

1.19%, 95% CI: 1.04–1.34, $P = 0.007$) and composite morbidity (odds ratio 1.36%, 95% CI: 1.05–1.77, $P = 0.02$) after AVR. Mortality and composite morbidity were significantly higher with lower levels of preoperative Hb.

Conclusions: Preoperative anaemia is a common finding in patients undergoing aortic valve surgery and is an important and potentially modifiable risk factor for postoperative morbidity and mortality.

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Procedure related incidence of atrial fibrillation after coronary artery bypass grafting during the early postoperative period

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Atrial fibrillation (AF), show to be a common postoperative complication, observed after coronary artery bypass grafting (CABG) During the first 7 postoperative days in 7–40% of patients. Some studies conclude that off-pump coronary artery bypass (OPCABG) may decrease the incidence of AF, whereas the combination of CABG with heart valve replacement may result in more frequent postoperative atrial fibrillation. The aim of our study was to compare the early postoperative AF incidence rate during ICU stay in three groups of patients: after CABG, OPCABG, and CABG combined with valve replacement.

Material and methods: During the period from January 2009 till January 2012. Clinical profile of 650 patients were included in a prospective study, factors having potential influence on postoperative AF did not show any significant differences between the groups. The presence of arrhythmia history was the reason of excluding 42 patients from the statistical analysis. 525 cases after conventional CABG, 96 after OPCABG, and 29 after CABG combined with valve surgery were analyzed.

Results: Atrial fibrillation occurred during the postoperative ICU stay in 9.8% of patients after CABG, in 10.2% after OPCABG, and in 21% after CABG combined with valve replacement. There was no significant difference between CABG and OPCABG groups ($P = 0.965$). We observed a statistically significant increase of the early postoperative atrial fibrillation incidence rate in patients after CABG combined with valve replacement, when compared with both CABG + OPCABG groups ($P = 0.005$).

Conclusions: (1) Atrial fibrillation is a common postoperative complication after myocardial revascularization procedures which prolong ICU stay. (2) The study did not show that the incidence of postoperative AF is influenced by the technique of coronary artery bypass grafting: with or without CPB. (3) The prevalence of postoperative AF increase when CABG is combined with valve replacement.

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Regression of severe tricuspid regurgitation after mitral balloon valvotomy for severe mitral stenosis

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Background: Significant tricuspid regurgitation (TR) is occasionally associated with severe mitral stenosis and has an adverse impact on morbidity and mortality in patients undergoing mitral valve surgery.

However, the effect of successful mitral balloon valvotomy (MBV) on significant TR is not fully elucidated. The aim of this study was to investigate TR after MBV in patients with severe mitral stenosis.

Methods: We analyzed the data of 53 patients with significant TR (grade ≥ 2 , on a 1 to 3 scale) from the mitral balloon valvotomy database at our hospital. Patients were evaluated by Doppler echocardiography before valvotomy and at follow-up 1 to 13 years after MBV. Patients were divided into group A (27 patients), in whom TR regressed by ≥ 1 scale, and group B (26 patients), in whom TR did not regress.

Results: The Doppler-determined pulmonary artery systolic pressure was initially higher and decreased at follow-up more in group A (from 70.7 ± 23.8 to 36.5 ± 8.3 mmHg; $P < .0001$) than in group B (from 48.7 ± 17.8 to 41.6 ± 13.1 mmHg; $P = \text{NS}$). Compared with patients in group B, patients in group A were younger (25 ± 10 vs 35 ± 11 years; $P < .005$), had higher prevalence of functional TR (85% vs 8%; $P < .0001$), and had lower incidence of atrial fibrillation (7% vs 38%; $P < .005$). Significant decrease in right ventricular end-diastolic dimension after MBV was noted in group A but not in group B. The mitral valve area at late follow-up was larger in group A than in group B (1.8 ± 0.3 vs 1.6 ± 0.3 cm²; $P < .05$).

Conclusions: Regression of significant TR after successful MBV in patients with severe mitral stenosis was observed in patients who had severe pulmonary hypertension. This improvement in TR occurred even in the presence of organic tricuspid valve disease.

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Reperfusion therapy in renal dysfunction patients presenting with STEMI: Which is better in the Tunisian context?

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Background: Patients with renal insufficiency experience worse prognosis after STEMI. Current guidelines do not clearly draw specific strategies for renal dysfunction (RD) patients, and most clinical trials exclude them from the study population.

Aim of the study: To compare primary PCI (PPCI) and thrombolysis (using Streptokinase) results as well as in-hospital mortality after successful reperfusion between patients with or without RD.

Methods: From January 1995 to October 2011, 1388 patients admitted for STEMI were enrolled in the MIRAMI (Monastir's Acute Myocardial Infarction) registry. Two reperfusion groups were identified: PPCI (315 patients) and thrombolysis (379 patients). Patients who underwent rescue PCI were excluded. Due to lacking clearance data, we used a serum creatinine level > 130 $\mu\text{mol/l}$ to define RD patients. We compared in each reperfusion group: (1) The success of revascularization (TIMI III flow restoring with $< 20\%$ residual stenosis after PPCI, pain relief with ST regression $> 50\%$ 60 min after thrombolysis) and (2) the in-hospital mortality rate after reperfusion success between the RD patients (RD+) and normal renal function patients (RD-). **Results:** Ninety patients (13%) had RD, 50% of which underwent PPCI, and 50% received thrombolytics. Among RD+ and RD- groups, baseline characteristics were similar between the two reperfusion groups.

In the PPCI group, although TIMI flow was similar before angioplasty ($p = 0.82$), TIMI III restoring was significantly lower in the RD+ group (78.6% vs 91.8%, $p = 0.013$). Suboptimal result was also higher in the RD+ group (13.6% vs 2.7%, $p < 0.001$), but ST regression after TIMI III achievement was similar in the 2 groups ($p = 0.43$) reflecting probably no microvascular damage.

In the thrombolysis group, successful reperfusion was also significantly lower when RD exists (58% vs 74%, $p = 0.03$).

After successful reperfusion, in-hospital mortality is higher among RD+ patients in the PPCI group (33.3% vs 4.3%, $p < 0.001$), whereas it is similar after successful thrombolysis (2.6% vs 0%, $p = 0.42$).

Conclusion: RD reduces either PPCI or thrombolysis success, with no proven microvascular damage after PPCI. In-hospital prognosis is however worse in RD group only after successful PPCI, but not after successful Streptokinase thrombolysis.

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Right ventricular function in asymptomatic type 2 diabetic patients: A conventional and tissue doppler echocardiographic imaging study

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Introduction: Cardiac adverse effects influenced by diabetes have been demonstrated thus far for the left ventricle. Right ventricular dysfunction is relevant in a variety of disease states affecting both the course and prognosis. Therefore assessment of right ventricular performance is also an important issue in diabetic patients.

Aim of the work: To study right ventricular systolic and diastolic functions using conventional and tissue Doppler echocardiographic imaging in asymptomatic type 2 diabetic patients and to assess the relationship of RV functions to diabetes severity and complications.

Patients and methods: Fifty patients with type 2 diabetes with no cardiac diseases were prospectively enrolled. The control group included fifteen healthy volunteers. Patients with hypertension, valvular or coronary heart disease were excluded. Full clinical evaluation including fundus examination, laboratory work up including (FBS, HbA_{1c}, hs-CRP, S. creatinine and albuminuria), 12 lead ECG and full conventional and tissue Doppler echocardiographic assessment of both ventricles.

Results: Right ventricular diastolic function was abnormal in diabetic group as evidenced by significantly lower values of peak early diastolic velocity Em ($p < 0.001$) and prolonged IVRT ($p < 0.001$) compared to control group. A significant reverse relationship between FBS and RV systolic function assessed using fractional area change ($r = -0.280, p = 0.049$). RV diastolic dysfunction was significantly correlated with severity and complications of type 2 DM. 1 – FBS and RV regional IVRT, ($r = 0.352, p = 0.012$). 2 – HbA_{1c} and Em of RV, ($r = -0.403, p = 0.004$). 3 – Albuminuria and RV regional IVRT, ($p = 0.009$). 4 – hs-CRP and Am of RV, ($r = 0.357, p = 0.011$).

Conclusions: Type 2 diabetes mellitus affects right ventricular diastolic function in the presence of normal right ventricular systolic function. Impairment was evident mainly by TDI-derived indices and correlated significantly with severity and complications of type 2 diabetes mellitus.

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Role of 64-slice multidetector computed tomography in the diagnosis of abnormal vascular connections in congenital heart disease

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Aim: The aim of this study was to evaluate the role of 64-slice multi-detector computed tomography in the diagnosis of abnormal systemic and pulmonary vascular connections and the associated congenital anomalies in comparison to echocardiography.

Methods and results: The study enrolled 100 consecutive patients with the provisional diagnosis of congenital heart disease referred for further evaluation by MDCT. Low dose protocol was used for imaging. ECG-gating was used only when coronary anatomy needed to be defined.

Ninety-one abnormal vascular connections were found in 73 cases. Abnormal venous connections were further classified into 19 anomalous pulmonary venous connections and 13 anomalous systemic venous connections. Abnormal arterial connections include systemic-systemic connections: 8 coronary artery fistulas, 7 cases of systemic collaterals in aortic coarctation and 2 vascular rings, as well as systemic-pulmonary connections: 38 patent ductus arteriosus (PDA), 4 major aortopulmonary collateral arteries (MAPCAs) and one coronary artery to pulmonary artery fistula.

There was significant agreement between echocardiography and MDCT in the diagnosis of partial anomalous pulmonary venous connections (PAPVC) and total anomalous pulmonary venous connections (TAPVC) but not in determining the site drainage, in which MDCT was more accurate. In comparison to MDCT, echocardiography had a sensitivity and specificity of 90.9–95.5% respectively in the diagnosis of PAPVC and 100% and 98.9% in the diagnosis of TAPVC, while only a sensitivity of 45.5% in determining the site of drainage in PAPVC and 75% in TAPVC. However, echocardiography showed all intracardiac defects including that missed by MDCT. The majority of PAPVC were right-sided anomalous veins. Most TAPVC were supracardiac and half were isolated TAPVC. All anomalous systemic venous connections were incidentally discovered by MDCT and were not detected by echocardiography. The left superior vena cava was a component of a duplicated SVC in all cases. The majority of persistent azygos venous system cases were associated with complex CHD.

MDCT clearly showed the origin, course and termination of coronary artery fistulas. Echocardiography showed the intracardiac defects in all cases, including that missed by MDCT. Three fistulas originated from the right coronary artery, five from the left coronary artery and one fistula originated from both the right coronary artery and the left circumflex. All coronary-cameral fistulas drained into right cardiac chambers. Less than half were associated with other CHD. Systemic collaterals in coarctation were clearly demonstrated by MDCT, none of which could be visualized by echocardiography. MDCT was not indicated for the diagnosis of PDA but for the associated CHD. Furthermore, MDCT clearly showed MAPCAs with echocardiography being able to detect one case.

Conclusion: MDCT provides complete and accurate visualization of extracardiac vasculature but is less reliable for intracardiac defects. It can be used safely in neonates with complex congenital heart disease. It has advantages of non-invasiveness, fast acquisition, high spatial and temporal resolution and three-dimensional reconstruction.

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Role of ankle-brachial pressure index as a predictor of coronary artery disease severity in diabetic and non-diabetic patients

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