Long-term prognosis of elderly patients undergoing atrial septum defect closure: are we acting too late?

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Introduction: Atrial septum defects (ASD) are the third most common congenital heart defect affecting adults and often goes unrecognized due to the absence of significant symptoms and unspecific signs at physical examination. Yet, long-term exposure to chronic right heart volume overload can have deleterious effects, with almost all patients becoming symptomatic by the fifth or sixth decade. However, whether ASD closure in an elderly patient affects their average life expectancy (ALE) is still unknown.

Aim: To assess the relationship between ASD closure (surgical or percutaneous) and ALE in a Portuguese cohort of patients older than 65 years old.

Methods: Single-centre retrospective study including all consecutive patients older than 65 years old that underwent isolated ASD closure (surgical or percutaneous) between January 1998 and December 2020. Baseline characteristics were assessed as well as the predicted ALE (as determined per pre-defined national ALE tables) for every given patient at the time of the ASD closure.

Results: A total of 37 patients with a mean age at closure of 69±5 years, 76% female, were included. Most patients presented with heart failure (62%), 14% with ischemic stroke, and 51% had an atrial arrhythmia. 22% patients had severe tricuspid regurgitation, the mean systolic pulmonary artery pressure (SPAP) was 50±11mmHg and a median Qp/Qs of 2.1 [1.2-2.5]. Five patients were treated surgically. The mean size of the ASD was 21±7mm and those treated surgically had a higher mean size (24±7mm vs 21±9mm). During the mean FUP of 9.3±5.2 years, 16 patients died (37%). The mean age of death was 79.4±5.8 years and did not differ significantly from the expected mean ALE of 84.3±1.3 years (p=0.304). Patients who did not reach the predicted ALE at the time of the procedure (N=12, 33%) had higher SPAP (58±10 vs 46±8mmHg; p=0.001) and presented more frequently with severe tricuspid regurgitation (42 vs 12%, p=0.040) (figure 1A). There was no difference in terms of mortality regarding method of closure (p=0.096).

Conclusion: Overall survival of elderly patients that underwent late ASD closure did not differ significantly from the expected ALE, nevertheless one-third of the patients died prematurely. A premature death was associated with higher SPAP and a more severe tricuspid regurgitation. These results suggest that late-ASD closure does not overcome the effects of long-term right chamber overload and pulmonary hypertension, thus arguing in favour of earlier intervention.