

Malaria and Typhoid Co-infection: Need to Interpret Serological Results Cautiously

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To,
The Editor,

This is in reference to the article "Comparative evaluation of various tests for diagnosis of concurrent Malaria and Typhoid fever in a tertiary care hospital of Northern India" published by Deepika verma et al., in the Journal of Clinical and Diagnostic Research, 2014, May, Vol-8(5), in which the prevalence of malaria and typhoid co-infections have been reported to be 8.5% using serological tests and 1.6% using blood culture for enteric fever and peripheral smear for Malaria [1]. We would like to add to the existing knowledge by sharing our findings using various serological and gold standard tests for Malaria and Enteric fever. This is also to highlight the epidemiological differences in both the diseases as well as confections in different regions of Northern India.

Both typhoid and malaria are diseases of epidemiological importance globally. Though caused by different organisms – one Gram negative bacilli, the other protozoa, and transmitted via different mechanisms, both present with acute febrile illness which requires workup for both. Co-infections can lead to misdiagnosis usually resulting in either under treatment or over treatment. This predisposes transmission of infection from untreated patient to new host and further irrational use of antibiotics/anti malarial results in increasing surge of drug resistance [2,3]. The present study was conducted in VMMC & Safdarjung hospital, New Delhi from July 2014 to June 2015. A total of 1464 samples collected from the patients attending the outpatient department and admitted in the wards of our hospital were tested for the diagnosis of malaria and enteric fever both. The inclusion criteria followed for the study were-

- Patients presenting with undifferentiated fever of minimum 5 days with clinical suspicion of typhoid or malaria.
- Patients of age from >2 years onwards.

The patients having history of intake of anti-malarial drug, or antibiotics were excluded from the study.

Blood smear examination, Rapid malaria antigen test, blood culture, and Widal test were done for the diagnosis of Malaria and typhoid respectively. Out of 1464 samples 14(1%) were positive by both Widal and rapid malaria antigen test. However, out of 14 samples positive by Widal and rapid malaria test, only 6 (5 *S. typhi* and 1 *S. paratyphi*) were confirmed by blood culture and ten were confirmed for malaria by peripheral smear. Hence co-infection cases confirmed by gold standard tests were only six (0.40%). These results are similar to the findings obtained by the authors and establish that the results obtained by Widal and Malaria rapid tests should be interpreted carefully especially while reporting Malaria and typhoid co-infections.

To the best of our knowledge and as per pubmed search there is no published data on the prevalence of malaria typhoid co-infection from Delhi. Hence this study was done to determine the prevalence of malaria typhoid co-infections in our region. On comparing the data with the above mentioned authors and some other and the other reports from Uttar Pradesh, prevalence of confection cases in our study was found to be very less [1,4]. However, this may be attributed higher prevalence of typhoid and malaria in Uttar Pradesh as evident by the website of National Vector Borne Disease Control Programme [5]. Hence it is important to consider endemicity of the infections, while interpreting the results of serological tests where typhoid and Malaria co-infection are suspected.

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