

Transcatheter aortic valve implantation for severe aortic stenosis

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1 Transcatheter aortic valve implantation is first-line therapy for high-risk patients with severe symptomatic aortic stenosis

Transcatheter aortic valve implantation reduces risk of death in patients for whom the risk of surgical aortic valve replacement is prohibitive¹ and has similar rates of survival in patients who are considered at high risk of complications or death from surgery.² Candidates should have a life expectancy greater than 1 year and expect to have a meaningful improvement in quality of life.³ Candidates should undergo risk assessment by a comprehensive heart team that includes interventional cardiologists, cardiac surgeons and anesthesiologists.³ Several risk scores are used to assess surgical risk, but major risk factors such as frailty and medical comorbidities should be considered as part of risk stratification (Box 1).³

2 The procedure should be performed at a dedicated centre of excellence specializing in treatment of valvular heart disease

There is strong evidence suggesting that the rate of complications after transcatheter aortic valve implantation is dependent on the volume of these procedures performed, with the highest-volume centres having the lowest rate of complications.⁴

3 There are unique postoperative risks associated with transcatheter aortic valve implantation

The implantation procedure carries an increased risk of paravalvular regurgitation (6.1%–15.5%); major vascular access complications, such as retroperitoneal hematoma (6%–32%); and conduction disease (6.6%–38.7%).⁵ Patients who develop new left bundle branch block after transcatheter aortic valve implantation should undergo continuous electrocardiogram monitoring for 48–72 hours and be considered for further monitoring or permanent pacemaker implantation if conduction abnormalities persist.⁶

4 While thromboprophylaxis is recommended after transcatheter valve replacement, the choice of therapy is controversial

TAVI valves are bioprosthetic and valve thrombosis is uncommon. Although evidence is sparse, a current guideline recommends dual antiplatelet therapy for 3 to 6 months in patients without other indications for anticoagulation.³

5 Routine endocarditis prophylaxis is recommended for patients with an implanted transcatheter aortic valve

Prophylaxis against infective endocarditis is recommended before high-risk and dental procedures that involve manipulation of the oral mucosa, gingival or periapical region of the teeth (Box 1).³

Box 1: Resources for clinicians

- Society of Thoracic Surgeons Online Risk Calculator: <http://riskcalc.sts.org/stswebriskcalc/#/>
- European System for Cardiac Operative Risk Evaluation (EuroSCORE) II calculator: <http://euroscore.org/calc.html>
- American Association of Endodontists Antibiotic Prophylaxis 2017 Update: https://www.aae.org/specialty/wp-content/uploads/sites/2/2017/06/aae_antibiotic-prophylaxis-2017update.pdf

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