

**Febrile Young Infants With Altered Urinalysis At Low Risk For Invasive Bacterial Infection. A Spanish Pediatric Emergency Research Network's (RiSEUP-SPERG) study**

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Urinary tract infection (UTI) is the most common serious bacterial infection in infants less than 90 days of age. Many physicians admit infants younger than 90 days old because the greater risk of developing invasive bacterial infections (IBI), mainly but not only, secondary to UTI. The primary objective of the study was to design a prediction model to identify febrile infants less than 90 days of life with an altered urinalysis at low risk for IBI more suitable for outpatient management

**Study design:** Prospective multicentre study including 19 hospitals members of the Spanish Pediatric Emergency Research Group of the Spanish Society of Pediatric Emergencies. Febrile infants younger than 90 days old with altered urinalysis were included. Patients were excluded if any mandatory data was missed or if informed consent was not given by the parents. IBI was defined as the isolation of a single pathogen in a blood or cerebrospinal fluid (CSF) culture. IBI was considered as secondary to UTI if the same pathogen was isolated in the urine culture as in the blood or CSF culture.

**Results:** A total of 766 patients with altered urine dipstick were included. Fifty (6.5%) of them developed IBI, 39 (78.0%) secondary to UTI. Patients were at low risk for IBI if they were well appearing at arrival to the emergency department, were older than 21 days old and they had procalcitonin and C-reactive protein blood levels lower than 0.5 ng/ml and 20 mg/L, respectively. These factors were used to create a prediction model for IBI secondary to UTI, with a sensitivity of 100% (CI95% 89.3-100) and a negative predictive value of 100% (CI95% 97.5-100).

**Conclusion:** We have derived a highly accurate prediction model for IBI in febrile infants with altered urinalysis. Given these results, outpatient management might be suitable for 1 of each 4 patients diagnosed, with considerable costs saving.