S7_3

Pulmonary Arterial Hypertension Pre- and Post- Transcatheter Aortic Valve Implantation

Diego Medvedofsky, Robert Klempner, Paul Fefer, Ilan Hay, Victor Guetta, Ilan Goldenberg, Amit Segev
The Heart Center, Chaim Sheba Medical Center, Israel

Background:
Transcatheter aortic valve implantation has become the treatment of choice for symptomatic patients with aortic stenosis (AS) and high surgical risk. Pulmonary hypertension (PH) has been shown to be associated with worse early and late outcomes after aortic valve surgery. Data regarding the effect of TAVI on PH are limited.

Methods:
We evaluated the characteristics and outcome of patients with systolic pulmonary hypertension referred to TAVI. Pulmonary hypertension was defined as systolic pulmonary arterial pressure (SPAP) >50mmHg as assessed by echocardiography. Patients with SPAP decrease after TAVI to below 50mmHg were compared to patients with persistent PH.

Results:
Of the 122 patients included in the present study, 49 (40%) patients had elevated SPAP prior to TAVI. This group of patients has presented with smaller aortic valve areas (representing patients with long-standing severe AS), greater degrees of mitral or tricuspid regurgitations, lower left ventricular ejection fraction and more prevalent COPD (all $p<0.05$). Following TAVI, 57% of the patients with prior PH experienced a reduction in SPAP to below 50 mmHg. Patients with persistent PH (SPAP>50mmHg) had higher 2-year mortality as compared to patients with SPAP decrease (p=0.013, Figure). Multivariable analysis identified COPD to be the most powerful predictor for persisting pulmonary hypertension (HR 3.9; 95%CI 1.5-9.9).

Conclusions:
Our data suggest that TAVI is associated with a significant reduction in pulmonary pressure in more than half of patients with pre-procedural PH. Persistent PH is associated with worse outcome. COPD identifies patients with persistent PH after TAVI.