

Adherence to Protocol Cuts Line Sepsis in NICU

BY MICHELE SULLIVAN
Mid-Atlantic Bureau

PHILADELPHIA — A central venous line hub access protocol using 2% chlorhexidine was linked to an almost 50% decline in overall line infections in an urban neonatal intensive care unit.

It's unclear whether the decrease in line sepsis was related to the choice of antiseptic agent, adherence to a specific protocol, staff education, or a combination of all these factors, Dr. Sulaiman Sannoh said at the annual meeting of the Eastern Society for Pediatric Research.

"I think it was the combination of the new line care technique and the specific disinfectant," said Dr. Sannoh, a neonatology fellow at the Maria Fareri Children's Hospital in Valhalla, N.Y. "There are no universal protocols for central venous line care, and the infection rates vary tremen-

bilical artery and vein catheters (14 in 1,000 catheter-days to 3 in 1,000 catheter-days).

The overall percentage of infected catheters dropped significantly, from 17% to 9%. The biggest decrease occurred in the percentage of infected Broviac catheters (60% to 31%). The decline in line sepsis occurred despite high CVL device utilization rates. There were nonsignificant decreases in the percentage of infections in PICC lines and umbilical artery and vein catheters.

Gram-negative sepsis also decreased significantly after the protocol was introduced, Dr. Sannoh said, but the rates of line sepsis caused by gram-positive bacteria and fungus were unchanged.

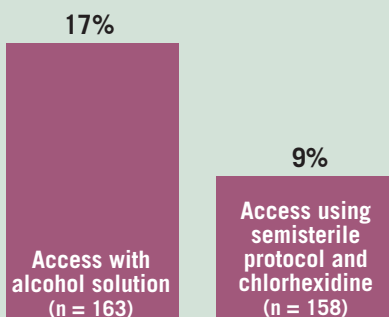
The audiovisual presentations were an effective tool in changing practice, and the protocol adherence appeared good throughout the study, Dr. Sannoh added. The cumulative infection rate increased very slightly in the first month of protocol institution, and then began a decline

that continued its downward trajectory throughout the implementation period.

Dr. Sannoh acknowledged that protocol compliance rates tend to decrease over time, but said the online audiovisual reinforcement program may positively influence that tendency. "The staff found it very helpful and consulted it frequently," he said.

Dr. Borianna Parvez, Barbara Clones, R.N., and Dr. Jose Munoz were coinvestigators in the study. ■

Sepsis Declined After New Hub Access Protocol Initiated



Note: Data on line-related sepsis based on two 9-month periods.

Source: Dr. Sannoh

dously between hospitals. Studies have shown that adhering to a specific protocol is one way of decreasing line sepsis."

His prospective trial compared central venous line (CVL) infections over two 9-month periods. In the first period, 163 neonatal intensive care unit (NICU) infants' lines were accessed using an alcohol solution.

In the second period, 158 NICU infants' CVL hubs were accessed using a semisterile protocol and disinfected with 2% chlorhexidine. Staff applied the chlorhexidine solution 10 times in a circular motion and allowed 30 seconds of air-dry time. All supplies for line access were kept in a sterile field. Staff members learned the new protocol in group sessions using an audiovisual presentation; the presentation was subsequently available online for future reference and reinforcement.

There were no significant differences at baseline between the two groups. A total of 40% had a birth weight below 1,000 g. The rates of necrotizing enterocolitis, ventilator days, length of stay, and mortality were also similar.

There was a significant decline in line-related sepsis after the chlorhexidine protocol was instituted. The incidence of peripherally inserted central catheter (PICC) sepsis decreased from 23 in 1,000 catheter-days to 11 in 1,000 catheter-days. There was also a significant decrease in the combined rates of sepsis associated with um-

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