

Age and Sex Distribution for Aortic Stenosis at First Presentation: A 10-year study

Aishwarya Roshan^{1*}, Jeffrey Yim^{2*}, Janarthanan Sathanathan², David Wood², Michael Y.C. Tsang², Darwin F. Yeung², Christina Luong², Parvathy Nair², John Jue², Kenneth Gin², Teresa S.M. Tsang²

Affiliation:

1. Department of Medicine, University of British Columbia, Vancouver, British Columbia, Canada.
2. Division of Cardiology, University of British Columbia, Vancouver, British Columbia, Canada.

*Co-first author

Background

Aortic stenosis (AS) is the most prevalent valvular heart disease in Canada, and its incidence is expected to only increase with the rise in aging populations. The cornerstone of AS diagnosis and monitoring is echocardiography. This pilot study aims to evaluate age and sex distribution, and burden of AS across a 10-year period at a single laboratory.

Methods

Following institutional review board approval, a retrospective chart review was performed of all echocardiograms of patients with AS (mild, moderate, and severe) diagnosed at Vancouver General Hospital and University of British Columbia Hospital between the years 2012 to 2022. We evaluated the age and sex distribution of each category of AS severity.

Results

During the 10-year study period (2012-2022), 9379 studies were identified to have mild (N= 5079), moderate (N= 1390), or severe (N= 2910) AS for the first time. The age at diagnosis of AS was significantly higher in females compared to males (mild: 76.2 vs 73.8; moderate: 77.2 vs 75.2; severe: 78.1 vs 74.9) (Table 1). The age differences between females and males increased with the severity of the AS with the biggest age difference occurring in the index diagnoses of severe AS (Figure 1).

Conclusion

For each AS severity category, females were significantly older than males. The absolute number of women in each category was lower, but the proportion of women in each severity category were similar. This data suggests that women are first diagnosed with AS at significantly older ages, which was more pronounced in the index diagnoses of severe AS. More studies are needed to better understand the impact of sex on AS diagnosis and how that may impact treatment decisions and outcomes.

Word Count: 278

Table 1. The age and sex distribution of patients during index diagnosis of aortic stenosis.

	Male (N = 5378)	Female (N = 4001)	P-value
Mild AS			
N	2874	2205	
Age (average)	73.8 ± 12.1	76.2 ± 12.2	<0.05
Age (median)	76 (67-83)	78 (70-85)	
Moderate AS			
N	837	553	
Age (average)	75.2 ± 11.9	77.2 ± 12.3	<0.05
Age (median)	77 (69-84)	79 (71-86)	
Severe AS			
N	1667	1243	
Age (average)	74.9 ± 11.6	78.1 ± 12.0	<0.05
Age (median)	76 (68-83)	80 (71-87)	

Figure 1. Sex Differences in Age at Index Diagnosis of Aortic Stenosis by Severity

