No long-term survival difference found between types of mitral valve replacements

April 21 2015

In a comparison of mechanical prosthetic vs bioprosthetic mitral valves among patients 50 to 69 years of age undergoing mitral valve replacement, there was no significant difference in survival at 15 years, although there were differences in risk of reoperation, bleeding and stroke, according to a study in the April 14 issue of *JAMA*.

In patients with severe, symptomatic mitral valve disease unsuitable for surgical repair, mitral valve replacement reduces symptoms and improves survival. Bioprosthetic valves (made primarily with tissue) are recommended in patients older than 70 years, in whom the likelihood of needing reoperation because of valve degeneration is low. In nonelderly patients requiring valve replacement, deciding between bioprosthetic and mechanical prosthetic valves is challenging because long-term survival and other outcomes have not been well defined, according to background information in the article.

Joanna Chikwe, M.D., of the Icahn School of Medicine at Mount Sinai, New York, and colleagues compared long-term survival, stroke, reoperation, and bleeding events after bioprosthetic vs mechanical prosthetic mitral valve replacement among 3,433 patients (age 50-69 years) who underwent mitral valve replacement in New York State hospitals from 1997-2007. Propensity score matching for 19 baseline characteristics yielded 664 patient pairs. Follow-up ended November 2013; median duration was 8.2 years.

The researchers found there was no difference in long-term survival

between the mechanical prosthetic and bioprosthetic mitral valve replacement: 15-year survival was 57.5 percent vs. 59.9 percent, respectively. The cumulative incidence of stroke at l5 years after mitral valve replacement was significantly higher in the mechanical prosthesis group (14.0 percent) compared with the bioprosthesis group (6.8 percent), as was the cumulative incidence of bleeding events (14.9 percent vs. 9.0 percent).

The cumulative incidence of mitral valve reoperation at 15 years was significantly lower in the mechanical prosthesis group (5.0 percent) compared with the bioprosthesis group (11.1 percent).

"Consensus guidelines have increasingly emphasized patient preference in preoperative decision making. Quality-of-life surveys indicate that many patients view the distant possibility of reoperation as a reasonable trade-off for freedom from lifelong anticoagulation, reduced quality of life, and poorer perceived health status associated with mechanical prosthetic valves," the researchers write. "Our data strongly suggest that the incremental risks of stroke and bleeding associated with mechanical prosthetic valve replacement should also be a major consideration in any discussion of prosthesis choice."

The authors note that even though these findings suggest bioprosthetic mitral valve replacement may be a reasonable alternative to mechanical prosthetic valve replacement in patients aged 50 to 69 years, the 15-year follow-up was insufficient to fully assess lifetime risks, particularly of reoperation.

More information: *JAMA*, DOI: 10.1001/jama.2015.3164

Provided by The JAMA Network Journals