

Prevalence and predictors of urinary tract infection in full-term and preterm neonates

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Abstract

Background: Early and prompt diagnosis of urinary tract infection (UTI) in neonates has important therapeutic implications. The aim of this study was to evaluate the prevalence of UTI in neonates admitted to a referral neonatal intensive care unit (NICU) and to identify predictors associated with an increased risk of UTI in NICU population.

Results: The prevalence of culture-proven UTI in the studied neonates was 6.67%. Moreover, UTI was more frequent (70%) among full-term neonates. Additionally, both fever and pyuria were the only clinical and laboratory findings that showed significant association with UTI ($p < 0.05$). Binary logistic regression revealed that neonates with pyuria in urine analysis were 5.44 times more liable to have UTI, while the presence of fever constitutes a risk of only 0.166 (odds ratios were 5.44 and 0.166, respectively). Additionally, sensitivity, specificity, positive predictive value, and negative predictive value of the regression model were 50.0, 94.5, 20.05, and 98.57%, respectively.

Conclusions: We conclude that UTI is not uncommon in full-term neonates admitted in NICU. Additionally, pyuria was significantly related to positive urine culture and its detection in urine analysis increases the likelihood of UTI by 5.44 times.

Keywords: Neonates, Pyuria, Urine culture, UTI, NICU