

Abstract:

BACKGROUND: Central line-associated bloodstream infections (CLABSIs) are important hospital-acquired infections. Chlorhexidine-impregnated dressings (also known as Chlorhexidine patches, CHG-patches) are reported to decrease CLABSI in adults. This study aims to determine the efficacy of CHG-patches in reducing CLABSIs in children.

METHODS: An open-label randomized controlled trial was conducted in children aged 2 months to 18 years requiring a short-term catheter. Patients were randomized into two groups, allocated to receive CHG-patches or standard transparent dressings. Caring of the catheter was in accordance with APSIC recommendations. CLABSI was defined using NHSN surveillance criteria.

RESULTS: From April 2017 to April 2018, 192 children were enrolled. There were 108 CHG-patches catheters and 101 standard dressing catheters contributing to 3,113 catheter-days. The median duration of catheter dwelling was 13 days (interquartile range, 8-20 days). Fifty-percent were placed at the jugular vein and 22% at the femoral vein. There were 23 CLABSI events. Incidence rates for CHG-patches and standard dressings were 7.98 (95% confidence interval, 4.25-13.65) and 6.74 (95% CI, 3.23-12.39) per 1000 catheter-days, respectively (incidence rate ratio 1.18; 95% CI, 0.52-2.70). CLABSI pathogens were 15 Gram-negative, 6 Gram-positive bacteria and 2 Candida organisms. Catheter colonization of CHG-patches and standard dressings were 2.02 (95% CI, 0.42-5.91) and 3.07 (95% CI, 1.00-7.16) per 1000 catheter-days, respectively. Only local adverse effects occurred in 6.8% of the participants.

CONCLUSIONS: In our setting, there was no difference in CLABSI rates when the chlorhexidine patch dressings were compared to the standard transparent dressings. Strengthening of CLABSI prevention bundles is mandatory.

Reference:

Jitrungruengnij, N., Anugulruengkitt, S., Rattananupong, T., Prinyawat, M., Jantarabenjakul, W., Wacharachaisurapol, N., Chatsuwana, T., Janewongwirot, P., Suchartlikitwong, P., Tawan, M., Kanchanabutr, P., Pancharoen, C. and Puthanakit, T. (2020) Efficacy of chlorhexidine patch on central line-associated bloodstream infections in children. *Pediatrics International*. February 17th. doi: 10.1111/ped.14200. (Epub ahead of print).