Abstract: P1851

**Long-term outcomes of transcatheter versus surgical aortic valve replacement in low risk, elderly patients with severe aortic stenosis**

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**Topic(s):**
Aortic Valve Intervention

**Citation:**

**Background:** Although surgical aortic valve replacement (SAVR) is recommended for symptomatic severe aortic stenosis (AS) patients at low surgical risk, there is a growing need for an expansion of transcatheter aortic valve replacement (TAVR) as an alternative to SAVR for elderly AS patients at low operative risk.

**Purpose:** We tried to compare the long-term clinical outcomes of TAVR versus SAVR in elderly AS patients (=80 years old) at low surgical risk.

**Methods:** We consecutively enrolled 261 elderly patients (131 men; 83±3 years of age) with symptomatic severe AS and EuroSCORE II < 4%, who underwent SAVR or TAVR from 2010 to 2018. Heart Team made the decision between SAVR and TAVR according to the individual patient’s preference and characteristics. SAVR was performed on 93 patients (SAVR group), whereas TAVR was chosen for 168 patients (TAVR group). The primary end point was cardiac mortality including procedure-related death, and the secondary end point was all-cause death and cardiovascular event.

**Results:** Baseline characteristics were similar between the two groups, but the TAVR group was significantly older than the SAVR group (83±3 vs 82±2 years; p<0.01). Device was successfully implanted in all the patients and there was 1 in-hospital mortality in the TAVR group and 3 in-hospital mortalities in the SAVR group (p=0.13). During a median follow-up of 24 months (IQR, 9-45 months), there were 22 deaths (13.1%) including 8 cardiac deaths (4.8%) in the TAVR group and 16 deaths (17.2%) including 9 cardiac deaths (9.7%) in the SAVR group. The rates of the primary and secondary end points were similar between two groups in the overall cohort and the propensity score-matched cohort (table). On subgroup analysis according to the presence of coronary artery disease (CAD), the only independent variable associated with cardiac mortality, the SAVR group had a significantly higher cardiac mortality rate than the TAVR group (15±7% vs 7±6% at 5 years, p=0.048) in 185 (71%) patients without CAD, whereas there was no significant difference among those with CAD.

**Conclusion:** In elderly AS patients at low surgical risk, TAVR was similar to SAVR with respect to long-term clinical outcomes. TAVR should be considered a treatment option for elderly patients who refuse to undergo surgery despite low risk.

<table>
<thead>
<tr>
<th></th>
<th>TAVR (n=168)</th>
<th>SAVR (n=93)</th>
<th>Overall cohort HR (95% CI) p value</th>
<th>TAVR (n=76)</th>
<th>SAVR (n=76)</th>
<th>PS-matched cohort HR (95% CI) p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac mortality</td>
<td>8</td>
<td>9</td>
<td>0.65 (0.25-1.71)</td>
<td>0.386</td>
<td>2</td>
<td>0.34 (0.07-1.61)</td>
</tr>
<tr>
<td>All-cause mortality</td>
<td>22</td>
<td>16</td>
<td>1.08 (0.56-2.08)</td>
<td>0.831</td>
<td>6</td>
<td>0.86 (0.30-2.43)</td>
</tr>
<tr>
<td>Cardiovascular event*</td>
<td>18</td>
<td>12</td>
<td>1.09 (0.52-2.28)</td>
<td>0.826</td>
<td>6</td>
<td>0.72 (0.26-1.98)</td>
</tr>
</tbody>
</table>

* Cardiovascular event was defined as the composite of cardiac mortality, hospitalization for heart failure, stroke, myocardial infarction, and reoperation.