

P1778

Changes in size of ascending aorta in patients with bicuspid aortic valves

M.V. Garcia-Ruiz, V.M. Becerra Munoz, J. Robledo-Carmona, I. Rodriguez-Bailon, E. De Teresa Galvan

University Hospital Virgen de la Victoria, Department of Cardiology, Malaga, Spain

Introduction: It is well known that bicuspid aortic valve (BAV) is associated with premature valve dysfunction and ascending aorta dilation. However, limited data still exists regarding the rate of growth of the ascending aorta and the risk factors associated with it in these patients.

Methods: We analyzed prospectively baseline characteristics and echocardiographic data from 192 adult patients with BAV followed in an Adult Congenital Heart Disease Unit from 2007 until 2018.

The exclusion criteria were: patient's without at least 2 echocardiographic examinations >6 months apart, and patients with aortic valve and/or ascending aorta surgery at baseline or at follow up (except aortic coarctation). Following the ASE guidelines two cardiologists experts in echocardiography made all the studies at baseline and follow-up where they measured the aortic root and ascending aortic diameters, as well as typified the aortic valve and analyzed the degree of stenosis (AS) and regurgitation (AR). Statistical analysis was performed using Stata 13.1, and a p value of ≤ 0.05 was considered significant.

Results: 97 patients were finally included (70 male, mean age 37.56 ± 18.9 years). 66 patients had type A BAV (68.04%), 21 type B (21.7%), 2 type C (2.06%) and 7 unicuspid (7.22%). 19 patients had hypertension (19.59%)

and 9 had a corrected aortic coarctation. In baseline echocardiogram, 20 had aortic stenosis \geq moderate (20.6%) and 38 regurgitation \geq grade II (39.18%). Mean diameter of ascending aorta was $35.78 \text{ mm} \pm 6.73$.

With a mean follow-up time of 50.53 ± 27.05 months, mean rate of diameter progression was 0.76 mm/year at the proximal ascending aorta (95% CI 0.6 to 1.2). Progression was significantly higher in patients with moderate or severe aortic stenosis (0.65 vs. 1.17 mm/year, $p=0.021$). Age, sex, hypertension, AR and high baseline diameters ($\geq 40 \text{ mm}$ or $\geq 45 \text{ mm}$) were not associated with progression. In a direct comparison between the two more frequent forms of BAV, Type A and Type B, rate of diameter progression was significantly higher in Type B (0.61 vs. 1.05 mm/year, $p=0.044$).

In a multivariate analysis, none of the variables statistically associated to major progression were found to be predictors of growth of the ascending aorta.

Conclusions: In our population of BAV patients, mean rate of diameter progression at the proximal ascending aorta was 0.76 mm/year. Moderate-severe AS, and having type B BAV were associated, but not predictors, of higher growth rates.