SHA 060. The impact of different coronary risk factors on the degree of coronary calcification in the Saudi population
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Background & Aim: The amount of coronary calcification measured by coronary computed tomography (CCT) correlates with increased risk of coronary events. We aimed to measure the effect of coronary risk factors on the degree of coronary calcification in clinically indicated CCT studies in the Saudi population.

Methods: Clinically indicated patients were scanned using 64 slice CCT to measure Agatston coronary calcification score.

Results: 1287 patients were scanned with mean age of 52 ± 13.2 years, 65% males, & 35% females. Chest pain was the indication in 80% of cases. There was 37% diabetic, 58% hypertensive, 23.6% hyperlipidemic, 13% smoker, and 32% with family history of coronary daisies. The mean calcium score was high in males compared to females, 99.6 ± 341, and 54.2 ± 182, P < 0.001, in patients ≥40 years compared to <40 years, 92.5 ± 314, and 6.1 ± 39.4, P < 0.0001, in diabetic patient, compared to non-diabetic, 125.9 ± 387, and 52.7 ± 212, P < 0.0001, in hypertensive patient compared to non-hypertensive, 114.8 ± 360, and 25 ± 107, P < 0.0001, in hyperlipidemic patient compared to non-hyperlipidemic, 177.5 ± 407, and 44 ± 222, P < 0.0001, in n patients with body mass index ≥25 compared to those <25, 72 ± 295, and 45 ± 141, P < 0.05 and in patients with HbA1c ≥8 compared to <8, 152 ± 467, and 76.4 ± 365, P < 0.01.

Conclusion: Coronary calcification is significantly higher in patients with classical coronary risk factors. Poorly controlled diabetes is associated with higher risk of coronary calcification.


SHA 061. Efficacy of a single dose intravenous heparin during diagnostic angiography in reducing sheath thrombus formation: A randomized controlled trial
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Background: Femoral arterial sheath thrombosis and distal embolization is a well-recognized complication of cardiac catheterization and may result in serious comorbidities like acute leg ischemia. Heparinized saline flushes are used during diagnostic coronary angiography to prevent thrombus formation within the lumen of the sheath. However, the use of prophylactic intravenous heparin following the femoral arterial sheath insertion is controversial. The aim of this study was to evaluate the effectiveness of 2000 units’ heparin intravenous bolus versus saline placebo on thrombus formation within arterial sheath during the diagnostic coronary angiography.

Methods: Eligible patients were randomized to receive either study drug or placebo at the time of femoral sheath insertion. Arterial access was obtained via femoral arterial approach using access 6F–7F sheaths and catheters. The sheath was aspirated and flushed for presence of thrombus after each catheter exchange and at the end of the procedure. Five milliliters of blood was extracted and visualized on clean gauze and if thrombus was noticed, further aspiration was performed followed by saline flush. The primary end point was the effectiveness of study drug on reducing the incidence of sheath-thrombus formation.

Results: 304 patients were randomized into two arms: 147 patients received intravenous heparin and 157 patient received placebo. The baseline characteristics were similar. Sheath thrombi were observed in 20% of the total cohort. Of the heparin arm, 12% (19 patients) developed sheath thrombus formation versus 26% (42 patients) in placebo arm, P value = 0.002. Adjusted logistic regression showed that the only predictor for the sheath thrombi formation was the study drug. The odds ratio of developing a thrombus when a study drug is not used was 2.5 (95% CI: 1.4–4.5, p = 0.003). There were no adverse events noticed.

Conclusion: IV heparin significantly reduced thrombus formation with no adverse events. Therefore, our data suggest using IV heparin routinely.

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SHA 062. Incidence of contrast induced nephropathy in Saudi patient after cardiac catheterization
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Background: Contrast induced nephropathy CIN is an acute deterioration of renal function defined as increase in serum creatinine by 25% above the baseline value within 48 h after administration of contrast agent, several risk factors may aggravate CIN and DM is a strong predisposing factor.

Objectives: To study the effect of contrast administration on renal function and the relation of diabetes mellitus and other risk factors which can predispose patients to CIN.

Methods: Open label, single center study in cath lab a total of 1117 patients underwent cardiac catheterization between January and December 2009, all patients in that period included in this study. Acute coronary syndrome and stable CAD patients.

Results: 304 patients were randomized into two arms: 147 patients developed CIN, 35 (64%) patients are diabetics, 39 (71%) patients are hypertensive, 38 (56%) patients underwent diagnostic cardiac cath and 17 (34%) had PCI, 23 (41%) patients had body weight <70 kg and 44 (80%) patients received omnipaque contrast media.

Conclusion: This study conclude that hypertension and DM are the major risk factors in our patients, diabetic patients in particular should be closely monitored for CIN and preventive measures should be strictly enforced.


SHA 063. Coronary atherosderotic disease in saudi patients
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Introduction and aim of the study: Coronary Artery Disease (CAD) in Saudis is reaching epidemic levels, Type II Diabetes (DM) is the highest in the region. The pattern, and extent of Coronary Athero-Thrombosis (CAT) is not studied. We aim to
investigate the spectrum of CAT of Saudi patients (pts) with Acute Coronary Syndromes (ACS).

Methods: We reviewed 60 pts Intra-Vascular Ultrasound (IVUS) studies, including 105 IVUS runs of whom 38 runs were carried out for Borderline Lesions Pre-Runs (PR). Thirty-five files were reviewed for Risk Factors, diagnosis and Troponin I (CT-I) levels.

Results: Twenty eight Males (80%), 7 Females (20%), average age 64 years. Twenty seven DM (77.14%), 8 NDM (22.86%) and 14 smokers (40%). Twelve (34.29%) recent ST segment Elevation Myocardial Infarction (STEMI), 8 (22.86%) Non-STEMI (NSTEMI), and 5 (42.85%) Unstable Angina (UA). CT-I positive in 19 patients (36.84%) of whom 8 (42.11%) STEMI, 7 (36.84%) NSTEMI and 4 (21.05%) UA. DM with NSTEMI revealed a significantly larger Plaque Area (p = 0.0003) and Plaque Burden (p = 0.0033) when Compared with NDM. While Average Luminal Diameters, Vessel Diameters, Vessel, and Plaque Areas were significantly larger (p value: 0.0497, 0.0080, 0.0088, 0.0200) more in NDM with recent STEMI. The percent Volume obstruction however were not significantly different between the two groups.

Conclusion: This preliminary data is the first of a kind IVUS analysis study ever generated in Saudis. We aim to establish the first database of Coronary Atherothrombotic Diseases and the first core-lab in the Middle East.

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SHA 064. Coronary atherosclerotic disease in Saudi Patients: A pilot intravascular ultrasound (IVUS) analytical study of patients presenting with acute coronary syndrome

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Introduction and aim of the study: Coronary Artery Disease (CAD) in Saudi population is reaching epidemic levels, coupled with sedentary life style the rate of Type II Diabetes Mellitus (DM) is among the highest in the region. The pattern, extent and distribution of Coronary Athero-Thrombosis (CAT) in Saudi population is yet to be studied.

Our study is designed to investigate the spectrum of CAT of our patients presenting with Acute Coronary Syndromes (ACS).

Methods: As part of our database Registry of patients who underwent IntraVascular Ultrasound (IVUS) at Prince Salman Heart Center/King Fahad Medical City. A total of 60 patients were retrospectively reviewed, a total of 105 IVUS runs were studied, of whom 38 runs (35 patients) were carried out for evaluating Borderline Lesions Pre-Runs (PR) and 67 runs (25 patients) were carried out for post stent deployment optimisation (PS).

We report our first 35 consecutive patients who underwent coronary angiography and had IVUS for evaluating their borderline lesions. Patients files were reviewed for their Risk Factors, presenting Diagnosis and Troponin I (CT-I) levels.

Thirty eight IVUS runs were analysed in cooperation with Dr. Lisette Okkels Jensen IVUS Core Lab, Odense University Hospital, Odense – Denmark. INDEC Medical system software, Inc., 2210 Martin Ave. Santa Clara, CA 95050 was used.

Each run was divided into 1mm slices, each of which required 2 separate Luminal and External Elastic Membrane (EEM) tracings, lesions within 5 mm Proximal and Distal to the maximal Plaque Burden (PB) were analysed.

The following selected parameters were obtained:

Definitions: Average Luminal Diameter (ALD), the average of Minimal Luminal Diameter and Maximal Luminal Diameter.

Luminal Area (LA), the External Elastic Membrane (EEM) Cross Sectional Area (CSA) of the vessel lumen.

Average Vessel Diameter (AVD), the average of all vessel EEM diameters obtained from each slice.

Vessel Area (VA), the CSA of the vessel wall using EEM of each slice.

Plaque Area (PA), the EEM CSA – Lumen CSA.

Plaque Burden (PB), the Plaque CSA/EEM CSA.

Remodelling Index (RI), the EEM CSA Lesion/EEM CSA of the average Proximal and Distal Reference Vessel (RV), obtained from the most normal looking segments with the least PB 5 mm Proximal and Distal to the Lesion.

EEM Volume, the sum ( Σ) EEM CSA Lumen Volume, the sum ( Σ) Lumen CSA Plaque Volume, the sum ( Σ)(EEM CSA – Lumen CSA) Percent Plaque Volume, the ( Σ)(EEM CSA – Lumen CSA / EEM CSA)×100

Results: Twenty eight patients were Males (80%) and 7 Females (20%), average age 54 years. Twenty seven patients were diabetics (DM) (77.14%) and eight were non-diabetics (NDM) (22.86%). 14 patients were smokers & ex-smokers (40%). Patients were admitted for acute coronary syndromes including, 12 patients (34.29%) with recent or late presentation ST segment Elevation Myocardial Infarction (STEMI) two of them underwent Primary PCI, 8 patients (22.86%) with non-STEMI (NSTEMI), and 5 patients (42.85%) with Unstable Angina (UA).

Nine patients had no f/u Cardiac Troponin-I (CT-I) of whom four had baseline CT-I levels. Five patients had no baseline CT-I levels (30 pts were analysed). CT-I was positive in 19 (54.29%) of whom 8 patients with STEMI (42.11%), 7 patients with NSTEMI (36.84%) and 4 patients with UA (21.05%). Total with UA/NSTEMI 11 patients (57.88%).

We found that the most significant differences were observed in Diabetics presenting with NSTEMI revealing a significantly larger Plaque Area and Plaque Burden (P value: 0.0003, 0.0033) compared with Non-Diabetics. While Average Luminal Diameters, Vessel Diameters, Vessel, and Plaque Areas were significantly larger (P value: 0.0497, 0.0080, 0.0088, 0.0200) and particularly obvious in Non-Diabetics presenting with recent STEMI. The percent Volume obstruction however were not significantly different.

Discussion: Although the data is considered preliminary yet this is the first of a kind Pilot data ever generated in Saudi population. We look forward to establish the first database of Coronary Atherothrombotic Diseases and establish the first core-lab in the Middle East.


SHA 065. Stent thrombosis is a major concern in clinical practice, a single Saudi cardiac center experience

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Background: The drug-eluting stents (DES) are used in the majority of patients who undergo percutaneous coronary interven-