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The St Jude prosthesis - An outdated gold standard for mechanical valve replacement?

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THEME: Interventions for Valvular Disease

TOPIC(S): Other valvular and structural interventions

AIMS

Mechanical prostheses evolved with the introduction of pyrolytic carbon. The St Jude prosthesis is the first bileaflet mechanical heart valve used as a gold standard in the treatment of young and middle-aged patients suffering from heart valve disease. Despite its low thrombogenic profile, this particular prosthesis has not yet been approved for lower target INR ranges than currently accepted by recommended guidelines in contrast to the On-X or Bicarbon prosthesis.

METHODS AND RESULTS

We have conducted a retrospective study including all patients undergoing aortic valve replacement with the St Jude prosthesis from its first implementation at our department until December 2010. A total of 132 patients were included for analysis. Main endpoint was survival. Secondary endpoints regarded valve-related hazards. 132 patients (30% : 70% = f : m) were enrolled with a mean age of 54 ± 15 years. 25% (N = 33) underwent previous cardiac surgery. Concomitant procedures were performed in 58% (N = 78) of the study population. 13% (N = 17) received MVR either prior to surgery or concomitantly. Overall mortality was 28% (N = 37) of which 9.8% (N = 13) were valve-related. Main death-cause was myocardial infarction (11%, N = 14). Other death causes included bleedings (2.3%, N = 3), stroke (0.8%, N = 1), endocarditis (0.8%, N = 1), cancer (3%, N = 4) and other reasons (8.3%, N = 11). 14% (N = 18) experienced thromboembolic events of which 5.3% (N = 7) were strokes. 16% (N = 21) suffered from major bleedings due to long-term OAC. Prosthesis endocarditis was observed in 7.6% (N = 10). 6.1% (N = 8) demanded pacemaker implantation for postoperative arrhythmia within 14 days. 5.3% (N = 7) required Re-Do AVR for various reasons.

CONCLUSIONS

Thromboembolic events and major bleedings were rather balanced within our all-comer real-world population. We want to raise awareness for the high rate of complication rates after mechanical aortic valve replacement. Physician shall strive for novel prostheses or surgical techniques, especially in young and middle-aged patients with a higher life expectancy to avoid the long-term risks that occur with mechanical heart valves.