Prolonged Paratyphoid Fever in the Setting of Streptococcus

Catherine Alapatt OMS-III, Andreas Terestenyi DO PGY-2, Krut Patel DO PGY-1, Kira Abrams DO PGY-1, Gabrielle Daisey Pharm. D., Yvette Wang DO

Overview
Paratyphoid fever is an insidious bacteremic infection caused by Salmonella Paratyphi. Around 92% of US paratyphoid fever cases are travelers from endemic areas including Southeast Asia. Paratyphoid fever has an incubation period of 1-10 days and can resolve in three to five days with treatment, which usually consists of azithromycin, ciprofloxacin, or ceftriaxone. 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 makes 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 cephalaxin
• Positive blood cultures for gram negative bacteria, Patient returned same day, with continued symptoms abdominal pain, fever of 101.6°F, elevated ALT & ALT 34—Admitted for GAS bacteremia, started on IV ceftriaxone 2,000mg

Case Continued
• Biofire preliminary result of Salmonella
• Day 6 AST: 208, ALT: 148; Day 6 AST: 349, ALT: 253
• 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

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

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<tr>
<th>Day</th>
<th>AST</th>
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<tr>
<td>Day 1 AM</td>
<td>34</td>
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<td>Day 6 AM</td>
<td>208</td>
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<td>Day 6 PM</td>
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<td>Day 7 AM</td>
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<td>Day 8 AM</td>
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Day     AST ALT
1        104 9
3.7 5.7

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%. Additionally, DILI is seen between 5 days and 3 months of initiation of an offending drug. 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