

1 QUESTION

IS IT APPROPRIATE TO TREAT A SUSPECTED URINARY TRACT INFECTION BASED ON AN IN-OFFICE URINE DIPSTICK RESULT, OR SHOULD THE SPECIMEN BE SENT FOR CULTURE? DOES THE AGE OF THE PATIENT HAVE ANYTHING TO DO WITH THE DECISION?

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Urine culture remains the criterion standard for diagnosis of urinary tract infection (UTI). Urine is usually sterile and thus any bacteria growing in it should be considered an infection. However, children may have asymptomatic bacteriuria or contamination of the collected specimen such that bacteria may grow on culture without any symptoms being present. Early studies showed that adult patients often could have some bacteria growing in culture, but only after there was a certain concentration of bacteria would UTI symptoms also be present. Because of this threshold for causing symptoms and the variation in contamination rates by the urine collection method, there are different standards for what constitutes a positive urine culture (Table 1-1) of a single organism.

The biggest problem with a urine culture is the delay in receiving results, a minimum of 24 to 36 hours for most laboratories, with even longer waits for antibiotic susceptibilities. Also, depending on your medical practice, cultures may be incubated in the office, requiring appropriate equipment and personnel training, or elsewhere, with potentially even longer delays in receiving results. Therefore, there has been keen interest in the accuracy of more rapid urine testing, such as dipstick (leukocyte esterase [LE], nitrite) and microscopy (pyuria, bacteriuria), for predicting UTI.

The presence of bacteria on microscopy of an uncentrifuged urine specimen has been shown to be the single test with the highest specificity and sensitivity for UTI, as reported by 2 separate meta-analyses (Table 1-2).^{1,2} The presence of pyuria (>5 white blood cells/high-powered field) on microscopic examination of a centrifuged specimen does not have as high a sensitivity or specificity as bacteriuria, but when the 2 are present together,