrast crossing into the descending aorta only with collateral vessels. It was thought that luminal obstruction causing functional interruption of aorta. Luminal obstruction was perforated gently by antegrade route with Terumo hydrophilic guidewire placed from left subclavian artery to coarctatiation and created a lumen. Than implanted a covered stent. Angiography revealed good passage and coarctation gradient decreased to 2 mmHg. CoA was not observed in the first month echocardiographic control.

Result: Severe form of discrete CoA with complete luminal obstruction is accepted functional interruption of the aorta. The increased experience of interventional cardiologists allows treating severe CoA like functional interruption with stent.

[PP-059]

Stenotic valve formulas: How accurate are they? Introduction of the embil valve formula

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This article will introduce the Embil Valve Formula, which calculates orifice areas more accurately than other formulas used since 1951 and the formulas that have been placed in computerized monitored systems as logarithms, since the early 80's. In 1986, Embil noticed that a possible correlation between the "notches" of aortic valve pressure upstroke from diastole and the downstroke towards diastole and the cardiac rhythm existed. The primary author (Embil) measured the distance between the ancrotic notch on the upslope and the dicrotic notch on the downslope of the aortic pressure that was simultaneously recorded on a scale of 0-200 mm-Hg at a slip chart paper speed of 100 mm/sec. He then measured the width of the "QRS" of the corresponding ECG wave form. He calculated the quotient between the width of the QRS segment and the width of the notches. He asked Dr. Hooshang Bolooki to measure the area of the valves prior to surgical replacement. Correlation between the findings were identical. For mitral stenosis, Embil created a quotient between the distance between the "a" wave and "v" wave on PWCP-LVEDP simultaneous pressures and the width of the "p" wave on the corresponding ECG wave form. Correlative results were the same. Between 1986 and 2003, Embil completed studies on 135 patients with histories of pulmonic, mitral, and aortic stenosis. Accuracy was phenomenal.

[PP-060]

Transcatheter perforation of interrupted aortic arcus (membranous atresia) with stiff ends of the guide-wires and subsequent covered stent implantation: A new method performed in two adolescents

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Introduction: We present two cases having interrupted aortic arch were treated by transcatheter guide-wire perforations and subsequent covered stent implantations.

In a14-year-old boy having interruption radial artery and femoral artery punctures were performed. Angiograms revealed no luminal continuity with membranous atresia. The atretic segment was perforated with stiff end of 0.014" guidewire through retrograde 6Fr JR4 catheter, after we were sure that the end of the wire in the proximal lumen with hand injections, stiff end of the 0.0035" guidewire was inserted through the same retrograde JR4 catheter beside the coronary wire, and then multiple perforations were made by this thicker guidewire safely. The retrograde catheter progressed on them to the proximal aorta as perforating the membrane. Predilations with 4 mm coronary and 6 mm Tyshak balloons were performed.

16 years-old girl; we tried perforation with stiff end of the 0.035 hydrophilic guidewire through the 6Fr JR4 catheter, it was successful then, 0.014 was inserted through the 6Fr JR4 catheter beside the 0.035 guidewire with perforating near it passing the proximal aorta. After we are sure that stiff end of the 0.014 guidewire in the proximal aorta, we pulled the 0.035" guidewire to the distal aorta then multiple perforations beside the coronary wire were performed, then the JR4 catheter was progressed on them with perforating membrane to the proximal aorta. The rest of the procedure completed in a standard manner after predilation ın both case.

Conclusion: Membranous interrupted aortic arch can be perforated safely by stiff end of the guidewires.

[PP-061]

Cheatham-platinum stents for aortic coarctation: Immediate and early results

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Objective: To present our institutional experience of endovascular Cheatham-Platinum (NumedTM) stents implantation in child and adults with aortic coarctation.

Method: Between August 2007 and June 2010, 52 patients had aortic coarctation treated with 54 stent implantation. We preferred covered stents in cases with aneurysm or with patent ductus arteriosus and subatretic or atretic coarctation.

Results: 17 covered and 37 bare Cheatam Platinum stents were implanted in 52 patients. Four patients were subatretic coarctation, two had blind coarctation (membranous atresia), five had patent ductus arteriosus and two had aneurysm. In three patients the lesions were on transverse arcus and bare stents were implanted without any complication. The mean age was 14.2 ± 9,8 (4-54 years) and mean weight was 44.8 ± 18.7 (18-80 kg). The systolic peak pressure gradient was decreased from 46.4 ± 19.1 (0-94) to 3.0 ± 3.7 12 (0-12) mm Hg (P < 0.000) and ascending aortic pressure decreased from 150.9 ± 30.6 (115-230) to 136.8 ± 19.6 (61-170 (p<: 0.000). The mean coarctation diameter increased from 6.9 ± 3.4 mm to 13.8 ± 3.4 mm (p<0.000). One patient experienced an acute wall rupture at the distal end of the implanted bare stent, which was successfully managed by implanting a covered stent immediately at the same session. The mean follow up duration was 14.2 ± 7.9, median 14 month (1-34 month).

Conclusion: Cheatam-Platinum Stent implantation is safe and effective in treating coarctation of the aorta. They are very effective in reducing coarctation gradient and increasing lesion diameter.

[PP-062]

A new device, Cardi-O-Fix muscular ventricular septal defect occluder, for percutaneous closure of congenital ventricular septal defects: early and midterm results

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Objective: We present our preliminary experience using new device Cardio-O-Fix muscular VSD occluder (Starway Medical Technology Inc), which is similar to Amplatzer muscular VSD device but has lower cost.

Methods and Patients: It is a double disc device made of nitinol wire mesh like Amplatzer but the difference is that central connecting waists have two lengths 5 and 7 mm. Percutaneous VSD cIosure with CFX mVSD occluders were attempted in 15 patients using devices have 5 mm connecting waists. 11 of them were muscular, 3 of them were perimembranous VSDs.

Results: 14 of them were successfull. Mean defect diameter was 7.04 ± 1.7, 4.9-11 mm, median 7 mm, mean LVDD Z score; + 3.56 ± 1.95, + 1.11- 7.66, median +3.4, mean Qp/Qs: 1.8 ± 0.4, 1.5-2.8, median 1.8 in pts their VSDs closed. Procedural teqnique were antegrade transvenous in 13 (transfemoral 12, transjugular 1), retrograde transarterial in one. Used device diameters were 6 mm in 2, 8 mm in 5,10 mm in 5, 14 mm in 2. Complication was observed in only one child who has muscular- inlet VSD as 2+ tricuspid regurgitation. Overall complete occlusion was 11 of 14 (%78,5) and no new complication encountered during the follow-up of 3-31, median 21 months.

Conclusion: Our preliminary results suggest that not only in structural features but also in early and midterm results of CFX muscular VSD occluders are similar with Amplatzer ones. So, it can be preferred because of low cost

[PP-063]

Transcatheter closure of secundum atrial septal defects with the amplatzer septal occluder in children-follow-up results from Kayseri

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Aim: To report the results of transcatheter atrial septal defect (ASD) closure with the Amplatzer septal occluder (ASO) from the single centre providing interventions for congenital heart disease in Kayseri /Turkiye.

Methods: A single centre retrospective review of all patients 2003–2010 inclusive, undergoing planned transcatheter ASD closure was undertaken. Implantation success, complications and latest patient follow-up are described.

Results: Percutaneous ASD closure was planned in 147 children (60.4% girl) The mean ASD size was 12.5±5.1 mm, and device size ranged from 7 to 32 mm. Closure was successful in 135 patients (93.8 %), unsuccessful in 6 patients (4.1%) and device migrated and surgery applied in 3 (2%). two device embolisations, were one immediately post-release and two within 24 h. Minor procedural complications occurred in 6.9% of patients. There were no cases of suspected or proven device erosion. Ninety-nine percent had documented follow-up beyond 6 months. At latest follow-up the closure rate was 99.5%. SVT was detected in two patients. one used beta bloker for six months because of palpitation: both arrhythmias resolved in 6 months.

Conclusion: There is a high implantation and closure rate using transcatheter ASD closure with the Amplatzer septal occluder in children avoiding the need for cardiac surgery. Follow-up at one year shows there is no progression of mitral regurgitation, and supraventricular arrhythmias have usually resolved.

[PP-064]

Nitroglycerine added to conventional local anesthesia infiltration improves the radial artery canulation for left cardiac catheterization

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Introduction: We developed a protocol which included a subcutaneous periarterial infiltration with nitroglycerine (NG) added to local anesthesia (mepivacaine).

Hypothesis: To analyze the effects of subcutaneous NG in the radial artery pulse, and if these lead to a shorter time and improved cannulation of the artery for cardiac catheterization.

Methods: Prospective single center study, double blindness. We randomized 182 consecutives patients underwent to cardiac catheterization by radial approach. They were assigned to one of two groups:

- Group I: Conventional subcutaneous periarterial infiltration with local anesthesia only (100 mg of mepivacain). 82 cases.

- Group II: NG added to local anesthesia (200 mcg of NG plus 100 mg of mepivacain).100 cases.

Endpoints:

- Primary endpoint:systolic wave velocity of radial artery pulse measured by doppler.

- Secondary endpoints:cualitative pulse measurement by operator palpation (scale 1 to 4),time to cannulation, first-punction success rate, number of punctions attempts.

Results:

1.-There were neither differences in basal features nor pre-infiltration systolic wave velocity between the groups.

2.-The post-infiltration systolic wave velocity was higher in the NG group (7,8±8,6vs38,2±12,9 cm/sec;p<0.01)(primary endpoint).

3.-The secondary endpoints were favorable to NG group: better pulse quality by operator palpation (2,5±0,5 vs 3,7±0,3;p<0.01),shorter time to canulation (47±25vs31±2 seconds;p<0.01),higher first-punction success rate (78% vs 92%;p<0.01) and less number of punctions attempts(2,1±0,3 vs 1,2±0,4;p<0.01).

Conclusion: Nitroglycerin added to conventional local anesthesia on subcutaneous periarterial infiltration improves the radial artery pulse amplitude,measured by doppler and subjective operator´s palpation. This leads to shorter time to cannulation and a higher first-punction success rate in radial artery approach for cardiac catheterization.

[PP-065]

The morriston arterial access study for intervention in the coronaries (MASSIVE-C)

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Background: The debate on the advantages of radial over femoral access for coronary intervention is still raging. The radial approach has been increasingly adopted for coronary intervention in our centre providing a unique opportunity to report the impact of the switch from femoral to radial approach.

Methods: We data-mined our interventional database(s) and discharge summaries to document relevant patient- and procedure-related characteristics for all coronary angioplasty procedures performed between 01/01/07 – 11/12/09.

Results: We included 2845 PCIs; the radial approach increased during the study period from 36% to 59% of procedures (p<0.0001). Post-procedural transfusions were required in 66 (2.3%) patients, (Radial 32%, Femoral 68%, p=0.011) and puncture-site haematomas developed in 77 (2.7%), with a clear decrease during the study period, from 3.9% to 1.3% (p<0.0001). Mortality was 0.5% at discharge, 1.9% and 2.4% at 3 and 6 months respectively. Survival at 6 months was best predicted (c=0.852) by a multivariate model including age, abnormal creatinine and transfusion (p=0.0001), cardiogenic shock (p=0.003) and arterial management (p=0.039). Mean length of hospital stay was 1.5[3.1] days for radial and 2.2[3.9] days for femoral (p<0.0001). In multivariate analysis arterial access predicted length of hospital stay only in stable patients (radial 0.8[1.9] days vs. femoral 1.1[2.0] days (p<0.001)).

Conclusion: The radial approach works well and is adopted rapidly by interventionalists in the real world, where it tends to be associated with less transfusion requirements, lower 6-month mortality than the femoral approach, and where it can reduce length of hospital stay in elective PCI.

Vascular access and arterial closure devices

[PP-066]

Transcatheter closure of patent ductus arteriosus and interruption of inferior vena cava with azygous continuation using an amplatzer duct occluder-I

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A case with interrupted inferior vena cava (VCI) and azygous continuation requiring patent ductus arteriosus (PDA) occlusion per cardiac catheterization is presented. The technique is described for occlusion of PDA using an Amplatzer duct occluder-I despite interruption of inferior vena cava and azygous continuation.

Case: 5 months old boy (5 kg) who underwent transcatheter PDA closure was found to have interrupted VCI with azygous vene continuation. Angiography revealed a PDA sized 2.2 distal diameter and 3.4 mm proximal diameter with 1 cm length. By retrograde way a Terumo hydrophilic guidewire was placed and snare catheter used for making an arteriovenous loop through PDA. 6 F long PDA delivery sheath placed by antegrade way. 5x4 Amplatzer duct occluder type I loaded to delivery system. Opened in descending aorta but could not be pulled back with long sheath. By supporting the device by another catheter and pulling back gently, it placed to the ampulla and right position arranged by control angiograms. Device released and pullback pressure gradient across device in descending aorta checked and no gradient detected. In the follow up, TTE and Doppler examination revealed no residual shunt.

Conclusion: The transcatheter closure of PDA in patient who has interrupted VCI with azygous vene continuation remains a challenge. The stiff long sheath in hard anatomy makes manipulation difficult for transcatheter technique. But placing an arteriovenous loop and supporting by an arterial extra catheter helps to good positioning and releasing the device.