

Mixed infection of salmonella Typhi and Paratyphi A: A Rare case

Pritam Pardeshi^{1*}, Sonal V Thavare², Sujata Baveja³

¹Tutor, ²JR II, ³Professor and HOD, Department of Microbiology, LTMGH, Sion, Mumbai, Maharashtra, INDIA.

Email: dr.pritampardeshi@gmail.com

Abstract

Typhoid fever due to mixed infection with multiple Salmonella serotypes in the same patient is very rarely seen. We present a case of enteric fever in which both Salmonella Typhi and Salmonella Paratyphi A in a patient with history of travelling from endemic area.

Keywords: Typhi, Paratyphi A.

*Address for Correspondence:

Dr. Pritam Pardeshi, Tutor, Department of Microbiology, LTMGH, Sion, Mumbai, Maharashtra, INDIA.

Email: dr.pritampardeshi@gmail.com

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CASE REPORT

A 17-year young male, a resident of Mumbai travelling to the Bengal 1 month back, came with complaints of fever, headache, and vomiting since 10 days. The fever was intermittent which was not associated with chills or rigors. He had also given history of two episodes of vomiting with loss of appetite. There was no history of diarrhoea or blood in stool and headache. He had taken some treatment from private practitioner which we could not trace as patient was uneducated and no documents of previous treatment was present. On general examination, he was febrile with a temperature of 40°C and a pulse rate of 78/min, blood pressure: 110/80 mmHg. On local examination liver and spleen were not palpable. No abnormality detected on ultra sonography of abdomen. In laboratory examinations: leukocytes 3.200/mm³, (with differential: 12.8% lymphocytes, 78.1% polymorphonuclear leukocytes, and 9.1% monocytes), Hb: 9.1 gr/dl, platelets: 1,83,000/mm³. Rapid malaria antigen detection test (Accucare, Lab-care Diagnostics

Pvt. Ltd., Mumbai) and rapid antibody detection test for dengue test (Dengue NS1 card, Melrose Healthcare Pvt. Ltd., Chennai), leptospirosis (Rapid test for IgM Antibodies to Leptospira, Leptocheck, Goa) was negative. Widal test (Typhocheck, Mumbai) was positive for typhoid with 1:1280 titer for H antigen and also for paratyphi A for paratyphoid H antigen at titer 1:640 and negative for paratyphi B and typhoid O antigen. Clot culture was performed but there was no growth in it. Paired serum sample after 1 week also showed positive for typhoid but with low titer (1:320) and negative for paratyphoid A. After samples were taken for microbiological analyses patient was treated with ciprofloxacin. Patient was recovered after 15 days of admission and then discharged.

DISCUSSION

Enteric fever (typhoid and paratyphoid fever) is a major human bacterial infection. Although the disease is not common in industrialised countries, it is still an important and persistent health problem in developing countries. Incidence of typhoid fever varies in Asia though very high incidence has been found in India and Pakistan.³ Transmission of the disease occurs through faecal-oral route, upon ingestion of contaminated water and food and inadequate sanitation, consuming raw milk products, flavored drinks and ice-creams.² Isolation of *Salmonella* by culture is the gold standard technique diagnosis of typhoid in 73-97 per cent cases prior to medications, though excessive antibiotic use has reduced this isolation rate to 40- 60 per cent.⁴ The Widal test which measures

the antibody titres to the somatic O and flagella H antigens is relied upon widely, although. There are very divergent views on its utility. Overall sensitivity is approximately 70-80% with specificity ranging from 80-95%.⁵ In our case widal test had given positive results with very high titer, but there was no growth in clot culture. Possible explanation is patient had history of fever more than 1 week and he may taken some antibiotics before coming to our institute. The absence of *Salmonella* species on some culture plates from the Widal positive cases and their presence in similar cultures from some Widal negative patients may be due to the stages of development of the pathogen and whether the patient had taken self medication before visiting the hospital.⁶ In present case on repeat widal testing titer of both *Salmonella* Typhi and *Salmonella* Paratyphi A were decreased, signifying good prognosis. In typhoid fever complications seen in 10%–15% of cases; gastrointestinal bleeding, perforation and typhoid encephalopathy are the most serious⁷ though in our case there were no complications occurred due to early diagnosis and treatment. Treatment of typhoid fever is with antibiotics, usually fluoroquinolones⁷ and our case also showed good response to ciprofloxacin. As typhoid is endemic in India so doing preventive measures like handwashing, sanitary disposal of human faces, provision of safe public water supplies, controlling of flies, we can control this disease. Just to conclude though blood culture is gold standard test

for diagnosis of typhoid, widal test is useful in diagnosing patients who already started antibiotics and also assessing prognosis of disease. So we should do both the test (widal and blood culture) in patients suspecting typhoid fever.

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