

Prospective Observational Study on Central Line–Associated Bloodstream Infections and Central Venous Catheter occlusions using a Negative Displacement Connector with an Alcohol Disinfecting Cap

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BACKGROUND

Major complications of central venous catheter (CVC) use include bloodstream infection and occlusion. We performed a prospective, observational study to determine the rate of central line–associated bloodstream infection (CLABSI) and CVC occlusion using a negative displacement connector with an alcohol disinfecting cap.

METHODOLOGY

Patients were followed from the time of CVC insertion through 2 days after removal, at the time of hospital discharge if there was no documentation of removal, or 90 days after the insertion of the CVC if it was not removed. CLABSI was defined using National Healthcare Safety Network criteria. Data for evidence of lumen occlusions were extracted from the electronic health record. Direct observations were performed to assess adherence to hospital policy regarding CVC insertion practice.

RESULTS

A total of 2,512 catheters from 2,264 patients were enrolled for this study. There were 21 CLABSIs (0.84%; 95% confidence interval [CI], 0.48%-1.19%; 0.62 per 1,000 line days) and 378 occlusions (15.05%; 95% CI, 13.65%-16.45%; 11.23 per 1,000 line days). Eighty-five direct observations demonstrated insertion protocol adherence in 881 of 925 (95.24%; 95% CI, 93.87%-96.61%) measured criteria.

CONCLUSIONS

Lines placed following a standardized protocol using a negative displacement connector with an alcohol cap have low rates of infection compared with historically published findings. We also established that the occlusion rate is >15-fold the CLABSI rate.

Full Study Available In:

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