

Referral to aortic valve replacement in young adult population

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Introduction: Aortic stenosis (AS) can be present among the younger age with congenital bicuspid aortic valve (BAV) or rheumatic heart disease (RHD). The data on the younger group is limited especially concerning echocardiographic follow up and predictors for referral to aortic valve replacement (AVR). We sought to identify clinical and echocardiographic parameters that may predict AVR in the young age group with AS.

Methods: Patients $f < 50$ years, with velocity of > 2 meters per second across the aortic valve, and at least 2 echocardiograms before surgery or during follow up period, were identified from the echocardiographic database. Logistic regression models were used to assess the associations.

Results: One hundred and fifty-one patients were included in the study, 70 with RHD, 54 with BAV and 27 others. Thirty-three patients (22%) were referred for AVR. The table depicts clinical and echocardiographic characteristics of the two groups of patients: those who underwent AVR and those who were free of surgery at the end of the follow up period. Age (@1st echo), sex, peak velocity (@1st echo) and peak gradient (@1st echo) each were found to be independent predictors for AVR.

Conclusion: age at first echo, male gender and peak velocity were independently associated with higher referral rate to aortic valve surgery.

	No surgery (118 patients)		AVR (33 patients)	
Age at first echo (years)	36.8+10.0		42.8+6.6	
Sex (male/female)	50/67		20/13	
Time of follow up (days)	1949+1194		1715+1259	
AV measurements	First echo	Last echo	First echo	Last echo
Peak Velocity (meter/second)	2.77+0.70	3.11+0.77	3.45+0.73	4.27+0.67
Peak Gradient (mm Hg)	32.9+18.5	40.6+21.0	48.9+22.2	74.4+22.9
Mean Gradient (mm Hg)	25.0+14.3	30.6+12.4	29.6+10.2	47.3+15.1