Poster Session

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Utility and prognostic value of aortic valve area by magnetic resonance imaging in patients with aortic stenosis

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Classically clinical evaluation of patients with aortic stenosis (AS) is made using clinical and echocardiographic parameters but recently new imaging techniques as cardiovascular magnetic resonance (CMR) are being used increasingly in this clinical setting. We aim to assess utility and prognostic value of aortic valve area (AVA) by CMR in patients with AS regarding echocardiographic data.

METHODS: a retrospective cohort of patients with AS referred to CMR and cardiac echocardiography study for evaluation were included. Patients with known coronary artery disease or another significant valve disease were excluded. Clinical Follow up was performed to asses cardiovascular death, hospital admission or aortic valve replacement at the first year after imaging evaluation. Furthermore symptomatic status was assessed. Echocardiographic severity was estimated used peak and mean gradients . Additionally a CMR study including b-SSFPS for left ventricle ejection fraction (LVEF) quantification and phase-contrast sequences acquired at aortic valve plane to analyze aortic valve area (AVA) by planimetry was performed.

RESULTS: ninety eight patients, mean age 67+ 15 years, 52(58%) males, 23 (25%) with decreased left ventricular ejection fraction. A significant negative correlation was observed between AVA by CMR and echocardiographic gradients (-0.49 for mean gradient and -0.58 for peak gradient). AVA was strongly associated to symptomatic status (AUROC curve 0.66, p < 0.001). A multivariate logistic regression model including echocardiographic gradients,CMR, LVEF and AVA was performed and mean gradient

(OR:1.02 p = 0.01) and AVA (OR: 0.002 p = 0.001) were shown to be independent predictors of events.

Conclusion: 1.AVA by planimetry in phase-contrast CMR sequences is a valid tool to asses severity of aortic valve stenosis . 2 AVA was strongly associated to symptomatic status.3. AVA has proven to have additional prognostic value beyond echocardiographic gradients.

Abstract P349 Figure. Aortic valve area by planimetry by MR