Don’t Order Urine Culture Request with Normal Urine Analysis

One of the useful and fast way to diagnose UTI is urinalysis. It can detect multiple chemical and microscopic tests, one of the most important tests, leukocyte esterase test which has high specificity 72% and sensitivity 94% when it is corelated with clinical suspicion of UTI, and it reflects the measure of pyuria (1).

On the other hand, absences of pyuria in urine analysis may delay the diagnosis of UTI and delay the treatment until the urine culture result become positive.
Based on limited numbers of studies (2), Uropathogens such as Enterococcus create intracellular bacterial groups which interfere with the host’s immune response. Other uropathogens form biofilms which reduce the host’s ability to initiate an inflammatory response. This interference leads to low amounts of pyuria in urine, even for infected children. However, the presence of these organisms cannot be used to fully explain the absence of pyuria since their concentration is low. An alternative approach would be to use other markers in early diagnosis (3). For example, the existence of nitrites is a key indicator of UTI caused by bacteria in the Enterobacteriaceae family. Thus, even with the absence of pyuria, symptomatic child with a positive nitrite test can be diagnosed with a UTI caused by Kleibsella or E. coli. Similarly, if a child has a Gram-positive coccus but no pyuria and nitrate, they can also be diagnosed with UTI (4).

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