

# Authors' Response to Odugoudar et al: Poor Kidney Transplant Outcomes and Higher Organ Discard Rate Secondary to Macroscopic Arteriosclerosis of Renal Artery: More Evidence Needed to Prove Correlation

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We, as authors, very much appreciate the constructive remarks made by Odugoudar et al about our recently published study.<sup>1</sup> We fully agree with their general notion that such retrospective analyses have serious shortcomings, which limit the generalization of results. In addition, caution should be taken when interpreting the isolated effect of arteriosclerosis on the decision to accept or discard a donor kidney. Such decisions will indeed always be based on a subjective clinical interpretation of many other factors as well.

Nevertheless, having read their commentary, we cannot exclude that Odugoudar et al might have misunderstood several important aspects of our study. We will attempt to clarify these issues next.

As noted, our study included approximately 7 times more transplanted than discarded kidneys. However, this 7:1 ratio did not result from any matching or selection but reflects the number of transplanted and discarded kidneys in the cohort studied, for which data on macroscopic

arteriosclerosis were available. The percentage of kidneys with missing arteriosclerosis data was similar in both groups. In line with these numbers, the kidney discard rate in the period studied was 13%, as reported in our article.

Odugoudar et al explain how subjective and unreliable the assessment of macroscopic arteriosclerosis in the Eurotransplant system is. They are perfectly right, and this is indeed the point we were trying to make in our article, that is, in Eurotransplant, macroscopic arteriosclerosis needs to be graded by the retrieval surgeon, without any instructions or reference protocol. This very subjective and nonstandardized verdict is then conveyed to the potential recipient center. Our analysis clearly shows that recipient centers do take this questionable score into serious account when deciding on organ acceptance or discard.

Odugoudar et al suggest that other relevant factors should also be accounted for when studying determinants of the decision to accept or discard. For that purpose, our study incorporated a multivariate analysis that corrected for many relevant donor- and organ-related factors. After correcting for such potential confounders, the Eurotransplant arteriosclerosis score remained a strong independent predictor of discard. Hence, our study shows that this subjective and likely unreliable score does have a major contribution to final decision making, despite the fact that it lacks an important association with transplant outcome. We feel that our data should discourage transplant clinicians from taking such subjective arteriosclerosis grading into account, as it may contribute to unnecessary organ discard.

The above does not rule out that there might be other, more reliable, grading systems for renal arteriosclerosis. A more objective and quantitative grading methodology could have independent predictive value for renal transplant outcome and may therefore be considered in pretransplant organ quality assessment. But to the best of our knowledge, such methodology has not yet been clinically adopted, let alone properly evaluated in a similar study as the one we performed.

## REFERENCE

1. Keijbeck A, Veenstra R, Pol RA, et al. The association between macroscopic arteriosclerosis of the renal artery, microscopic arteriosclerosis, organ discard, and kidney transplant outcome. *Transplantation*. 2020;104:2567–2574.

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