

Prevalence of a Positive Emergency Department Septic Screen Differs Between Respiratory Syncytial Virus and Non-Respiratory Syncytial Virus Bronchiolitis

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Objective: To compare the prevalence of a positive ED septic screen (SS) and serious bacterial illness (SBI) between children with RSV and non-RSV bronchiolitis.

Methods: A retrospective explicit review of laboratory records of patients <18 months old with bronchiolitis from a prior RCT was performed. Testing had been at the physicians' discretion. The study was conducted at a county hospital ED. A positive ED SS was defined as urine or CSF microscopy results with >10 WBC or organisms on gram stain. SBI was defined as bacterial growth from a sterile site. A composite endpoint comprising either SS or SBI was created. Patients who were not tested but alive at three days were assumed not to have had an SS/SBI. Chest x-rays do not distinguish viral from bacterial disease and were not included. Data analysis: Prevalence and CIs for the outcomes were calculated. Multivariate analysis assessed age, gender, fever, severity of bronchiolitis, and prior antibiotic use on outcomes.

Results: Of 640 patients, 608 had RSV antigen testing; 334 were positive, 271 were negative, and three were equivocal. Urine microscopy showed >10 WBC in 6/95 (6.3%). CSF showed >10 WBC (corrected) in 2/10 (20%). Urine cultures were positive in 6/71 (8.5%). Blood cultures were positive in 2/183 (1.1%). SS was positive in 2/334 (0.6%, 95% CI 0.1%-2.1%) in RSV and 9/271 (3.3%, 95% CI 1.5%-6.2%) in non-RSV bronchiolitis. SBI occurred in 4/334 (1.2%, 95% CI 0%-3.0%) of RSV-positive and 6/271 (2.2%, 95% CI 1.0%-5.7%) of RSV-negative infants with bronchiolitis and did not differ between groups. The combined endpoint occurred in 4/369 (1.1%, 95% CI 0.3%-2.8%) and 10/271 (3.7%, 95% CI 1.8%-6.7%) in RSV and non-RSV bronchiolitis. Younger age (months) (OR 0.57; 95% CI 0.39-0.82) and a negative RSV antigen test (OR 4.81; 95% CI 1.45-15.99) predicted the primary or composite endpoint.

Conclusion: A positive ED SS/SBI in bronchiolitis is uncommon but may occur more often in younger infants and those with non-RSV bronchiolitis.