

Sex Differences in Outcomes After Transcatheter Aortic Valve Implantation (TAVI)

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1 Introduction

Transcatheter aortic valve implantation (TAVI) is a minimally invasive procedure used to treat severe aortic stenosis especially in patients ineligible for surgical aortic valve replacement (SAVR) due to high risk of developing complications. Even in patients eligible for SAVR, TAVI is becoming a viable option due to evidence of lower risks of all-cause death, cardiovascular death, as well as certain other complications, as well as a shorter in hospital recovery time compared to SAVR. Although, other evidence suggests that SAVR may be still be the safer option for yet other complications. Given the great advantages TAVI brings to aortic stenosis treatment, it would be beneficial to understand how different factors affect TAVI outcomes so as to design the safest and most effective, evidence-based treatment plans for patients of aortic stenosis.

My study focuses particularly on how a patient's sex (gender) influences his or her TAVI outcomes, a question which has been moderately investigated by other research studies, but has often yielded mixed, contradictory, or inconclusive results. Moreover, I am specifically interested in Sex-Based TAVI Outcomes for patients in Thailand, having consulted papers on this topic specifically in Asian patients and seen potential divergences in results from studies done on western populations. Thus, I believe conducting a small retrospective study on this topic based on King Chulalongkorn Memorial Hospital (KCMH) patients who underwent TAVI would help bring further understanding to this topic and would benefit future treatment plans for such patients in Thailand too.

2 Objective

Primary outcome: To determine sex differences in in-hospital mortality post-TAVI

Secondary outcome: To determine sex differences in in-hospital, at 30 days post-TAVI complications including cardiovascular mortality, myocardial infarction, stroke and transient ischemic attack, bleeding complications, vascular complications and implantable cardiac devices.

Why these outcomes?

In hospital mortality is a very important, and easily determined outcome, which should be noted in all medical records and thus easily determined and useful to analyze.

These post-30 days complications are important post-TAVI clinical endpoints used to determine success, safety, and effectiveness of TAVI as described in the Valve Academic Research Consortium (VARC)-2 initiative and many of them are also recorded in KCMH Patient medical records. These secondary outcomes may also have some correlation to the primary outcome.

3 Research Methodology

Target Population: all patients with severe symptomatic aortic stenosis undergoing TAVI at King Chulalongkorn Memorial Hospital.

Inclusion criteria:

- Age > 18 years
- Patients with severe symptomatic aortic stenosis undergoing TAVI Exclusion criteria:
- Active endocarditis or sepsis within 6 months before the TAVR procedure
- Hemodynamically unstable
- Life expectancy <12 months.

Methods:

Patients: all consecutive patients with severe symptomatic aortic stenosis undergoing TAVI at King Chulalongkorn Memorial Hospital collection from January 2011 to March 2022.

Sample size: 200 cases

Data Collection

Endpoints and Definitions:

Mortality: cardiovascular mortality, myocardial infarction, stroke and transient ischemic attack, bleeding complications, vascular complications.

A case record form will be used to collect necessary data from the medical records as the table 1.

Table 1	Male Case (%)	Female Case (%)
Age		
BMI		
Diabetes		
Atrial fibrillation		
Chronic renal insufficiency		
Coronary artery disease		
Carotid stenosis		
Peripheral vascular disease		
Prior stroke		
Prior pacemaker		
Anemia		
Transfemoral TAVI		
Outcome		
Death		
Acute kidney injury		
Stroke and transient ischemic attack		
Myocardial infarction		
Bleeding		
Vascular complications		

Patient Cohort Summary

Number of Patients
231 Total Patients
104 Male (45%)
127 Female (55%)

Age
Mean Age: 81.37
Male Mean Age: 80.99
Female Mean Age: 81.69

In the Majority of Patients
Diagnosis of Severe Aortic Stenosis
Used Transfemoral Route For TAVI

5 Results and Analysis

Currently in progress, to be updated within December 2022