BAG SAMPLING OF URINE TOO UNRELIABLE

A prospective, cross-sectional study of almost 200 non-toilet-trained children provides compelling evidence that bag collection should not be the sole method of urine sampling when urinary tract infection is suspected.

All children aged <3 years who presented to one of two emergency departments in France with fever of unknown etiology were eligible for enrollment. When urinalysis of a bag-collected specimen was positive, catheterization to obtain a second sample was recommended. In this way, matched urine aliquots were available for culture from 192 patients (mean age 9 months, 138 girls).

Comparison of culture outcomes indicated a worryingly high potential for misdiagnosis associated with bag collection of urine. Reliance on this sampling method alone would have resulted in false-positives in 7.5% of cases and false-negatives for almost one-third of patients. Culture of urine obtained using a catheter led to an unworkable diagnosis—a function of polybacterial findings—for just over 8% of the study cohort.

Catheterization for urine sampling in non-toilet-trained children is already recommended by many professional organizations, including the American Academy of Pediatrics. Nevertheless, it is not widely used. According to senior author Vincent Guigonis, "most pediatric emergency units in France still rely on bags alone."

"[In our practice we now] systematically use catheterization to confirm every positive dipstick obtained with bags," he states. Thorough training, with an emphasis on aseptic technique, is essential if rates of failure and complication associated with catheterization are to be kept low (8% and 0%, respectively, in the current study).

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