Does this child have a urinary tract infection?

Shaikh N, Morone NE, Lopez J, Chianese J, Sangvai S, D'Amico F, Hoberman A, Wald ER.

Department of Pediatrics, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania, USA. nader.shaikh@chp.edu

CONTEXT: Urinary tract infection (UTI) is a frequently occurring pediatric illness that, if left untreated, can lead to permanent renal injury. Accordingly, accurate diagnosis of UTI is important. OBJECTIVE: To review the diagnostic accuracy of symptoms and signs for the diagnosis of UTI in infants and children. DATA SOURCES: A search of MEDLINE and EMBASE databases was conducted for articles published between 1966 and October 2007, as well as a manual review of bibliographies of all articles meeting inclusion criteria, 1 previously published systematic review, 3 clinical skills textbooks, and 2 experts in the field, yielding 6988 potentially relevant articles. STUDY SELECTION: Studies were included if they contained data on signs or symptoms of UTI in children through age 18 years. Of 337 articles examined, 12 met all inclusion criteria. DATA EXTRACTION: Two evaluators independently reviewed, rated, and abstracted data from each article. DATA SYNTHESIS: In infants with fever, history of a previous UTI (likelihood ratio [LR] range, 2.3-2.9), temperature higher than 40 degrees C (LR range, 3.2-3.3), and suprapubic tenderness (LR, 4.4; 95% confidence interval [CI], 1.6-12.4) were the findings most useful for identifying those with a UTI. Among male infants, lack of circumcision increased the likelihood of a UTI (summary LR, 2.8; 95% CI, 1.9-4.3); and the presence of circumcision was the only finding with an LR of less than 0.5 (summary LR, 0.33; 95% CI, 0.18-0.63). Combinations of findings were more useful than individual findings in identifying infants with a UTI (for temperature >39 degrees C for >48 hours without another potential source for fever on examination, the LR for all findings present was 4.0; 95% CI, 1.2-13.0; and for temperature <39 degrees C with another source for fever, the LR was 0.37; 95% CI, 0.16-0.85). In verbal children, abdominal pain (LR, 6.3; 95% CI, 2.5-16.0), back pain (LR, 3.6; 95% CI, 2.1-6.1), dysuria, frequency, or both (LR range, 2.2-2.8), and new-onset urinary incontinence (LR, 4.6; 95% CI, 2.8-7.6) increased the likelihood of a UTI. CONCLUSIONS: Although individual signs and symptoms were helpful in the diagnosis of a UTI, they were not sufficiently accurate to definitively diagnose UTIs. Combination of findings can identify infants with a low likelihood of a UTI.

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