We aimed to quantify the effectiveness of central-line bundles (insertion or maintenance or both) to prevent these infections” Ista et al(2016).

Abstract:

BACKGROUND: Central-line-associated bloodstream infections (CLABSIs) are a major problem in intensive care units (ICUs) worldwide. We aimed to quantify the effectiveness of central-line bundles (insertion or maintenance or both) to prevent these infections.

METHODS: We searched Embase, MEDLINE OvidSP, Web-of-Science, and Cochrane Library to identify studies reporting the implementation of central-line bundles in adult ICU, paediatric ICU (PICU), or neonatal ICU (NICU) patients. We searched for studies published between Jan 1, 1990, and June 30, 2015. For the meta-analysis, crude estimates of infections were pooled by use of a DerSimonian and Laird random effect model. The primary outcome was the number of CLABSIs per 1000 catheter-days before and after implementation. Incidence risk ratios (IRRs) were obtained by use of random-effects models.

FINDINGS: We initially identified 4337 records, and after excluding duplicates and those
ineligible, 96 studies met the eligibility criteria, 79 of which contained sufficient information for a meta-analysis. Median CLABSIs incidence were 5·7 per 1000 catheter-days (range 1·2-46·3; IQR 3·1-9·5) on adult ICUs; 5·9 per 1000 catheter-days (range 2·6-31·1; 4·8-9·4) on PICUs; and 8·4 per 1000 catheter-days (range 2·6-24·1; 3·7-16·0) on NICUs. After implementation of central-line bundles the CLABSI incidence ranged from 0 to 19·5 per 1000 catheter-days (median 2·6, IQR 1·2-4·4) in all types of ICUs. In our meta-analysis the incidence of infections decreased significantly from median 6·4 per 1000 catheter-days (IQR 3·8-10·9) to 2·5 per 1000 catheter-days (1·4-4·8) after implementation of bundles (IRR 0·44, 95% CI 0·39-0·50, p<0·0001; I2=89%).

INTERPRETATION: Implementation of central-line bundles has the potential to reduce the incidence of CLABSIs.

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Reference:


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