Documents

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An international prospective study of INICC analyzing the incidence and risk factors for catheter-associated urinary tract infections in 235 ICUs across 8 Asian Countries

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Abstract
Background: Identify urinary catheter (UC)-associated urinary tract infections (CAUTI) incidence and risk factors (RF) in 235 ICUs in 8 Asian countries: India, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, Thailand, and Vietnam. Methods: From January 1, 2014, to February 12, 2022, we conducted a prospective cohort study. To estimate CAUTI incidence, the number of UC days was the denominator, and CAUTI was the numerator. To estimate CAUTI RFs, we analyzed 11 variables using multiple logistic regression. Results: 84,920 patients hospitalized for 499,272 patient days acquired 869 CAUTIs. The pooled CAUTI rate per 1,000 UC-days was 3.08; for those using suprapubic-catheters (4.11); indwelling-catheters (2.65); trauma-ICU (10.55), neurologic-ICU (7.17), neurosurgical-ICU (5.28); in lower-middle-income countries (3.05); in upper-middle-income countries (1.71); at public-hospitals (5.98), at private-hospitals (3.09), at teaching-hospitals (2.04). The following variables were identified as CAUTI RFs: Age (adjusted odds ratio [aOR] = 1.01; 95% CI = 1.01-1.02; P < .0001); female sex (aOR = 1.39; 95% CI = 1.21-1.59; P < .0001); using suprapubic-catheter (aOR = 4.72; 95% CI = 1.69-13.21; P < .0001); length of stay before CAUTI acquisition (aOR = 1.04; 95% CI = 1.04-1.05; P < .0001); UC and device utilization-ratio (aOR = 1.07; 95% CI = 1.01-1.13; P = .02); hospitalized at trauma-ICU (aOR = 14.12; 95% CI = 4.68-42.67; P < .0001), neurologic-ICU (aOR = 14.13; 95% CI = 6.63-30.11; P < .0001), neurosurgical-ICU (aOR = 13.79; 95% CI = 6.88-27.64; P < .0001); public-facilities (aOR = 3.23; 95% CI = 2.34-4.46; P < .0001). Discussion: CAUTI rate and risk are higher for older

patients, women, hospitalized at trauma-ICU, neurologic-ICU, neurosurgical-ICU, and public facilities. All of them are unlikely to change. Conclusions: It is suggested to focus on reducing the length of stay and the Urinary catheter device utilization ratio, avoiding suprapubic catheters, and implementing evidence-based CAUTI prevention recommendations.

Author Keywords
Rates

Index Keywords
adult, age, Article, Asia, bladder catheterization, catheter associated urinary tract infection, cohort analysis, evidence based practice, female, hospitalization, human, incidence, India, infection prevention, infection risk, intensive care unit, length of stay, major clinical study, Malaysia, male, middle aged, middle income country, Mongolia, multivariate logistic regression analysis, Nepal, neurological intensive care unit, neurosurgical intensive care unit, odds ratio, Pakistan, Philippines, private hospital, prospective study, public hospital, risk factor, sex difference, teaching hospital, Thailand, trauma intensive care unit, Viet Nam, catheter infection, cross infection, incidence, indwelling catheter, intensive care unit, risk factor, urinary tract infection; Catheter-Related Infections, Catheters, Indwelling, Cross Infection, Female, Humans, Incidence, Intensive Care Units, Pakistan, Prospective Studies, Risk Factors, Urinary Tract Infections

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