To explore the risk-adjusted association between intensive care unit (ICU)-acquired central line-associated bloodstream infection (CLABSI) and in-hospital mortality" Wong et al (2016).

Abstract:

Objective: To explore the risk-adjusted association between intensive care unit (ICU)-acquired central line-associated bloodstream infection (CLABSI) and in-hospital mortality.

Design: Retrospective observational study.

Setting: Forty-five-bed adult ICU.

Patients: All non-extracorporeal membrane oxygenation ICU admissions between July 1, 2008, and April 30, 2014, requiring a central venous catheter (CVC), with a length of stay > 48 hours, were included.

Methods: Data were extracted from our infection prevention and ICU databases. A multivariable logistic regression model was constructed to identify independent risk factors for ICU-acquired CLABSI. The propensity toward developing CLABSI was then included in a logistic regression of in-hospital mortality.

Results: Six thousand three hundred fifty-three admissions were included. Forty-six cases of ICU-acquired CLABSI were identified. The overall CLABSI rate was 1.12 per 1,000 ICU CVC-days. Significant independent risk factors for ICU-acquired CLABSI included: double lumen catheter insertion (odds ratio , 2.59; 95% confidence interval , 1.16-5.77), CVC exposure > 7 days (OR, 2.07; 95% CI, 1.06-4.04), and CVC insertion before 2011 (OR, 2.20; 95% CI, 1.22-3.97). ICU-acquired CLABSI was crudely associated with greater in-hospital mortality, although this was attenuated once the propensity to develop CLABSI was adjusted for (OR, 1.20; 95% CI, 0.54-2.68).

Conclusions: A greater propensity toward ICU-acquired CLABSI was independently associated with higher in-hospital mortality, although line infection itself was not. The requirement for prolonged specialized central venous access appears to be a key risk factor for ICU-acquired CLABSI, and likely informs mortality as a marker of persistent organ dysfunction.

Reference:

Wong, S.W., Gantner, D., McGloughlin, S., Leong, T., Worth, L.J., Klintworth, G., Scheinkestel, C., Pilcher, D., Cheng, A.C. and Udy, A.A. (2016) The influence of intensive care unit-acquired central line-associated bloodstream infection on in-hospital mortality: A single-center risk-adjusted analysis. American Journal of Infection Control. February 10th. .

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