**Valvular Heart Disease**

**NET ATRIOVENTRICULAR COMPLIANCE IS AN INDEPENDENT PREDICTOR OF MORTALITY IN MITRAL STENOSIS**

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**Background:** Net atrioventricular compliance (Cn) has been reported to be a major determinant of elevation of pulmonary artery pressure in mitral stenosis (MS). We hypothesized that Cn may be useful in predicting prognosis, specifically death. This prospective study was designed to assess the prognostic value of Cn in a large series of MS patients undergoing percutaneous mitral valvuloplasty (PMV).

**Methods:** This study involved 211 consecutive patients with symptomatic rheumatic MS who underwent PMV between 2000 and 2011. Echocardiography was performed before and 24 hours after PMV. Doppler-derived Cn was estimated at baseline using a previously validated equation. The endpoint was all-cause mortality.

**Results:** During a median follow-up of 29 months, 31 patients (15%) died. Thirty-three patients underwent MV replacement and 8 repeated PMV, and were censored at the time of the procedure. In-hospital or procedure-related deaths were not included. In multivariate Cox proportional hazards model, adjusted for well-known markers of decreased survival in MS, Cn was an independent predictor of death, adding incremental prognostic value to age, NYHA functional class, and tricuspid regurgitation severity. A baseline Cn of ≤ 4 mL/mmHg was associated with a high risk of mortality (hazard ratio, 2.84; 95% confidence interval, 1.23 to 6.55; p=0.014), which remained significant after adjusting for demographics, clinical factors (including comorbidity index), pulmonary artery pressure, ventricular function, degree of mitral regurgitation (MR), and immediate procedural results (MR severity and mitral valve area after PMV). Survival rate at 1-, 3- and 5-year follow-up was 97%, 93% and 81% in patients with Cn>4 mL/mmHg compared to 89%, 71% and 64% in those with Cn ≤ 4 mL/mmHg.

**Conclusions:** Cn is an independent predictor of death in patients with significant MS, even after adjustment for important prognostic factors. Cn reflects the overall hemodynamic consequence of the mitral valve obstruction, and should be considered in evaluating mortality risk in this setting.