

We identified Gram-negative bacteria as leading pathogens of CLABSIs in a Taiwan medical center, and good compliance to care bundle is associated with reduced CLABSI incidence rate” Kuo et al (2017).

Abstract:

BACKGROUND/PURPOSE: For high risk of central line-associated bloodstream infections (CLABSIs) in patients of intensive care units (ICUs) and scarcely epidemiology and therapeutic recommendations in Asia, we aimed to evaluate the annual change in epidemiology, antibiogram, and risk factors for 14-day mortality.

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METHODS: A retrospective study of ICUs patients with CLABSIs at a medical center in Taiwan (2010-2016), where central line care bundle implemented since 2014, by reviewing clinical data, pathogens, and the antibiogram.

RESULTS: Gram-negative bacteria (59.3%) were main microorganisms of CLABSIs, and 9.0% of all GNB were MDROs. *Acinetobacter* spp., *Enterobacter* spp., and *Stenotrophomonas maltophilia* were the most frequently isolated. In multivariate analysis, malignancy, inadequate empirical antimicrobial therapy, inadequate definite antimicrobial therapy, and infection by fungi or multidrug-resistant organisms (MDROs) were associated with 14-day mortality (all $p < 0.05$). The CLABSI incidence rate decreased from 5.54 to 2.18 per 1000 catheter-day (from 2014 to 2015) with improved compliance to care bundle. Carbapenem and aminoglycoside were suitable empirical drugs in the hospital setting when GNB is predominant for CLABSI. Significant decreasing susceptibility of ampicillin/sulbactam in *Enterobacter* spp. (36.7%-0.0%), and ampicillin/sulbactam (12.5%-0.0%), ceftazidime (100.0%-52.9%), and tigecycline (87.5%-35.3%) in *Serratia marcescens*.

CONCLUSION: We identified Gram-negative bacteria as leading pathogens of CLABSIs in a Taiwan medical center, and good compliance to care bundle is associated with reduced CLABSI incidence rate. Malignancy, infection by MDROs or fungi, inadequate empirical or definite antimicrobial therapy are significant factors for 14-day mortality.

Reference:

Kuo, S.H., Lin, W.R., Lin, J.Y., Huang, C.H., Jao, Y.T., Yang, P.W., Tsai, J.R., Wang, W.H., Chen, Y.H., Hung, C.T. and Lu, P.L. (2017) The epidemiology, antibiograms and predictors of mortality among critically-ill patients with central line-associated bloodstream infections. *Journal of Microbiology, Immunology, and Infection*. September 6th. .
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