Letters to the Editor

Universal Maximal Sterile Barrier Precautions May Be Unnecessary

To the Editor:

Raad et al[1] present welcome data showing that maximal sterile precautions at the time of insertion of central venous catheters (CVC) significantly reduces infection.

However, Maki's ringing endorsement[2] of the universal use of maximal sterile precautions at the time of CVC insertion needs to be tempered with reason. Like Dr. Maki, we have inserted and supervised insertion of hundreds of CVCs and agree that touch contamination of the guidewire, the CVC, or both is common but rarely appreciated. Like Dr. Maki, we believe that maximal sterile precautions should be considered mandatory. Over the last 2 years, we slowly have changed practice in our intensive care unit (ICU) from one in which CVCs were inserted with gloves alone with a small sterile drape to one in which all CVCs are inserted with maximal barrier precautions, including a gown, mask, and large drape that leaves no part of the patient or bed sheet exposed. A survey of 160 CVCs done during this transition showed that the overall infection rate was 32 of 160. Of these 160 CVCs, 75 were in septic patients with multiorgan failure on respiratory and circulatory support. In this group, we were unable to show any difference in CVC infection rates in those catheters inserted with maximal sterile precautions (8 of 25) and those inserted with gloves and a small drape alone (19 of 50).

We believe that projecting data from one type of patient group, in this case, cancer patients with long-term CVC placement,[1] may not apply to all patients who require CVCs. The situation in critically ill patients may be significantly different, and our data do not support the concept of dramatic benefit with the use of maximal sterile precautions. Nevertheless, we continue to use maximal sterile precautions with the hope of reinforcing the importance of infection control in the ICU.

F. Kapadia MD, MRCP
C. Rodrigues, MD
Hinduja National Hospital
and Medical Research Centre
Bombay, India

REFERENCES

1. Raad II, Hohn DC, Gilbreath J, et al. Prevention of central venous catheter-related infection by using maximal sterile barrier precautions during insertion. *Infect* Control *Hosp Epidemiol* 1994;15:231-238.
2. Maki DJ. Yes, Virginia, aseptic technique is very important: maximal barrier precautions during insertion reduce the risk of central venouscatheter-relatedbacteremia. *Infect Control Hosp Epidemiol* 1994;15:227-230.

The author replies.

Dr. Kapadia and Dr. Rodrigues raise a valid point. Is it justified to conclude, based on a study showing marked benefit in ambulatory cancer patients, that use of maximal barrier precautions during insertion of a central venous catheter (CVC)—a sterile long-sleeved surgical gown and large sterile sheet drape, a head cover and mask, as well as sterile gloves-also will be of benefit in other patient populations, such as critically ill ICU patients?

First, although it is not stated, I presume that their data, which form the basis for their reservation, refer to ***colonized*** catheters, rather than catheters that produced catheter-related bacteremia. It is always preferable that a study of a measure to prevent CVC-related infection be sufficiently large to have statistical power to identify significant differences in ***catheter-related bloodstream infection.***[1] The database they provide is far too small to be able to draw meaningful conclusions about differences in risk of CVC-related infection between the two groups.

Second, Kapadia and Rodrigues' analysis is further compromised by the fact that the levels of barrier precautions used in their "septic" ICU patients were not determined by random assignment, but rather by individual physicians' choices during a "transition" period when Kapadia and Rodrigues were striving to gain acceptance of maximal barrier precautions. It is very plausible that the two groups differ in important ways that influence susceptibility to CVC-related infection, beyond the level of barrier precautions used, such as physicians who chose to use maximal precautions were less experienced in the insertion of CVCs than those who used lesser precautions and thus, any benefit gained with the use of maximal precautions was negated; or, physicians' decisions to use maximal barrier precautions were determined primarily by how critically ill the patient was perceived to be at the time, particularly how vulnerable they felt the patient was to nosocomial infection.

Kapadia and Rodrigues have fallen into the same intellectual trap as early authors of observational studies of surgical antimicrobial prophylaxis who, comparing rates of postoperative surgical wound infection in patients who happened not to have received prophylaxis with rates in patients whose surgeons chose to give them prophylaxis-usually because they were sicker or were

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