

Smartphone Apps to Stratify the Risk of Early Allograft Failure Are Just the Beginning for Next-Generation Outcome Prediction in Transplantation Medicine

TO THE EDITOR:

We are delighted about the correspondence from Avolio et al. regarding our publication highlighting the association between increased hospital costs and early allograft dysfunction (EAD) after liver transplantation.⁽¹⁾ We concur, that EAD as defined by Olthoff et al.⁽²⁾ has limitations as a prognostic marker for graft failure or tool to help with clinical decision making. In comparison to the Model for Early Allograft Function and Liver Graft Assessment Following Transplantation score (L-GrAFT₇), EAD has the worst area under the receiver operator characteristic curve of 0.68, versus 0.78 for the L-GrAFT₇, to estimate 3-month graft failure-free survival after transplantation.⁽³⁾ Indeed, Avolio et al. reported on excellent C-statistics of their own Early Allograft failure Simplified Estimation (EASE) score and underline the need for constant re-evaluation and simplification of current score characterizing graft function after transplantation.⁽⁴⁾

However, we decided to use the Olthoff criteria, as they are well established in the field and the goal of our publication was not to predict graft failure. Additionally, despite having excellent statistical fit, the EASE score is still significantly more complicated to be calculated and requires more data to impute, with data that—especially for retrospective analysis—are not always easy to retrieve. The smartphone-based app is a helpful addition, despite having to manually input laboratory values up to 10 days after transplantation. Future focus should be on implementing a score such as the EASE score in already available clinical information systems as a feature for clinicians to easily predict graft failure, hence overcoming manual input of data, eliminating human input error, and adding real value to scores established on retrospectively acquired data. Data-driven and artificial intelligence-supported medicine will equally influence liver transplantation and provide real-time updates for clinicians to take appropriate action.⁽⁵⁾

We agree that the EASE or the L-GrAFT₇ scores would be superior for outcome analysis and prediction of graft failure prediction. However, for characterizing cost association, a dichotomous variable that is simple

to calculate might have been more useful. We are looking forward to evaluating the EASE and L-GrAFT₇ score in the near future and will report on our findings.

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