

Post-Procedural Hypertension Following Transcatheter Aortic Valve Implantation: Incidence and Clinical Significance

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Objectives:

To investigate the blood pressure (BP) response after transcatheter aortic valve implantation (TAVI) and its correlation with short and mid-term clinical outcomes.

Background:

TAVI is an emerging therapy for aortic stenosis (AS) patients at high surgical risk. The acute hemodynamic sequelae of this procedure and their clinical relevance are yet unclear.

Methods: Consecutive patients who underwent TAVI in a single center were prospectively monitored for BP response during 5 post-procedural days. Clinical parameters, adverse events and medical treatment were recorded during hospitalization, at 30 days and at 12 months after the procedure. Patients were divided according to their post-procedural BP response into two groups: increased BP and stable BP.

Results:

One hundred and five patients were analyzed. Overall, systolic BP increased immediately after TAVI in the entire cohort by an average of 15 ± 31 mmHg. This rise was sustained and led to intensification of anti-hypertensive treatment in 53 patients (51%), these patients were designated as the increased BP group. The increase in systolic BP after TAVI was associated with an increase in stroke volume and cardiac output and was not related to age, baseline cardiac function or procedural outcomes. Patients with increased BP after TAVI had a significantly better prognosis with less adverse events in hospital (21% vs. 62%, $p<0.01$), after 30 days (30% vs. 71%, $p<0.01$) and after 12 months (53% vs. 83%, $p<0.01$) as compared with patients with stable BP.

Conclusions:

After TAVI, a substantial number of patients have a significant rise in systolic BP necessitating long term treatment. This increase in BP is associated with an increase in cardiac output and predicts a better clinical outcome.