The vascular catheterization (central venous, arterial and hemofiltration catheter) was significantly associated with hospital-acquired bloodstream infection” Thuy et al (2018).

Abstract:

Data concerning intensive care unit (ICU)-acquired bacterial colonization and infections are scarce from low and middle-income countries (LMICs). ICU patients in these settings are at high risk of becoming colonized and infected with antimicrobial-resistant organisms (AROs). We conducted a prospective observational study at the Ho Chi Minh City Hospital for Tropical Diseases, Vietnam from November 2014 to January 2016 to assess the ICU-acquired colonization and infections, focusing on the five major pathogens in our setting: Staphylococcus aureus (S. aureus), Escherichia coli (E. coli), Klebsiella spp., Pseudomonas spp. and Acinetobacter spp., among adult patients with more than 48 hours of ICU stay. We found that 61.3% (223/364) of ICU patients became colonized with AROs: 44.2% (161/364) with rectal ESBL-producing E. coli and Klebsiella spp.; 30.8% (40/130) with endotracheal carbapenemase-producing Acinetobacter spp.; and 14.3% (52/364) with nasal methicillin-resistant S. aureus. The incidence rate of ICU patients becoming colonized with AROs was 9.8 (223/2,276) per 100 patient days. Significant risk factor for AROs colonization was the Charlson Comorbidity Index score. The proportion of ICU patients with HAIs was 23.4% (85/364), and the incidence rate of ICU patients contracting HAIs was 2.3 (85/3,701) per 100 patient days. The vascular catheterization (central venous, arterial and hemofiltration catheter) was significantly associated with hospital-acquired bloodstream infection. Of the 77 patients who developed ICU-acquired infections with one of the five specified bacteria, 44 (57.1%) had prior colonization with the same organism. Vietnamese ICU patients have a high colonization rate with AROs and a high risk of subsequent infections. Future research should focus on monitoring colonization and the development of preventive measures that may halt spread of AROs in ICU settings.

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