Phantom of the Opera of TAVI: The Point of No Return

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Background: Diastolic dysfunction and pulmonary artery hypertension (PAH) are frequent findings in patients with severe aortic stenosis (AS) and their influence on clinical features and outcome is recognized. The question is whether TAVI can reverse this and lead to better survival.
Methods: Parameters of diastolic dysfunction as well as PAH were assessed with transthoracic echocardiography before TAVI, month and year after TAVI in 58 consecutive patients with severe AS and high risk for surgical aortic valve replacement. Tricuspid valve gradient was used as surrogate of PAH.
Results: Mean age was 80.6 years (range 58-91) and mean EuroSCORE was 24±14.7SD. E to A ratio at the baseline was 1.26±0.86, month after TAVI was 1.37±1.26 and 1.02±0.79 year after TAVI. Deceleration time (DT) at baseline was 190±86 ms at baseline, 207±80 ms month after TAVI and 215±58 ms year after TAVI. Peak e' lateral annular velocity was 5.7±1.2 cm/s at the baseline, 5.8±1.5 cm/s month after TAVI and 7.2±3.4 cm/s year after TAVI. Tricuspid valve gradient declined from 43±15 mmHg at baseline to 35±13 mmHg moth after TAVI an remains the same year after TAVI, 34±10 mmHg. General linear model multivariate test of repetitive measures did not show significant decrease of E to A ratio ($p=0.15$), no significant increase of DT ($p=0.51$), no significant increase in lateral e' velocity ($p=0.13$). Tricuspid valve gradient fall significantly month after TAVI ($p<0.05$) without further decline and without influence on one year survival ($p=0.08$).
Conclusion: Diastolic left ventricular performance did not change over time after TAVI and has no impact on overall survival. Tricuspid valve gradient was reduced significantly month after TAVI without further decline and without influence on one year survival.