

- Title** Efficacy and safety of percutaneous and transapical aortic valve implantation in the treatment of severe aortic stenosis. Systematic review
- Agency** Avalia-t. Axencia de Avaliación de Tecnoloxías Sanitarias de Galicia
Edificio Administrativo San Lázaro 15781 Santiago de Compostela
Telf.: 881 541 831 Fax: 881 542 854 e-mail: avalia-t@sergas.es web page: <http://avalia-t.sergas.es>
- Reference** avalia-t2012/13-1, http://www.sergas.es/Docs/Avalia-t/avaliat201213_1tavi_RS.pdf

Aim

To analyse the safety, effectiveness and efficacy of percutaneous or transapical transcatheter implantation of bioprosthetic aortic valves in the treatment of severe symptomatic aortic stenosis.

Conclusions and results

Transcatheter implantation and conventional surgery display a similar efficacy in the treatment of symptomatic aortic stenosis among patients with high surgical risk.

On applying the selection criteria, 12 assessment reports and 25 primary studies were finally included in the systematic review. A breakdown by epidemiological design showed that the above primary studies comprised 18 case series (5 multicentre), 2 comparative studies and 5 randomized clinical trials. According to the available evidence, there was a higher frequency of paravalvular regurgitation (valvular leaks) with TAVI than with conventional surgery, and the transfemoral approach seemed to be associated with a higher rate of vascular complications. It appeared that patients treated with the CoreValve prosthesis had a greater need of pacemaker implantation than those who had the Edwards SAPIEN transcatheter heart valve implanted. Despite these complications, TAVI registered a mortality rate similar to that of surgery.

Recommendations

The use of TAVI is recommended in carefully selected patients, whose clinical situation (assessed on the basis of scores or presence of comorbidities) renders surgical risk unacceptable or who present with contraindications for surgery.

Methods

A search of the scientific literature was made, covering the following databases: Centre for Reviews and Dissemination (CRD); Medline (PubMed); EMBASE (Ovid); ISI Web of Science (Web of Knowledge, WoK); Índice Médico Español (IME); Current Controlled Trials (CCT); International Standard Randomised Controlled Trial Number (ISRCTN); and ClinicalTrial.gov. This process was completed by a search of meta-search engines (Google Scholar) and websites of national and international organizations and assessment agencies. The strategy was implemented in July 2012 and monthly updates were conducted to retrieve recently published studies. Two reviewers, acting independently,

selected the papers on the basis of pre-established inclusion/exclusion criteria. The data were then summarised in evidence tables and the methodological quality of the studies was separately assessed by two researchers using the scale issued by the Scottish Intercollegiate Guidelines Network.

Further research/reviews required

Transcatheter aortic valve replacement is a technique that raised great interest, which generates the publication of a large volume of studies, so it is recommended to update this report when new evidence is published.

Written by

Janet Puñal Riobóo, avalia-t, Galicia (Spain).