sured by cardiac catheterization in patients with severe AS without other valve disease.

**Methods and results** From January 2010 to December 2012, we included 85 consecutive patients with severe AS scheduled for clinically indicated cardiac catheterization study. Comprehensive transthoracic echocardiography (TTE) was performed in all patients within 24 hours of the hemodynamic study. Mean age was 75±9 years, 65% of them were male, 65%, 22% and 54% had respectively a history of hypertension, diabetes, and dyslipidemia. NYHA functional class was II in 63% of patients. By TTE, mean LV ejection fraction, max left atrial (LA) volume indexed, were respectively 60±9%, and 38±16mL/m². Mean mitral septal E/e’ ratio was 18.6±9. Cardiac catheterization found 60% cases of coronary artery disease and the mean PCWP was 13.5±7mmHg. As compared to patients with low PCWP (<13mmHg), those with higher PCWP had similar LVEF, and AS severity but significantly higher LA indexed volume (41±19 vs. 29±10mL/m², p=0.004) and septal E/e’ (22±10 vs. 14±7.4, p=0.001). A maximal LA indexed volume >29ml/m² predicted a PCWP>13mmHg with a sensitivity of 77% and a specificity of 62% (area under the curve=0.73). Similarly, mitral annular septal E/e’ >12 predicted PCP>13mmHg with a sensitivity of 90% and a specificity of 60% (area under the curve=0.73).

**Conclusion** In severe AS patients, maximal LA indexed volume >29/ml/m² and E/e’ ratio >12, derived from TTE, appear as good markers of elevated NYHA functional class was III in 63% of patients. By TTE, mean LV ejection fraction, max left atrial (LA) volume indexed, were respectively 60±9%, and 38±16mL/m². Mean mitral septal E/e’ ratio was 18.6±9. Cardiac catheterization found 60% cases of coronary artery disease and the mean PCWP was 13.5±7mmHg. As compared to patients with low PCWP (<13mmHg), those with higher PCWP had similar LVEF, and AS severity but significantly higher LA indexed volume (41±19 vs. 29±10mL/m², p=0.004) and septal E/e’ (22.4±10 vs. 14.7±4.1, p=0.001). A maximal LA indexed volume >29ml/m² predicted a PCWP>13mmHg with a sensitivity of 77% and a specificity of 62% (area under the curve=0.73). Similarly, mitral annular septal E/e’ >12 predicted PCP>13mmHg with a sensitivity of 90% and a specificity of 60% (area under the curve=0.73).

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