The authors reported no conflicts of interest.

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REPLY: RIDING OUT THE STORM

Reply to the Editor:

As the demand for donor hearts continues to increase and the supply remains stalwartly low, Dark and colleagues[1] have not only agreed with Jawitz and colleagues[2] that donor hearts with increased duration of donor brain death times do not have a decrease in recipient survival but actually suggest that purposefully waiting longer can perhaps allow for greater rates of organ use. Based on previous papers from their institution, one a review of the heart transplanted from the UK Transplant registry, Dark and colleagues concluded that optimizing medical care while waiting up to 48 hours for donor hearts rejected for impaired function to recover could allow these hearts to eventually be transplanted.[3]

Reperfusion injuries caused by a proinflammatory milieu induced by brain death can be managed and allow for recovery times, allowing more hearts to not only be considered but also transplanted.[4] The subsequent time period afterwards should involve optimizing donor care and patience. With the current scarcity of donor hearts, this is an alluring idea. However, the authors do caution after a certain time period (60-72 hours was mentioned), the organ has achieved its maximal recovery and waiting longer will not be beneficial.

The guidance provided by these studies and the resulting responses is helpful as we navigate a world with more sickly and geriatric patients requiring heart transplantation and a limited supply of organs.[5] Expanding the acceptable criteria for donor hearts even beyond what Jawitz and colleagues recommended would open unexplored avenues for helping even more of those in need. The next logical step requires more studies to investigate the long-term clinical outcomes of the recipients who have received these recovered hearts—not only recipient survival and donor use rates, but studies comparing the function, complications, and duration of these "extended-criteria" hearts post-transplant. We may see the rays of hope for transplanting even more patients after riding out the storm.

Dr Mokadam is a consultant for Medtronic, Abbott, SynCardia, and Carmat. Dr Le reported no conflicts of interest.

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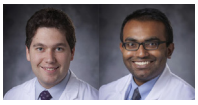

REPLY FROM AUTHORS: HEART DONOR BRAIN DEATH DURATION—

EXTERNAL VALIDATION FROM ACROSS THE POND

Reply to the Editor:

We thank Dr Dark and colleagues for their interest in our work examining the association between heart donor brain death duration and recipient survival using data from the United Network for Organ Sharing (UNOS) Registry.[1] As mentioned in our article, an important limitation of our study was the inability to account for the time interval between the occurrence of donor brain death and its declaration, which can be highly variable. We commend Drs Mehew and Venkateswaran for their 2018 study examining the association between donor brain death duration and organ utilization rates in the United Kingdom.[2] In a retrospective analysis of the UK Transplant Registry, they analyzed the time between brain death—defined as the time when fixed pupils were first noted—and cardiac assessment at organ retrieval. We agree that this is a more accurate marker of brain death duration than what is documented in the UNOS dataset, although we are reassured by the very similar findings reported in the 2 articles. In fact, the functional form of the association between brain death duration and recipient survival modeled using splines were nearly identical-appearing in the 2 analyses, providing further external validation of our conclusions.

Ultimately, when interpreted together, findings from the 2 studies suggest that longer donor brain death duration is not associated with worse survival following heart transplantation. When evaluating donor allografts with borderline function early after brain death, it may be reasonable to engage in further organ optimization and reevaluation over a period of 48 to 72 hours to increase organ utilization.

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