MedicalXpress

Commonly used catheter's safety tied to patient population

August 6 2013

A new study reports that peripherally inserted central catheters (PICCs) do not reduce the risk of central line associated bloodstream infections (CLABSIs) in hospitalized patients. PICCs have become one of the most commonly used central venous catheters (CVCs) in healthcare settings since they are considered easier and safer to use, with less risk of CLABSIs. The study, published in the September issue of *Infection Control and Hospital Epidemiology*, the journal of the Society for Healthcare Epidemiology of America, demonstrates that the risk of CLABSI with PICCs is based more on patient factors, rather than the device.

"As the use of PICCs has grown exponentially in vulnerable populations, caution and close evaluation of risks and benefits is warranted when using the device," said Vineet Chopra, MD, MSc, lead author of the study and assistant professor of medicine at the University of Michigan Health System. "This research provides novel ideas for advancing both clinical practice and science around the use of these devices."

Chopra and colleagues conducted a systematic review and meta-analysis of 23 studies of PICCs to compare the risk of CLABSIs between PICCs and other non-cuffed, non-tunneled central venous catheters (CVCs). The researchers hypothesized that selection of healthier patients in past studies may explain the lower risk of CLABSI observed with PICCs. Their theory was based on the observation that many of the original studies reporting PICC bloodstream infection rates included non-hospitalized patients who are fundamentally different from those in

whom CLABSIs usually occur.

The analysis involved 57,250 patients and revealed that hospitalized patients with PICCs were just as likely to develop bloodstream infection when compared with patients with other types of CVCs; however, non-hospitalized patients in outpatient settings appeared to fare better with PICCs than other devices.

The authors suggest adhering to proven prevention strategies to reduce CLABSIs in non-critical care settings with the same drive, intensity, and strategic insights that have been employed in intensive care units. The study also highlights the need for future research assessing the role of novel technologies and practices, such as chlorhexidine-impregnated site dressings and antimicrobial PICCs.

More information: Vineet Chopra, John C. O'Horo, Mary A.M. Rogers, Dennis G. Maki, Nasia Safdar. "The Risk of Bloodstream Infection Associated with Peripherally Inserted Central Catheters Compared with Central Venous Catheters in Adults: A Systematic Review and Meta-Analysis." *Infection Control and Hospital Epidemiology* 34:9 (September 2013).

Provided by Society for Healthcare Epidemiology of America