

Percutaneous Closure of Atrial Septal Defects in Elderly patients: the experience of a high-volume referral tertiary center.

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OBJECTIVES. Ostium Secundum Atrial Septal Defects (ASDs) are a common congenital heart disease. An early diagnosis allows to close them before to develop a pulmonary hypertension. In some cases, these defects are not diagnosed in childhood, but when symptoms and signs compare and pulmonary arterial pressure increases. The elderly patients (>60 years) are a complex subgroup to treat with several complications and hemodynamic limitations.

METHODS. From March 2000 to November 2018, 1084 patients (pts) with ASD underwent closure at our institution. 65 were elderly patients (≥ 60 years). Mean age and weight were $65,07 \pm 3,82$ years (range 60-75) and $71,27 \pm 12,35$ kg (range 45-105), respectively. Right heart catheterization was performed to evaluate pulmonary pressures, pulmonary vascular resistances and to address the closure.

RESULTS. Among these elderly patients: 28 (43%) had high mean pulmonary arterial pressure (mPAP ≥ 25 mmHg). At multivariate analysis, the mean pulmonary pressure was not influenced by the age ($p=0.8$) but was mainly correlated with ASD dimension ($p<0.01$). At admission, 27 patients (41,5%) showed atrial flutter or fibrillation. Supraventricular arrhythmias were mainly associated with elevated mean pulmonary pressure ($p<0.01$), whereas the age didn't influence them. One patient with high pulmonary pressure (mPAP=44mmHg) and high arteriolar pulmonary vascular resistances (PVR=3,15WU) underwent sildenafil therapy for 3 months with a significant improvement of hemodynamic data (mPAP=25mmHg and PVR=0,65WU) and consequent ASD closure. In 3 cases ASD wasn't closed because of pulmonary hypertension with high arteriolar pulmonary vascular resistances (PVR>3WU). Percutaneous closure was effectiveness in all resting patients and no major complications were recorded. At mean follow-up of 4,3 years, no mortality or morbidity related to procedure arose and no patients developed new onset arrhythmias.

CONCLUSION. ASD closure in elderly patient is often challenging for interventional cardiology because of the high pulmonary pressures. Pulmonary pressure is related to ASD dimension (not to the age), and the onset of atrial flutter or fibrillation is influenced by high pulmonary pressure. The right heart catheterization is helpful to guide decision making of interventional cardiology. No mortality or morbidity related to procedure were showed during follow-up.