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Valvular Heart Disease

PREDICTORS OF LONG-TERM MORTALITY IN PATIENTS UNDERGOING MINIMALLY INVASIVE VALVE SURGERY

Poster Contributions
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Authors: *Andres M. Pineda, Juan P. Rodriguez-Escudero, Christos Mihos, Nirat Beohar, Joseph Lamelas, Orlando Santana, Mount Sinai Medical Center, Miami Beach, FL, USA*

Background: Minimally invasive valve surgery (MIVS) has demonstrated excellent outcomes, and is increasingly been used for the treatment of valvular heart disease. However, there is paucity of data in regards to the possible predictors of mid- or long-term mortality.

Methods: We retrospectively reviewed all consecutive patients undergoing MIVS at our institution between January 2009 and May 2014. The relationship between risk predictors and long-term mortality was assessed by logistic regression model.

Results: The cohort consisted of 2280 patients (53% males); with a mean (±SD) age of 70 ± 13 years. Hypertension, diabetes mellitus, and cerebrovascular disease were present in 86.9, 26.8, and 13.6%, respectively. The median ejection fraction (EF) was 58%, preoperative creatinine was 0.9 mg/dL, and the mean predicted STS mortality score was 2.8%. The most common type of surgery was aortic valve replacement (51.9%), followed by mitral valve repair (33.5%) or replacement (23%), or multiple valve surgery (15.1%). The operative mortality was 2.5%. At a mean follow-up of 28 ± 19 month, there were 203 (8.9%) deaths. In an univariable analysis, multiple clinical and operative characteristics were associated with mortality at follow-up, including age, body mass index, hypertension, diabetes mellitus, EF<40%, peripheral vascular disease, prior myocardial infarction or cerebrovascular accident, preoperative glomerular filtration rate, preoperative hematocrit, cardiogenic shock, intraoperative blood transfusion, perfusion time, and mitral, tricuspid or multiple valve surgery. However, when the multivariable analysis was performed, only age (per each 10 year increase OR 1.28, 95% CI: 1.09-1.50, p=0.002), EF <40% (OR 1.88, 95% CI: 1.30-2.68, p<0.001), glomerular filtration rate <60 mL/min (OR 1.67, 95% CI: 1.18-2.36, p=0.004), history of cerebrovascular accident (OR 1.76, 95% CI: 1.21-2.53, p=0.003), and multiple valve surgery (OR 1.51, 95% CI: 1.02-2.20, p=0.034) were found to be significant independent predictors of long-term mortality.

Conclusion: In patients undergoing MIVS, a number of clinical and operative risk factors are associated with long-term mortality.