

Commentary: Resilience and dialysis patients: What counts is survival, not the prosthesis



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Resilience can be defined as the ability to adjust to change.¹ This concept applies to patients supported by long-term renal dialysis. It is known that some deaths in this patient population are related to cardiovascular disease.² As the number of patients receiving dialysis has steadily increased during past decades, an increasing number have required cardiac surgical procedures. Since the early case series³ until now,⁴ they have faced difficulties in management and increased perioperative risk. Valve replacement surgery brings an additional problem, the replacement device. Whether tissue or mechanical valve prostheses perform differently is controversial and a relevant question.

In this issue of the *Journal*, Ikeno and colleagues⁵ report their 7-center retrospective study evaluating long-term outcomes of heart valve replacement with a mechanical prosthesis (MP) versus a bioprosthesis (BP) in patients receiving dialysis. In a period of 16 years, 312 patients were enrolled; 94 (30.1%) received MPs and 218 (69.9%) received BPs. Mean follow-up was 3.4 ± 3.6 years. The 5- and 10-year survivals were similar between groups. Multivariate Cox hazard analysis demonstrated diabetic nephropathy, New York Heart Association functional class of at least III, and mitral valve replacement as risk factors for late death. Interestingly, valve selection was not a significant risk factor. Freedom from valve-related embolic events at 5 years was significantly lower in the MP group. Freedoms from valve-related reoperation or hemorrhagic events were similar across groups. Ikeno and colleagues⁵ concluded that although valve selection was not associated with late survival outcomes in patients receiving dialysis, BPs may be advantageous in preventing embolization without increasing the incidence of valve-related reoperation when compared with MPs.

This contribution addresses the important clinical question of which replacement device should be chosen in these patients. Current information is inconclusive, and there is no evidence that MPs perform better than BPs in these and other complex cases, as addressed by Thourani and



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Central Message

The survival of patients on long-term hemodialysis for end-stage renal disease after heart valve replacement is not related to the type of replacement device implanted.

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associates⁶ and Weber and coworkers.⁷ The number of patients enrolled is larger than in previous contributions^{4,8} and the study period is long, although some might point out that mean follow-up is less than 5 years and that several centers contributed. Multivariate analysis confirms existing knowledge, namely that diabetic nephropathy, advanced functional class, and mitral surgery are predictors of poorer outcomes. This is not surprising, because patients with advanced mitral symptoms do have poor performance over time.

Ikeno and colleagues⁵ highlight a few interesting aspects. First, valve selection did not influence outcomes, despite allocation to MP or BP, with a cutoff of 65 years. This may be a selection bias, but results did not define specific differences in this regard. Second, it is remarkable that Ikeno and colleagues⁵ achieved almost 95% completeness of follow-up; this supports data quality missing in some studies. Third, BP may protect against embolic phenomena arising from worse compliance of patients undergoing dialysis with oral anticoagulation without an increase in late reoperation rate. Furthermore, there was no survival difference with MP, as highlighted earlier by others.⁸ These results may raise questions with regard to the use of transcatheter valves in the dialysis population because of concerns about higher mortality in that group,⁹ as discussed by Ikeno and colleagues.⁵

The contribution of Ikeno and colleagues⁵ certainly has acknowledged limitations, although these are partly counteracted by large for the topic sample size and completeness of follow-up. Its interest largely lies in updating our knowledge and understanding of a complex, difficult, and resilient population.

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