

Transcatheter Aortic Valve Implantation: Learning Curve Makes the Difference

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Introduction:

Transcatheter aortic valve implantation is an emerging technology for the treatment of patients with severe aortic stenosis that are at high surgical risk. Randomized trials to assess TAVI and compare its outcome with surgical AVR are conducted in centers that performed less than ten procedures. The present study examined the effect of the learning curve on TAVI outcome.

Methods:

A single center data base of one hundred TAVIs with the self-expandable Medtronic-CoreValve system was analyzed according to chronological experience in four consecutive quartiles.

Results:

Median age of the patients was 81 years (interquartile range 58 to 91 years), median Logistic EuroScore 22 and baseline echocardiographic mean aortic valve gradient of 45 mmHg, with no difference between the four quartiles. Number of cases increases significantly in Q4 (p0.01). Conscious sedation use was significantly increased during Q3 and Q4. Significant aortic regurgitation (≤ 2) occurrence post procedure was significantly reduced at Q4 as were the need for pacemaker implantation and in-hospital stay. Thirty day mortality in the whole cohort was 5% with no major difference between the four quartiles.

Conclusions:

TAVI is a complex procedure that is performed in sick patients with multiple co-morbidities. The procedure calls for multiple steps that are new to treating physicians. Procedural outcomes are significantly improved following a prolonged learning curve. The results question the clinical validity of trials performed at centers during their initial TAVI experience.