

The Importance of Pyuria in Identifying a UTI Needs More “Concentration” If You Want to Use This Sign as a Diagnostic Tool

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When we find white blood cells (WBCs) being reported in a urinalysis, we tend to look at the number of white cells among other clinical indicators to point us in the direction of diagnosing a urinary tract infection (UTI). Yet with newer automated urinalysis systems that do not centrifuge urines, it is possible that urine concentration may need to be taken into account in terms of how many white cells per high powered field (hpf) are suggestive of that UTI. In other words, do you need to see more WBC if the sample is obtained from concentrated urine and less WBCs in less concentrated urine?

To answer this question Chaudari et al. ([10.1542/peds.2016-2877](#)) in a study being released this month in our journal, performed a retrospective cross-sectional study of 2700 infants less than 3 months of age being evaluated for a possible UTI. WBC and leukocyte esterase levels were looked at in terms of specific gravities of urines ≥ 1.015 and less than 1.015. Optimal WBC cut points were obtained depending on whether the urine was dilute (3WPC/hpf) or more concentrated (6 WBC/hpf) whereas concentration did not influence leukocyte esterase positivity at all.

Do you take into account the urine concentration when you send a urine to your lab to be analyzed? Is this a useful clinical finding to apply? To help you make that decision, we have asked the chair of the AAP's UTI policy committee, Dr. Ken Roberts to share his thoughts on this study with an accompanying commentary that is a must-read as well. Take a pee-k at both the study and commentary and let us know your thoughts by responding to this blog, sending us a comment to be posted with this article or post your thoughts on our Facebook or Twitter sites.

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