

Disparity between severe Aortic Stenosis prevalence and aortic valve replacement using the National Echo Database of Australia (NEDA)

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Background: Echocardiography (echo) is pivotal in evaluation of valvular heart disease. Traditionally, aortic valve replacement is delayed until symptoms develop, due to the long latent period. Recent data suggests earlier intervention in asymptomatic patients reduces mortality and hospitalisations.

Aim: To examine prevalence of severe AS within the National Echo Database Australia (NEDA), and compare with Medicare Australia data on surgical interventions.

Methodology: The NEDA database utilises novel database engineering to combine echo databases into a single database. To date, 307,656 echocardiograms from two laboratories have been included in this analysis (patient age 62.9 ± 16.9 years). Data was extracted and Medicare data was compared for 2014.

Results: Within NEDA database (2001-2015), an aortic valve area (AVA) was calculated in 139,372 patients (mean $2.4 \pm 0.89 \text{cm}^2$), mean transaortic gradient (MG) in 250,138 patients (mean $6.7 \pm 8.0 \text{mmHg}$). We defined severe AS as a MG $>40 \text{mmHg}$ or an AVA $<1.0 \text{cm}^2$. 8182 patients met our definition (age 73.9 ± 17.1 , AVA 0.82 ± 0.25 , MG 37.4 ± 18.5), and 892 in the 2014 year (age 75.9 ± 17.1 , AVA 0.82 ± 0.25 , MG 33.7 ± 18.3). In 2014, 3907 aortic valve replacements (AVR) were performed in Australia, and 189 in the NEDA geographical area. 703 patients (79%) of those with severe AS did not undergo AVR.

Conclusion: Severe AS is common, but AVR is only performed in 21% of these patients. Even accounting for comorbidities, age and transcatheter intervention, there appears to be a disparity between severe AS and AVR rates. In the era of earlier intervention to improve outcome, further investigation into this mismatch may be warranted.

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