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Commentary: Mixed messages

Dawn S. Hui, MD

In their article in this issue of the *Journal*, Ogami and colleagues¹ use the US Renal Data System (USRDS) to examine the national outcomes of proximal aortic surgery in patients with end-stage renal disease (ESRD). For patients with aortic aneurysm and aortic aneurysm dissection, perioperative mortality was high, and median survival was poor at 2.07 to 2.28 years. It is instructive to examine the scope of this study. Over the 28-year study period, only 726 ESRD patients underwent aortic surgery, an average of 25.9 patients per year. Interestingly, by the authors' arbitrarily divided time periods (1987-2009 and 2010-2015), more than one-half of the operations occurred in the last 5 years. This may reflect an increasing willingness to operate, increased incidence of aortic disease, and/or increased detection of disease. From the surgeons' perspective, longitudinal improvements in technique and perioperative care may offer greater confidence in achieving acceptable outcomes for these high-risk patients. However, era of operation was not a significant factor in multivariable analysis, although the analysis was likely hampered by this arbitrary definition. Do the remainder of the study findings help inform this point?

Although the USRDS is likely the only data source that permits study of national long-term outcomes in this population, its limitations are significant. Without data on causes of death, long-term aortic-related complications or reinterventions, and aortic-specific operative details (eg, cerebral protection, hypothermia, extent of aortic replacement), this study offers little to guide surgeons in patient selection or management. The reader also should be cautioned that the "aneurysm" group is perhaps a misleading term.

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Disclosures: The author reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication March 10, 2021; revisions received March 10, 2021; accepted for publication March 12, 2021; available ahead of print March 16, 2021.

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J Thorac Cardiovasc Surg 2023;165:40-1

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2021.03.034>

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CENTRAL MESSAGE

An administrative database offers a unique opportunity to describe national outcomes of aortic surgery in patients with end-stage renal disease, but interpretation of the results is a complex matter.

Concomitant aortic valve replacement was performed in 64.3% of the patients, and concomitant coronary artery bypass grafting was performed in 34.2%, suggesting that aortic pathology may have been coincident rather than the primary pathology.

At a broader level, the authors' comparison of ESRD with non-ESRD outcomes merits scrutiny. The nephrology literature has noted that since 1996, ESRD mortality rates have fallen by 28% for dialysis recipients and by 40% for transplant recipients.² Mortality risk reduction has been achieved at a greater rate in ESRD patients than in the general population.³ Because cardiovascular events are a driver of long-term mortality in these patients, the role of cardiovascular surgery in mitigating this risk should be examined. For this purpose, a more appropriate comparison would have been medical versus surgical management. One can never reasonably expect surgical outcomes to reach those of non-ESRD patients; rather, the goal should be to examine whether surgical intervention improves mortality, dismal as they may seem relative to non-ESRD patients.

One interesting note is that the racial patterns of this study contrast greatly to that of the ESRD demographic. Aneurysm patients were 69.5% white and 26.2% black, but the prevalence of ESRD is 2.7 to 3.7 times higher in blacks than in whites.² This raises important questions

about bias in patient selection. Given that patients on dialysis are covered by Medicare, access would not seem to be an issue. Mortality risk is in fact lower in older African-American ESRD patients compared with whites.³

Finally, the authors' perspective statement offers a somewhat confused and mixed message. They urge a need for "careful patient selection" for aortic aneurysm repair, while encouraging emergent surgery for type A dissection. If the point of elective aortic aneurysm surgery is to prevent

complications such as dissection, then it seems discordant to hold back on the former while encouraging the latter.

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Commentary: A word of caution (and a note of optimism)

Amedeo Anselmi, MD, PhD

End-stage renal disease and chronic dialysis are conventionally known to increase the general operative risk in cardiac surgery and to be a marker of both complicated postoperative course and decreased late survival. With the power only national databases can provide, the current analysis by Ogami and colleagues,¹ based on the United States Renal Data System, obtained clinical and follow-up data of 726 thoracic aortic surgery recipients for either non-ruptured aneurysm or acute type A dissection while on chronic dialysis. The current analysis is significant, as it addresses a question that was previously approached only through limited series and clinical common sense based on personal/local experience: the legitimacy of offering major thoracic aortic surgery to patients whose prognosis is burdened by chronic dialysis. The paper could not but conclude that the long-term survival of these patients is

Amedeo Anselmi, MD, PhD

CENTRAL MESSAGE

The late benefits of thoracic aortic surgery are mitigated in patients with end-stage renal disease, but those of renal transplantation are not (necessarily) abolished after careful selection.

severely affected by their chronic disease(s) and that caution needs to be exerted in offering elective thoracic aortic surgery.

Unfortunately, the price paid for the power of the study is the lack of "granular" information about questions that are well present in the mind of an aortic surgeon, for example, whether the use of hypothermic circulatory arrest or a greater extension of the aortic replacement truly impacts early mortality/morbidity and whether the benefits of valve-sparing aortic root replacement over valve replacement are maintained in this population, questions that only this series might have the power to but cannot explore, regrettably. More importantly, the causes of death at follow-

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Disclosures: The author reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication March 16, 2021; revisions received March 16, 2021; accepted for publication March 16, 2021; available ahead of print March 18, 2021.

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J Thorac Cardiovasc Surg 2023;165:41-2

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2021.03.053>