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Echocardiographic correlates of pulmonary hypertension in adult patients with atrial septal defect

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Aim: Aim of this study is to identify echocardiographic factors that correlate with pulmonary hypertension (PH) in adults with ostium secundum atrial septal defect (ASD).

Methods: From November 2009 to November 2013, 92 adults with ASD were studied. All had clinical history and transthoracic echocardiogram.

Results: 39% of patients had severe PH defined as systolic pulmonary artery pressure (sPAP) of 70 mm Hg or more. The size of ASD (31.84±8.21 mm) and a right sided tricuspid inflow E wave to tissue Doppler e´wave ratio >6.2 correlated with severe PH with AUC of 0.704 (CI 95%=0.59 to 0.818, p<0.001) and 0.65 (CI 95%=0.531 to 0.773, p<0.014), respectively. Multivariate logistic regression showed that sPAP>70 mm Hg was the variable that most precisely correlated with right ventricular (RV) dysfunction as evidenced by TAPSE <17 mm and RV fractional shortening area (RVFSA) <35%. Left ventricular (LV) diastolic function was also significantly reduced in the group with severe PH mitral inflow E/A ratio of 0.73±0.23 vs. 1.13±0.42 in the group without severe PH (sPAP<70 mm Hg, (p=0.001). The pulmonary (Qp) to systemic (Qs) cardiac output ratio (3.09±1.12) and right sided tissue Doppler S<9.5 cm/sec most accurately predicted a Tei index>0.55.

Conclusions: Larger size of ASD using the QP/QS ratio and increased right-sided tricuspid E/e' ratio correlated with severe PH with a sPAP of 70 mm Hg or more. Patients with severe PH had more severe RV dysfunction as evaluated by TAPSE and RVFSA in comparison to those with PH <70 mm Hg. LV diastolic function was also reduced in the severe PH group.

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Comparison of different risk scores for predicting contrast induced nephropathy and short outcome after primary percutaneous coronary intervention in patients with ST elevation myocardial infarction

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Background: Accurate risk stratification for contrast-induced nephropathy (CIN) is important for patients with ST-segment elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary intervention (PPCI).

Aim: Aim of this study is to compare between different risk scores for predicting contrast induced nephropathy and short outcome after primary percutaneous coronary intervention in patients with ST elevation myocardial infarction.

Material & Methods: We prospectively enrolled 100 patients with STEMI undergoing PPCI. Mehran; Gao; Chen; age, serum creatinine, or glomerular filtration rate, and ejection fraction (ACEF or AGEF); and Global Registry for Acute Coronary Events risk scores were calculated for each patient. The prognostic accuracy of the six scores for CIN, and in-hospital death and major adverse clinical events (MACEs) was assessed. CIN was defined as an increase of 25% or 0.5 mg/dL serum creatinine within 2-3 days after PCI. The data was analyzed using Chi-square test using SPSS software.

Results: All risk scores had relatively good predictive values for CIN (AUC: 0.671 to 0.829) and performed well for prediction of in-hospital death (0.838 to 0.973), MACEs (0.815 to 0.926). The Gao and Mehran risk scores had better predictive accuracy for CIN. While GRACE and Mehran risk scores had better predictive accuracy for in-hospital MACEs and death.

Conclusion: Risk scores for predicting CIN perform well in stratifying the risk of CIN and in-hospital death or MACEs in patients with STEMI undergoing PPCI. The Gao and Mehran risk scores appear to have greater prognostic value.

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