To compare the efficacy of three antiseptic solutions [0.5%, and 1.0% alcohol/chlorhexidine gluconate (CHG), and 10% aqueous povidone-iodine (PVI)] for the prevention of intravascular catheter colonization, we conducted a randomized controlled trial in patients from 16 intensive care units in Japan” Yasuda et al (2017).

Abstract:

BACKGROUND: To compare the efficacy of three antiseptic solutions [0.5%, and 1.0% alcohol/chlorhexidine gluconate (CHG), and 10% aqueous povidone-iodine (PVI)] for the prevention of intravascular catheter colonization, we conducted a randomized controlled trial in patients from 16 intensive care units in Japan.

METHODS: Adult patients undergoing central venous or arterial catheter insertions were randomized to have one of three antiseptic solutions applied during catheter insertion and dressing changes. The primary endpoint was the incidence of catheter colonization, and the secondary endpoint was the incidence of catheter-related bloodstream infections (CRBSI).

RESULTS: Of 1132 catheters randomized, 796 (70%) were included in the full analysis set.
Catheter-tip colonization incidence was 3.7, 3.9, and 10.5 events per 1000 catheter-days in 0.5% CHG, 1% CHG, and PVI groups, respectively (p = 0.03). Pairwise comparisons of catheter colonization between groups showed a significantly higher catheter colonization risk in the PVI group (0.5% CHG vs. PVI: hazard ratio, HR 0.33 [95% confidence interval, CI 0.12-0.95], p = 0.04; 1.0% CHG vs. PVI: HR 0.35 [95% CI 0.13-0.93], p = 0.04). Sensitivity analyses including all patients by multiple imputations showed consistent quantitative conclusions (0.5% CHG vs. PVI: HR 0.34, p = 0.03; 1.0% CHG vs. PVI: HR 0.35, p = 0.04). No significant differences were observed in the incidence of CRBSI between groups.

CONCLUSIONS: Both 0.5% and 1.0% alcohol CHG are superior to 10% aqueous PVI for the prevention of intravascular catheter colonization.

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Reference:


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