Assess the efficacy of chlorhexidine with povidone solutions as a skin disinfectant for central venous catheter (CVC) care” Shi et al (2019).

Abstract:

OBJECTIVE: Assess the efficacy of chlorhexidine with povidone solutions as a skin disinfectant for central venous catheter (CVC) care.

BACKGROUND: Central venous catheters are widely used for critically ill patients. Catheter maintenance can easily lead to a catheter-related bloodstream infection (CRBSI), which is the manifestation of a bloodstream infection (BSI) in a patient who carries a catheter or removes the catheter within 48 hours. There is no clear source of BSIs except for indwelling catheters in the blood vessels, and BSIs significantly increase the morbidity and mortality of patients. We assess the efficacy of chlorhexidine with povidone as a skin disinfectant for CVC care.

METHODS: In July 2018, we searched the Cochrane Library, PubMed, EMBASE, Web of Science, OVID, CNKI, SinoMed, WanFangData, CqVip, and DuXiu for publications in English and Chinese. By searching articles published before July 2018, we were able to extract data on study design, participants, antiseptics compared, sample size, and main outcomes. We conducted meta-analyses of the efficacy of chlorhexidine vs povidone solutions as a skin disinfectant for CVC care.

RESULTS: We included 10 randomized controlled trial studies. After conducting subgroup analysis, the results indicated that chlorhexidine was significantly better than povidone in preventing CRBSIs (P = .12; I² = 36%; risk ratio = 0.49; 95% confidence interval, 0.29-0.85). Compared with povidone, the chlorhexidine catheterization rate of CRBSIs was reduced (P = .16; I² = 32%; RR = 0.54; 95% CI, 0.42-0.69). There was no clear difference in the rates of skin reaction between chlorhexidine and povidone (P = .006; I² = 87%; RR = 1.92; 95% CI, 0.55-6.72). The comparison was underpowered for BSIs without a clear source.

CONCLUSIONS: Chlorhexidine solution for CVC care may significantly reduce rates of CRBSIs and catheter colonization compared with povidone solutions. The disinfection effect of chlorhexidine-alcohol is better than that of other solutions. Because the quality of the studies...
Chlorhexidine disinfectant reduces risk of central venous catheter infection | 2

evaluated is relatively low, the true effects may be different, so more evidence is needed.

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