Conventional mitral surgery in octogenarians: The “μισο” study against skepticism

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Elderly patients with mitral valve disease are increasingly referred to cardiac centers, and management is often complex because of their greater burden of comorbidities and higher perioperative risk.¹ Available options range from medical management of heart failure symptoms to catheter-based interventional procedures and surgical procedures consisting of mitral valve repair (MVr) or mitral valve replacement (MVR).

To address this interesting and actual topic, a real-world experience from 3 large UK centers (Mitral Surgery in Octogenarians - MiSO - study) sought to determine the predictors of survival in octogenarians after mitral valve surgery for degenerative disease.² A retrospective series of 247 patients was analyzed, and 2 groups were identified for comparison: 150 (60.7%) MVr versus 97 (39.3%) MVR in conventional full sternotomy (Figure 1).

Two points strongly emerged from the study by Chivasso and colleagues² and can be summarized as follows:

- First, outcomes in octogenarians requiring mitral valve surgery are more in favor of MVr compared with MVR. Chivasso and colleagues² clearly showed that 30-day mortality was unbalanced in favor of MVr (4.7%) versus MVR (18.6%), as well as for long-term survival, for which MVR seems to be a negative independent predictor of late death (hazard ratio, 1.88; 95% confidence interval, 1.22-115 2.89; $P < .01$). This concept is not new, and current guidelines^{3,4} already recommend MVr as the preferred technique when a successful and durable repair can be accomplished, despite the patient's age and comorbidities. A recent analysis of outcomes in 1239 hospitals performing mitral valve surgery in Medicare beneficiaries clearly indicated this, because survival after MVr in the elderly is similar to that of the age- and gender-matched US population.¹

However, there are some operative factors that could have contributed to overbalance the results in favor of MVr in the study by Chivasso and colleagues.² For

Depiction of a retractor for open mitral valve operations.

Central Message

The “μισο” or “reluctance” of performing conventional mitral valve surgery in octogenarians is a contemporary myth to be abandoned.

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example, it is unknown if the mitral valve apparatus was spared during surgery and not clear why 18 patients received a small-sized prosthesis (23 and 25 mm).

- The second strong evidence coming from the study is the concept of the Heart Valve Center of Excellence. Despite the growth of catheter-based interventions for mitral and

FIGURE 1. Depiction of a retractor for open mitral valve operations.

aortic valve disease, we are aware that octogenarians are a subset of high-risk patients who require a patient-centered heart team evaluation to obtain successful outcomes. This suggested that being an octogenarian and receiving a mitral valve procedure in full sternotomy does not necessarily implicate a higher surgical risk if the recommendations arise after a proper team discussion and the procedure is performed in high-volume specialized centers.

This concept is stronger than any available scoring system, whereas the logistic European System for Cardiac Operative Risk Evaluation does not always accurately reflect the exact risk profile of these patients.

The dark side of the current nonrandomized study is the lack of surgical selection of patients undergoing MVr versus MVR. Although the 2 populations were homogeneous for the majority of preoperative characteristics, they were still unbalanced for relevant variables such as the number of patients (150 MVr and 97 MVR), redo cardiac surgery (6 MVr and 11 MVR), preoperative atrial fibrillation (79 MVr and 34 MVR), and especially for all the unknown data on the indication for MVr or MVR at the time of surgery. Of course, as pointed out by the authors,² only larger international multicenter registries would be able to correctly delineate factors affecting

surgical selection and afterward create a powerful scoring system in guiding decision making in such a high-risk subgroup.

The Mitral Surgery in Octogenarians (MiSO) study confirmed as open mitral valve surgery in octogenarians is still the gold standard (especially if repair is possible) and pursued according to the meaning of the ancient Greek word for “μίσος” as the aversion, disinclination, or dislike for the conventional “full sternotomy” treatment is just a myth to be reappraised.

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