



This is the first randomized clinical trial (RCT) to compare rates of central line-associated bloodstream infection (CLABSI) between patients using an SS + SUF and those using a 3WSC” Rosenthal et al (2015).

Reference:

Rosenthal, V.D., Udwardia, F.E., Kumar, S., Poojary, A., Sankar, R., Orellano, P.W., Durgad, S., Thulasiraman, M., Bahirune, S., Kumbhar, S. and Patil, P. (2015) Clinical impact and cost-effectiveness of split-septum and single-use prefilled flushing device vs 3-way stopcock on central line-associated bloodstream infection rates in India: a randomized clinical trial conducted by the International Nosocomial Infection Control Consortium (INICC). American Journal of Infection Control. July 8th. .

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Abstract:

BACKGROUND: Three-way stopcocks (3WSCs) are open systems used on intravenous tubing. Split septums (SSs) are closed systems with prepierced septums. Single-use prefilled flushing devices (SUFs) carry a lower risk of contamination than standard intravenous flushing. 3WSC and standard flushing are widely used in developing countries. This is the first randomized clinical trial (RCT) to compare rates of central line-associated bloodstream infection (CLABSI)



between patients using an SS + SUF and those using a 3WSC.

METHODS: An RCT with 1096 patients in 5 adult intensive care units was conducted between April 2012 and August 2014 to evaluate their impact on CLABSI rates. Centers for Disease Control and Prevention/National Healthcare Safety Network definitions were applied and International Nosocomial Infection Control Consortium methodology were followed.

RESULTS: The study cohort included 547 patients and 3619 central line (CL)-days for the SS + SUF group, and 549 patients and 4061 CL-days for the 3WSC group. CLABSI rates were 2.21 per 1000 CL-days for SS + SUF and 6.40 per 1000 CL-days for 3WSC (relative risk, 0.35; 95% confidence interval [CI], 0.16-0.76; $P = .006$). The SS + SUF group had significantly better cumulative infection-free catheter survival compared with the 3WSC group (hazard ratio, 0.33; 95% CI, 0.15-0.73; $P = .006$). Using an SS + SUF represents savings of \$402.88 and an increase in quality-adjusted life years of 0.0008 per patient. For each extra dollar invested in an SS + SUF, \$124 was saved.

CONCLUSION: The use of SS + SUF is cost-effective and associated with a significantly lower CLABSI rate compared with the use of 3WSC.

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