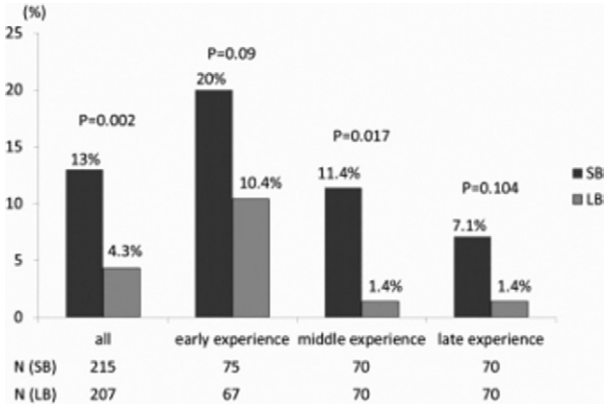


**TCT-832**

**Epidemiology of Severe Aortic Stenosis in the Elderly: A Systematic Review and Meta-Analysis of Published Prevalence Estimates**

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**Background:** The prevalence of degenerative Aortic Stenosis (AS) is strongly linked to the phenomenon of population aging. While elderly patients form the majority of patients treated with AS, comorbidities place them at high for surgical aortic valve replacement (SAVR). With the new treatment option of transcatheter aortic valve implantation (TAVI), also patients formerly deemed inoperable can now be treated. Robust estimates in an elderly population remain unclear. The objective of this study is to perform a systematic review (SR) and meta-analysis (MA) to identify observational population-based studies that report prevalence of severe AS in persons > 70yrs.
**Methods:** A search of the published literature was conducted in Feb 2012 using Medical databases. General population observational studies, surveys, registries that reported the prevalence of degenerative severe AS in elderly persons (>70yrs) were included. Although the methods used to diagnose severe AS differed slightly between studies, the cut-off diagnostic criteria used in this analysis, where severe AS is defined as aortic valve area $<1\ cm^2$, was taken from the ESC AS guidelines. A MA of prevalence estimates was conducted in order to provide a point estimate (with confidence interval) of severe AS prevalence. Heterogeneity was quantified using the I2 measure and its significance was tested with the Q test.
**Results:** A total of 1524 citations were retrieved for review and 7 observational studies reported severe AS in an elderly population. Five studies reported severe AS separately (from other forms of AS) and were included in the MA. The pooled prevalence of severe AS in persons >75yrs was 4.3% (95% CI 3.1%, 5.5%; heterogeneity, I2=52.8%, chi-square p-value=0.095). In persons >80yrs the pooled prevalence of severe AS was 4.8% (95% CI 3.4%, 6.3%; heterogeneity, I2=48.2%, chi-square p-value=0.122). Due to the moderate amount of heterogeneity in the estimates, which was deemed statistically non-significant, a fixed-effect approach was used.
**Conclusions:** Our unique SR shows a prevalence of almost 5% in the octogenarians have severe AS. These figures reconfirm AS as a major disease and form a starting point in light of new less invasive TAV implantation.

**TCT-833**

**Is Transcatheter Aortic Valve Implantation A Cost-Effective Treatment in Patients Who Are Ineligible For Surgical Aortic Valve Replacement?**

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**Background:** Transcatheter Aortic Valve Implantation (TAVI) offers an alternative treatment option in patients who are not eligible for surgical aortic valve replacement (SAVR). In this patient group TAVI has been demonstrated to improve survival and Health Related Quality of life. Cost-effectiveness analysis compares the costs and clinical outcomes of an intervention in order to evaluate the extent to which it provides value for money. Cost-effectiveness thresholds, representing the maximum amount societies are willing to pay for a unit of additional benefit (typically expressed as Quality Adjusted Life Years – QALYs), are used in the assessment of health technologies. This review compares published cost-effectiveness studies performed on TAVI vs. medical management (MM) in patients ineligible for SAVR.
**Methods:** The Medline database was systematically searched and health technology assessment (HTA) reports were analyzed in order to retrieve published cost-effectiveness models. An internationally accepted checklist was used to assess all aspects of each model and to illustrate similarities or differences.
**Results:** Three cost-effectiveness models were identified. The first publication appeared in Heart in November 2011 (Watt et al). More recently, in 2012, another two cost-effectiveness analyses of TAVI were published: Neyt et al in BMJ Open and Reynolds et al in Circulation. The perspectives of three different country healthcare systems are therefore represented: UK, Belgium and US, respectively. Main results are shown in the table below:

| | Watt et al | Reynolds et al | Neyt et al |
|---|---|---|---|
| Currency | GBP | US (USD) | Euro's |
| Perspective | National Health Service | US Healthcare System (modified societal) | Belgian Healthcare Payer |
| Time horizon | Lifetime horizon | Lifetime horizon | 3 years |
| Modelling approach | Markov | Trial based evaluation with extrapolation | Markov |
| Discount rate (Costs) | 3.5% p.a. | 3% p.a. | 3%.p.a. |
| Discount rate (Benefits) | 3.5% p.a. | 3% p.a. | 1.5% p.a. |
| Incremental Cost | £25,300 | $79,837 | €33,200 |
| Incremental effect (QALY) | 1.50 | 1.3 | 0.74 |
| ICER (original) | £16,700 | $61,889 | €44,900 |
| ICER (USD) (converted using OECD PPP 2010) | $25,340 | $61,889 | $51,950 |

**Conclusions:** Cost effectiveness evaluations on TAVI in the treatment of patients ineligible for SAVR have been reported in three different countries. In those countries, thresholds, discount rates, medical costs, modeling approach and health care systems are different. Despite these differences, the published analyses show that TAVI is a cost-effective treatment when compared to optimal MM in patients unsuitable for SAVR replacement.

**TCT-834**

**Qualitative Assessment on TAVI utilization: a European Perspective**

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**Background:** TAVI has been introduced to offer a new treatment option in patients who are not eligible for surgical AVR and it has been demonstrated to improve survival and Health Related Quality of life. In Europe just over 18000 procedures were performed in 2011. This figure is set to grow depending on the epidemiology of the disease, the demographics of the population, clinical trials advancement as well as regulatory and reimbursement approvals. Significant differences in TAVI rates continue to exist within Europe in 2011 due to different country healthcare systems.
**Methods:** A qualitative market survey was piloted amongst a group of 65 implanting centers from 9 European countries. The aim is to assess their perception on what the main barriers in addressing disparities in accessing TAVI across Europe are. Telephone interviews were conducted with cardio-thoracic centers based on pre-arranged questionnaires.
**Results:** Based on the reported TAVI implant rate per million inhabitants, 86% of the interviewees think that the medical need of treating patients with severe symptomatic aortic stenosis ineligible for conventional surgery is still unmet. In 2011 these centers assessed 5770 patients with severe symptomatic AS. 2120 (36.7%) were considered at high risk for surgical AVR and indicated for TAVI. Only 1211 patients (55%) received TAVI, 276 (12%) were treated with Balloon Aortic Valvuloplasty, 399 (18.1%) received treatments with drugs only, and 314 (14.2%) were managed using other medical management approaches. The decision to not refer 45% of the patients with severe symptomatic aortic stenosis to TAVI was based upon different reasons (such as budget constraints, national reimbursement issues, hospital capacity, clinical assessment).
**Conclusions:** This first pilot survey suggests that, despite TAVI being accepted as standard of care for patients suffering from severe AS, other inter-related reasons, such as budgetary constraints and patient's health expectancy hamper the drive for a wider TAVI adoption. Financial limits like budget constraints and hospital capacity represent more than 60% of reasons for denying a patient to be treated with TAVI.

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