Diagnosis of Catheter-Related Bacteremia in Cancer Patients

I read with great interest the article by Malgrange et al. (3) about the usefulness of difference in time-to-positivity of peripheral blood cultures and cultures of blood taken through the catheter for the diagnosis of bloodstream infection related to long-term intravenous devices. However, in performing sensitivity and specificity analyses for validation of a new diagnostic test, the choice of a well-validated “gold standard” is essential (2). In this regard some important remarks can be made.

For port-related infections, catheter-tip culture does not seem to be sufficiently sensitive for the diagnosis of infection, as the internal lumen of the port is the source of infection in almost half of the patients (1, 5). Culturing the lumen of the port therefore seems necessary. Because all of the patients in the above-mentioned study were cancer patients with long-term intravenous devices, for a correct interpretation of the study results, it is essential to know how many of them had a venous access port.

The definition of probable catheter-related infection used is problematic, as all patients with blood culture positive for staphylococci or yeasts and without clinically apparent catheter infection (as indicated by, e.g., pus and inflammation) were classified as having probable catheter-related infection and were therefore included in the sensitivity and specificity analyses. Bacteremia caused by an organism commonly found on skin but without an apparent focus as a definition for catheter-related bacteremia can be a clinically very useful definition (in cases where identifying catheter-related bacteremia is essential), but it cannot be used as a gold standard on which further specificity analysis is subsequently built. Positive predictive values will in consequence be falsely high, as an uncertain number of the patients identified will not have suffered from catheter-related bloodstream infection.

Finally, it is important to note that endoluminal infection of the catheter is probably more important for long-term intravenous devices than it is for short-term catheters, such as those used in intensive care units (4). Therefore, the study results should not be generalized to patients with short-term intravenous catheters before confirmation by further studies of other patient populations.

REFERENCES


Bart Rijnders*
Department of Internal Medicine—Infectious Diseases
University Hospital Gasthuisberg
Herestroat 49
B-3000 Leuven, Belgium

*Phone: 32 16 346274
Fax: 32 16 346275
E-mail: bart.rijnders@uz.kuleuven.ac.be

Ed. Note: The authors of the published article did not respond.