

Abstract Submission No.: A-0895**Urinary Tract Infection Diagnostic Challenges in Pediatric Patients using Automated Urine Analyzer Sysmex UX-2000 to find the best cut-off for Leukocyturia and Bacteriuria****Muhamad Ramdani Ibnu Taufik**, Gabriela Claudia

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Objectives : One of the most frequent bacterial diseases in children that becomes apparent is urinary tract infection (UTI). According to prevalence studies, a UTI may frequently go unnoticed during a physical examination and history. Therefore, while deciding whether to screen for UTIs, one must evaluate the challenge and cost of testing against the chance of missing infections. Results of urine cultures are not available for 24 to 48 hours, despite the fact that they are the gold standard for diagnosing UTIs. There are no studies comparing automated urine culture with VITEK 2 versus automated urine analyzer Sysmex UX-2000 for diagnostic testing on pediatric patients. This study set out to determine the cut-off values of bacteriuria and leukocyturia using the automated urine analyzer Sysmex UX-2000.

Methods : An observational analytical study with cross-sectional design was conducted during August-October 2019 at the Clinical Pathology Laboratory and Clinical Microbiology Laboratory of Moewardi Hospital. A total of 84 samples were gathered. Utilizing the automated urine analyzer Sysmex UX-2000, the number of urine bacteria (BACT) and urine leukocytes (WBC) from a urinalysis were gathered. A study of the data was done using a diagnostic test.

Results : With 61.1% sensitivity, 63.6% specificity, 31.4% positive predictive value, 85.7% negative predictive value, 1.64 positive likelihood ratio, 0.595 negative likelihood ratio, and 63% accuracy, 37 cells/ul was the best cut-off value for leukocyturia. With a sensitivity of 66.7%, specificity of 71.2%, positive predictive value of 38.7%, negative predictive value of 88.7%, positive likelihood ratio of 2.14, negative likelihood ratio of 0.432, and accuracy of 70.2%, the best cut-off value for bacteriuria was 143 cells/ul.

Conclusions : The Sysmex UX-2000 automated urine analyzer is suitable for quick UTI screening in pediatric patients, with a cut-off of 37 cells/ul for leukocyturia and 143 cells/ul for bacteriuria.