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Cost-effectiveness of TAVI in patients at high surgical risk in the Belgian healthcare system - An exploratory analysis using contemporary data

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THEME: Interventions for Valvular Disease
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AIMS

Transcatheter aortic valve implantation (TAVI) for severe aortic stenosis is currently limited in Belgium to patients at extreme or high (HR) surgical risk. It is also subject to a volume cap. No cost-effectiveness analyses have been published in this setting for close to a decade, with previous analyses relying on early evidence of balloon-expanding TAVI devices. Our objective was to generate an estimate for the potential cost-effectiveness of TAVI compared to surgical aortic valve replacement (SAVR) in high risk patients using contemporary data of self-expandable TAVI devices.

METHODS AND RESULTS

We obtained detailed procedure costs using 2018 device reimbursement, physician fees, and a lump sum amount for materials. Hospitalization costs were derived from a health technology assessment and adjusted to 2018 costs. In addition, an alternative calculation of index treatment costs was derived from a random sample of 2018 hospital bills collected from Antwerp University Hospital (n=11 TAVI, n=9 SAVR). Relevant adverse event costs through two years after index procedure were considered based on incidences observed in the CoreValve HR Trial and costs derived from the Belgian APR-DRG system. Lifetime health outcomes for the HR population were computed using a previously published decision-analytic model projecting unadjusted and quality-adjusted life year (LY/QALY) gain based on Belgian lifetable data. A discount rate of 3.0% and 1.5% was applied to costs and QALYs, respectively.Over the simulated patient's lifetime, TAVI was projected to add 0.64 LYs (5.45 vs. 4.81) and 0.41 QALYs. TAVI lifetime costs were â,¬8,518 (â,¬37,669 vs. â,¬29,151) and â,¬9,093 (â,¬33,851 vs. â,¬24,758) higher than SAVR costs, using the first and second approach to index cost calculation, respectively. The actual hospital bill-based approach yielded length of stay estimates of 11.8 vs. 10.9 days for TAVI and SAVR, respectively. The resulting estimated cost-effectiveness was â,¬20,877/QALY and â,¬22,286/QALY for the two approaches, respectively.

CONCLUSIONS

The results of this exploratory analysis suggest TAVI is a cost-effective intervention for high risk patients in the Belgian healthcare system. Our findings underscore the need to consider contemporary data to inform decision making about expanded therapy adoption.

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