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Title: CLINICAL AND ECHOCARDIOGRAPHIC OUTCOMES IN RHEUMATIC HEART DISEASE PATIENTS WITH SUPRA-SYSTEMIC PULMONARY HYPERTENSION: THE EXPERIENCE OF THE SALAM CENTRE FOR CARDIAC SURGERY

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Background & Aims: Pre-operative pulmonary hypertension (PH) and, even more, supra-systemic pulmonary hypertension (SSPH), is a feature of severe valvulopathy heart disease that is associated with excess post-operative mortality. Our work aims to investigate the clinical and instrumental outcomes in patients with valvulopathy associated with SSPH operated at the Salam Centre for Cardiac Surgery from April 2007 to December 2022 (177 months).

Methods: Patients undergoing surgery for valvulopathy were identified retrospectively through our database. The sPAP and the other haemodynamic variables analysed were estimated during the pre-operative and post-operative period through echocardiographic examination performed at an interval between 15 and 91 days from the date of surgery and through echocardiographic exam performed at the most recent visit. Mortality data are expressed in months. Right ventricular function was assessed through TAPSE.

Results: We analysed 335 patients - of whom 58.2% females - with a median age at surgery 23 years (min 5, max 60). The median pre-surgical sPAP was 108 (IQR 100- 115). Pre-surgical TAPSE, available only in 260 patients, was 18 (median, IQR 15-21). Moderate to severe right ventricular dilatation was found in 153 patients (46%). At the first available postoperative follow-up, in 262 patients, the median sPAP was 38mmHg (IQR 30-47) and a median TAPSE of 14 (IQR 11-16). Moderate to severe right ventricular dilatation was found in 38 patients (15.2%). In the group of patients (n=227) where echocardiographic data were available for at least three years of follow-up, a moderate to severe VD dilatation was registered in 4.4% of patients, with a median TAPSE of 17 (IQR 15-19), and a median PAPS 31 mmHG (IQR 25-38). Thirty-day mortality was 3.9% and the three-month mortality was 4.7%.

Conclusions: Our cohort shows only slightly higher intra-hospital and three-months-after-surgery mortality data when compared to the general Salam Centre's operated population (2.87% 30-days mortality). The echocardiographic data show a significant reduction in sPAP, already in the early postoperative period and further at three years, and the moderate to severe RV dilatation is progressively reduced from 46 to 4.4% of the subjects. In conclusion, our data show that even patients presenting with pre-operative supra-systemic pulmonary hypertension can successfully undergo surgery.