was representative of the baseline cohort as there were no differences in terms of baseline characteristics and comorbidities.

In conclusion, we show for the first time evidence of reversibility of preoperative CKD in patients with moderate and severe CKD following AVR, based on dynamic changes in eGFR following AVR. Reversibility of CKD was associated with improved postoperative outcomes and long-term survival rates. We also demonstrate that preoperative CKD is associated with worsened outcomes after AVR, particularly in patients with no improvement in GFR. This information suggests that reversibility of CKD after AVR is a clinically important concept that may refine risk stratification, facilitate management of CKD in the peri- and postoperative period and potentially even improve survival. More investigation to delineate exact factors contributing to this phenomenon and its clinical use is warranted in patients with severe aortic valve disease.

SUPPLEMENTARY MATERIAL

Supplementary material is available at ICVTS online.

Conflict of interest: Craig R. Smith and Mathew R. Williams disclose a financial relationship with Edwards Lifesciences.

REFERENCES


eComment. It is difficult to clearly explain the effect of aortic valve replacement on the reversibility of chronic kidney disease

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We eagerly read the article by Najjar et al. [1], in which the reversibility of chronic kidney disease (CKD) and outcomes following aortic valve replacement (AVR) were studied. We appreciate their effort. However there are some contradictory parts that should be reconsidered. The first conflicting point concerns the definition of CKD reversibility. Improvements in estimated glomerular filtration rate have to be identified clearly. What is the cut-off level for eGFR increase to define improvement? What did the authors use to assess this? Was there any correlation between eGFR and mortality/morbidity rates? Secondly, eGFR levels were calculated by CKD-EPI formula. In the current literature, the use of the Medical Diet for Renal Disease (MDRD) formula is recommended, which seems to be more reliable [2].

It is mentioned in the study that moderate and severe CKD groups demonstrated higher mortality/morbidity rates. There is great consensus on this. But baseline and operative characteristics such as urgent operation, age, diabetes, peripheral vascular disease, cerebrovascular disease, chronic obstructive pulmonary disease, generate a significant heterogeneity in the cohort. All these factors may easily affect the outcomes. This situation makes it difficult to come up with a reliable and convincing conclusion. In order to prove the direct effect of AVR on CKD, AVR should have been the only variable. Otherwise, all results are confounded by the aforementioned factors. The authors reported the results of acute kidney injury (AKI) occurrence. Although non-CKD and moderate CKD groups had a 7.1% and 17.3% AKI occurrence rate, respectively, the severe CKD group had a rate of 2.4%. However, the expected results are just the opposite. Ivert et al reported that postoperative haemodialysis requiring AKI occurrence increased with decreases in preoperative eGFR in their study [3]. Preoperative medication may be one of the factors affecting these results. Medications may also affect follow-up eGFR levels. However there is no information on the type of medication in the study. Increase in eGFR levels is a direct indicator for improvement of renal perfusion and function and also an indirect indicator for cardiac output and contractility. Authors declared that small fluctuations observed in GFR in the acute setting are not important since they used the serial changes in GFR to reflect true changes in kidney function. Although it may be valid for patients with stable haemodynamics, it is not appropriate for unstable patients.

Our last comment is regarding the statistical parameters. Authors used mode and standard deviation parameters for expressing eGFR values in the follow-up period. But we noticed that the standard deviation values were very high. How could they explain this situation?

Conflict of interest: none declared.

References

