

Leptospirosis Following Freshwater Adventure Travel

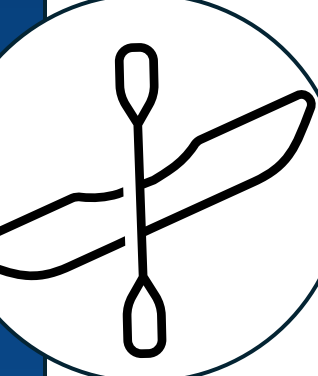
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Introduction

 Leptospirosis is an emerging zoonotic infection in travelers¹

 Transmission via direct or indirect contact with infected animal urine^{2,3}

 Freshwater recreation, such as kayaking and rafting, are implicated in transmission^{2,3,4}

Clinical Cases

Three cases of leptospirosis acquired during whitewater rafting in Ecuador

 2024 Two patients referred via ED for acute febrile illness after a 3-week rafting trip

- Case 1: 20s M, no PMH, on finasteride (hair loss)
- Case 2: 50s M, no PMH, no medications

 2025 One patient referred via ED following a convalescent episode of acute febrile jaundice on a 6-week rafting trip

- Case 3: 20s F, no PMH, no medications

Case 1 Timeline

Day 0	Returns from Ecuador
Day 6	Fever, myalgia, n/v
Day 8	+ ED visit • WBC 10.2, ANC 9.4 x10⁹/L • Bili 16 umol/L, ALT 44 U/L • COVID-19 NP +ve • Malaria screen –ve • Blood cx, Dengue IgM, viral hep serologies sent
Day 9	+ Tropical Disease Unit • New non-bloody diarrhea & headache • Persistent fever (38.3°C) • DDx: acute gastroenteritis and leptospirosis • <u>Leptospira serology sent</u> • Tx: ciprofloxacin 500 mg BID x 3 days
Day 10	News Alert Outbreak of leptospirosis in Ecuador from heavy rains • Ongoing fever and diarrhea (>30 BM/day) • New proteinuria (0.3 g/L) • New anemia (Hb 128 g/L) • Elevated bili (23 umol/L) • Dx: leptospirosis (clinical) • Tx: doxycycline 100 mg BID x 7 days
Day 11	• Clinical improvement within 24 hours • Stool cx <i>Campylobacter coli</i> and <i>Campylobacter jejuni</i>
Day 17	• Complete clinical and biochemical resolution • <u>Leptospira IgM returns negative</u> • Blood cultures, Dengue IgM, viral hepatitis serologies negative

Case 2 Timeline

Day 0	Returns from Ecuador
Day 5	Fever, arthralgia, myalgia, n/v, abdo pain
Day 8	+ ED visit • Plt 103, WBC 6.4, ALC 0.2 • Bili 41 umol/L, ALT 38 U/L • Cr 129 umol/L (no baseline) • Malaria screen –ve • <u>Leptospira serology sent</u> • Blood cx, Dengue IgM, CHIKV IgM sent
Day 9	News Alert Outbreak of leptospirosis in Ecuador from heavy rains + Tropical Disease Unit • Afebrile, conjunctival injection, abdominal tenderness • UA: proteinuria (1 g/L) • Dx: leptospirosis (clinical) • Leptospira serology sent • Tx: doxycycline 100 mg BID x 7 days • Returns to ED with vomiting of doxycycline + Admitted to GIM • Plt 78 x10⁹/L, Hb 123 g/L • Bili 70 umol/L, Cr 123 umol/L • Tx: ceftriaxone 2g IV daily
Day 12	• Improving, tolerating PO • D/c home with 5 days of doxycycline (7 days total)
Day 26	• Complete clinical and biochemical resolution • <u>Leptospira IgM returns negative</u>
Two Months	• Convalescent <i>Leptospira</i> serology ordered → Leptospira IgM positive, MAT negative

Case 3 Timeline

 ~1 wk	Travel to rural Ecuador: 6-week rafting trip • Acute, non-bloody diarrhea. No systemic symptoms. • Rx Secnidazole, Albendazole, 10 days of Ciprofloxacin
2-3 days later	• Symptoms worsening despite treatment • New fever & jaundice + Admitted to hospital • Dx: acute liver failure • Reports IVF but no antimicrobial therapy • D/c after a few days
~3 wk	• Complete symptom resolution → resumes rafting
~4 wk	• New acute febrile illness • Reports dx of Dengue + Admitted to hospital for 5 days for monitoring
 6 wk	Returns to Canada (~6 weeks) + Tropical Disease Unit • No infectious symptoms • ALT 62, AST 41, bili 62 • <u>Leptospira serology sent</u> • Negative Dengue IgM/IgG • Reactive Hep A IgG (h/o pre-travel HAV vaccine)
7 wk	• Leptospira IgM positive, MAT negative • ALT, AST normalized • Bili 32 umol/L

Discussion

- Leptospirosis can present as anicteric or icteric infection; Weil’s Disease is the feared complication
- Treatment is with doxycycline; IV therapy is indicated for severe disease or inability to tolerate oral intake

Learning Points

- Suspect leptospirosis in febrile travelers with freshwater exposure
- Diagnosis is often clinical due to limitations in microbiologic testing
- Start empiric treatment with high clinical suspicion before testing returns
- Prophylaxis with doxycycline 200 mg PO once weekly is effective⁴ → consider in all travelers with recreational water travel

References

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