
Abstract:

BACKGROUND: The Centers for Disease Control and Prevention guideline recommended the use of 2% chlorhexidine as a percutaneous disinfectant for central venous catheter (CVC) insertion. However, in Japan, 0.05% chlorhexidine is commonly used as well as 10% povidone-iodine, instead of 2% chlorhexidine. PURPOSE: It was the aim of this study to examine whether the use of 0.05% chlorhexidine is inferior to conventional 10% povidone-iodine as a percutaneous disinfectant for preventing CVC-related bloodstream infection (CVC-RBSI).

METHODS: Between September 2006 and July 2008, the time interval from insertion to development of CVC-RBSI was compared prospectively between patients prepared with 0.05% chlorhexidine (group 1, n = 286 CVCs) and those prepared with conventional 10% povidone-iodine (group 2, n = 298 CVCs).

RESULTS: Two hundred and thirty-nine patients received 584 CVCs for a total of 6,205 catheter-days. CVC-RBSI (3.22 per 1,000 catheter-days) was diagnosed in 20 cases. There were no significant differences in patient background factors between group 1 and 2, except
for blood culture positivity (p = 0.0450). However, Kaplan-Meier analysis and the log rank test revealed no significant difference between group 1 and 2 in the time interval from insertion until development of CVC-RBSI.

CONCLUSIONS: Use of 0.05% chlorhexidine is not inferior to conventional 10% povidone-iodine as a cutaneous disinfectant for the prevention of CVC-RBSI.