Evidence Summary of a Systematic Review

Who is this summary for?
For Doctors and Health Personnel, Administrators and Managers of health facilities, and Community Health Workers.

Rapid diagnostic tests for typhoid and paratyphoid (enteric) fever

Background

Typhoid fever and paratyphoid fever are infections caused by the bacteria *Salmonella typhi* and *Salmonella paratyphi* A respectively.

The term 'enteric fever' is used to describe both infections. Enteric fever can be difficult to diagnose as the signs and symptoms are similar to those of other infectious diseases that cause fever such as malaria.

The recommended test to confirm if a person has enteric fever is to grow the *Salmonella* from their blood. It takes at least 48 hours to give a result, so cannot help healthcare workers make a diagnosis the same day the blood culture is taken. Blood cultures may give a negative result even though a person has enteric fever. The test also requires a laboratory and trained staff, which are often unavailable in communities where enteric fever is common.

Questions

What is the diagnostic accuracy of commercially available rapid diagnostic tests (RDTs) and prototypes for detecting *Salmonella typhi* or *paratyphi* A infection in symptomatic persons living in endemic areas?

Key findings

- TUBEX showed an average sensitivity of 78% and specificity of 87%, Typhidot studies, showed an average sensitivity of 84% and specificity of 79% and Test-It Typhoid and prototypes (KIT) showed an average sensitivity of 69% and specificity of 90%.
- The sensitivity and specificity of TUBEX, Typhidot and its variants, and Test-it Typhoid test and its KIT protypes are not robust enough in terms of performance to replace existing diagnostic tools in enteric fever (blood cultures and Vidal).

Best practice recommendations

- The moderate sensitivity and specificity of the evaluated RDTs does not support their use as a replacement for blood culture for diagnosing enteric fever when they exist;
- Improved the performance of the RDTs by combination with a solid evidence based clinical algorithm for suspected enteric fever.

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