

LETTER TO THE EDITOR**Dengue virus transmission from live donor liver graft: Comments and clarifications**

To the Editor:

Thank you for allowing us a chance to reply to Joob and Wiwanitkit.¹

We certainly agree with the authors that owing to the retrospective nature of the study, pretransplant samples were not available for testing and that, therefore, conclusive evidence of donor to recipient transmission is virtually impossible. Nevertheless, the plasma from the donor and the recipient was tested for dengue virus (DENV) RNA and results were positive, confirming the presence of viremia. Although the diagnostic test was not quantitative, the real-time polymerase chain reaction results for dengue diagnosis indicated a much higher viremia in the recipient compared to the donor (Recipient Ct value << Donor Ct value). Levels of viremia correlate with disease severity, and the observed escalation of symptoms in the recipient may be a result of the high viral load. As was explained in the discussion, the donor would have contracted the infection in the preoperative period, most likely the day before hepatectomy. Consistent with the incubation period of DENV, the donor became symptomatic on postoperative day 6. The recipient became symptomatic on day 9, which is still within the incubation period. However, it must be noted that the clinical course of dengue infections in an immune-compromised patient is not well understood and early diagnosis aids in appropriate and timely management.²

A 100% homology exists at the amino acid level in the envelope region, which is the most antigenic determinant of DENV (figure 2C³). This was not a case of dual infection either in the donor or the recipient, as a single serotype was identified in the donor and the recipient. DENV-1 was isolated from both the recipient and the donor.

It is true that nosocomial transmission of vector-borne diseases such as dengue can occur. However, because the likely time of virus transmission in the recipient was during the immediate postoperative period (he became symptomatic on postoperative day 9), the vector bite should have occurred in the first week. At this time the recipient was in the intensive care unit, where the high-efficiency particulate air filter-based closed ventilation system would normally mitigate vector-borne transmission.

Although screening of living donors and recipients of living donor liver transplantation for dengue using nucleic acid testing in endemic regions may be considered based on our findings, further

evaluations including the cost-effectiveness of this protocol must be evaluated before guidelines are formed.²

Considering the timeline of events, the negative explant, and the 100% homology between the donor and the recipient viruses, we reiterate that it is highly probable that the infection was transmitted from the donor to the recipient through the graft.

We thank Joob et al for their interest in our article and hope that this answers their queries.

DISCLOSURE

The authors of this manuscript have no conflicts of interest to disclose as described by the *American Journal of Transplantation*.

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REFERENCES

1. Joob B, Wiwanitkit V. Dengue virus transmission from live donor liver graft: a comment [published online ahead of print 2019]. *Am J Transplant*. <https://doi.org/10.1111/ajt.15302>
2. Rosso F, Pineda JC, Sanz AM, et al. Transmission of dengue virus from deceased donors to solid organ transplant recipients: case report and literature review. *Braz J Infect Dis*. 2018;22(1):63-69.
3. Mathew JS, Menon VP, Menon VP, et al. Dengue virus transmission from live donor liver graft [published online ahead of print 2019]. *Am J Transplant*. <https://doi.org/10.1111/ajt.15270>