Reply to Thomason et al and Bahr et al

To the Editor—We appreciate the comments from Thomason and colleagues [1] on our recent manuscript regarding the outcome survival from sepsis in transplant recipients compared with nontransplant patients [2]. Studies evaluating the time to antibiotics and mortality are primarily based on patients with septic shock. Reasons to choose this patient population include the high mortality and consequent statistical power to detect survival differences, as well as the more precise “time zero” (shock diagnosis or vasopressor initiation). Our overall 28-day mortality was 8.1% (similar to Thomason et al’s cohort: 9.1%), and only 14% of our transplant cohort had septic shock. Our study was neither designed nor powered to evaluate outcomes based solely on patients with septic shock. Of note, our hospital sepsis standard protocols do not indicate differences in time to antibiotics between transplant and nontransplant patients. It is also of interest to note differences between the timing of antibiotic initiation and the spectrum of activity of the antibiotic regimen. This is why we prioritized antibiotic appropriateness in our study. Notably, the fact that the survival of our transplant patients with sepsis was significantly better than nontransplant patients, despite the fact that the transplant patients had a significant lower rate of appropriateness of the initial antibiotic regimen (84%) compared with nontransplant patients (98%) ($P <$ .001), emphasizes the novelty and robustness of our findings.

We also thank Bahr and colleagues [3] for their interest in our study. It should be noted that age is a well-defined factor associated with mortality in patients with sepsis [4, 5]. Hence, our matching by age is scientifically justified. Bahr and colleagues claim that more rapid and comprehensive care provided to solid organ transplant recipients would occur regardless of location in ward or intensive care unit. As we stated in our discussion, a disparity in care could be the case for outpatient settings; however, there is no evidence to support extrapolation to inpatient settings. In fact, in our institution, screening protocols for sepsis on inpatient units are identical and there is no indication that sepsis in transplant patients is detected earlier or invokes a more rapid response than in nontransplant patients. Accordingly, we believe our reasoning and study design were appropriate, and we performed matching by hospital location. Also, it should be emphasized that transplant recipients were significantly more severely ill at the time of admission, as evidenced by higher Sequential Organ Failure Assessment scores and higher rates of septic...
shock and multiorgan failure, compared to nontransplant patients. These observations support our conclusion that better or faster healthcare access did not explain the better survival outcomes for the transplant patients. We agree with Bahr et al that the new finding of decreased mortality from bacteremic sepsis in solid organ transplant recipients warrants further study.

Note

Potential conflicts of interest. All authors: No potential conflicts of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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