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Catheter-Based Valve-Implantations Using CoreValve and Edwards-Sapien Devices

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Background: Transcatheter valve implantation (TAVI) is an alternative for surgery in patients with severe aortic-stenosis at high risk. We describe our experience with TAVI.

Methods: 131 patients were treated and followed prospectively: 62 trans-femoral Corevalve; 12 trans-axillary Corevalve; 1 trans-aortic Corevalve 1; 28 trans-femoral Edwards and 28 trans-apical Edwards. This patient group (60.7% women) was characterized by relatively older age (mean 81.5 years), and high prevalence of severe co-morbidities: 31.5% diabetes mellitus, 27% post thoracotomy, 33.8% chronic renal failure, 28.4% pulmonary disease. The mean logistic EuroSCORE was 22.9% and STS 9.8%. Six cases (4.8%) were performed in degenerated bioprosthetic valves.

Results: The rate of acute procedural success was 97.0%. Six patients (4.6%) died within 30-days after the procedure and 7 patients died after that period to one year (95.4% survival @30-days and 87.0% @360-days). There were 2 cases (1.5%) needed urgent cardiac surgery due to tamponade. Vascular complications were noted in 22 patients (16.9%) mostly treated percutaneously. Six patients sustained stroke (4.6%). Permanent pacemaker implantation was required in 20 patients (15.3%): 24.3% in Corevalve and 3.7% in Edwards. Significant (grade >2) post-procedural aortic-regurgitation was noted in 4 patients (3.1%); acute renal failure in 4 patients (3.1%), blood transfusion in 23 patients (17.7%). Two patients (1.5%) needed additional valve due to misplacement. The median length of hospital stay was 5 days. Mean valve gradients decreased from 52mmHg to 8.6mmHg ($p<0.001$). At follow-up Symptomatic improvement was evident in 98% of patients.

Conclusions: TAVI is a feasible and effective procedure for the treatment of patients with severe aortic stenosis who are at high-surgical risk. Complication rate should be considered in the risk vs. Benefit assessment of patients and by a multidisciplinary 'heart team'.