

Value of right ventricular dysfunction estimation in concomitant left-sided valvular stenotic disease

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KEYWORDS: right ventricular function, multiple valve disease, non-invasive hemodynamics.

CITATION: Cardiol Croat. 2023;18(5-6):110. | <https://doi.org/10.15836/ccar2023.110>

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Introduction: Right ventricular dysfunction (RVD) and tricuspid regurgitation (TR) are associated with poor outcomes in multiple valve disease¹. Degenerative valve disease mainly affects aortic and mitral valves². In case of significant aortic stenosis (AS) combined with the stenotic mitral disease, transmitral gradient (TMG) might be underestimated due to pressure load and assessment is more challenging. Less is known about the clinical impact of combined degenerative stenotic aortic mitral disease and RVD and TR. This pilot study aimed to evaluate the effect of combined aortic mitral degenerative disease and tricuspid regurgitation and right ventricular function on risk of hospitalization due to cardiovascular cause over four years follow-up and to evaluate potential prognostic value of the echocardiographic parameter for risk stratification in multivalvular disease.

Patients and Methods: We retrospectively analyzed 39 eligible patients, admitted due to aortic mitral stenotic disease, with elevated transmitral gradient (TMG) defined as TMG >4 mmHg and mitral annulus calcification through 2017 and 2018. During the four-year follow-up, we examined the causes of hospitalization and mortality. Baseline demographic and echocardiographic data were extracted from the electronic medical record and analyzed from a digital database.

Results: In total, 39 patient data were reviewed (average age 71.64±SD 9.39; 71% female), mean SVi 41.49±12.46 ml/m², mean LVEF 61.28±9.8 %, mean MV MPG (TMG) 5.92±1.92 mmHg, mean MVA 1.74±0.4 cm², mean AVAi 0.81±0.36 cm²/m², mean TAPSE 16.23±5.1 mm, mean RVFWS -18.43±6.5%, mean TR RV 13.33±12.4 ml, mean RVSP 33.01±15.24 mmHg. During four years of follow-up, the mean number of hospitalizations was 2.51±1.9 and the four-year survival rate was 79%. Paired quantile groups of mean RVFWS of -14.38±3.1% and mean RVFWS -24.9±4.9% were compared. The number of hospitalizations differed between groups, 2.88 ±1.3 and 2.14±1.4 respectively (p<0.0328). There was no difference in hospitalization between groups observed in TAPSE, TR or RVSP. Patients with RVD (RVFWS -18.4%) and significant stenotic aortic mitral disease had more hospitalizations due to cardiovascular causes.

Conclusion: RVD increases the risk of hospitalizations, while RVFWS may serve as echocardiographic indicator of RVD in hemodynamically significant left side valvular disease and add value in risk stratification in multiple valve disease in this case aortic mitral stenotic disease.

RECEIVED:
March 26, 2023

ACCEPTED:
March 29, 2023



LITERATURE

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