867 Meta-analysis on the Relative Risk of Central Line-associated Bloodstream Infections Associated with a Needleless Intravenous Connector with New Engineering Design

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Accessibility
867. Metaanalysis on the Relative Risk of Central Line-associated Bloodstream Infections Associated with a Needless Intravenous Connector with New Engineering Design
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Background. Needleless-intravenous-connectors (NC) with desired patient safety design may facilitate effective intravenous line care and reduce the risk for central line-associated bloodstream infections (CLA-BSIs). We conducted a meta-analysis to determine the risk for CLA-BSI associated with the use of MaxPlus™ Tru-Swab™ Positive Displacement Connector (MP), a newer generation NC with improved engineering design.

Methods. We reviewed MEDLINE, Cochrane Review, EMBASE, ClinicalTrials, and studies presented in 2010-2012. Studies reporting the CLA-BSIs in patients using MP compared to negative- or neutral-displacement NCs were analyzed. We estimated the relative risk (RR) of CLA-BSI with the MP for each study and then the pooled effect using the random effects method.

Results. Seven studies met the inclusion criteria: four were conducted in intensive care units, one in a home-health setting, and two in long-term-acute-care settings. In the comparator period, total central venous line (CVL) days were 111,255; the CLA-BSI rate was 1.5 events/1,000 CVL days. In the MP period, total CVL days were 95,383; the CLA-BSI rate was 0.5 events/1,000 CVL days. The pooled random effects model revealed 63% CLA-BSI risk reduction associated with the MP (RR: 0.37; 95% Confidence Interval [CI]: 0.16, 0.90). The Poisson model showed 69% CLA-BSI risk reduction associated with MP (RR: 0.31, 95% CI: 0.19, 0.47).

Conclusion. A needless connector with improved engineering design is associated with lower CLA-BSI risk.

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