Rapid Access to Comprehensive Care May Explain Better Outcomes in Persons With Sepsis With Solid Organ Transplant Versus Those Without Solid Organ Transplant

To the Editor—We read with great interest the provocative study by Kalil et al [1], which compared mortality rates from bacteremic sepsis in solid organ transplant (SOT) recipients vs control patients without an SOT. The finding that both 28- and 90-day mortality rates were significantly lower in the SOT patients is striking, as such patients are often assumed to be at higher risk of infectious complications [2].

In observational studies, unmeasured confounders can introduce considerable bias. The authors used propensity score matching to adjust for multiple baseline differences between the SOT and control groups. This method is useful in defining a conditional probability for 2 groups based on measured covariates. However, it does not adjust for unmeasured confounders. Although multiple publications address methods to account for unmeasured confounding in propensity score analysis for observational studies, the details are beyond the scope of this letter (eg, [3]).

The authors note in the discussion that SOT recipients “have a long-lasting relationship with a multidisciplinary transplant team, which could have led them to more timely medical treatment than non-transplant patients, who may not have an established healthcare network for immediate access” [1]. We agree with this observation. Having cared for numerous SOT recipients, we find that they are quickly able to access specialized care and that the threshold to treat for possible infections is low [4, 5]. Patients with an SOT also typically receive extensive counseling regarding infection prevention measures and the importance of promptly reporting manifestations of infection.

However, we are concerned that the authors dismiss the potential impact of unmeasured confounding introduced by care disparities as “very unlikely,” stating that “all patients were matched by age, which is a well-known factor associated with different healthcare access and different survival outcomes from sepsis.” The authors’ supporting reference is a study showing that younger mice are less likely...
to die of sepsis than are older mice [6]. Regardless of the questionable practicality of relating murine and human aging, age matching between SOT recipients and the control patients does not eliminate the effect of differential access to subspecialists and multidisciplinary care. The authors also declare matching by hospital unit as a way to control for care access, but the likely more rapid and comprehensive care provided to SOT patients would occur regardless of location in ward or the intensive care unit.

In summary, important differences in care counseling, access, and timeliness between the SOT and control groups are not controlled for by propensity scoring, and the authors’ assertions that a mouse study and patient location in a hospital can be reliably correlated with healthcare access are concerning. Although we agree that future trials of sepsis therapies should include patients with an SOT, we believe that the current analysis does not suitably account for or discuss the unique differences between this population and the control group. The finding of decreased mortality from bacteremic sepsis in SOT recipients warrants further study.

**Notes**

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