

P27. Risk Factors For Patient-Prosthesis Mismatch After Aortic Valve Replacement With Current Bioprostheses

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OBJECTIVES: To evaluate risk factors for postoperative patient-prosthesis mismatch (PPM) after aortic valve replacement with current bioprostheses.

METHODS: Between March 2006 and October 2008, 413 consecutive patients (75 ±8 years; range: 28-88) underwent biological aortic valve replacement at our Institution. Indication for surgery was aortic valve stenosis in 345 patients (83%), aortic regurgitation in 51 patients (12%) and endocarditis in 17 (5%). The aortic valve was replaced with pericardial (226 patients) or porcine (84 patients) stented valve or pericardial stentless valve (102 patients). No patient underwent aortic annulus enlargement. The predicted orifice area was extrapolated from literature data or, if not available, from our echocardiography laboratory and indexed to the body surface (EOAi). Patient-prosthesis mismatch was defined as an effective orifice area indexed (EOAi) ≤0.85 cm/m². Follow-up was 100% complete.

RESULTS: Mean prosthesis label size was 23 ±2 (in 127 patients ≤21) for a mean body surface area of 1.8 ±0.2m² (range: 1.30-2.50). The echocardiography study detected a PPM in 35% of patients (145/402). At multivariate analysis, body mass index ≥ 30 (p<0.0001), body surface area ≥ 1.77m² (p<0.0001), prosthesis label size ≤21 (p<0.0001), porcine stented valve (p<0.0001) and the absence of a stentless aortic valve (p<0.0001) were identified as independent risk factors for PPM.

CONCLUSIONS: The occurrence of postoperative PPM after aortic valve replacement with current bioprostheses may be reduced avoiding porcine stented valve, especially in obese patients or in those with a body surface area ≥ 1.77m². The risk of PPM after aortic valve replacement with stentless pericardial prosthesis approaches zero.