

# Management of UTI in Children: Murky Waters

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Over the course of the last 2 decades, the approach to the management of urinary tract infections (UTIs) in children has undergone considerable reconsideration. Areas such as screening urinalysis, method of urine collection, definition of a positive culture, imaging assessment after the diagnosis of UTI in children, medications for treatment, and mode of administration are examples of such reassessment.

In 2011, American Academy of Pediatrics (AAP) guidelines for the diagnosis and management of UTI in febrile infants and young children were published.<sup>1</sup> The guidelines were for children 2 to 24 months. However, the guidelines also provide a framework for the approach to older children as well. In particular, the guidelines strongly recommend urinalysis to support the presumptive use of antimicrobial therapy and urine culture for establishing the diagnosis of a UTI.

Shaikh et al,<sup>2</sup> in this issue of *Pediatrics*, demonstrate that certain urinary pathogens fail to reliably elicit pyuria. In 1181 children where both a urine culture and concomitant urinalysis were performed, only 87% of the time was pyuria found in the setting of a positive culture. The authors further found that *Enterococcus*, *Klebsiella*, and *Pseudomonas* species were less likely to elicit pyuria or a positive leukocyte esterase test despite causing a urinary tract infection.

So how does the urinalysis help? More pointedly, why do a urinalysis? The report by Shaikh et al<sup>2</sup> agrees with a previously published meta-analysis

that reveals pyuria to be absent in at least 10% of urines that culture positive.<sup>3</sup> For a condition as common as UTI, this is too high a false-negative rate. Shaikh et al<sup>2</sup> conclude that a urine culture should be obtained in all children suspected of UTI. Indeed, the AAP guidelines are consistent with this statement. The AAP guidelines recognize that a clinician may have a low level of suspicion for UTI and may choose not to treat. However, given recent analyses of the utility of urinalysis and the report by Shaikh et al,<sup>2</sup> it is difficult to see how a negative urinalysis might reassure a clinician if there are signs of a UTI. Hence, if one is considering treating for presumptive UTI, a culture is needed. If one is considering waiting and not treating, but suspects a UTI, a culture is still needed. Shaikh et al<sup>2</sup> conclude that new biomarkers are needed if we really want help with the “point of care” testing. Although we wait for new biomarkers, we should recognize the limitations of a negative urinalysis and still get that urine culture.

## ABBREVIATIONS

AAP: American Academy of Pediatrics  
UTI: urinary tract infection

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