

## Does This Febrile Patient Have a Typhoid Fever?

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**Background:** Typhoid fever remains a problem of concern in Africa. The gold standard for diagnosis of typhoid fever is blood culture (BC), which is often not available in many developing countries. It would be helpful to have alternative diagnostic approaches. The clinical examination may aid in this process. The objective of this study was to systematically review the accuracy of clinical signs, WHO case definition and Widal test for the diagnosis of typhoid fever in patient with fever.

**Methods:** The data source was MEDLINE (last five years 2009-2014) searches of English-language articles that compared of clinical signs with a reference gold standard for diagnosis of typhoid fever. From this, the likelihood ratios (LRs) were calculated for the individual findings described, along with the 95% confidence intervals (CIs). Of the 59 studies identified by the search strategy, 2 studies were used for accuracy analysis.

**Results:** *S. Typhi* was isolated from 162 (3.7%) of 4373 blood cultures processed, collected among patients with fever from two studies. Having chills (likelihood ratio [LR], 2.18; 95% confidence interval [CI], 1.483-23), abdominal pain (LR, 2.17; 95% CI, 1.26-3.71), bloody stools (LR, 3.56; 95% CI, 1.04-12.11) and the existence of convulsions (LR, 4.36; 95% CI, 0.58-33.1) slightly increase the likelihood of typhoid fever. The presence of respiratory syndrome such as cough (LR, 0.91; 95% CI, 0.63-1.31), or having breathing difficulties (LR, 0.6; 95% CI, 0.08-4.19), with wheeze (LR, 0.51; 95% CI, 0.13-1.99) or crepitations (LR, 0.44; 95% CI, 0.06-3.07) makes the diagnosis of typhoid fever slightly less likely.

**Conclusions:** In resource-limited settings, diagnostic algorithm should include typhoid fever in febrile patients: chills, abdominal pain, bloody stools and convulsions.