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The Use of Vital Signs as Predictors for Serious Bacterial Infections in Children with Acute Febrile Illness

Elmuntasir Taha
Department of Pediatrics, Faculty of Medicine, The National Ribat University, Sudan

Address for Correspondence: Dr. Elmuntasir Taha, Department of Pediatrics, Faculty of Medicine, The National Ribat University, Sudan. E-Mail: almuntasirtaha@yahoo.com

Abstract

Background: Distinguishing children with serious infections from those with milder, self-limiting febrile illnesses remains a daily challenge in primary care and hospital emergency department. Measurement of vital signs is recommended as part of this assessment.

Aims: To determine whether vital signs can predict children with serious bacterial infections.

Methods: Children age 1 month to <16 years presenting with acute febrile illness to pediatric emergency unit in Sudan were enrolled. Sample size was 150. Severity of infection classified as serious or not serious bacterial infection. Vital signs and oxygen saturation were recorded and compared to the final outcome of these children. Data analyzed bivariably and Multivariable using regression analysis.

Results: Ten percent of patients were classified as having serious bacterial infection. Tachycardia and tachypnea are the most sensitive and specific in predicting serious bacterial infections with sensitivity (80%, 86.6%) and specific (97.4%, 83.7%) respectively. High temperature, severe hypoxemia and hypotension were the least sensitive but highly specific for serious bacterial infections.

Conclusion: Vital signs can be used to differentiate children with serious bacterial infections from those with no serious bacterial infections in a pediatric emergency department and has comparable sensitivity to more complicated triage systems.