

Prolonged Paratyphoid Fever in the Setting of Streptococcus

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Overview

Paratyphoid fever is an insidious bacteremic infection¹ caused by *Salmonella Paratyphi*². Around 92% of US paratyphoid fever cases are travelers from endemic areas including Southeast Asia¹. Paratyphoid fever has an incubation period of 1-10 days¹ and can resolve in three to five days with treatment¹, which usually consists of azithromycin, ciprofloxacin, or ceftriaxone³. Here we illustrate the case of a 20-year-old female whose presentation challenges what is normally seen in paratyphoid patients. Although the patient traveled from an area where paratyphoid fever is endemic, the time of travel was nearly a month prior to the onset of symptoms. Additionally, the development of elevated liver enzymes in this patient made it difficult to distinguish between Paratyphoid related damage and drug induced liver injury. We recommend a low threshold for suspicion of paratyphoid and typhoid fever in patients.

Case

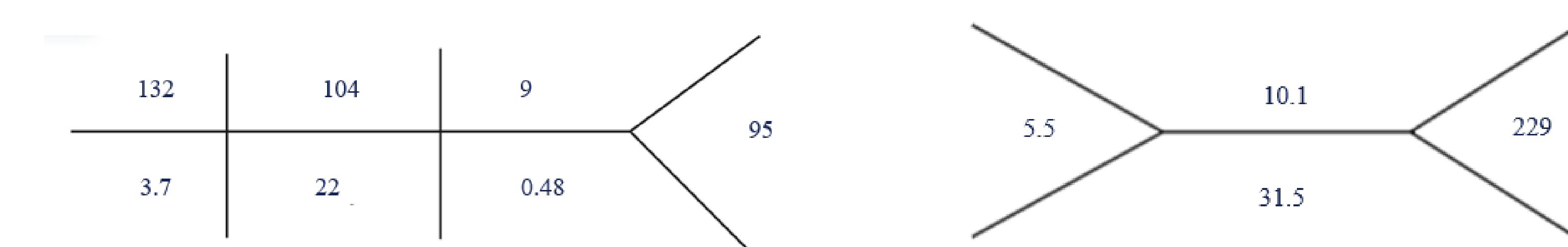
- A 20-year-old female who recently immigrated from Bangladesh, presents to the ED with a sore throat, fever, cough, headache, back pain
- LP done for intractable headaches→CSF negative
- Positive rapid strep test, discharged with empiric cephalexin
- Positive blood cultures for gram negative bacteria, Patient returned same day, with continued symptoms abdominal pain, fever of 101.6F, elevated ALT & AST 34→Admitted for GAS bacteremia, started on IV ceftriaxone 2,000mg

Pertinent Lab Values

Review of Symptoms: + fever, sore throat, cough, vomiting, headaches

Vital Signs on admission: Temperature 98.5°F, Heart Rate 91 beats per minute, Respiratory Rate 18 breaths per minute, Blood Pressure 98/57 mmHg, Oxygen Saturation 99% on room air

Physical Exam: Patient ill-appearing and slightly distressed. Mucous membranes moist without peripheral edema, +oropharyngeal erythema, +tenderness to palpation in site of LP



Day	AST	ALT
Day 1 AM	34	34
Day 6 AM	208	148
Day 6 PM	349	253
Day 7 AM	449	359
Day 8 AM	303	339

Case Continued

- Biofire preliminary result of *Salmonella*
- Day 6 AST: 208, ALT: 148; Day 6 AST: 349, ALT: 253 Day 7 AST: 449, ALT: 359
- Concern that ceftriaxone DILI, switched to cefepime 2,000mg on Day 7
- Day 8 improvement of liver enzymes AST: 303, ALT: 339→ discharged on sulfamethoxazole-trimethoprim 800-160 mg q12H
- State lab resulted *Salmonella Paratyphi A* bacteremia

Discussion

Paratyphoid fever cannot be excluded from the differentials, even if the incubation period is longer than the expected ten days. Additionally, suspicion should be maintained in patients that present with elevated fever and travel from an endemic area. Elevated liver enzymes are typical and can be expected in the clinical course of Paratyphoid fever. Although it can be difficult to distinguish DILI from the effects of paratyphoid fever, there are a few indications that this patient's labs were most likely a result of the infection and not due to DILI, as previously suspected. First, Ceftriaxone has only been shown to cause abnormal AST in 3.1% of cases and abnormal ALT in 3.3%⁴. Additionally, DILI is seen between 5 days and 3 months of initiation of an offending drug⁵. This patient was admitted with elevated liver enzymes and trended upwards throughout her stay, making ceftriaxone DILI unlikely. Given this, it's important to note that the change made in her medications from ceftriaxone to cefepime was unnecessary.

References

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