Long-term Outcomes and Predictors of Mortality in Low Surgical Risk Patients Undergoing Transcatheter Aortic Valve Implantation

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Background: Transcatheter aortic valve implantation (TAVI) is an alternative treatment for severe symptomatic aortic stenosis (AS) in patients at increased surgical risk. However, less is known about long-term outcomes among patients with severe AS who are at low surgical risk.

Methods: All patients who underwent TAVI at two centres between August 2008 and December 2017 were reviewed and excluded if they were lost to follow up. Patients were divided into three cohorts based on the Society of Thoracic Surgery (STS) risk score (<4 = low, 4-8 = intermediate, >8 = high). The primary endpoint was all-cause mortality.

Results: A total of 593 patients were included, with 273 (46%) patients deemed low risk. Mean AV gradient was similar (49mmHg vs. 50mmHg vs. 46mmHg, p = 0.10). The median follow-up was 861 days with a maximum follow-up period of 10 years. Low-risk patients had lower 12-month mortality (4% vs. 10% vs. 15%) and 5-year mortality (18% vs. 30% vs. 47%) compared to moderate- and high-risk groups. In low-risk patients, independent predictors of all-cause mortality were prior atrial fibrillation (HR 4.15, 95%CI 1.26-13.66), pre-TAVI left ventricular ejection fraction (HR 0.95, 95%CI 0.91-0.98), and frailty score (HR 2.05, 95%CI 1.07-3.91).

Conclusion: Low-risk patients undergoing TAVI display less than half of the mortality rates of higher-risk patients. Long-term randomised studies are required to determine the safety of TAVI in this cohort of patients compared with surgical aortic valve replacement.

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Long-term Outcomes of Percutaneous Coronary Intervention in Patients with Diabetes Mellitus: Results from a Large Multi-centre Australian Registry

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Background: Advances in diabetes management, particularly widespread use of SGLT-2 inhibitors, have result in cardiovascular risk reduction but further analysis of percutaneous coronary intervention (PCI) outcomes in diabetics is required.

Method: We prospectively enrolled 20,393 patients in the Melbourne Interventional Group (MIG) Registry from 2005-2014. Patient, procedural characteristics and clinical outcomes were compared by DM status, with target-vessel revascularisation (TVR) and myocardial infarction (MI) used as markers of PCI durability.

Results: Patients with DM were more likely to be female, obese and have renal impairment (p<0.001). DM patients were more likely to receive drug-eluting stents (DES) than bare-metal stents (BMS) (p<0.001). There was no difference between groups in stent length, however those with DM received smaller diameter stents (p<0.001) and more often completed ≥12 months of dual antiplatelet therapy (p<0.05).

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<thead>
<tr>
<th></th>
<th>DM (n=4984)</th>
<th>Non-DM (n=15409)</th>
<th>P</th>
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<tbody>
<tr>
<td>30-day TVR (%)</td>
<td>2.1</td>
<td>1.9</td>
<td>0.25</td>
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<tr>
<td>30-day MI (%)</td>
<td>1.7</td>
<td>1.4</td>
<td>0.1</td>
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<tr>
<td>12-month TVR (%)</td>
<td>6.9</td>
<td>5.4</td>
<td>&lt;0.001</td>
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<tr>
<td>12-month MI (%)</td>
<td>5.1</td>
<td>3.1</td>
<td>&lt;0.001</td>
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