Percutaneous valve commissurotomy in mitral stenosis patients: a 20 years follow-up


Sao Joao Hospital, Cardiology, Porto, Portugal

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Background: Percutaneous valve commissurotomy (PMC) is a viable alternative to mitral valve surgery in the treatment of patients with clinically significant mitral stenosis (MS). Although rheumatic MS incidence has decreased in developed countries, it remains a prevalent healthcare problem in Cardiology clinics.

Purpose: To evaluate the early and long-term results of PMC in patients with rheumatic MS and to compare long-term events between patients with and without pulmonary hypertension (PH).

Methods: We retrospectively analysed all consecutive patients between 1991 and 2008 with clinically significant rheumatic MS undergoing PMC. Clinical and echocardiographic data were collected at baseline and during long-term follow-up. MACE was a composite of adverse events defined as all-cause mortality, mitral valve re-intervention or hospitalization for a cardiovascular cause.

Results: A total of 124 patients were enrolled: 87% were female, with a mean age at the time of repair of 46±11 year-old and a mean follow-up of 20±6 years. Before the procedure, 34% were in NYHA class ≥ III and 81% had a Wilkins score ≤ 8; all patients had preserved biventricular systolic function, 83% presented PH, mean transvalvular gradient (TVG) and mitral valve area (MVA) were 12.8 mmHg and 1.0 cm², respectively. Most of the procedures were successful (91%) and without complications (94%), with a mean MVA improvement of 0.9 cm² and reduction of 8.5 mmHg in TVG and 9.7 mmHg in pulmonary artery systolic pressure (PASP) after PMC. During long-term follow-up, 42% of patients were submitted to re-intervention (most of them surgically) and 24% died. In patients non-submitted to re-intervention, TVG and PASP remained similar with early post-procedure evaluation (p=0.109 and p=0.777, respectively), while MVA reduced over time, yet still statistically superior to baseline MVA (1.6 cm² vs 1.0 cm², p<0.001). Concerning time-to-event analysis, approximately 80% of patients kept uneventful after 10 years; after 30 years, more than 20% continued MACE-free and approximately 50% were alive. Regarding PH presence at time of PMC, there was no significant difference in MACE events and all-cause mortality between the two groups (Log Rank, p=0.846 and p=0.681, respectively).

Conclusion: PMC was safe and effective in clinically significant rheumatic MS. After a long-term follow-up patients maintained the reduction in TVG and PASP and a smaller but significative improvement in MVA. Most of the patients were free from adverse events after 10 years and half were alive after 30 years. There was no difference in all-cause mortality and in a composite of all-cause death, mitral valve re-intervention or cardiovascular hospitalization concerning PH presence.