Infection-Thwarting Catheters, Planning Key in Reducing Hospital Deaths

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A new study shows that antiseptic-coated catheters and better safety measures in hospitals could significantly reduce the number of infection-related hospital deaths, which account for nearly 100,000 lives lost each year. The study, led by University of Nebraska Medical Center physician-scientists, is published in the Oct. 18 issue of the Annals of Internal Medicine.

“Our study clearly indicates the importance of using various precautions in insertion and care of central venous catheters,” said Mark Rupp, MD, professor of internal medicine at UNMC and the lead author of the study. “Infections of these devices result in approximately 250,000 cases of bloodstream infection per year. Patient safety is a big concern.”

Each year more than 2 million people in the United States develop an infection during their hospital stay. These nosocomial infections are a leading cause of death in the United States and cost nearly $5 billion annually to treat.

The nine-center study evaluated a new kind of central venous catheter designed to help reduce nosocomial infections. Central venous catheters (CVC’s) are placed in a major vein to draw blood and provide nutrition and medication to patients. The CDC estimates about 53 percent of adult patients in intensive care units have a CVC on any given day.

This study compared an antiseptic-coated CVC to an uncoated CVC in 780 intensive care unit patients. The results showed a substantial decrease in bacterial colonization, the first step to an infection, in patients receiving the coated catheters.

But the study revealed something with even broader implications, Rupp said. It suggested that meticulous infection-control measures used by hospital personnel may have played an even greater role in reducing microbial infections than the catheter itself.

“Our infection rate was much lower possibly because we used good techniques and barriers,” Rupp said. “What this means is you don’t necessarily have to use coated catheters, you have to use appropriate precautions for inserting and caring for catheters.”

The Institute of Medicine contends that wider implementation of the nosocomial infection guidelines from the Centers for Disease Control and Prevention would save more than 40,000 lives annually, reduce infection rates by up to 50 percent, and save nearly $2.75 billion.

Rupp’s study was funded by Arrow International Inc., which manufactures the antiseptic-coated catheter. He said investigator-initiated money to study nosocomial infections is nearly non-existent, yet these studies may provide additional proof that simple measures are more successful and far less costly than complex technologies in reducing hospital infections.

“Nearly 100,000 persons die each year from nosocomial infections,” said Rupp. “An effective hospital infection control program isn’t expensive compared to the huge expense, in terms of mortality, morbidity, and economic cost, of healthcare-associated infections.”

“As a nation, we spend much more money on issues like AIDS and bioterrorism even though, in comparison, they do not have as much impact on the average American as healthcare-associated infection. We just need to make prevention of these infections a bigger national priority.”