Removal of Central Venous Catheters from Patients with Candidemia

Str—We read with interest the recent article “Should Vascular Catheters Be Removed from All Patients with Candidemia? An Evidence-Based Review” by Nucci and Anaissie [1], who attempt to clarify a controversial issue related to the clinical management of this infection. As the authors of a study [2] cited in their article, we were surprised by the interpretation of some of our data, and we would like to add our comments on this topic.

First, in our retrospective study [2], removal of central venous catheters (CVCs) was associated with a significant decrease in the mortality rate (OR, 0.62; 95% CI, 0.38–0.99; P = .047). The mortality rate among patients whose catheters were not removed was 65%, whereas, among patients whose catheters were removed, it was 26%. This measure’s impact on mortality was statistically modest on multivariate analysis. However, the majority of our study population, as well as other patient populations with candidemia, were critically ill patients who had a high risk of dying of causes other than Candida infection. In a number of these patients, even the most effective medical treatment is unable to change the poor prognosis, as confirmed by our data on the efficacy of adequate antifungal treatment. We agree with Nucci and Anaissie [1] that, in the absence of adequate prognosis stratification, the high mortality rate may have resulted from selection bias (i.e., if catheters had been removed from patients with better prognoses, the mortality rate in this group would have been lower). They propose resolving this issue by means of a prospective, randomized trial. We would like to raise doubt about whether performing this kind of study is ethical. In fact, according to their analysis, 3 studies have shown that CVC removal has some benefit in patients with candidemia. Because candidemia is associated with a high mortality rate, it would be more acceptable, with respect to ethical issues, to perform a retrospective, case-control study.

Second, we found that the mortality rate in the intensive care unit (ICU) differed from the rates in the surgical and medical wards, which Nucci and Anaissie [1] considered “puzzling.” Actually, the authors inverted the factors of our comparison between surgical/medical wards and the ICU; therefore, they reported an unlikely result. In fact, we found, as expected, that the mortality rate in the surgical and medical wards was significantly lower than that in the ICU (OR, 2.06; 95% CI, 1.21–3.51; P = .007).

Third, Nucci and Anaissie [1] emphasized the lack of correlation between mortality and the severity of illness score used in our study. This finding, as they correctly pointed out, results from features of the McCabe scale, which is based on the underlying disease of the patient and not on vital signs and other parameters that are noted at admission to the hospital, as is the case with the Simplified Acute Physiology Score and the APACHE III score. Moreover, the McCabe scale subdivides the underlying diseases on the basis of generic definitions, potentially leading to equivocal interpretations. However, this scale system is sometimes the only possible choice in a retrospective study because of the lack of several data in medical records.

Finally, we would like to raise a point about the usefulness of catheter removal with respect to the source of candidemia. The authors said that, because most episodes of candidemia have an intestinal source, the removal of the CVC is likely to have limited impact on the outcome. On the contrary, we found that 75% of our evaluable nonneutropenic patients with CVCs in place had CVC-related candidemia. Moreover, catheters that are retained and that subsequently become infected may become the source of sustained candidemia that is independent from the primary source of fungemia. As a general rule, in the treatment of infectious diseases, retention of an infected foreign body constitutes a factor for the persistence of infection. Therefore, the usefulness of leaving an infected CVC in place needs to be demonstrated, rather than the contrary. As suggested by the authors [1], there is a strong need for adequate studies to better define the impact of CVC removal on patients with candidemia. While we await further data on this topic, we believe that the removal of CVCs is advisable.

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