Daptomycin or Vancomycin for Methicillin-Resistant Staphylococcus aureus with a Vancomycin Minimum Inhibitory Concentration >1 μg/L

To the Editor—We commend Moore et al for their study comparing the effectiveness and safety of vancomycin and daptomycin in the treatment of bacteremia due to methicillin-resistant Staphylococcus aureus (MRSA) with a vancomycin minimal inhibitory concentration (MIC) >1 μg/mL [1], because it is indeed a very complicated question to answer with observational studies. The hypothesis that daptomycin is more effective in such a situation is plausible, but we are worried about several problems in the design of their study that would merit some clarifications.

In a randomized clinical trial, patients would be randomized to vancomycin or daptomycin approximately on day 3, when the MIC of the isolate becomes available. It should be noted that the study by Moore et al was a matched cohort study rather than a matched case-control study. However, the method used to match the patients treated with daptomycin and vancomycin would suffice to appropriately control for the confounding caused by age and severity of illness before the infection occurred and by the source of infection, but not for the situation of the patients when the decision to switch therapy was made (Figure 1).

First, the fact that 38% of patients were treated with daptomycin for unknown reasons is very worrisome. As an example, patients with good evolution may have been switched to daptomycin because it is more convenient as outpatient intravenous therapy than vancomycin. Second, the fact that daptomycin prescriptions needed the approval of an infectious disease consulting service also raises some questions. If some physicians were reluctant to consult the infectious diseases service or obtain approval for daptomycin, then some patients whose condition worsened with vancomycin may have still continued to receive it.

Third, the main outcome variable was clinical failure, a composite including microbiological failure that was defined as persistent bacteremia after ≤7 days of therapy with a specific antibiotic. Microbiological failure for patients treated with daptomycin seems less likely, because bacterium would need to persist after 3–6 days of vancomycin plus 7 days of daptomycin treatment. The fact that 10% of daptomycin-treated patients were still bacteremic after all those days of therapy is not very encouraging. Finally, other aspects of the management of MRSA bloodstream infections known to affect outcome, such as the early removal of catheters or surgical drainage if indicated, were not studied.

Note

Potential conflicts of interest. A. P. has been a consultant for Pfizer, has served as a speaker for Wyeth and Pfizer, and has received research support from Pfizer, Wyeth, and Novartis. J. R. B. has been a consultant for Wyeth and Pfizer, has served as a speaker for Wyeth, Pfizer, and Novartis, and has received research support from Wyeth and Novartis. L. E. L. C. reports no potential conflicts.

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