

EPIDEMIOLOGY OF CATHETER-ASSOCIATED URINARY TRACT INFECTIONS AT MAHARAJ NAKORN CHIANG MAI HOSPITAL, NORTHERN THAILAND

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Abstract. Catheter-associated urinary tract infections (CAUTI) are a common nosocomial infection. This study aimed to determine the incidence, etiology and outcomes of CAUTI at Maharaj Nakorn Chiang Mai Hospital, northern Thailand. This was a prospective cohort study conducted among inpatients at the medicine units from March 2015 to June 2016. Study subjects were patients aged ≥ 18 years with a urinary catheter (UC) who developed a CAUTI. A total of 120 patients meeting inclusion criteria during the study period were included in the study consisting of 127 episodes of CAUTI. Seventy-five patients (62.5%) were male; the median study subject age was 65.5 years (interquartile range: 54.5, 79 years). The incidence of CAUTI varied from 2.37 to 7.83 /1,000 catheter-days. Forty point nine percent of subjects had a UC placed to monitor hourly urine output. Twenty-three point six percent of patients had a UC placed without a medical indication. Enterobacteriaceae was the most common group of bacterial pathogen isolated (48 episodes, 37.8%), followed by enterococci (47 episodes, 37.0%). The in-hospital mortality rate among study subjects was 36.7%; the CAUTI probably accounted for 20 % of these. Multivariate analysis revealed that factors associated with death included: having a CAUTI due to multidrug-resistant bacteria (odds ratio (OR)=3.70; 95% confidence interval (CI): 1.13-12.09; $p=0.030$), *Candida* species (OR: 10.85; 95% CI: 2.85-41.30; $p < 0.001$), *A. baumannii* (OR=11.42; 95% CI: 2.54-51.38; $p = 0.002$), *K. pneumoniae* (OR=19.96; 95% CI: 1.96-203.50; $p =0.011$) and developing septic shock (OR=65.26; 95% CI: 7.45-571.89; $p < 0.001$). In summary, a CAUTI caused death in one-fifth of study subjects. One-fourth of study subjects had no medical indication for retaining a UC. It is important to develop and implement strategies to prevent CAUTI, such as early UC removal, when to place a UC, in order to prevent CAUTI and mortality.

Keywords: catheter-associated urinary tract infections, incidence, etiology, outcome, northern Thailand

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