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Prevalence of right ventricular dysfunction according to different parameters: basal and one year after transcatheter aortic valve implantation

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Background: Right ventricle (RV) is not often specifically studied in patients with severe aortic stenosis (AS). It's difficult to find the correct tool to assess RV function with echocardiographic parameters, and the percentage of patients with dysfunction may vary depending on the parameter that we use.

The aim of the study was to evaluate the prevalence of RV dysfunction basal and one year after transcatheter aortic valve implantation (TAVI), according to different parameters.

Methods: Consecutive patients with severe AS undergoing TAVI from January 2016 to July 2017 were included. RV anatomical and functional parameters were analyzed according to ESC and ASE guidelines. RV dysfunction was assessed using tricuspid annular plane systolic excursion (TAPSE) <17 mm, fractional area change <35%, systolic movement of the RV lateral wall by tissue Doppler imaging (RV-S'TDI) <9.5 cm/s, global longitudinal (RV-GLS) and free wall strain (RV-FWS) using as cutting point [20]. Pre procedure echo, immediate post procedure and 1 year echo were analyzed. Statistical analysis was performed using SSPS version 22.

Results: The final study population consisted of 78 patients (115 patients were included, 37 were excluded due to suboptimal acoustic window for RV anatomical and functional evaluation), mean age 83.73 ± 6.31 year-old, 38.2% females. We analyzed the percentages of RV dysfunction according to the different parameters evaluated before and in the control one year after. They are shown in Figure 1.

Conclusions: The presence of RV dysfunction in patients with severe AS is higher than expected. Our data suggest that RV function improve one year after TAVI, in terms of a reduction in the number of patients with dysfunction. The assessment of RV function is difficult, and there is no agreement on what tools are more accurate and useful. RV strain seems to be the most sensible parameter to assess RV function in patients with AS undergoing TAVI. Impact of these measurements in patients management needs further evaluation.

