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Abstracts

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Immediate and In-hospital Complications of Percutaneous Coronary Intervention

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Background: Ischemic Heart Disease (IHD) is a major and increasing health care issue in Bangladesh. Since the first human percutaneous transluminal coronary angioplasty (PTCA) procedure was performed in 1977, the use of this procedure has increased dramatically, becoming one of the most common medical interventions performed. The technique, originally developed in Switzerland by Andreas Gruentzig, has transformed the practice of revascularization for coronary artery disease (CAD). Initially used in the treatment of patients with stable angina and discrete lesions in a single coronary artery, coronary angioplasty has multiple indications today, including unstable angina, acute myocardial infarction (MI), and multivessel CAD. With the combination of sophisticated equipment, experienced operators, and modern drug therapy, coronary angioplasty has evolved into an effective nonsurgical modality for treating patients with CAD.
Methods: A prospective study was conducted in National Institute of Cardiovascular Diseases (NICVD) Dhaka; Al-Helal Heart Institute and Hospital, Mirpur Dhaka; Urobangla Heart Hospital, Lalmatia, Dhaka, Lab-Aid Cardiac Hospital, Dhaka and Metropolitan Hospital, Mohakhali, Dhaka from August 2003 to July 2013. A total of 1100 patients underwent coronary angioplasty and stenting. Angioplasty was done as elective & adhoc basis.
Results: Most of the cases are of middle age group. 88% are male. 58% are smokers, 40% hypertensives, 33% have diabetes and 28% are dyslipidemic. 54% had STEMI, 20% had unstable angina, 14% had chronic stable angina. 75% had single vessel disease, 20% had double vessel diseases, 5% had triple vessel diseases. 90 patients had total occlusion. 47% had lesion in LAD, 33% had lesion in RCA, 12% had lesion in LCX. In most of the indicated cases PCI was done efficiently with very minimum rate of failure & complications. In hospital mortality was only 1.6% with 0.8% periprocedure MI - due to sub acute stent thrombosis.
Conclusion: In the field of management of coronary artery disease percutaneous coronary intervention (PCI) is the internationally recognized standard treatment worldwide for more than last 3 decades. Our result of PCI correlates well with the other studies worldwide, though the study population is not big enough & there are many lacks of logistics in our country. Complications during and in-hospital period are very few.
Keywords: complications • percutaneour coronary intervention

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Mitral Valve Replacement in the Presence of Severe Pulmonary Hypertension in Upper Egypt

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Background: The development of pulmonary arterial hypertension (PAH) has been long considered a risk factor for poor outcome in patients undergoing mitral valve replacement (MVR).
  This prospective study was conducted to assess the operative mortality, immediate postoperative hemodynamics and short term (6 months) survival in patients who underwent MVR in the presence of severe PAH
Patients and methods: This study was conducted between May 2007 and September 2011 at the departments of cardiac surgery in Sohag Heart center and Sohag university hospital. 83 patients (25 men, 58 women) with rheumatic mitral valve disease (61 patients with predominant mitral stenosis, 13 with mitral regurgitation and 9 combined lesions), and severe pulmonary hypertension (ranging from 70 to 135 mmHg) were included in the study. Patients age range from 17–60years (mean = 34years). We followed the patients for 6 months postoperatively. We divided the patients into 2 groups, group I, 35 patients with pulmonary artery systolic pressure (PASP) <90 mmHg, group II, 48 patients with PASP > 90 mmHg.
Results: 3 patients from group II died, and only 1 patient in group I. constituting an overall mortality rate of 4%. In group I, the mean PASP fell by 44% from a mean preoperative of 76.6 mmHg to 33.16 within a week after surgery, which is highly statistically significant (p < 0.01), and it deceased to a mean of 27 mmHg during follow up after 6 month. In group II, PASP fell by 64% from a mean preoperative level of 109.7 mmHg to 45mmHg (p < 0.01), which is highly significant, and it decreased to a mean of 35 mmHg at 6 months. The follow up period of 6 months was completed in 65 patients (78%). There

were no late deaths. New York Heart Association (NYHA) class was also improved in all our patients.
Conclusion: Mitral Valve replacement in the presence of severe pulmonary hypertension has a low operative mortality, with the evidence of decreased PASP and excellent short term survival.

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Anomalous Left Anterior Descending Coronary Artery Arising from Pulmonary Artery in a 63 year-old patient Case Report

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Objectives: to present a case of a rare congenital coronary anomaly in an adult patient, which was not reported before in Palestine.
Case presentation: A 63 year old male patient who was referred to our center with effort intolerance, exertional dyspnea and occasional palpitation for coronary angiography. Electrocardiography and echocardiography revealed non-specific ST-T changes, and a mildly dilated LV cavity with borderline systolic function and Grade II mitral regurgitation, respectively. Coronary angiography showed an anomalous left anterior descending
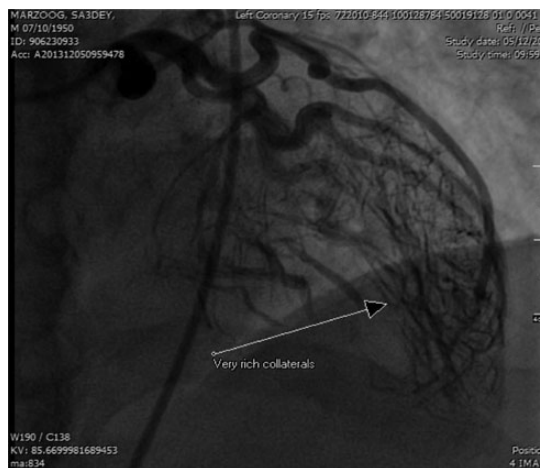

Figure 1 Very rich coronary collaterals.

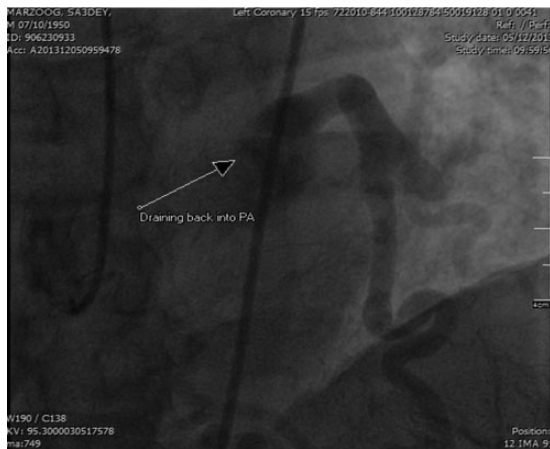**Figure 2** Big ectatic and tortous RCA.

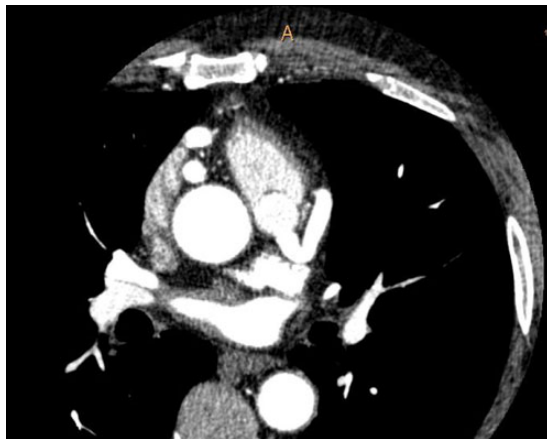Figure 3 Anomalous LAD draining back in PA.

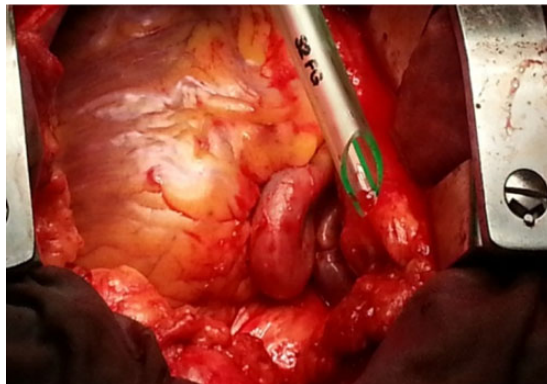Figure 4 LAD originates from PA in MSCT

Figure 5 Huge RCA as it appeared intra-OP.

(LAD) artery that is arising from, and draining back into, the pulmonary artery. Both the right coronary artery and the obtuse marginal branch were significantly big in size, tortous and giving very rich collaterals to the LAD (*Figures 1 - 3*). Diagnosis of Anomalous Left Anterior Descending Coronary Artery Arising from Pulmonary Artery (ALADAPA) was established and confirmed by Coronary Multislice CT (MSCT) (*Figure 4*).

Intervention: Patient was referred for cardiac surgery through which the anomalous LAD was proximally ligated and Left Internal Mammary Artery (LIMA) was grafted to the distal LAD. Patient has been improving clinically after surgery. Post surgical coronary angiography showed a good LIMA to anomalous LAD graft, tightly ligated proximal LAD with residual retrograde flow (*Figure 6*).

Conclusion: Anomalous Left anterior descending coronary artery arising from pulmonary artery (ALADAPA) is an extremely rare congenital anomaly that could be discovered during adulthood (beyond age of 60 as in our case). Both invasive coronary angiography and non-invasive coronary MSCT are the main diagnostic methods. Surgical ligation of the anomalous vessel with coronary grafting can lead to significant clinical improvement.

Figure 6 4 weeks Post-surgery coronry angio.

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Accuracy of global longitudinal strain analysis in early diagnosis and localization of significant coronary artery lesions in non st - elevation acute coronary syndrome

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Purpose: Early detection of coronary artery disease **(CAD)** in patients with non- STelevation acute coronary syndrome **(ACS)** remains a clinical challenge. Our aim is 1. To evaluate the accuracy of Global Longitudinal Strain **(GLS)** by speckle tracking strain analysis **(SSA)** in diagnosis of significant CAD in this patient population, and 2. To assess the ability of SSA to localize the coronary artery lesion, compared to coronary angiography **(CA).**

Methods: Our study included all patients who presented with non- ST elevation ACS to emergency department of Hamad Heart Hospital, Qatar, during the period of January 2014 to June 2014. Among our inclusion criteria was those who had CA, adequate echocardiography and with no wall motion abnormalities. Speckle tracking analysis was performed in all patients. Average GLS was obtained and was considered positive for CAD if $\geq$ -19 %. Territorial longitudinal strain **(TLS)** was calculated for each major artery, as the average of the strain to the segments supplied by this artery. TLS was considered positive if $\geq$ -19 %. We compared GLS and TLS to angiography results.

Results: Fifty patients were included, 80% male and with age range 18 to 78 years. Of the 42 patients with positive CAD, defined as having at least one vessel with $\geq$ 60% stenosis, 36 had abnormal GLS. Of the 17 with multi-vessel disease **(MV)** and the 25 with single vessel disease **(SV)**, 15 and 21 had abnormal GLS. Sensitivity was 85.7% in all, 88.2 % in MV, and 84% in SV. Specificity was 87.5%. LAD, circumflex and RCA lesions were found in 31, 21 and 12 patients respectively. Corresponding TLS was abnormal in 23, 18, and 11 yielding a sensitivity of 78%, 86% and 92% while specificity was 35%, 31% and 61% respectively.

Conclusion: GLS by speckle tracking analysis, is a non-invasive and accurate method in early diagnosis of significant CAD, in patients presenting with non ST elevation ACS, without wall motion abnormalities. Sensitivity is greater in patients with multi-vessel disease. For localizing CA lesions, TLS was found to be highly sensitive but of low specificity.

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Heart rate at discharge is an independent predictor of readmission and mortality among patients admitted with acute heart failure. Cohort analysis from Salmaniya Medical Complex - Kingdom of Bahrain

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Purpose: Risk prediction models use factors to calculate or predict an outcome. The latter can vary from readmission to major morbidity or even mortality. Readmission rate for patients with heart failure is reported to be high. Identifying factors that predict readmission of these patients are highly valuable. It can stratify their readmission risk and enhance the management strategy. Undeniably it is an indicator of the quality and efficiency of care provided by the institute. Notably the judicious utilization of valuable means is to be expected. We aim to study readmission predictors for heart failure patients at Salmaniya Medical Complex in Bahrain.

Methods: Adult patients non-electively admitted with principle diagnosis of heart failure were enrolled. Eligible candidates are those declared the same diagnosis upon discharge.

To decrease the heterogeneity of the group, we excluded patients with severe aortic stenosis, severe mitral stenosis, peri-partum cardiomyopathy or heart failure caused by a medical illness (eg, sepsis or thyroid disease). The enrollment period was from January 1st till March 31st, 2012. Follow up was extended to March 31st, 2013. The study was prospective were demographic, clinical, laboratory, length of stay and medications at admission and discharge were collected. Number of readmissions and mortalities was recorded during the follow up period. During each readmission, compliance was verified by direct questioning and follow-up visits attendance monitoring. The above listed clinical parameters were also collected. Basic and advance statistics were conducted using statistical package. Univariate and multivariate regression was done to identify the predictive power of various variables included.

Results: 245 patients were included during the enrollment period. Their mean age was 64 ± 13.5 years. 69%(169 out of 245) were male. Systemic hypertension and diabetes mellitus were found in 73% and 64% respectively (179 and 157 out of 245). During the follow up period 48% (117out of 245) were readmitted. Mortality was recorded in 9% (23 out of 245). Of the 42 clinical factors studied; 3 were found to be significantly associated with readmission in logistic regression model. Unforeseen, lack of compliance was not accused. A heart rate of 78 beats per minute at discharge with adjusted odd ratio (aOR) 2.36 (95% CI 1.37–4.07, p= 0.05), Coronary artery disease aOR 1.81 (95% CI 1.04–3.40, p= 0.05) and diabetes mellitus aOR 1.88 (95% CI 1.01- 3.24, p= 0.05) were the most predictors for mortality and readmissions.

Conclusion: Few clinical variables can predict readmission for heart failure patients. The above identified might represent country or institution specific predictors for heart failure readmission that have to be verified by future studies. It can guide the clinicians to adopt a synchronized approach where cardiac abnormalities, non-cardiac co-morbidities and nation specific factors to be well integrated.

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More than 200 heart transplantation from the single centre in the Middle East. All time high: 22 heart transplantation during the first 10 months at King Faisal Specialist Hospital and Research Centre, Riyadh

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Purpose: Heart transplantation (HTx) is an available therapeutic option in the Middle East. The first adult Htx was performed at our hospital 1989. Today we have data from 205 HTx and this year we hit already all time high–22 Htx. The purpose of this study was to report demographics characteristic of our recipients and donors, show survival data and present our Centre as a referral Centre of excellence for heart transplantation.

Table 1 Survival rate of transplanted patients in the two eras

Era of transplantation	Era of transplantation and survival				
	30 day S	1 -YS	3 -YS	5 -YS	10 -YS
1898–2005, n = 57	79 %	67 %	58 %	53 %	42 %
2006–2013, n = 124	94 %	89 %	80 %	79 %	–

YS-year survival

Methods: Retrospective analysis of prospectively collected data from all heart transplanted since 1989 through October 2014. Overall survival was presented until the end of September 2014. We have included in survival analysis only patients with least follow up of 365 days.
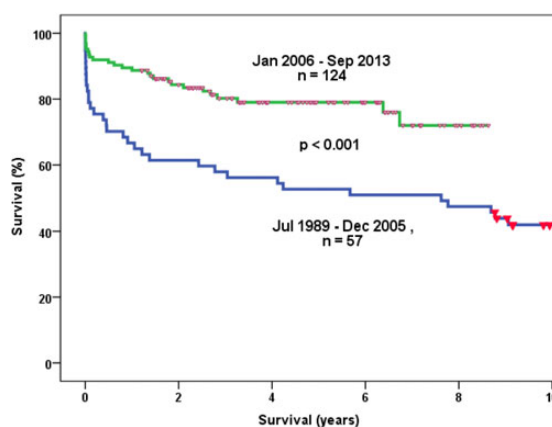

Figure 1 Survival rate of transplanted patients in the two eras.

Results: During this period of more than 25 years, 204 patients underwent 205 HTx. Mean recipient age was 33 ± 13 (range 11-59) and 75% (n = 154) were male. Six transplanted patients (3%) were from other countries (UAE-2, Bahrain-2, Yemen-1 and Sudan-1). Seven donors were from Kuwait (4 donors during 3 months – July to October 2014). Only 2donors (0.98%) were Saudi and all the other were expatriates. Main indications for HTx were: cardiomyopathy (63%), Coronary artery disease 26%, valvular heart disease 8% congenital heart disease (2%) and retransplantation (0.7%). Mean follow up was 4.3 ± 4.4 years (median 3.1, interquartile range 0.8-6.5, and interval 0-22) and no patients were lost to follow up. Survival for transplanted patients was 89%, 82%, 73%, 70% and 56% at 30 days, 1, 3, 5 and 10 years follow up.

The survival data were significantly higher in the new transplantation era (since 2006), with tailored immunosuppressive therapy, higher volume (12-19 HTx per year) and increased experience (Figure and Table) despite significantly older recipients and donors (36 ± 13 vs. 27 ± 13 years, $p < 0.001$ and 32 ± 10 vs.21 ± 18 years, $p = 0.008$, respectively).

Conclusion: With this current number of HTx, KFSH&RC belongs to the group of 38 high-volume international centers, performing 20-29 HTx per year. With better organization, and close collaboration at different levels between Gulf countries, KFSH&RC with available competence can be the HTx referral centre for all Gulf countries patients.

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Outcomes of patients with reduced left ventricular systolic function undergoing heart surgery at King Faisal Hospital & Research Center

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Purpose: Left ventricular dysfunction is a one of the main predictors of morbidity and mortality after cardiac surgery. Association between very low left ventricular ejection fraction (LVEF) and outcome of different cardiac surgical procedure are influenced by different factors. We aim to report clinical results and to identify predictors of early and 1 year outcome in patients who underwent cardiac surgery under above mention settings at KFSH&RC.

Methods: We retrospectively analyzed prospectively collected data from all consecutive patients with LVEF $\leq 45\%$ undergoing cardiac surgery at KFSH&RC since the beginning of

Table 1 Univariate and multivariate analysis of possible predictors of mortality

	90 days mortality			1 year mortality		
Univariate analysis of possible predictors of mortality:						
Variable	Hazard Ratio	95% Confidence interval	P value	Hazard Ratio	95% Confidence interval	P value
Age (years)	1.02	0.99–1.05	0.16	1.007	0.985–1.03	0.519
LVEF	0.993	0.943–1.045	0.776	0.996	0.954–1.04	0.853
EF $\leq$ 25% vs. 30–45%	1.862	0.796–4.357	0.152	1.592	0.785–3.23	0.198
PASp	1.033	1.00–1.066	0.047	1.022	0.995–1.05	0.106
RA pressure				1.093	1.023–1.169	0.009
Renal impairment	14.2	1.9–105.8	0.009	3.66	1.405–9.537	0.008
GFR	0.98	0.965–0.994	0.01	0.991	0.98–1.002	0.105
RVEF severely reduced	2.55	0.942–6.92	0.065	2.517	1.084–5.841	0.032
Multivariate analysis of possible predictors of mortality:						
PASp	1.022	0.987–1.059	0.226	1.01	0.982–1.041	0.453
Renal impairment	16.1	2.138–120.78	0.007	4.186	1.58–11.087	0.004
RVEF severely reduced	2.976	1.039–8.52	0.042	2.96	1.196–7.32	0.019

2001 until December 2013. Data were collected from patient's records and electronic charting. Statistical analysis was done using SPSS software version 20.

Results: During the period of 13 years 209 patients with LVEF $\leq$ 45% underwent cardiac surgery. The median age was 56 years (IQR 38-65) and 73% (n = 152) of patients were male. The overall hospital mortality was 11% (n = 23). The 30-, 90-day and 1-year mortality was 6.2%, 10.6% and 15.2%, respectively. There were no significant difference in survival between isolated CABG and isolated valve surgery with 3- and 12-months follow up (p = 0.905 and 0.918, respectively). Cox regression analysis showed that impaired LVEF were not predictors of 30-day and 1 year mortality on univariate and multivariate analysis (Table 1).

Conclusion: Renal impairment and severely reduced right ventricular function are independently risk factors for early and late mortality following cardiac surgery. Severe left ventricular systolic dysfunction does not appear to be an independent risk factor associated with higher mortality.

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Pattern of in-hospital Cardiac Catheterization for Patients with Acute Coronary Syndrome in Kuwait

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Introduction: Acute coronary syndrome (ACS) is a major cause of morbidity and mortality globally, and angiography is commonly used for risk stratification. **Methods:** We aimed to

Table 1 Basic angiographic data, treatment provided and interventional data

Characteristics	Patients (n =950)
LM >50%	12 (12.6 %)
MVD	19 (20 %)
SVD	24 (25.2%)
Normal coronaries	19 (20%)
MR (> +3)	6 (6.3%)
EF < 25%	4 (4.2%)
Decision post angiography:	
Medical therapy	42 (44.2 %)
PCI	38 (40%)
CABG	15 (14.2%
PCPCI angiographic data	
Total number of stented vessels	
BMS	6/38 (16.6 %)
DES	32/38 (84.2 %)
Successful	37/38 (97.3 %)
Unsuccessful	1/38 (2.7%)
Bifurcation stenting	5/38 (13.1%)
PCI of in-stent restenosis	3/38 (7.8%)

LM, left main; MVD, multivessel disease; SVD, single vessel disease; MR, mitral regurgitation; EF, ejection fraction; PCI, percutaneous coronary intervention; CABG: coronary artery bypass grafting; BMS, bare metal stent; DES, drug eluting stent

Table 2 In-hospital outcomes and discharge medication

Outcomes	(N: %)
In hospital complications	
Stent thrombosis	1/38 (1.05%)
Heart failure	8/95 (8.4 %)
CIN	8/95 (8.4 %)
VT/VF	2/95 (2.1%)
Fever	3/95 (3.1%)
Vascular complications	2/95 (2.1 %)
Pseudo aneurysm	3/95 (3.1%)
Groin hematoma Retroperitoneal bleeding	1/95 (1.05%)
MI	3/95 (3.1%)
CVA	0/95 (0%)
Death	1/95 (1.05%)

MI, myocardial infarction; CVA, cerebrovascular accident; ACEI, angiotensin converting enzyme inhibitors; ARBS, angiotensin receptors blockers

identify patient characteristics and clinical management, as well as angiographic, PCI, and hospital outcomes in Kuwait.

Subjects: A total of 95 consecutive patients with the diagnosis of ACS transferred to the Chest Diseases Hospital in Kuwait for cardiac catheterization from April 2013 until April 2014.

Results: Patients were primarily Kuwaitis (n = 58) and with a mean age of 60 $\pm$ 12.26 years. The most common reason for referral was non-ST segment myocardial infarction (NSTEMI; n = 28), followed by ST segment myocardial infarction (n = 23), and unstable angina (n = 15). 20 % of patients had multivessel disease (n = 19), possibly due to the high rate of diabetes and renal disease. More patients received percutaneous coronary intervention (PCI; n = 38) compared with coronary artery bypass grafting (CABG; n = 15). Most stents placed were drug-eluting stents (32/38).

Conclusion: Findings from this small descriptive study suggest that high rates of aggressive ACS make primary prevention extremely important.

Keywords: Cardiac Catheterization • PCI • Kuwait

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Incidence of Malignancies among Post Heart Transplant Patients in the Middle East; is it of Any Significance to the Rest of the World?

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Purpose: Organ transplant recipients are at an increased risk of a wide range of malignancies. Few previous population-based studies have quantified and compared cancer risks according to graft type. Based on the long-term follow-up, the incidence in these studies has been quoted as high as 18.25%. We report the incidence and type of malignancies in post heart transplant patients, at the King Faisal Specialist Hospital & Research Center, despite the use of a slightly different immunosuppressive induction protocol.

Material and methods: We retrospectively identified 127 recipients who received heart transplant at a single center, between February 2005 and October 2013. They were prospectively followed up for post-op cancer. The mean age of our patients was 35.3 $\pm$ 13.4 years (range 13-59 years) and the mean BMI was 24.4 $\pm$ 5.8 Kg/m^2. The mean pre-op NYHA class was 3 $\pm$ 0.7, mean LVEF was 17.6 $\pm$ 8.7% & the mean PAP was 38 mmHg $\pm$ 9.5. The leading reason for transplant was dilated cardiomyopathy; in 65.5%(83) of the patients, followed by Ischemic Cardiomyopathy in 24.4% (31), Rheumatic Heart Disease in 7.1% (9), Congenital Heart Disease in 1.5% (2), Hypertrophic Cardiomyopathy in 0.8% (1), and other (unspecified) reasons in 0.8%(1) of the patients.

Results: The mean follow up period was 4.3 $\pm$ 4 years and no patients were lost to follow up. Survival for transplanted patients was 93.8%, 89.1%, 78.8%, 77.7%, and 64.4% at 30 days, 1, 3, 5, and 8 year follow up periods respectively. For the purpose of this study we only included patients with survivals beyond 1 year of transplantation. Dosage of ATG used as induction therapy was 3mg/kg (1-12 days) and this was adjusted according to the WBC count, specifically the CD4/8 count and the lymphocyte percentage. The remaining immunosuppressive therapy was as per international guidelines. A total of 2 (1.8%) cancers developed during the follow-up period. The first patient (a 54-year old male) had gastric adenocarcinoma who was diagnosed at 41 months post transplantation. He underwent successful surgical resection and is still under remission. The second patient (a 13-year old male) was found to have an aggressive large B-cell lymphoma 3 months post-transplantation. However, despite receiving optimum treatment this patient passed away.

Conclusion: Despite the high ATG dosage used for induction therapy in our patients, we surprisingly found a very low incidence (1.5%) of malignancies post heart-transplantation. One of the major factors contributing to this small figure could be the relatively young average age of our study population. In light of these results, we propose a large scale genetic study to be considered for our population in the future.

Keywords: Heart Transplant • Malignancy • Middle East

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Percutaneous Mitral Balloon Valvuloplasty in Yemeni Patients; The challenges Never Ends

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Background: Rheumatic heart disease (RHD) still a major public health problem in Yemen. Our country had one of the highest reported prevalence rate in the world. Mitral stenosis as a sequelae of rheumatic heart disease results in significant morbidity and mortality.

Objective: To study the frequency, general characteristics, morbidity and mortality of Yemeni patients with rheumatic severe mitral stenosis presented for percutaneous

balloon mitral valvuloplasty (PBMVP) at Al-Thawra Modern General Hospital, Cardiac Center.

Patients and methods: Cross sectional observational prospective study. All patients who underwent percutaneous balloon mitral valvuloplasty (PBMVP) at Al-Thawra Modern General Hospital, Cardiac Center, over the period October 2012 to march 2013 were included in our study. Rheumatic severe mitral stenosis diagnosis and the eligibility of the patients for PBMVP were established using the trans-thoracic and trans-esophageal echocardiography. PBMVP were performed in catheterization lab. in a transvenous ante-grade fashion using the Inoue balloon technique. Statistical analysis was performed using Statistical Package for Social Sciences (SPSS).

Results: A total of 107 patients with rheumatic severe mitral stenosis who were suitable for PBMVP were included. The mean age of the patients was 30 ± 10 years and 75 patients (70.1 %) were females, 14.6% of them (11 out of 75) were pregnant. 23.4% of the patients were from Sanàa governorate, 73.8% were married and about one half of the patients were illiterate (only 6 patients joined the university). The average time between the first diagnosis of RHD and the time of procedure (PBMVP) was 4.4 years and there was only 39.2% of the patients on regular long acting penicillin during this time. 38.3% of the patients had NYHA class III or IV symptoms prior to the procedure. Atrial Fibrillation was presented with 13.1% and also 13.1% had history of ischemic cerebro-vascular stroke. 16.8% of the patients presented with re-stenosis post previous PBMV. All patients had multi-valve problem of varying severity. The mean left atrium(LA) dimension was 49 ± 5.8 mm and the mean mitral valve was 0.92 ± 0.17 cm2. The mean Wilkins scoring and the mean transmitral diastolic pressure gradient was $8.5 \pm 0.6/16$ and 15.2 ± 5.6 mmhg respectively and 80 (74.8%) patients had more than moderate pulmonary hypertension.

Conclusion : Yemeni patients with rheumatic severe mitral stenosis usually presented in advance condition or with complication. Low educational level, poor socioeconomic status and poor referral to tertiary care centers leads to delayed diagnosis and intervention which results in complication.

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Importance of Health Education in improving the Quality of life of people with Chronic Diseases

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Purpose: Diabetes, hypertension, hypercholesterolemia, obesity and smoking are major risk factors of coronary heart disease (CHD), stroke and peripheral vascular disease (PVD). Drug therapy is required in the management of the above risk factors, but, lifestyle modification and weight management are vital components to control blood glucose, blood pressure and cholesterol levels (Lago *et al.* 2007). However, it is important from the patient's perspective to understand the importance of such measures which is only possible if they are educated about their health condition. Thus, we postulate a health educational session at regular intervals can help people understand their health condition which may lead to improvement in health by better management of these chronic conditions.

Methods: A questionnaire was prepared based on the current lifestyle choices. The questionnaire used in this study included key components of self-management i.e. awareness of risk factors, use of medications, investigations, side effects of medications, importance of blood tests, diet, smoking, exercise, stress, sleep hygiene and questions on quality of life. People with chronic diseases including diabetes, hypertension, dyslipidaemia and CHD were requested to fill the questionnaire and encouraged to participate in the health education session. The session was based on the following:

(1) Learn about the impact of long term diseases on the heart and other vital organs.
(2) Lifestyle changes that can be made to improve the quality of life.

After the completion of one hour health education session, the people were asked to fill a health education feedback form.

Results: 50 people with chronic diseases had filled the questionnaire and 10 people participated in health education session. Based on the answers of 25 questions, the response of the people in terms of awareness was calculated as shown in *Table 1*.

Table 1 Outcome of awareness of people based on the answers given

Topics	Awareness (%)
Risk factors of Chronic diseases	96
Medications used	98
Importance of regular investigations	80
Moderate intake of salt, sugar and oil	30
Adverse effects of smoking	10
Sleep hygiene	32
Normal blood pressure	30
Common side effects of medicine	16
Exercise	32
Stress Management	8

Based on the feedback form after the health education session, out of the 10 participants, 6 of them felt that their illness affected the quality of life, 5 felt that their doctor should spend more time in educating about their health condition and all of them were of the view that more of such sessions will help them in understanding their health condition better.

Conclusions: This study has shown that people are still unaware of certain elements such as ways to reduce stress levels, proper sleep hygiene, appropriate intake of salt, sugar and oil, adverse effects of smoking and ways to quit smoking. However, a structured health education session comprising of basic elements of lifestyle modification can keep the people interested and willing to learn more about it.

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Influence of Rescuers' Gender and Body Mass Index on Cardiopulmonary Resuscitation According to the American Heart Association 2010 Resuscitation Guidelines

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Background and objectives: The accuracy of rescuers' cardiopulmonary resuscitation (CPR) is an important factor in determining its overall outcome. This study aims to test the association between rescuers' gender, Body Mass Index (BMI) and the accuracy of chest compressions (CC), specifically the depth and rate, as well as ventilation, according to American heart association (AHA) 2010 resuscitation guidelines.

Methods: This cross-sectional study included 72 participants (30 males and 42 females) selected from Dasman's Clinical Skills Training Center. The participants were all trained CPR for the first time by the same instructor according to AHA 2010 resuscitation guidelines. An assessment of their CPR was carried out a week later, in which the participants were asked to perform 5 cycles of chest compressions and ventilation with a ratio of 30:2 on a manikin connected to Resusci® Anne Basic and SkillGuide device. This device assesses the accuracy of chest compressions, in terms of their depth and location, as well as the accuracy of ventilation delivered. In addition, the time taken to perform the chest compressions during the 5 cycles was measured to calculate the rate of chest compressions. Moreover, the weight and height of the participants were measured in order to calculate their BMI.

Results: In our analysis, a Chi-Square test for independence was used demonstrating no significant association between gender and chest compressions performed with the correct depth ($P = 0.53$) as well as between gender and ventilation ($P = 0.42$). The chest compression rate among females was significantly higher than that of males ($P = 0.000$). Regarding BMI, it was found that participants with a BMI < 26, which is the mean BMI of the study sample, tend to perform chest compressions with the correct depth ($P = 0.045$) and to finish the cycles of chest compressions faster than those with a BMI > 26 ($P = 0.000$). On the other hand, no significant association was found between BMI and ventilation ($P = 0.187$).

Conclusion: CPR can be influenced by factors such as gender and BMI, as such the individual rescuer and CPR training programs should take these into account in order to maximize victims' outcome.

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Postoperative Mid-Term Results of Tricuspid Valve Surgery: Does Valve Repair Have a Better Outcome?

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Background: Tricuspid valve (TV) regurgitation hasrecently been identified as a major risk factor for long-termmortality. Isolated preoperative tricuspid valve repair/replacement (TVR/rep) carries an excessively high operativerisk.

Purpose of the study: To prospectively analyze the postoperative outcomes of TV surgery patients with isolated TV operations performed with or without combined heart surgery and to compare the outcome of valve repair to replacement (TVR).

Methods: Between January 2005 and December 2006, 73 consecutive patients underwent tricuspid valve surgery in which 5 of them were pediatricsand excluded. We present a retrospective study of 68patients who underwent TV operations, with TVRepgroup 46% (n = 31) and TVR group was 53% (n = 37). 23.5% (n = 16) had isolated (IT) TV surgery.

Mean patient age was 44 ± 14.1(15-81) years and 76.7%were female. The average log. EuroSCORE and EuroSCORE-IIwere 19% and4.6% respectively. Redo operations rate was 35.3% (n = 24). Long-term follow-up was 93.8% completed, with a meanduration 6.3 ± 2.5 years.

Mean LVEF 59% (32%-74%), chronic lung disease 29%, renal failure was 19% and was significantly in TVR group p = 0.05. Dialysis presented in 12.3% which significantly higher in TVR group, p = 0.05. History of previous valve surgery was found more in IT and TVR group, of 35% and 46% respectively, p = 0.1.

RHD was present in 48% of total with a highertrend in TVR group 54%, p = 0.07.

Results: Overall hospital mortality was 10.3%.Hospital mortality in the TVRepand TVRgroups were 10% and 16.2% respectively, p = 0.45.Overall survival at 1 and 9-year was 86%. TVRep and TVR, 1 and 9-year survival were 87 and 81%, respectively, p = 0.36.

Overall IT and combined Tricuspid (CT) group mortality were 18.7% and 15%, p = 0.75. No mortality found in the IT TVrep group. However, 23% mortality was found in the TVR group.

Ten pts (33.4%) in TVR group had normal quality of life (QOL) with normal NYHA in 1-year and 9-year, while fourteen pts (52%) in TV repair group had normal quality of life in 1-year and 9-year follow-up, p = 0.02. There was a significant improvement of mean NYHA from pre-op CF-III+ to Post CF-I+ at one year and CF-II at 9-year, p = 0.05. There was no difference between Pre- and post-op LVEF at one month, and one year. Yet, Significant drop of LVEF at 9-year with mean from 60% to 54%, p = 0.02. There was a significant drop in mean PAP from 43.8 mmHg pre-op to 20.9mmHg,p = 0.001. No significant changes in the mean RVESP pre- or post-op., neither in RV function, p = 0.97.

Echocardiographic findings showed a significant improvement in mitral insufficiency >2+ pre-op to 1 post-op at 1, and 9-year follow-up, p = 0.07. As well as a very significant improvement of tricuspid insufficiency >2+ pre-op to 1, post-op, p = 0.0001 over the 1, and 9-year follow-up.

A significant improvement of creatinine, albumen, and total bilirubin post-op, p = 0.002, and p = 0.018, and p = 0.05, respectively.

Overall readmission rate due to TV symptoms worsening was in 19%, equally in both TVR/TVrep groups, during the follow-up period.

Conclusion: Although both cohorts were very heterogeneousand difficult to compare, our results show thatboth surgical strategies for TV repair have good resultsregarding postoperative survival.

Chronic Renal failure and dialysisis an identified mortality risk factor in TV surgery. Surprisingly, TVrepair in the IT group had the best outcomeresults among all other groups, which might be due to early interference in insolated TV disease.

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Clinical and Angiographic gender differences in patients undergoing Coronary Angiography

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Purpose: Women undergo evaluation and treatment for cardiac diseases less frequently than men with similar symptoms. The purpose of this study was to determine what differences exist in clinical evaluation and treatment between men and women presenting with coronary heart disease that may indicate a gender bias.
Methods: Retrospective study which reviewed clinical and angiographic results from eligible 200 consecutive patients (100 women, 100 men) who underwent coronary angiography for suspected CAD.
Results: Overall, females and males presented at similar ages and with similar prevalences of dyslipidemia, albeit women were less likely than men to be a smoker. BMI, prevalence of diabetes mellitus and hypertension were all found to be at significantly higher in women than men. Women were more likely to present with atypical symptoms in comparison to men who presented more with typical angina (20% of female patients and 11% of male patients presented with atypical symptoms while 77% of female patients and 85% of male patients presented with typical angina) Angiographic data revealed that females were more likely to have 3 vessel CAD (20% and 12%, female and male respectively) while there were more 1 vessel and 2 vessel diseases in male patients compared to female patients. Left ventricular function was similar between the two groups. Treatment options were found to be significantly different between the two groups, women were sent for CABG at higher rate than men (20% vs 11.5% respectively P < 0.05) while men underwent more PCI than women (47% vs 32% respectively P < 0.01)
Conclusion: While women are more likely to present with atypical symptoms, they have more cardiovascular risk factors, more aggressive multivessel coronary disease indicating the higher surgical referrals compared to their men counterpart.

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Sonographic chest B-lines with echocardiography Probe anticipate Elevated N-terminal pro-brain-type natriuretic peptide, irrespective of ejection fraction

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Background: Echocardiography and N-terminal pro-brain-type natriuretic peptide (NT-ProBNP) are important tests in assessing left ventricular function in patients presenting with acute dyspnoea to emergency department. Ultrasound chest is becoming an important tool in diagnosing acute pulmonary oedema.
Aim: To assess the diagnostic accuracy of Ultrasound chest using echocardiography curvilinear probe in detecting B lines in patients present with acute pulmonary oedema in comparison with NT-ProBNP.
Method: A Prospective observational study of 61 consecutive patients presenting with symptoms and signs of pulmonary oedema and bilateral B lines detected by 5 MHz curvilinear probe of echocardiography.The emergency department physician ordered

NT-ProBNP, and critical care physician with trained ultrasound will perform Echocardiography and Ultrasound chest. The findings of Ultrasound chest will be revised by another senior physician.
Results: Sixty one participants were enrolled over period of six months: 49.2% male, mean age 66.8. 51 of the 61 had bilateral B lines. The median NT-ProBNP in patients with bilateral B- Lines was (6200), compared with A lines pattern (180) (CI = 0.33-0.82). The distributions in the two groups differed significantly (p = 0.034). Based on a threshold level of NT-ProBNP in relation to age, Sensitivity and specificity (including 95% confidence interval) the sensitivity of finding bilateral B-lines on ultrasound was (92.0%), and the specificity was (91.0%). The positive predictive value of B-lines pattern was 97.0% and negative predictive value was 71.0%. The systolic function in B line pattern was below 50% in 84.3 % and normal in 15.7%. A line pattern were present in all systolic function > 55%. In B line pattern (94%) proportion had a Framingham score for CHF > 4, with all A lines pattern had <4, p < 0.0001 and NHANES scores of > 3 in B lines pattern96% vs all A lines pattern had scores < 3, p <0.0001).
Conclusion: Detecting B lines with echocardiography probe (curvilinear 5 MHz) in lung ultrasound is highly sensitive and specific for diagnosing pulmonary oedema, in comparison with NT-ProBNP.

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Regain Interest in Semi-continuous Sutures in Prosthetic Valve Replacement

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Background and aim of the study: The continuous suture technique has numerous advantages as a simple, quick, and effective method for valve replacement. The semi-continuous suture technique is a modification of the continuous technique aiming to avoid its technical disadvantages. This method combines advantages of the continuous and interrupted suture techniques. In this study we evaluated the semi-continuous suture technique in patients undergoing prosthetic valve replacement, comparing it with the conventional interrupted suture technique.
Patients and methods: 131 patients with valvular lesions were included in the study, underwent valve replacement. Patients were divided into two groups according to the suture technique used in valve replacement. Group I (conventional interrupted suture technique), 76 patients, there were 43 males and 33 females, mean age 36.6 years. 18 patients underwent isolated aortic valve replacement (AVR), 36 underwent isolated mitral valve replacement (MVR), and 22 patients underwent double valve replacement (DVR), and group II (semi-continuous suture technique), 55 patients, there were 27 males and 28 females, mean age 36.9 years. 15 patients underwent isolated AVR, 24 underwent isolated MVR, and 16 patients underwent DVR.
Results: Statistical analysis showed that the aortic cross clamp time, cardiopulmonary bypass time, and operation time, were significantly decreased in group II than in group I, And the implanted valve size was significantly larger in group II. 2 patients in group I developed paravalvular leakage, and one patient in group II. There is no late postoperative leakage in both groups. 3 cases of late endocarditis in group I, and one case in group II. Valve thrombosis occurred in 5 patients in group I, and in 4 patients in group II.
Conclusion: The semi-continuous suture technique is suitable for all types of prosthetic valve replacement, especially those of rheumatic origin, and with small left atrium and small aortic annulus. It is simple, with short period of valve implantation, associated with few postoperative complications, and especially suitable for patients in developing countries.

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Accuracy of Predictive Operative Mortality Models in Octogenarians; a 10-Year Follow-Up Post Open Heart Surgery

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Title: Accuracy of Predictive Operative Mortality Models in Octogenarians; a 10-Year Follow-Up Post Open Heart Surgery
Purpose: Octogenarians who undergo heart surgery are thought to be high-risk surgical candidates. Therefore, elderly patients with heart disease are generally under-referred for heart surgery. This study investigated the preoperative and perioperative factors associated with long-term outcomes in a consecutive series of patients who underwent coronary artery bypass (CABG), and/or multiple valve replacement surgeries.
Methods: We retrospectively studied 92 patients who underwent open-heart surgery, between January 2003 and June 2013. The mean age of our patient population was 82.4 ± 2.9 years (79–89 years), out of which 26% were females. The mean STS and EuroSCORE-II were 27.9 ± 11.6 and 15.56 ± 13.7 respectively. The mean pre-op NYHA class was 3 along with a mean LVEF of 46% (15–65). The prevalence of heart related co-morbidities included unstable angina in 53.5%, MI in 38.4%, CHF in 17.5%, atrial fibrillation (AF) in 8%, redo CABG in 4.6% and valve surgery in 6.9% of the patients. The prevalence of chronic disease such as HTN, IDDM, dyslipidemia, chronic renal failure and cancer were
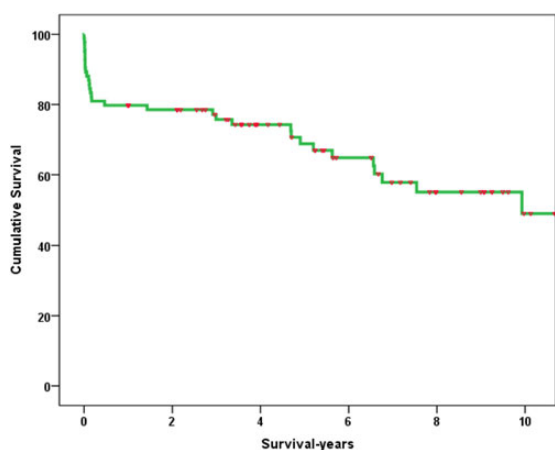
Figure 1 Postoperative survival rate in patient population.

77%, 58.2%, 40%, 16.3% and 3.5% respectively. Long-term survival was evaluated using Kaplan-Meier and Cox proportional hazards regression models.

Results: The percentage of patients who had isolated CABG surgery was 47%, whereas 13% had CABG combined with valve surgery, 23% had valve surgery alone, 4% had double valve surgery, 1% had triple valve surgery, and 2% had other surgical procedures. Postoperatively, five patients required re-intervention for bleeding; and three patients each suffered from a cardiac arrest, CVA, lung disease, and acute renal impairment. Five patients developed atrial fibrillation, whereas pneumonia and GI bleeding was found in three patients. Complete heart block needing PPMWAS was encountered only in one patient. The average length of the CSICU stay was 6.3 days (1-45 days). Survival at 30 days was 88.1%, whereas 1-year, 3-year, 5-year, and 10-year survival rates were 88.1%, 79.8%, 77.1%, 70.7%, and 55.1% respectively. Of note, patients who underwent isolated CABG had a 1-year survival rate of 100%. In univariate Cox-regression analysis, EuroSCORE-II was significantly associated with a negative outcome (HR 1.03, 95% CI 1.009 - 1.06; p = 0.007) but we could not find a statistically significant association with STS score (p = 0.06). Furthermore, even in multivariate analysis EuroSCORE-II seems to be an independent predictor of negative outcome in octogenarians (HR 1.068, 95% CI 1.014-1.124, p = 0.01), but no statistically significant association could be found with the STS score (HR 0.98, 95% CI 0.94-1.02; p = 0.3).

Conclusions: Our single-center series reveals significantly lower in-hospital adverse outcomes and operative mortality than the predictive mortality models. Nevertheless, EuroSCORE-II score seems to be a superior model in predicting the geriatric mortality risk when compared with its counterpart. Long term follow-up results were acceptable, which hence encourages an increase in octogenarians' referrals for surgery, especially isolated heart surgery in the future.

Keywords: Octogenarian • Open Heart Surgery • Mortality

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What is the optimum management of Pacemaker Lead Endocarditis with multiple vegetations?

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Purpose: Severe infection of intracardiac pacemaker leads can result in Infective Endocarditis with serious affection of the Tricuspid Valve. The aim of this work is to evaluate safety and outcome of management of infected intracardiac pacemakers Leads.

Methods: This is a prospective observational study that involved 18 patients with infected intracardiac pacemaker leads referred to our department over the period between October 2010 and February 2014. All patients suffered from fever and constitutional symptoms of endocarditis and diagnosis was confirmed with echocardiography and blood culture, which proved the diagnosis and presence of multiple vegetations around the pacemaker lead with affection of Tricuspid valve.

Results: Seventeen patients were subjected to surgical removal of the intracardiac lead, removal of all vegetations, repair of Tricuspid valve when needed. The generators were replaced in all cases. Three of them (17 %) were implanted in the rectus sheath, while 14 (83%) were implanted in the opposite subpectoral region with insertion of epicardial pacemaker lead. All cases were done with the use of cardiopulmonary bypass with beating heart except three (17%) needed cardioplegia for repair of extensive affection of tricuspid valve. Tricuspid valve was successfully repaired in all cases with good satisfactory outcome and survival rate of 89%. One patient responded well to medical treatment, his vegetation subsided over 12 weeks and did not need surgery. We lost two patients (11%) in this series due to fulminant endocarditis and multiple organ failure, The overall morbidity was prolonged ventilation in one case (6%) and superficial wound infection in 2 cases (12%) and postoperative fever

Conclusion: Optimum management of infected intracardiac pacemaker lead with affection of tricuspid valve and multiple vegetations will be surgical removal and replacement which can be done with good outcome. The key of success is the early diagnosis and proper timing of intervention which require good coordination between infective endocarditis team.

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Should digoxin be prescribed in atrial fibrillation patients with or without heart failure? Results from Gulf Survey of Atrial Fibrillation Events (Gulf SAFE) in the Middle East

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Background: The use of digoxin in atrial fibrillation (Afib) patients with or without congestive heart failure (CHF) is not without controversy. The aim of this study was to examine the impact of digoxin therapy on mortality stratified by CHF.

Methods: Gulf Survey of atrial fibrillation events (Gulf SAFE) is a prospective, multinational, observational registry of consecutive Afib patients recruited from the emergency room of 23 hospitals in 6 countries in the Middle East. Patients were recruited between October 2009 and June 2010 and followed up for 1 year after enrollment. Analyses were performed using univariate and multivariate statistical techniques.

Results: The study included a total of 1,962 Afib patients with an overall median age of 57 (45-69) years and 52% (n = 1,026) were males. At hospital discharge, digoxin was prescribed in 36% (n = 709) of the patients while CHF was present in 27% (n = 528) of the patients. A total of 225 (12.1%) patients died during the 12-month follow-up period after discharge (5.3% (n = 104) were lost to follow-up). Patients with CHF were consistently associated with higher mortality at 1-month (5.1 vs 2.1%; p < 0.001), 6-month (17.2 vs 5.0%; p < 0.001), and 12-month (24.3 vs 7.6%; p < 0.001) when compared to those without CHF. When stratified by CHF, digoxin therapy was associated with significantly higher mortality in those without CHF at 6-month (8.7 vs 3.7%; adjusted odds ratio (adj. OR), 5.07; p < 0.001) and 12-month (12.3 vs 6.0%; adj. OR, 4.22; p < 0.001) but not in those with CHF (6-month (18.6 vs 14.7%; adj. OR, 1.62; p = 0.177), 12-month (25.4 vs 22.4%; adj. OR, 1.37; p = 0.317)).

Conclusions: In patients with Afib and CHF, digoxin did not offer any survival advantages. However, in those without CHF, digoxin therapy was, in fact, associated with significantly higher long-term mortality.

Keywords: Atrial fibrillation • digoxin • mortality • congestive heart failure • Middle East

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Detection of Early Left Ventricular Systolic and Diastolic Dysfunction in Patients with Maternoplacental Syndrome by Tissue Doppler and Strain Rate Imaging

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Background: Maternal placental syndromes (MPS) occur as a consequence of abnormal placental vessel formation, and refer to hypertensive pregnancy disorders (HPDs) and related placental abnormalities. The aim of this study is to investigate early alterations in left ventricular function in patients with MPS by using tissue Doppler and strain rate imaging.

Methods: the present study enrolled 122 females, 6 months after delivery. Group 1 included 72 patients who experienced MPS. Group 2 included 50 women with normal pregnancy as control. All participants underwent clinical examination, and laboratory assessment of HBA1c, lipid profile, blood urea, and serum creatinine. Echocardiographic studies included standard trans-thoracic echocardiography, tissue Doppler imaging, strain and strain rate imaging.

Results: There was no significant difference between both groups with regards to ejection fraction, deceleration time, isovolumetric relaxation time or E/A ratio. Deterioration of left ventricular systolic and diastolic function was evident in MPS group, by TDI parameters (significantly lower values of Sm 7.5 ± 1.2 VS 9.1 ± 1.3 P < 0.001, Em 7.0 ± 0.8 VS 10.0 ± 1.4, P = 0.02, and Em-to-Am ratio 0.84 ± 0.14 VS 1.2 ± 0.18 P < 0.001). Systolic strain, peak systolic strain rate, early and late diastolic were also significantly lower in patients with MPS than in control group (−18.7 ± 2.6 VS −20.8 ± 1.5 P <

0.001, -0.92 ± 0.14 VS -1.01 ± 0.23 P $<$ 0.001, 1.05 ± 0.11 VS1.29 ± 0.24 P $<$ 0.001, 1.8 ± 0.3 VS 1.2 ± 0.4 P $<$ 0.001 respectively).

Conclusion: Left ventricular systolic and diastolic dysfunction occur in patients with MPS. These abnormalities are evident on tissue Doppler and strain imaging even in absence of changes in ejection fraction or standard diastolic parameters.

Abbreviations: LV = leftventricle, MPS = materno-placental syndrome, TDI = tissue Doppler Imaging.

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Right Ventricular Function Assessment in Single LAD lesion Patients Using Strain and Strain Rate Imaging

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Background: Strain and strain rate imaging is currently the most popular echocardiographic technique that reveals subclinical myocardial damage, no available data on this imaging method with regard to assessing right ventricular involvement in single LAD lesion.

Aim: to evaluate right ventricular regional functions using strain and strain rate imaging tissue Doppler method in patients with single LAD lesion .

Methods: The patient group was composed of 60 patients who had experienced first anterior myocardial infarction and had undergone successful percutaneous coronary intervention for LAD lesion. Twenty patients were selected for the control group. The right ventricular myocardial samplings were performed in three regions: the basal, mid, and apical segments of the lateral wall. The individual myocardial velocity, strain, and strain rate values of each basal, mid, and apical segment were obtained.

Results: The right ventricular myocardial velocities of the patient group were significantly decreased with respect to all three velocities in the control group. The strain and strain rate values of the right mid and apical ventricular segments in the patient group were significantly lower than those of the control group (excluding the right ventricular basal strain and strain rate). In addition, changes in the right ventricular mean strain and strain rate values were significant.

Conclusion: Right ventricular involvement in LAD lesion patient is significant and can be assessed using tissue Doppler based strain and strain rate

Abbreviations: RV = Right ventricle, TDI = Tissue Doppler imaging, LAD = left anterior descending

Keywords: Right ventricle • Tissue Doppler imaging • LAD

Introduction: Echocardiographic RV functional parameters have independent and additive prognostic value in patients with(LV) dysfunction.

1 Right Ventricle (RV) dysfunction may be primarily attributed to abnormality of RV myocardium or secondary to left ventricle (LV) dysfunction, as a consequence of **"Ventricular Interdependence"** between the two ventricles, as they are encircled by common muscle fibres, share a common septal wall and are enclosed within a common pericardium1. Hence earliest recognization of RV dysfunction is warranted but till today it remains a challenging task because of complex structure and asymmetric shape of RV 3. Doppler Tissue imaging is more sensitive than other echocardiographic modalities in evaluation of ventricular functions.18Earlier studies have depended upon M-Mode, 2- D or pulsed Doppler evaluation.4, 7,19,20. Previous studies using Doppler tissue imaging have selectively evaluated lateral tricuspid annulus alone or in combination with RV lateral wall.3,8

Subclinical RV dysfunction is known in patients with right coronary territory ischemia n results. Right ventricular functions in LV anterior infarction has been subject of several studies but with significant discrepancies in results.2-7

The aim of the present study was to assess right ventricular systolic and diastolic function in patients with proximal LAD lesion by the use of Doppler echocardiography, tissue Doppler and strain imaging parameters .

Patients: This study included 60 single LAD patients (Group .A) who were admitted to cardiology department in Tanta University Hospital and 20 persons as a control group (group B)

Exclusion criteria:
- Pulmonary hypertension
- Valvular heart disease
- Lung disease
- Cardiomyopathy
- Renal, hepatic,heamatological disorders
- Malignancy

Methods: All selected patients were subjected to:
(1) Full history taking
(2) Full clinical examination
(3) Body Mass Index
(4) Resting standard 12 leads surface ECG
(5) Lipid profile
(6) Conventional echocardiography

Two dimensional, M mode, pulsed Doppler left ventricular and right ventricular inflow was done using standard views, techniques, calculations according to the guidelines of American society of cardiology. Using Vivid 7 dimension (GE Health care) 2.5 MHZ transducer, echo examination was done for each patient while lying in left decubitus position, ECG tracing was conducted for all patients and the images were digitally stored on C. D for further analysis independent of the clinical data.

(1) Measure peak transmitral,transtricuspid flow velocity in early diastole(peak E) and in late diastole (peak A)and E\A ratio to assess right and left ventricular diastolic function.it is obtained by pulsed –wave Doppler Echocardiography positioning a sample volume between outflow tract and valve leaflet tips in apical four chamber view and pulsed Doppler at Mitral and Tricuspid valves.
(2) Right ventricular free wall thickness and interventricular septum thickness measurement in long axis parasternal view and M mode cursor perpendicular on right ventricle and interventricular septum.
(3) Lateral Tricuspid Annular Plane systolic Excursion(TAPSE):It was obtained by placing an M mode cursor through the Tricuspid annulus and measuring the amount of longitudinal motion of the annulus at peak systole from a standard apical four chamber window by 2-D echocardiography.

7-Tissue Doppler Imaging: They were performed by activating T.D.I function in the same machine, the gain control and filter were manipulated to get the clearest and less noisy tracing of the myocardial velocity and the ECG was recorded simultaniously and both tracing were recorded on paper speed of 100mm/s.The TDI was performed with a 5mm sample volume placed at basal free wall segment of right ventricle and Tricuspid annulus from apical 4 chamber view.

1-Tricuspid annular velocity: Color coded Tissue Doppler is acquired at high frame rates and analysis offline, by placing a region of interest in the segment to be interrogated.

Platform-specific soft ware then generates velocity profiles over the cardiac cycle.The velocity is read as the highest systolic velocity, without over gaining the Doppler envelope.The velocity E represent the early diastolic velocity, the velocity E" represent the late diastolic velocity to assess the diastolic function of the right ventricle.

2-Regional right ventricular Strain and Strain rate: High frame rates were required, ideally $\geq$150 frames /S.As such, a narrow imaging sector focusing on the right ventricular free wall.

Imaging is in color coded Tissue Doppler mode, and $\geq$3 beats are acquired with suspended respiration.Values for Strain and Strain rate are then derived offline on the system or the work station using equipement-specific algorithms by placing sample volume(s) or regions of interest of varying sizes in the mid portion of the segments.

3- Isovolumic acceleration time: Myocardial acceleration during isovolumic contraction is defined as the peak isovolumic myocardial velocity devided by time to peak velocity and is typically measured for the right ventricle by Doppler tissue imaging at the lateral tricuspid annulus.

For the calculation of isovolumic acceleration, the onset of myocardial acceleration is at the zero crossing point of myocardial velocity during isovolumic contraction.

IVA = IVVΔ T

Statistics: Statistical presentation and analysis of the present study was conducted, using the mean, standard deviation and chi-square test by SPSS V.16.

Table 1 Demographic and clinical parameters

	Patients	Control	p-value
Age (years)	50.45 ± 6.21	42 ± 5.19	0.142
Gender			
M	35 (58.3%)	15 (75%)	0.635
F	25 (41.7%)	5 (255)	
body mass index(BMI)(kg\m2)	27 ± 3.2	25 ± 3.4	0.754
total cholesterol mg\dl	250 ± 30.5	185 ± 20.8	0.042
HDL-C mg\dl	34.1 ± 5.4	40 ± 7.6	0.147
LDL-C mg\dl	140.2 ± 12.5	110 ± 10.8	0.049
Tridlycerides mg\dl	155.2 ± 10.9	130.8 ± 7.74	0.051
Diabetic cases	16 (26.7%)	4 (20%)	0.055
Systolic (mmhg)	136 ± 26.6	130 ± 24.5	0.674
Diastolic (mmhg)	83.25 ± 15.63	90 ± 13.42	0.229
ECG			
Ischemic changes	21 (35%)	-	0.562
Normal	39 (65%)	20 (100%)	

p-value $<$ .05 is significant and p-value $>$ .05 is non significant

Table 2 Echocardiographic and tissue Doppler parameter

		Patients	Control	p-value
tramsmitral	E(m/s)	0.71 ± 0.21	0.90 ± 0.13	0.019
	A(m/s)	0.83 ± 0.23	0.80 ± 0.26	0.775
	E/A	0.79 ± 0.23	1.10 ± 0.33	0.057
trans tricuspid	E(m/s)	0.48 ± 0.20	0.70 ± 0.23	0.016
	A(m/s)	0.53 ± 0.21	0.40 ± 0.16	0.324
	E/A	0.95 ± 0.36	1.50 ± 0.43	0.044
T.D.I	S(m/s)	0.12 ± 0.02	0.15 ± 0.06	0.341
	E(m/s)	0.09 ± 0.02	0.14 ± 0.07	0.016
	E"(m/s)	0.13 ± 0.02	0.13 ± 0.3	0.535
	E/E"	0.73 ± 0.16	1.2 ± 0.36	0.009

Results: This study included 60 LAD lesion patients as group (A), and 20 normal persons as a control group (group B). Demographic data is summarized in *Table 1*.

Pulsed – wave Tissue Doppler indices at the right ventricular free wall basal side of tricuspid annulus contain systolic velocity(S), early diastolic (E), late diastolic (A) E/E" ratio data is summarized in *Table 2*.

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Anxiety traits and long-term risk of myocardial infarction and stroke in female population 25 – 64 years in Russia: MONICA-Psychosocial Epidemiological Study

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Purpose: To study the influence of personal anxiety on risk of myocardial infarction (MI) and stroke in female population aged of 25 – 64 over 16 years of follow-up in Russia.
Methods: Under the third screening of the WHO "MONICA-psychosocial" (MOPSY) program random representative sample of women aged 25 – 64 yrs (n = 870) were surveyed in Novosibirsk in 1994. Levels of personal anxiety were measured at the baseline examination by means of Spilberger's test. From 1995 to 2010 women were followed for 16 years for the incidence of MI and stroke. Cox proportional regression model was used for an estimation of risk (HR) of MI, stroke. Women having heart disease or cerebrovascular events at the baseline were not included in the analysis.
Results: High level of anxiety (HLA) in female population aged 25 – 64 years was 60.4%. Over 16 years of study MI was developed in 2.7% of women, stoke - in 6.3%. Risk of MI in women with HLA was 4.2-fold higher compared to those with lower levels of anxiety (95.0% CI: 1.946-18.583; p = 0.05). HR of stroke was in 3.5 times higher (95.0% CI: 1,020-12,015; p < 0.05). MI incidence rates were significantly higher in married women with HLA compared divorced women with lower level of anxiety (χ^2 = 5.66 n = 1 p < 0.05). Rates of stroke increased in hard manual worker having HLA(χ2 = 3.99 df = 1 p < 0.05). There was tendency of increasing MI and stroke rates in first-line managers.
The conclusion: There is high prevalence of HLA in female population 25-64 years in Russia. Over16 years of follow-up women with HLA have significantly higher risk of MI and stroke. Rates MI and stroke were higher in married women, occupied in manual class and in managers.

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The effect of personal anxiety on 16 years risk of an arterial hypertension in female population aged 25 – 64 in Russia: based on WHO epidemiological program MONICA-psychosocial

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Background: We aimed to determine the influence of personal anxiety on risk of an arterial hypertension (AH) in female population of 25-64y over 16 years in Russia.
Methods: Under the third screening of the WHO "MONICA-psychosocial" program random representative sample of women aged 25-64y (n = 870) were surveyed in Novosibirsk in 1994. Personal anxiety was measured at baseline by means of Spilberger's test. From 1995 to 2010 women were followed for AH incidence. Cox proportional regression was used for risk (HR) assessment.
Results: High level of anxiety (HLA) in studied cohort revealed in 60.4% of women. HR of development of AH in women with HLA during the first 5 years of study was in 2.38-fold higher (95.0%CI:1.137-4.993; p < 0.05), over 10 years it was 1.85 (95.0%CI:1.075-3.194; p < 0.05) and HR was 1.46 (95.0%CI:1.023 - 2.079; p < 0.05) over 16 years of follow-up compared to those with lower anxiety levels. Depending on the age groups AH risk within 10 years was highest in older group with HLA aged 55-64 years (HR = 10.2; 95.0%CI:1.244-83.609, p < 0.05).

There were tendencies of AH rate increasing in married women with HLA compared to women with lower anxiety. AH rates were significantly higher in those with university education and HLA (χ^2 = 4.42 df = 1 p < 0.05); as for occupation, AH rates were higher in first-line managers (χ^2 = 4.85 df = 1 p < 0.05), manual workers (χ^2 = 4.81 df = 1 p < 0.05) with HLA.
Conclusions: There is high prevalence of HLA in Russian female population aged 25-64y. Over 16 years women with HLA have significantly higher risk of AH especially married ones with high educational level in "executive" and "physical work" class.
Keywords: anxiety • hypertension • lifestyle

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Comparison between Kuwaitis and expatriates in clinical features and outcome of primary PCI for acute ST elevation MI

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Background: The population in the Arabian Gulf region is mixed and in some states the majority of the population are expatriates from the South Asia and other Arab countries.

Different ethnic origins might affect the presentation and outcome in patients with STEMI going for primary PCI. We aimed at studying the differences between native Kuwaitis and expatriates who had primary PCI.
Methods: We retrospectively evaluated the clinical features, atherosclerotic risk factors, treatment delays, PCI details and hospital outcomes of patients who had primary PCI for STEMI in our center from January 2013 till September 2014. We excluded acute STEMI patients who didn't have PCI. Numerical variables were compared using the Welch t-test is normally distributed and the Wilcoxon rank-sum test if skewed. Categorical variables were compared with Chi-Square test.
Results: Out of 317 patients, 96 (30.3%) were Kuwaiti and 221 (69.7%) were expatriates. Native Kuwaiti patients were older, more likely to be females, with a significantly higher prevalence of diabetes mellitus, dyslipidemia, prior stroke and a trend towards more hypertension. The pre-hospital delay was longer in expatriates while the door to balloon time was longer in Kuwaitis. There was no significant difference in the Killip class on presentation or the extent of coronary disease. However, radial access and thrombus aspiration catheters were more commonly utilized in expatriates than in Kuwaitis. The number of stents used, the success rate and strategy of revascularization (complete versus staged) were not significantly different in the two groups. The duration of hospitalization, major complications, in-hospital mortality and ejection fraction at discharge were also not significantly different between the two groups. (Table)
Conclusion: Native Kuwaiti patients with STEMI going for primary PCI are older with preponderance of female gender and atherosclerotic risk factors. They are less likely to have radial access and get thrombus aspiration catheters. However, the hospital outcome is not significantly different from expatriates.

	Kuwaiti N = 96	Expatriate N = 221	P value
Age (years)	57.8 ± 13.9	52.3 ± 9.5	<0.0001
Female n (%)	25 (26%)	11 (4.9%)	<0.001
Diabetes n (%)	49 (51%)	83 (37.6)%	0.04
Hypertension n (%)	48 (50%)	83 (37.6%)	0.05
Dyslipidemia n (%)	36.792%	59.140%	<0.001
History of stroke n (%)	8 (8.4)%	3 (1.4%)	0.006
Pre-hospital delay (hours)	3.5 ± 4.5	4.1 ± 4.5	0.004
Killip Class 3 or 4 on presentation n (%)	10 (9%)	20 (10.4%)	NS
Door to balloon time (minutes)	106 ± 48.4	94.3 ± 42.2	0.04
Radial Access n (%)	61 (63.5%)	177 (80.1%)	0.003
Multivessel disease n (%)	25 (26%)	57 (25.8%)	NS
Thrombus aspiration n (%)	38 (39.6%)	133 (60.2%)	0.001
In-hospital Stroke/Bleeding/Stent thrombosis/Heart failure n (%)	19 (19.8%)	37 (16.7%)	NS
Death n (%)	8(8.3%)	12 (5.4%)	NS
Ejection fraction at discharge (%)	48.9 ± 9.9	49.8 ± 10.3	NS

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Gender-related differences in the presentation, performance and outcome of primary PCI in a tertiary center in Kuwait

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Background: There is paucity of data on gender-related differences in primary PCI in the Arabian Gulf region. We sought to study these differences in a tertiary referral center in Kuwait.
Methods: We retrospectively compared female and male patients who had primary PCI for acute STEMI in our center from January 2013 to September 2014. The items of comparison included the risk factor profile, presentation, PCI details and hospital outcome.
Results: Out of 317 patients who had primary PCI, 36 were females (11.36%) and 281 were males (88.64%). Females were older: 65.2 ± 11.1 vs. 52.5 ± 10.5 years; p < 0.001 and more likely to present with Killip class ≥3 (33.3% vs. 6.4%; p < 0.0001). Females had a higher prevalence of diabetes: 66.7% vs. 38.4%; p = 0.002, a higher prevalence of hypertension 58.3% vs. 39.1%; p = 0.04 but a lower prevalence of smoking: 2.8% vs. 65.5%; p < 0.001. There were no significant differences in the prehospital delay (4.6 ± 4.5 hours in females vs. 3.8 ± 4.5 hours in males; p = 0.3) or in the door to balloon time (107.4 ± 43.5 minutes in females versus 96.6 ± 44.4 minutes in males; p = 0.1) Females had lower chance of successful radial access: 44.4% vs. 79%; p < 0.001. There were no significant differences in the proportion of patients with multi-vessel disease (27.8% of females vs. 25.6% of males; p = 0.9) or in the number of patients who required thrombus aspiration (44.4% of females vs. 55.2% of males; p = 0.3). Females and males had comparable chances of complete revascularization during cath (61.1% vs. 52.5% respectively; p = 0.6). However, more females required mechanical ventilation (22.2% vs. 6.4%; p = 0.003) and intra-aortic balloon(16.7% vs. 5.7%; p = 0.037). Females had a higher

chance of in-hospital heart failure (27.8% vs. 8.2%; p < 0.001) and a trend towards more major bleeding (8.3% vs. 2.1%; p = 0.07). Females had significantly lower ejection fraction at discharge (45 ± 10.8 vs. 50.1 ± 9.9; p = 0.01) and trend to higher 30-day mortality (13.9% vs. 5.3%; p = 0.06).

Conclusion: Females are minority in primary PCI patients. However, females are older with a higher prevalence of diabetes and hypertension and a worse Killip class. Females required more invasive hemodynamic support and had more in-hospital heart failure. They also had a significantly lower ejection fraction at discharge and a trend towards a higher 30-day mortality.

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Venous saturations from central venous line and from venous side of heart lung machine are not interchangeable with mixed venous saturation from the pulmonary artery in children undergoing open heart surgery

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Background: Mixed venous oxygen saturation has been advocated as an indirect index of tissue oxygenation. This study was designed to examine if venous saturations from the pulmonary artery, central venous line and from the venous side of the heart lung machine are interchangeable or not in children undergoing open heart surgery.

Methods: Forty children (age from 1-15 years) undergoing correction for different congenital heart procedures with cardiopulmonary bypass (CPB) were included in this study. Simultaneous samples were taken from the central venous line, directly from pulmonary artery, and from venous side of the heart lung machine. Samples were taken after 10 minutes on full CPB before aortic cross clamping and at the end of surgery before end of CPB. Bland and Altman analysis were used to study the agreement between venous saturations.

Results: Insignificant correlations were observed between venous saturations in the pulmonary artery, in the central venous line and in the venous site of the heart lung machine. In addition, wide limits of agreements appeared between venous saturation in the pulmonary artery with that in the central venous line (14.21 to −15.32) and in the venous side of the heart lung machine (34.34 to −33.18). Also, wide limits of agreement were observed between venous saturation in the venous side of the heart lung machine and in the central venous line (28.24 to −31.67). (*Table 1*).

Conclusion: Venous saturations from central venous line, pulmonary artery and venous side of heart lung machine are not interchangeable in children undergoing open heart surgery.

Table 1 Correlations and limits of agreement between venous saturations of the central venous line (CVL), pulmonary artery and venous blood of the heart lung machine (CPB)

	Sample Size	r2	Mean difference (Bias)	SD of the mean difference (Precision)	Limits of Agreement	
					Upper	Lower
1. CVL and pulmonary artery venous saturations	80	0.089	−0.56	7.38	14.2	−15.32
2. CPB and pulmonary artery venous saturations	80	0.007	0.58	16.88	34.34	−33.18
3. CVL and CPB venous saturations	80	0.013	−1.716	14.98	28.24	−31.67

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Practice of smoking cessation counselling among physicians in Kuwait

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Background: Physician smoking cessation (SC) counselling is known to increase quitting rates among smokers. However, little is known about the practice of SC counselling among physicians in Kuwait. This study aimed at measuring the level of physicians' practice of SC counselling and identifying physician characteristics associated with higher practice of SC counselling.

Methods: This cross-sectional study enrolled 499 physicians from primary, secondary and tertiary governmental medical centres from all governorates in Kuwait. Participants were asked to fill a 30 item questionnaire which recorded their socio-demographic characteristics, smoking behaviours and practice of SC counselling. A score was developed to assess the level of SC counselling practice.

Results: Physicians reported asking a median of 8 (IQR = 5) of the last 10 patients about their smoking status. Physicians also reported advising a median of 7 (IQR = 7) out of 10 smoking patients to quit, providing a median of 7 (IQR = 6) with reasons to quit, helping a median of 0 (IQR = 3) to set a quit date, and referring a median of 0 (IQR = 2) to SC clinics. Factors associated with better SC counselling included older age (p = 0.005) and being aware of SC clinics in Kuwait (OR = 11.5; p < 0.001). Family medicine physicians had higher practice of SC counselling compared to other specialties (OR = 8.7; p = 0.005). Surgeons had lower practice compared to other specialties (OR = 0.2; p <0.001). Only 56.7% knew about the presence of SC clinics in Kuwait, and 17.8% had previously received training in SC counselling.

Conclusions: The low practice of SC counselling among physicians in Kuwait is concerning in face of the increased prevalence of smoking in the population. Efforts should be made to improve physicians' training in SC counselling and their awareness of SC clinics in the country.

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Patterns of tobacco smoking among physicians in Kuwait

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Background: Patterns of tobacco smoking among physicians in Kuwait are not well documented. The objectives of this study were to assess the prevalence and factors associated with smoking patterns among doctors in Kuwait and the smoking cessation experiences of past and present smokers.

Methods: This cross-sectional study enrolled 499 physicians in governmental medical centres at the primary, secondary and tertiary levels from all governorates in Kuwait. The Fagerstrom score (Range 0-10) was used to assess the level of nicotine dependence among the sample.

Results: The prevalence of current, past and never-smoking was 15.6%, 10.2%, and 74.1%, respectively. Prevalence among male physicians was 22.3% vs. 0.6% in female physicians. Current smoking was associated with male gender (OR= 44.0; p < 0.001), but not with nationality, specialty, or living with a smoker. Generally, participants were found to have low levels (≤4) of nicotine dependence based on the Fagerstrom score. Emotional disturbance or irritability (32.5%), and close proximity to smokers (19.5%) were the most cited barriers to smoking cessation. Prevalence of successful smoking cessation was 39.1% among smoking doctors. Successful smoking cessation among smoking physicians was not significantly associated with any characteristics.

Conclusions: The prevalence of smoking among physicians in Kuwait was high among male physicians and low among females. A substantial percent of smoking physicians had successfully quit. Health promotion programs should target the smoking physicians in Kuwait.

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Cardiac Status among End Stage Renal Disease Patients on Maintenance Haemodialysis in Aden, Yemen: A Cross Sectional Study

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Introduction: left ventricular structural and functional abnormalities is prevalent among dialysis patients. We aimed to assess the cardiac status, specifically, cardiac left ventricle in patient with end stage renal disease (ESRD) on maintenance haemodialysis and to explore factors associated with left ventricular abnormalities.

Methods: A cross-sectional study was conducted among one hundred and five patients with ESRD in two haemodialysis centres. Data collected included socio-demographics items and patients were clinically assessed for anaemia, hypertension, 2D, M-Mode and colour Doppler echocardiography of left ventricle. Preliminary descriptive statistics and bivariate analyses were performed.

Results: Patients' mean ± SD age was 47.08 ± 12.96 years, 71(67.6%) were males and 38 (34.2%) were unemployed. Of the 105 patients, 101 (96.19%) had different left ventricular abnormal echo-findings. Forty two (40%) had left ventricular hypertrophy (LVH) i.e. concentric hypertrophy with relative wall thicknesses (RWT) >0.45 and 48 (50.4%) had left ventricular dilatation (LVD) i.e. eccentric hypertrophy with RWT <0.45. Valve dysfunction and valve calcification occurred in 52 (54.6) and 46 (48.3%) of both LVH and LVD patients, respectively. Both patients with LVH and LVD exhibited left ventricular

diastolic dysfunction and systolic dysfunction (51 [53.55%], 12 [12.6%], respectively) with fraction shortening of <25. In bivariate analyses, conducted separately for patients with LVH and LVD, association between risk factors (e.g socio-demographic, anaemia and arterial hypertension) and left ventricular abnormality (LVH and LVD) were non-significant (p> 0.05).

Conclusions: In this study sample, both LVH and LVD were significant. Assessment of haemodialysis adequacy (e.g. measurement of dry weight) in patient with ESRD in these centres warrants consideration alongside other unexplored risk factors.

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Management and outcomes of Gulf citizens with ST elevation myocardial infarction: Findings from Gulf COAST

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Background: Knowledge about ST elevation myocardial infarction (STEMI) management and outcomes, in Gulf countries, is needed as a foundation for future management improvement initiatives in the region.

Methods: We used data from the Gulf loCals with acute CorOnAry Syndrome evenTs (Gulf COAST) registry, a prospective multinational registry of consecutive citizens admitted with the diagnosis of acute coronary syndrome to 29 hospitals in 4 Gulf countries between January 2012 and January 2013.

Results: Data from 1022 STEMI patients was analyzed (age 53 ± 13, 77.6% male, 46.5% with diabetes, 47% with hypertension, 42% with dyslipidemia and 37% current or recent smokers). Table shows management of patients in first 24 hours in hospitals with and without on site cardiac catheterization laboratory. Median door to needle time was 40 minutes and door to balloon time was 70 minutes. Hospital outcomes were death in 7.2%, heart failure in 15% and cardiogenic shock in 9%. One year mortality rate was 6.4%.

Conclusions: The preferred reperfusion strategy in the Gulf region remains to be fibrinolytic therapy but the door to needle time exceeds the 30 minute recommendation. Despite being relatively young, patients with STEMI in the Gulf region have high inhospital mortality rate.

	All (1022)	In Cath Hoaspitals (288)	In Non Cath Hospitals (734)	p-value
Reperfusion Therapy				
Fibrinolytic	671 (64.6)	119 (40.5)	552 (74.1)	<0.001
Primary PCI	107 (10.3)	106 (36.1)	1 (0.1)	<0.001
None	244 (23.5)	63 (21.4)	181 (24.3)	
Medication in First 24 hours				
Aspirin	1034 (99.5)	292 (99.3)	742 (99.6)	
Clopidogrel	866 (83.3)	285 (96.9)	581 (78)	<0.001
Beta Blocker	757 (72.9)	206 (70.1)	551 (74)	
ACE/ARB	807 (78)	215 (73)	592 (79.5)	
Statin	1008 (97)	284 (96.6)	724 (97.2)	

PCI = Percutaneous Coronary Intervention

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The Effect of Acute Epicatechin-3-gallate, Epigallocatechin and Epigallocatechin-3 Gallate Treatment on Tobacco Smoking Induced Heart Failure, In Ischemia/Reperfusion Rat Heart Model

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Background and Objectives: The main catechins in green tea are epicatechin, epicatechin-3-gallate, epigallocatechin and epigallocatechin-3 gallate (EGCG). The aim of this case-control study is to determine whether EGCG will protect the heart from global ischemia followed by reperfusion, measured as left ventricular pressure (Pmax), left ventricular end-diastolic pressure (LVEDP), coronary flow (CF), and coronary vascular resistance (CVR). We also propose that the hearts of smoking rats would recover better with EGCG rather than without it.

Methods: 44 wistar rats were divided in to 4 groups: untreated cigarette smoking group, treated cigarette smoking group, untreated non-smoking controls, and treated non-smoking controls. At the end of the 3-months tobacco-smoking period, rats were anesthetized and hearts were rapidly removed after intravenous heparinization and immediately mounted on the Langendorff perfusion assembly and perfused initially with a constant pressure perfusion of 50 mmHg with oxygenated Krebs–Henseleit buffer. We took the baseline end-diastolic pressure of 5 mmHg and monitored the P_{max}. Also, The CF and the Perfusion pressure were measured. We subjected the hearts of 1 case group and 1 control group to a 30 minutes of perfusion with 5 μM EGCG and then a 30 minutes of ischemia then 30 minutes of reperfusion. Post-Ischemia/Reperfusion left ventricular contractility and hemodynamics were recorded and compared.

Results: regarding the cardiac contractility parameters (P_{max}, and LVEDP), the cigarette smoking rats treated with EGCG showed significant improvement when compared with the Untreated cigarette smoking rats. (p-value < 0.05). Regarding the Hemodynamic parameters (CVR and CF), the cigarette smoking rats treated with EGCG also showed significant improvement in compared with Untreated cigarette smoking rats. (p-value < 0.05). In addition, when we compared the treated cigarette smoking control's cardiac contractility and hemodynamic parameters to the untreated non-smoking controls, values showed no significant different. (p-value > 0.05)

Conclusion: acute administration of EGCG provides significant recovery rate to smoking isolated hearts when compared to non-EGCG treated smoking rats heart. Also, EGCG acute administration has no effect on the non-smoker rat hearts.
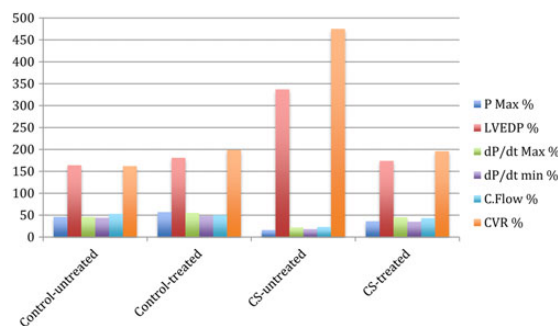
Figure 1 Comparing all four groups interm. Of cardiac contractility and hemodynamic parameters.

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Smoking patterns and smoking cessation counseling practices among medical students in Kuwait

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Introduction: The prevalence of smoking and practice of smoking cessation (SC) counseling among medical students is important because of their future role in health promotion. The study objectives were to assess the prevalence and factors associated with smoking among medical students in Kuwait, to evaluate their SC experiences and to assess their SC counseling practice.

Methods: This cross-sectional study enrolled 310 medical students at Kuwait University. A self-administered questionnaire was used to collect data on smoking experience and SC counseling. A score was developed to assess the level of SC counseling practice.

Results: The prevalence of smoking was 5.8%, and past smoking was 1.3%. Current smoking was associated with non-Kuwaiti nationality (OR = 3.8; p < 0.01) and male gender (OR = 8.7; p < 0.001) but not with age, phase of medical studies, childhood exposure to secondary smoking within the family, or living with a smoker. Close proximity to smokers was the most cited barrier to SC (27.8%). The students reported asking a median of 10 (IQR = 1) of the last 10 patients about their smoking status. Students also reported advising a median of 2 (IQR = 5) out of 10 smoking patients to quit, to provide a median of 1 (IQR = 5) with reasons to quit, a median of 0 (IQR = 0) with a quit date, and a median of 0 (IQR = 0) with a referral to a SC clinic. High SC counseling scores were associated with older age (OR = 3.8; p < 0.001), non-Kuwaiti nationality (OR = 2.4; p < 0.05) and awareness of SC clinics in Kuwait (OR = 3.1; p < 0.001).

Conclusions: The prevalence of smoking among medical students in Kuwait was low, although it should be decreased further among male students. Reported SC counseling

practices showed good identification of patient smoking status but poor attempts to help them quit. Improved training of medical students in SC counseling and increased awareness of SC clinics are recommended to strengthen anti-smoking initiatives in Kuwait.
Keywords: Smoking • Medical Students • Kuwait

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Early Experience in Percutaneous Coronary Intervention for complex Lesion among Yemeni Patients

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Background: Different strategy in management of coronary artery disease is depending increasingly on percutaneous coronary intervention PCI in combination with medical therapy. Percutaneous coronary intervention (PCI) is easy in most cases but multiple difficulties represent a challenge even with expert hands. The complex lesions can be classified into different types according to different criteria, anatomically there are calcific lesion, lesion with thrombus, and chronic occlusions, and according to site of lesion there are bifurcations lesion, saphenous vein grafts and unprotected left main lesions. For these types of lesions PCI need special new devices, such as drug-eluting stents, thrombectomy catheters, hydrophilic guidewires, rotational atherectomy, cutting balloons and distal protection balloons or filters. PCI success depends on these devices in good handling hands and in the presence of specific types of medication in need.

Although PCI is done in our counter since long time for different types of lesion but till now in Yemen, no study done regarding the complex lesion and the difficulties that we can face specially in the presences of limited resources.

Complex coronary lesions represent significant problem during percutaneous coronary intervention (PCI) in our country especially with significant prevalence of coronary artery disease risks. The objective of this study was to determine types of complex lesions in our country and to evaluate our early experiences in treating such cases.
Methods: Prospective cohort study, for 102 patients undergoing PCI with complex lesions cases were collected from three hospitals using the same technique and the data were gathered in questioner. Data were analyzed by the SPSS 17.0 program. Patient's characteristics, Correlations in-between different components and prognosis were described.
Results: Total number of PCI case was 102 cases; 34.4% of them were under 50 years old, 36patient of them was diabetes, 54 patient smokers and 51 hypertensive one. most of complex lesion was calcific total occlusion lesion in 44 patient followed by bifurcation lesion in 13 patient, Indirect way of stenting was done in 75 patient most of them are stented through femoral artery, 73 patient was stented with drug eluting stent, while 20 patient are stented with ber-metal stent TIMI flow was III in 94% of cases and 2% are failed to success in stenting their lesion and one patient die after the failure of PCI.
Conclusions: Yemeni Patients undergoing PCI in complex lesions have the same general characteristics except they are younger in age and with multiple risk factors, the success rate of PCI was comparable to other expert center. Calcific total occlusion was the dominant type of complex lesion most of them stented with DES.

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Influence of gender on presentation and outcomes of atrial fibrillation in Kuwait

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Background: Disease presentations and management are sometimes influenced by gender. We aimed to study the influence of gender on characteristics, treatments and outcomes of patients with atrial fibrillation (AF) in Kuwait.
Methods: Gulf Survey of Atrial Fibrillation Events (Gulf SAFE) registry was a prospective, observational registry of patients presenting with AF to the emergency rooms of 23 hospitals in 6 Gulf countries between October 2009 and June 2010. A total of 2043 patients were enrolled from the six countries. Three large general hospitals from Kuwait enrolled 605 patients. Here we report on the 605 patients from Kuwait.
Results: 268 (44%) were females and 337 (56%) were males. The mean age of females compared to males was 62.2 ± 14.7 vs. 54 ± 16.3, p = 0.031 and 51% of females while 29% of males were ≥65 years old, p < 0.001. Hypertension and diabetes were commoner in females compared to males 74% vs. 52%, p < 0.001 for hypertension and 52% vs. 32%, p < 0.001 for diabetes. Women compared to men were more likely to present with permanent or persistent AF (47% vs. 39%, p = 0.04) and had higher CHADS2 score (mean score 1.4 ± 0.8 vs. 1 ± 0.9, p < 0.001 and CHADS2 score ≥2 present in 60% vs. 37%, p < 0.001). At discharge from hospital, patients with CHADS2 score ≥2, 55% of women compared to 60% of men received warfarin, p < 0.001. At one year follow up, the all-cause mortality was similar in both genders (2.2% vs. 2.1% in women and men, respectively). The one year stroke/transient ischemic attack (TIA) rates were higher in women compared to men, but did not reach statistical significance (4.9% vs. 2.7%, p = 0.155).
Conclusions: In Kuwait, female patients with AF are older than their male counterparts and have higher rates of hypertension and diabetes and higher CHADS2 scores. Despite the higher CHADS2 score, women are less likely to receive oral anticoagulation at discharge from hospital. This could have been the cause for the non-significantly higher rates of stroke/TIA at one year.

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Characteristics and outcomes of patients with atrial fibrillation in Kuwait

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Background: Atrial fibrillation (AF) is a common arrhythmia. We aimed to study the characteristics, treatments and outcomes of the AF population in Kuwait.
Methods: Gulf Survey of Atrial Fibrillation Events (Gulf SAFE) registry was a prospective, observational registry of patients presenting with AF to the emergency rooms of 23 hospitals in 6 Gulf countries between October 2009 and June 2010. A total of 2043 patients were enrolled from the six countries. Three large general hospitals from Kuwait enrolled 605 patients. Here we report on the 605 patients from Kuwait.
Results: Their mean age was 57.6 ± 16.1 years, 38.5% of them were ≥65 years old and 44% were females. Their comorbid conditions were hypertension (62%), diabetes (41%), heart failure (18%), transient ischemic attack (TIA)/stroke (15%) and overweight/obesity (74%). Moderate to severe valvular heart disease occurred in 18%. The type of AF was first attack (40%), paroxysmal (15%), permanent (27%), persistent (15%) and unknown (3%). The mean CHADS2 score was 1.2 ± 0.8 and 47% had score of ≥2. At discharge from hospital, 57% of patients with CHADS2 score ≥2 and 36% with CHADS2 score of zero received warfarin while 33% of patients with CHADS2 score ≥2 received antiplatelets only. At one year follow up, the all-cause mortality and rate of stroke/TIA were 2.1% and 3.6%, respectively.
Conclusions: Patients with AF in Kuwait are relatively young and suffer from high cardiometabolic risks. Use of chronic oral anticoagulation therapy was suboptimal and might have been the reason behind the relatively high rate of stroke/TIA at one year.

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Prognostic Value of Normal Dobutamine Stress Echocardiography in Patients with Acute Chest Pain: A 15-years Follow up Study

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Introduction: The short term prognostic value of dobutamine stress echocardiography (DSE) is well documented. The annual event rate of a normal DSE is less than 2%. However, there is limited data on its long term prognostic value. We evaluated the 15-year prognostic value of normal DSE in patients presenting to the emergency department with acute chest pain and negative biomarkers.
Methods: A retrospective study including acute chest pain patients without prior known coronary artery disease presenting to a tertiary care center emergency room in 1999. Dobutamine–Atropine stress echocardiography was performed as per the stress laboratory standard protocol. Patients with normal DSE were followed up till December 2014 for all-cause mortality verified by vital records.
Results: A total of 88 patients are included in the analysis. One third of the patients were males and the mean age was 64 ± 12.7 years. After a median follow up duration of 15.3 years (25th-75th interquartile range 14.9-15.6 years), 20 (22.7%) patients died. The annual event rate for patient with a normal DSE was 1.51%. After adjusting for potential confounders, age was the only factor independently associated with increased all-cause mortality (Adjusted hazard ratio per 1 year 1.079, 95% confidence interval 1.022 - 1.138, p = 0.006).
Conclusion: DSE retains its prognostic value over a very long follow-up duration. Patients with normal DSE have excellent long term prognosis.

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Mitral Stenosis- Impact of Deranged Pulmonary Function Tests on Early Post-operative Outcome

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Background: Pulmonary function(PF) derangements manifesting due to hemodynamic alterations in mitral stenosis (MS) can have its impact on the post valve-replacement period, which has not been well studied or analyzed.
Aims: (1) To study the impact of the preoperative PF derangements intrinsic to MS on the early postoperative outcome. (2) to assess the prognostic relevance of spirometric tests as to the postoperative complications and morbidity.
Subjects and methods: The pulmonary function tests(PFT) performed by simple methods in 25 patients with isolated MS who were then subjected to mitral valve replacement(MVR), were interpreted according to the type & severity of the derangements. These were then correlated to postoperative variables like arterial blood gas(ABG), duration of ventilation, intensive care unit(ICU) stay, hospital stay; respiratory complications, and outcome. Data were also analyzed and compared under high and low-risk groups.

Results: The significant correlations of preoperative PFT to postoperative variables were:- FVC%($r = -0.464$*p0.019), FEV1($r = -0.464$*p0.020), FEV1%($r = -0.443$*p0.027), PEFR($r = -0.401$*p0.047), & PaO2($r = -0.546$**p0.005) with ventilation duration; FEV1($r = -0.416$*p0.038), PEFR($r = -0.408$*p0.043), FEF-50($r = -0.531$**p0.008), SPO2($r = -0.435$* p0.030) with ICU duration, and hospital stay{FVC($r = -0.421$* p0.041), PEFR($r = -0.447$*, p0.029), FEF-50($r = -0.538$** p0.008)}. Also the FVC ($r = 0.454$*p0.023), FEV1($r = 0.452$* p0.023), oxygenation($r = 0.470$**p0.018) correlated with postoperative oxygen-status; FVC($r = -0.515$* p0.008), FEV1($r = -0.416$* p0.039) with respiratory complications; and FVC($r = -0.392$, p0.053), PEFR($r = -0.415$* p0.039) & FEF-50($r = -0.438$* p0.031) with need for ventilation modification. The morbidity parameters showed a higher incidence in the restrictive & mixed types, and the severe grades, where also the postoperative respiratory events were higher -75%, 50%, and 100% respectively. The mortality was 1(4%). A slightly higher morbidity was associated with the high-risk group, in terms of respiratory complications(p0.044*) and prolonged ventilation.

Conclusions.: Pulmonary dysfunction native to MS presents in varying degrees, and plays its impact on the postoperative course in varying degrees & extent. A mild trend towards hypercarbia needs to be optimized by ventilatory adjustments. With increasing severity(high-risk group), more the derangements; and more the morbidity & complications, calling for precautionary care, but on-the-whole is not a contraindication for valve surgery. PFT derangements in MS as evaluated by spirometry can, to a certain extent predict the postoperative morbidity risk.

Keywords: Pulmonary function tests • mitral valve replacement • postoperative complications • morbidity

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Analysis of in-hospital delay components in patients with STEMI going for primary PCI in a single center

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Background: In STEMI patients presenting to a PCI-capable hospital, guidelines recommend ≤90 minutes as the goal time from first-medical contact (FMC) to device. This goal is achieved in a variable proportion in different hospitals. Delay may be related to the emergency room (ER), cardiologist response, hospital logistics of transfer or to the cathlab team response. We sought to determine which of the previous components contributed most to the delay in our center.

Methods: From June 2013 to May 2013, we analyzed STEMI patients who presented to the ER and had primary PCI. We excluded patients who didn't have ST elevation in the first ECG. For each patient, we prospectively documented 6 points in time in hh:mm format and calculated the difference between these 6 points in minutes. We considered each of the five differences to be related mainly to one key aspect of performance: ER team performance, cardiologist response time, hospital logistics of transfer, cathlab team response time and patient's vascular anatomy/pathology respectively. (Figure) We calculated of each of the five times as a percentage from the total FMC-to-device time.

Results: In 134 patients, the median FMC-to-device time was 75 minutes, interquartile range (IQR) 60 - 99 minutes. An FMC-to-device time ≤90 minutes could be achieved in 67.2% of patients. The largest percentage of the total FMC-to-device time was from hospital transfer logistics (median 37.5%, IQR 27.7- 44.2%), followed by the cathlab team response time (median 28.4%, IQR 20 - 42.6%), patient's vascular anatomy/pathology (median 19.8%, IQR 14.8 - 23.3%), ER team performance (median 6.8%, IQR 4.8 - 9.3%) with the least contribution from the cardiologist response time (median 3.1%, IQR 1.8 - 4.6%).

Conclusion: Strategies to reduce the FMC-to-device time should focus primarily on improving hospital transfer logistics and cathlab team response times.

Figure 1 Study protocol.

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Association between Oral Hygiene Practices and Coronary Heart Disease in Kuwait

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Introduction: The relationship between periodontitis and coronary heart disease (CHD)-although remains controversial- is of great interest as it postulates a role of poor oral health as an emerging risk factor for CHD. Self-reported oral hygiene practices have been shown to be a valid indicator of clinically confirmed periodontal disease but it remains unclear whether better self-reported oral hygiene practices are associated with a decrease in the risk of CHD. This study aimed to investigate the association between self-reported oral hygiene practices and CHD in Kuwait.

Methods: A hospital-based case-control study was conducted in which 127 CHD cases were compared to 127 controls who had other acute conditions "patient-controls" and 134 healthy participants visiting the hospitals "visitor-controls". Controls were frequency matched with CHD cases by age. Data on self-reported oral hygiene practices and the main risk factors of CHD, and other potential confounders were collected by face-to-face interview using structured pre-coded questionnaire. Poor oral hygiene practices were defined as those who brush their teeth less than twice a day.

Results: A significant association between self-reported poor oral hygiene practices and CHD was found when cases were compared to visitor-controls after adjusting for potential confounders, odds ratio 2.26 (95%CI:1.13-4.51) (p = 0.02). When cases were compared to patient-controls, there was a weak statistically non-significant association between self-reported poor oral hygiene practices and CHD, odds ratio 1.21 (95%CI:0.56-2.63) (p = 0.62). Any use of dental floss was negatively associated with CHD, whether cases were compared to patient-controls or visitor-controls but the statistical significance was lost after adjusting for potential confounders.

Conclusion: There is an association between self-reported oral hygiene practices and CHD, although it was not statistically significant. Large scale prospective studies are needed to investigate this relationship and ascertain whether programs aimed to improve oral hygiene practices have spin off benefits as CHD prevention.

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Under-utilization of Nuclear Myocardial Perfusion Imaging in the Middle East

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Background: The Middle East is currently experiencing an epidemic of coronary artery disease (CAD) and diabetes. Coronary Angiography remains the main diagnostic tool for CAD. The utilization of coronary angiography in the Middle East is very high (530 cath per 100,000 Person-Year in some countries). In the USA, the rate of nuclear stress testing ranges from 800-1,400 stress test per 100,000 Person-Year. There is no data on the utilization of nuclear myocardial perfusion imaging (MPI) in the Middle East.

Methods: Vendors of radiopharmaceuticals as well as sestamibi and tetrofosmin vendors were surveyed. This data was supplemented by data regarding the annual volume of nuclear cardiology laboratories using personal contacts. The utilization of nuclear cardiology procedures in each country was determined per 100,000 Person-Year using the annual census data.

Results: Nearly 75,000 SPECT myocardial perfusion are performed annually in the Middle East. There was significant regional variability in the rate of MPI utilization ranging from 0.6 to 67 nuclear MPI per 100,000 Person-Year (figure).

Conclusions: This analysis shows that despite the CAD and diabetes epidemics in the Middle East, there is significant underutilization of nuclear MPI compared to the USA and other regions.

Figure 1 SPECT myocardial perfusion imaging in the middle east per 100,000 person-year.

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Temporal Trends of Cardiorespiratory Fitness in Saudi Arabia: A Call for Action

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Background: The aim of this analysis is to describe temporal trends in cardiorespiratory fitness in Saudi Arabia.

Methods: We included 16,398 patients (41% females) who underwent 20,903 clinically indicated tests between 2001 and 2012 in a single university hospital in Saudi Arabia. Clinical data and stress variables were prospectively collected at the time of the test. Among patients who underwent an exercise stress test, exercise workload, expressed in estimated METS, was calculated by the Quinton treadmill controller based on achieved speed and elevation.

Results: Of the included patients, 43% were unable to exercise and were referred for pharmacological stress test. There was significant increase in the rate of pharmacological stress testing over the study period (figure, $p < 0.0001$). Among patients who were able to exercise, the mean body mass index decreased over time from 30.1 to 28.9kg/m2. ($p < 0.001$). There was a decline in the percentage of patients achieving more than 10 or 12 METS over the analysis period (figure, $p < 0.001$).

Conclusions: This analysis suggests that there is significant decline in cardiorespiratory fitness in Saudi Arabia in the past decade. This will have significant implications on the outcome of patients as well as healthcare cost.
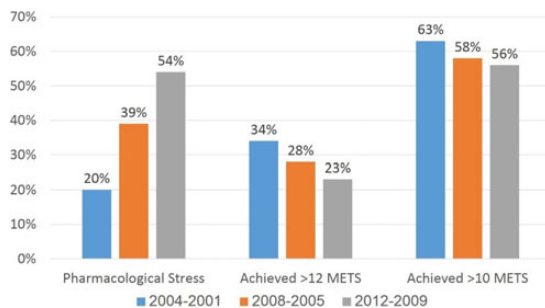
Figure 1 The trends of achievements over period of times.

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Radiofrequency catheter ablation of atrial tachycardia using 3D mapping with the EnSite system

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Background: Atrial tachycardia (AT) may originate from any site in the right or left atrium, and even from the proximal pulmonary veins or superior vena cava. Mapping and ablating atrial tachycardia is technically more challenging than other forms of paroxysmal supraventricular tachycardia. In this report, we describe the locations of the AT foci as well as evaluate the success of their treatment with radiofrequency ablation.

Methods: Our study population consisted of 10 patients (7 females: 35 ± 14 years) with AT from a consecutive series of 231 patients in a single hospital experience who were evaluated for narrow complex tachycardia. AT was confirmed by several mapping criteria in addition to the use of the EnSite system. The success of the radiofrequency ablation was established by the inability to induce tachycardia post ablation in the lab after 30 minutes of waiting.

Results: The site of origin of AT was the right atrium (RA) in 7 patients, left (LA) atrium in 2 patients and the non coronary cusp in 1 patient. Of the foci in the RA, 3 were septal and 1 was in the upper crista terminalis. The intervention was successful in completely ablating the AT foci in 9 patients while 1 case was partially successful requiring additional medical therapy to completely control the tachycardia.

Conclusion: 10 out of 231 patients with narrow complex tachycardia were diagnosed with AT using EnSite system. Complete success of radiofrequency ablation was achieved in 90% of the cases. This is comparable to the national data.

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Exercise Intolerance in Postoperative Fallot Repair, Does it Correlate with Pulmonary Regurgitation?

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Background: Pulmonary regurgitation (PR) is a well-known consequence after surgical repair of Tetralogy of Fallot (TOF) with deleterious effect on the right ventricle.

Aim of the work: We aimed to measure pulmonary regurgitation index (PRi) using echocardiography and to correlate it with exercise capacity in this group of patients.

Methods: Cross sectional descriptive study was conducted on 27 cases (mean age was 6.59 ± 1.80 years) with TOF after total surgical repair. Cases were subjected to 12-leads ECG, chest X-ray, 6 minute walking test (6MWT) and transthoracic color Doppler echocardiography with assessment of right ventricle myocardial performance index (RV MPI) and PRi.

Results: Exercise capacity was significantly impaired ($p = 0.017$). It is not correlating with PRi ($p = 0.977$, $r = 0.006$) or RV MPI ($P = 0.701$, $r = -0.077$). 74% of cases had PRi <0.77, denoting moderate to severe PR. 100% of cases have dilated RV. RV restrictive physiology was detected in 40.7%. RV MPI was increased in 6 (22%).

Conclusion: 6 minute walking test is an easy, cheap and reproducible method for assessment of exercise capacity. Exercise capacity is impaired in pediatric post total repair of TOF with PR. It is impaired after successful repair with no correlation with pulmonary regurgitation severity.

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Incremental Prognostic Value of Myocardial Perfusion Imaging in Patients with Renal Dysfunction

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Background: Coronary artery disease is the main cause of mortality and morbidity in patients with impaired renal function. The aim of this study is to evaluate the prognostic implications of single-photon emission computed tomography myocardial perfusion imaging (SPECT-MPI) in patients with impaired renal function.

Methods: We included 11,517 consecutive patients (mean age, 65 ± 12 years; 52% men) referred for SPECT-MPI between April 2004 and May 2009. Renal function was estimated using the estimated glomerular filtration rate (eGFR) formula. Patients were followed up for a composite endpoint of cardiac mortality nonfatal myocardial infarction (CD/MI). Multiple nested Cox proportional hazard models were used to determine the incremental prognostic value of SPECT-MPI over clinical features and renal function.

Results: A total of 897(7.8%) and 3506 (30.4%) patients had GFR less 30 and between 30-60 mL/min/1.73 m2 respectively. Patients with decreased GFR were more often older, with higher prevalence of conventional risk factors ($P < 0.001$). After a median follow-up of 5 years (25th to 75th percentiles, 3 to 6.5 years), 1692 (17.5%) patients experienced D/MI (740 MI and 1182 death). The risk of death increased with worsening kidney function. At each stage of impaired renal function, patients with abnormal SPECT-MPI had increased hazard of adverse events ($P < 0.0001$). Using Cox regression, total perfusion defect offered improved discriminatory ability beyond traditional risk factors (area under the receiver operator curve [AUC] 0.7076 vs. 0.7639, $p < 0.0001$).

Conclusions: SPECT-MPI adds incremental prognostic information to identify patients at higher relative risk of CD/MI across a wide spectrum of renal function.

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Impact of bleeding in patients with acute coronary syndrome on morbidity and mortality in the Gulf Region

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Background: With the use of thrombolytic, antiplatelet and anticoagulant medications in the treatment of acute coronary syndrome (ACS) patients, bleeding has emerged as an important outcome measure.

Methods: We analyzed data from Gulf loCals with acute CorOnAry Syndrome evenTs registry (Gulf COAST), which used the recent consensus Bleeding Academic Research Consortium (BARC) bleeding definitions. Gulf COAST is a prospective multinational registry of consecutive citizens admitted with the diagnosis of acute coronary syndrome, to 29 hospitals in 4 Gulf countries between January 2012 and January 2013.

Results: Of 4061 patients enrolled, 120 patients (3%) developed in hospital bleeding (17% not actionable, 25% actionable, 57% major and 2% fatal). Sites of bleeding included gastrointestinal (44%), coronary artery bypass graft surgery site (24%) and percutaneous entry site (14%). Independent predictors of bleeding included age (odds ratio [OR], 1.26; 95% confidence interval [CI], [1.028, 1.548]), history of hemorrhage (OR, 3.24; 95% CI [1.240, 8.487]), chronic renal disease (OR, 2.24; 95% CI [1.183, 4.230]), and fibrinolytic therapy (OR, 4.00; 95% CI [2.299, 6.961]). Table shows hospital outcomes in patients with and without bleeding. Bleeding was associated with significantly more adverse hospital outcomes including recurrent angina, infarction, heart failure and cardiogenic shock ($p < 0.001$). In-hospital bleeding was associated with four-fold increase in hospital mortality after adjusting for gender, Canada Risk Score, and discharge diagnosis (OR, 4.17; 95% CI [2.326, 7.468]). This adverse prognostic effect persisted up to 12-month follow-up (OR, 2.75; 95% CI [1.677, 4.513]).

Conclusions: Bleeding is an important predefined endpoint in registries of ACS. It significantly adversely impacts short and long-term mortality.

Hospital outcomes	ACS with bleeding (120)	ACS without bleeding (3941)	p-value
Death	21 (18%)	148 (4%)	<0.001
Recurrent Angina	41 (34%)	555 (14%)	<0.001
Infarction/Reinfarction	8 (7%)	64 (2%)	<0.001
Heart Failure	47 (39%)	480 (12%)	<0.001
Cardiogenic Shock	36 (32%)	180 (5%)	<0.001

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Improving Documentation of Cardio-Vascular Disease Risk in Medical Records of Diabetic Patients attending Non Communicable Disease Clinics at West Bay Health Center in Qatar

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Purpose: To improve documentation of cardiovascular disease risk in medical records of diabetic patients attending non communicable disease clinics at west bay health center from 13 % to 70 % using world health organization cardiovascular disease risk Prediction Charts from September 2014 to January 2015

Methods: Baseline audit to determine the percentage of cardiovascular disease risk documentation, Brain storming session was done to identify the causes of such problem including fish bone analysis, Survey questionnaire was designated to assess the main causes of the problem and distributed to all nurses working in non communicable disease clinics, The results demonstrated in paretto chart, We discover the main causes of the problem lies on two main causes (nurses were not oriented to new non communicable disease format and some of them were not trained to calculate risk). Intervention in form of : Education session for nurses working in these clinics were done particularly in : Orientation about new format and cardiovascular disease risk documentation, Orientation sessions for clinic running physicians, Putting reminder posters in clinics and staff nurse stations. Several audits done retrospectively for two weeks (3 days each week) to show average percentage of documentation in pre-intervention stage from 15th September to 13th November 2014, Several audits done for three weeks (3 days each week) and then weekly for 5 weeks to show average percentage in post-intervention stage ending at 15th January 2015, All data was demonstrated using run chart.

Results: The intervention began in November 2014 to January 2015 reveals that : Percentage of complete cardiovascular risk documentation for diabetic patients average was 7% in pre-intervention stage and increased to average of 59% after the intervention

Conclusions: Intervention in the form of nurse education and physician orientation improved Documentation of cardiovascular disease risk by 52%. Raising the average of documentation from 7% to 59%. Sustainability is very important for success in such improvement processes.

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The non-hyperemic coronary pressure notch as an indicator of the physiologic significance of coronary artery stenosis

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Background: Myocardial fractional flow reserve (FFR) is a new index of the functional significance of intermediate coronary stenoses that is calculated from pressure measurements made during coronary arteriography. The aim of this study was to evaluate the correlation between non-hyperemic coronary pressure dicrotic notch and fractional flow reserve (FFR).

Method: A consecutive of 114 patients (73 men and 41 women) was enrolled in this study. Data were shown as means $\pm$ SD. Statistical analyses were performed with SPSS software.

The statistical significance of differences was determined by chi-square analysis with Yates correction. Significance was defined as $p < 0.05$.

Results: Positive dicrotic notch was observed in 97 patients (85%). significant association was detected between coronary pressure notch (dicrotic notch) and FFR as loss of dicrotic notch was detected in 93.8% (15/16) of patients with FFR less than 0.75 ($p = 0.001$). Upon ROC curve a cutoff FFR value of approximately 0.75 demonstrated sensitivity and specificity of 93.8% and 98%, respectively for loss of dicrotic notch. The positive predictive value for loss of dicrotic notch was 88.2%.

Conclusion: Our study demonstrated loss of non-hyperemic coronary pressure diacrotic notch correlates significantly with FFR and may predict an FFR < 0.75 with high accuracy. In patients with functionally significant coronary stenosis, loss of non-hyperemic diacrotic notch appears to be a useful index of the functional severity of the stenoses and the need for coronary revascularization.

Keywords: dicrotic notch • fractional flow reserve • coronary stenoses

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Cardioprotective Effect Of Selenium And N-Acetylcysteine Versus Their Combination Against Myocardial Ischemia – Reperfusion Injury

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Background: Myocardial ischemia – reperfusion injury represents a clinically relevant problem associated with thrombolysis, angioplasty and coronary bypass surgery. Injury of myocardium due to ischemia – reperfusion includes cardiac contractile dysfunction, arrhythmias as well as irreversible myocytes damage. These changes are considered to be the consequence oxidative stress, inflammation and apoptosis in the heart.

Objective: This study was undertaken to investigate the potential role of Selenium and N-acetylcysteine in amelioration of myocardial I/R injury induced by ligation of coronary artery in a rat model .

Materials and methods: A total of 36 adult male Sprague Dawely rats were randomized into 6 equal groups. Group (1) sham group: rat underwent the same anesthetic and surgical procedure as the control group except ligation of LAD coronary artery; Group (2) control group: rat subjected to regional ischemia for 30 minutes by ligation of LAD coronary artery and reperfusion for 2 hours; Group (3) control vehicle group: rat received normal saline as vehicle for the study agents orally and subjected to regional ischemia for 30 min by ligation of LAD coronary artery and reperfusion for 2 hours; Group (4) Selenium treated group: rat pretreated with oral Selenium 2 mg/kg every day for 5 days before and up to surgery (ligation of LAD coronary artery); Group (5) N-acetylcysteine treated group: rat pretreated with oral N-acetylcysteine (NAC) 500 mg/kg every day for 5 days before and up to surgery (ligation of LAD coronary artery); and Group (6) Low dose combination treated group: rat pretreated with Selenium (1mg/kg) and N-acetylcysteine 250 mg/kg every day for 5 days before and up to surgery (ligation of LAD coronary artery). At the end of experiment, TNF-α, IL-1β, IL-6, caspase-3, Bcl-2 were measured in the cardiac tissue. Plasma level of cardiac troponin I and histological changes were also assessed.

Results: Compared with the sham group, levels of (TNF-α, IL-1β, IL-6), caspase-3 and plasma level of cardiac troponin I increased in control group ($p < 0.001$) while level of Bcl-2 decreased in control group ($p < 0.001$). Histologically, all rats in control group showed significant ($p < 0.001$) cardiac injury. Selenium, N-acetylcysteine and low dose combination significantly counteract the increase in myocardium levels of (TNF-α, IL-1β, IL-6), plasma cTnI & apoptosis by decreasing myocardial level of caspase-3 ($P < 0.001$) and increasing myocardium level of Bcl-2 ($P < 0.001$). Histological analysis revealed that Selenium, N-acetylcysteine and their low dose combination markedly reduced ($P < 0.001$) the severity of cardiac injury in the rat underwent LAD ligation procedure.

Conclusions: Results of the present study reveal that Selenium and N-acetylcysteine ameliorated myocardial I/R injury in rat via interfering with inflammatory reactions & apoptosis induced by I/R injury.

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Association between albuminuria and abnormal cardiac Findings in patients with type 2 diabetic nephropathy: Role of Urine Albumin Excretion

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Background: Diabetic patients have higher morbidity and mortality rates from cardiovascular diseases compared with non-diabetic background population and this is pronounced particularly in the patients with elevated Urinary Albumin Excretion (UAE).

The main aims of our study were to detect abnormal cardiac findings in patients with type 2 diabetic nephropathy and its relation to increased levels of UAE.

Methods: our descriptive; cross sectional study consisted of 105 diabetic patients with documented diabetic nephropathy who attended diabetic out-patient clinic of internal medicine department, Assiut University Hospital, where routine investigation, glycated hemoglobin(HbA1c),24-hour UAE and Trans-Thoracic Echocardiography (TTE) was done for all patients.

Results: We evaluated 105 patients with type 2 diabetic nephropathy (56 males and 49 females) where patients divided into two groups; group I included those with Microalbuminuria (39%) [Age: 54.3 ± 14.4 (mean $\pm$ standard deviation)] years and group II included those with Macroalbuminuria (61%) (Age: 59.7 ± 7.9) years. In comparison between two groups we found that there were significant relationship between the degree of albuminuria, occurrence of left Ventricular Hypertrophy (LVH) and Segmental Wall Motion Abnormality (SWMA) with ($P < 0.001$ and $P = 0.032$) respectively.

Conclusion: our data indicate a possible link between abnormal cardiac findings and progression of diabetic nephropathy. Also suggests that assessment of cardiac morbidity by echocardiography in patients with diabetic nephropathy may be mandatory for early preventive strategies.

Keywords: Diabetic Nephropathy ● Cardiovascular disease ● Urine Albumin Excretion

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Sub-clinical cardiovascular changes in chronic obstructive pulmonary disease patients: Doppler ultrasound evaluation

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Background: Chronic obstructive pulmonary disease (COPD) is a disease characterized by progressive poorly reversible airway obstruction. COPD associated with chronic systemic inflammation, hypercoagulable status, platelet activation and oxidative stress. These factors may result in sub-clinical cardiovascular diseases e.g. carotid atherosclerosis, peripheral arterial diseases (PAD), and coronary artery diseases (CAD).

IN this scenario; the main aim of this case-control study was detection of sub-clinical cardiovascular disease in COPD patients.

Methods: sixty two COPD patients and 62 healthy volunteers were enrolled in the present study. All patients submitted to full medical history and clinical examination, chest X-ray, arterial blood gas (ABG) analysis, laboratory assessment of C-reactive protein (CRP), complete blood count, lipid profile, spirometry, transthoracic echocardiography, carotid Doppler Ultrasound, and measurement of ankle brachial index (ABI). Comparison between COPD and control groups regarding different parameters was done, and comparison between different stages of COPD regarding different parameters was also done.

Results: carotid intimae-media thickness (CIMT) and carotid plaques were significantly higher, while ABI was significantly lower in COPD patients compared to control group, with no differences observed in different stages of COPD. Pulmonary hypertension and right ventricular dilatation were significantly common in COPD patients compared to control group ($P < 0.001$), and they were significantly increased with progressive stages of COPD. Pulmonary artery systolic pressure and CIMT showed significant negative correlation with PaO2 ($r = -0.341$ with P 0.007 and $r = -0.389$ with P 0.002) respectively, while showed significant positive correlation with PaCO2 ($r = 0.587$ with P 0.001 and $r = 0.491$ with P 0.001) respectively.

Conclusion: COPD is a risk factor for sub-clinical cardiovascular diseases mainly carotid artery atherosclerosis and PAD.

Keywords: COPD ● carotid atherosclerosis ● peripheral arterial diseases ● arterial blood gases

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Interleukin-6 and C-reactive protein as a marker of severity in Adult with diabetic ketoacidosis

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Background: Diabetic ketoacidosis (DKA) is a metabolic crisis that can precipitate other life-threatening complications. Elevated plasma levels of Interleukin-6 (IL-6) and C-reactive protein (CRP) have been reported to be sensitive indicators of infection in adults with DKA. However, both CRP and the pro-inflammatory cytokines, which regulate CRP, can be elevated without infection.

The main aim of our prospective cohort study was to examine the relation between IL-6, CRP and severity of DKA in Adult Patients in absence of infection.

Methods: This study involved thirty adult patients who admitted with DKA to the intermediate care unit, of internal medicine department, of Assiut University Hospital, where Blood samples were drawn at presentation before initial hydration and after resolution of DKA. Routine investigations, arterial blood gases, blood and urine cultures were done. Serum IL-6 and CRP levels were measured.

Results: Thirty patients were diagnosed as having DKA [Age: 24.33 ± 6.12 (mean $\pm$ standard deviation)] years, mild DKA was diagnosed in 5 (16.7%) patients and moderate/severe DKA was present in 25 (83.3%) patients. Mean of WBCs was (8.1 ± 2.3) $\times 10^9$/L. There was significant statistical difference as regard level of IL-6 and CRP before and after treatment of DKA with (p value for both 0.001 and 0.054 respectively). Also there was significant positive correlation between level of CRP and blood glucose before treatment of DKA ($r = 0.542$ with P-value 0.002).

Conclusion: CRP is increased in DKA patients along with IL6 in absence of infection. This finding might clarify the role of IL-6 and CRP in DKA crises as a marker of severity.

Keywords: Diabetic ketoacidosis ● CRP ● IL6

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Carotid artery stenting in asymptomatic tight carotid artery stenosis scheduled for elective CABG surgery. (CASCADE study)

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Introduction: The best approach for treatment of concomitant carotid and coronary disease is still controversial. Combined surgery is associated with an increased risk of morbidity and mortality (1). Carotid artery stenting (CAS) is rapidly evolving as an alternative to CEA, mainly in patients with severe carotid stenosis and coronary co morbidity (2)

Methods: Between January 2003 & January 2008 150 patients with asymptomatic carotid artery disease $\geq 70\%$ according to NASCET criteria (3) & stable multivessel coronary artery disease scheduled for coronary artery bypass grafting (CABG) were enrolled in our study. Patients with critical left main disease, unstable angina, recent acute myocardial infarction, EF $< 40\%$, chronic renal failure or severe renal impairment, previous stroke or TIA within the last 6month were excluded from our study.

Demographic data of the studied group was as follow, mean age 64 ± 4 years, gender 108 (72%) male, 42 (28%) female, diabetes 112 (74%), Dyslipidemic 122 (81%), hypertension 118 (78%), pervious myocardial infarction 98 (65%), pervious stroke > 6 month 48 (32%), contra lateral carotid lesion $\geq 70\%$ was found in 71 patients (47%).

In all patients carotid duplex was done pre & post CAS, all patent received aggressive anti ischemic medical treatment with special emphasis on beta blockers with resting target heart rate ≤ 60 beat/min., 80 mg/day atorvastatin was tolerated in most of the cases, cilostazol 100 mg/day if EF $\geq 50\%$, colpidogril 75mg/day, aspirin 150 mg/day.

In patients with bilateral stenosis a multistage procedure was performed with a mean delay of 5 ± 2 days. All cases were through transfemoral approach & filter wire protection devices were used.

CABG surgery was performed after 35 ± 7 days with both off & on pump techniques applied according to surgeon's preference.

Results: The outcome of the studied group was; periprocedure stroke rate was 2.6% (4), post CABG stroke 3.3% (5), 7 patients (4.6%) were admitted by acute coronary syndrome but none of them had ST elevation myocardial infarction, total mortality was 2 % (3).

Discussion: Carotid artery stenting (CAS) is considered one of the most controversial procedures in the history of medicine, especially in the setting accidentally discovered significant carotid lesion during routine preoperative preparation for elective CABG.

Although it seems that we tried to pick a low risk group of patients undergoing CABG surgery, the studied patients are considered a high risk in general population as first of all these are 100% multivessel coronary artery disease, 74% diabetics, 81% dyslipidemics 78% hypertensives, pervious myocardial infarction 65%, pervious stroke 32%, contra lateral carotid lesion $\geq 70\%$ in 47% of patient.

Our results where comparable to Akins CW et al, who preformed combined carotid and coronary surgery in 500 patient, Preoperative strokes were 4.6%, hospital mortality was 3.6%.

The difference in result might be due to there inclusion of patients with symptomatic carotid artery stenosis.

Conclusion: CAS with the use of filter protection device in asymptomatic patients scheduled for elective CABG surgery with careful patient selection seems to be a safe alternative to carotid endarterctomy in such group of patients.

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Prevalence of metabolic syndrome in patients with acute coronary syndrome in Yemen Data from Gulf Race

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Background: Metabolic syndrome is a complex condition with high socioeconomic cost that is rapidly increasing in prevalence worldwide as consequence of obesity and sedentary lifestyles. Metabolic syndrome patients are at high risk of coronary heart disease in addition to morbidity.

Objective: To evaluate the prevalence, characteristics, in-hospital course, outcomes of Metabolic Syndrome among ACS patients in Yemen

Methods: Our data were collected from a 9-month prospective, multi-center study in Yemen as part of Gulf RACE-2. ACS patients were recruited consecutively from 16 hospitals from 9 different governorates in Yemen with a diagnosis of acute coronary syndrome ACS . Between October 2008 and June 2009, 1761 ACS patients were enrolled.

There is no patient-specific exclusion criterion, and all prospective patients with ACS were thus enrolled. The study received ethical approval from the ethical committee in the Ministry of Health in Yemen. Metabolic syndrome was defined according to the criteria for its diagnosis by the International Diabetes Federation (IDF) and the American Heart Association/National Heart, Lung and Blood Institute (AHA/NHLBI). We compared baseline characteristics, treatment patterns, and in-hospital outcomes stratified by Metabolic Syndrome status.

Results: We extracted 675 patients with metabolic syndrome represent 38.3% out of 1761 patients admitted with acute coronary syndrome.

Mean age of metabolic syndrome patients was 59.39 ± 11.62 years. Metabolic syndrome patients were more frequently males 69.2% (467 patients) and more likely to be khat chewers 79% (533 patients), Dyslipidemia in form of hypertriglyceridemia was 84.2% (510 patients) and then hypertension 82% (554 patients) are the most common finding in this syndrome. Diabetes mellitus represent 71.4% (457 patients), HDL represent 71% (406 patients) Obesity is less commonly seen in this study which represent 68.4%)

In our study STEMI is the commonest type of MI 69.5% VS, 23.7% NSTEMI\UA) and atrial fibrillation AF is the commonest arrhythmia in metabolic syndrome representing which represent 98.7% (666 patients)

Conclusion: The prevalence of metabolic syndrome is not common in Yemen and represent 38.3% and it was less prevalent than in other regional countries like Oman 66% and Emirate 67.6%. Hypertriglyceride and hypertension were the commonest then diabetes and obesity among metabolic patient in Yemen

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Catheterization in Post CABG (Coronary Artery Bypass Graft); Lessons Learned

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Abstract: Over the past 8 months we were able to collect 82 patients who were catheterized for acute coronary syndrome or the like. Time after CABG was variable. But we could discern two time periods: ≤ 60 months (group A) or more than 60 months (group B). We were interested to see if the two groups diverged as to age or risk factors or place of operation. Furthermore we wanted to know if mode of management is differed in the two post-CABG groups. If PCI was done, the native artery or other conduits were compared vis-a-vis the two groups.

Results: There were 25 patients in group A vs. 57 in group B. Average age was 58.2 (± 9.8) years for group A, and 64 (± 8.8) years for group B. There were no differences among the group vis-a-vis diabetes, hypertension, hyperlipidemia, or smoking. Nineteen out of 25 patients in group A had their surgery done locally, whereas in group B there were almost equal numbers done locally or abroad. In group A 13/25 patients were assigned to medical treatment. Nine had angioplasty of native vessels and 3 had PCI grafts. In group B, 39 patients had PCI either for native vessels (27 patients) or grafts (12 patients). Six patients had PCI of both native and graft conduits.

Conclusion: in this limited study we learned the following:

(1) Seventy percent of patients coming to cath post CABG had their surgery more than 5 years, testimony for good intermediate result.

(2) Whereas half the patients were operated locally in group B, this percentage increased to 70% in group A. If symptoms and need of PCI could be taken as surrogate for quality of CABG, local CABG is not inferior to operation abroad.

(3) Most patients had CABG surgery. Only 2 patients in group B had CABG + valve surgery.

(4) More grafts were angioplastied in group B 12/39 than in group A 3 only. This is due to effect of aging of venous grafts.

(5) 36% of native coronary arteries were PCI'd in group A; vs. 27/39 in group B; i.e., more vessels (grafts or natives) become diseased with time.