Colonization by Antibiotic-Resistant Gram-Negative Bacteria and Appropriate Empirical Antibiotic Therapy in Intensive Care Unit Patients

TO THE EDITOR—The June 2005 issue of the journal included an article by Blot et al. that described the potential relationship between prior colonization and appropriate empirical antibiotic therapy for infection with some antibiotic-resistant gram-negative bacteria in intensive care unit (ICU) patients. The authors defined prior colonization as "the presence (detected 2 or more days before the onset of bacteremia and during the ICU stay) of the same antibiotic-resistant gram-negative bacteria in colonization and subsequent blood cultures."  

In light of this definition, we understand that patients who had been previously colonized by an antibiotic-resistant gram-negative bacterium and subsequently had bacteremia caused by a different antibiotic-resistant gram-negative bacterium may have been included in the group without prior colonization by any antibiotic-resistant gram-negative microorganism. If this is the case, then the analysis of the impact that colonization status had on the rate of appropriate initial antibiotic therapy is not accurate.

On the same page, Blot et al. defined antibiotic therapy as appropriate when it included “an in vitro effective antibiotic.” It is known that some gram-negative bacteria—such as Klebsiella species, Escherichia coli, and many others—may be producers of extended-spectrum β-lactamases and that this may lead to false-positive findings of in vitro susceptibility to some β-lactams, including cefuroxime or cefepime, both of which were used for empirical antibiotic therapy at the study institution. Therefore, it is possible that some of the patients who had bacteremia caused by any such bacteria may have been improperly classified as having received appropriate initial empirical antibiotic therapy, because of false-positive findings of in vitro susceptibility to a β-lactam eventually prescribed. Again, if this is the case, then the analysis of the impact that colonization status had on the rate of appropriate initial antibiotic therapy is not accurate.

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REFERENCES