Dengue Virus Disease in Travelers

Jessica K. Fairley, MD, MPH, FASTMH

Associate Professor of Medicine, Global Health, and Epidemiology

EMORY UNIVERSITY

Project ECHO®

Case 1

- 35 y.o. woman with no PMH presented to clinic with rash, diarrhea, abdominal pain and fever after 1- week trip to Côte d'Ivoire
- 6 days prior to presentation, she developed a headache on last day in-country
- 5 days prior – on flight home, she developed a fever of 102.
  - Negative malaria test
- 4 days prior –Emergency room after returning home, tested for malaria
- 2 days prior – Fever returned after initially feeling better; diarrhea
- 1 day prior – profuse diarrhea – went back to ED and treated with fluids
- On presentation - a bit better, but frequent diarrhea, 6/10 abdominal pain, itchy red rash over whole body

Case 1

- Physical Exam:
- T 36.4C HR 87 RR 16 BP 124/69 O2 sat 98%
- Gen: Non-toxic appearing, NAD
- HEENT: Moist mucous membranes
- Eyes: Conjunctivae normal
- CV: RRR,
- Lungs: CTA b/l
- Abd: No guarding / rebound, soft, NABS
- Ext: No edema
- Skin: Diffuse, macular erythematous, blanching rash on legs, torso, arms

Pic of shin at clinic visit

Case 1 – Laboratory results and added history

- ED visit → office visit (5 days)
  - WBC 2.2 → 5.0
  - Hgb 11.3 → 14.3
  - Plt 205K → 145K
  - AST 54 →222; ALT 46 → 217
  - Na 132 – 135; creat ok
  - Malaria smear neg (x 2)
- Dengue serologies
  - IgM 9.52 (2.85 positive)
  - IgG 1.94 → 13.62 (2.85 pos)

- Additional travel history
  - Stayed in Abidjan, works for an NGO, and mostly did office work
  - Yellow fever vaccine in airport on arrival since she had forgotten her yellow card
  - She did not take malaria prophylaxis on trip

Case 1

- Clinical Course
  - Seen in clinic for close follow-up 2 days later; Felt much better
  - Labs – Hgb normalized, plts trending back up, AST / ALT, trending down by follow up, and now normalized

Case 2

- 40 y.o. healthy man presenting with febrile illness after trip to Argentina
- 3 days prior to presentation - fatigue and chills in Buenos Aires
- 2 days prior - went to MD in Buenos Aires; diagnosed clinically with dengue; Flew home that night
  - High fever; back, shoulder, knee and elbow pain
  - Headache behind eyes and ears.
- 1 day prior – some minor epistaxis when blowing nose
  - Body aches, pain behind eyes, and bitter taste in mouth.
- At clinic visit: A bit better but bad nausea and non-bloody diarrhea
  - Slight rash on left side of chest that day; skin redness since start of illness

Case 2

Additional social history

- 5 weeks prior spent 1 week in high altitude areas of northern Argentina,
- 3 days in BA then 1 week in Patagonia.
- Last 3 weeks in BA where there was a bad dengue outbreak; lots of mosquito bites
- From Colombia, but living in US for 20 years

Physical exam

VS: BP 117/88, HR 75, T 36.9C

Gen: NAD, non-toxic appearing; diaphoretic

HEENT: +soft palate petechiae

Eye: Non-injected sclerae

Lungs: CTA b/l

Abd: Soft, NT, no guarding

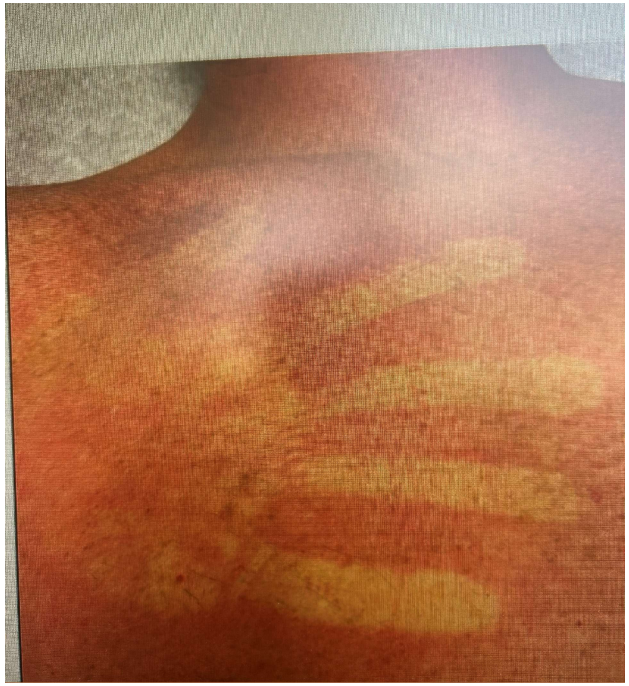
Ext: No edema

Skin: blanchable erythema diffusely

Case 2

Palate

Torso



Case 2

Laboratory results

- Na 132; creat 0.81
- AST 55 → 154 → 53 → 22
- ALT 51 → 166→ 117 → 23
- WBC 2.9 → 6.8
- Hgb 16.4 → 17.4 → 15.6
- Plt 148K → 120 → 259
- Dengue IgM 2.42 → 5.32 (pos 2.84)
- Dengue IgG 8.29→ 9.14

Clinical course and follow-up

- Follow-up in clinic in two days, and then daily by phone
- Given strict instructions on what to look for that would
- Labs worsened, then improved

Clinical Presentation

- Incubation period of 4-7 days (range 3-14)
- Abrupt onset of fever, headache, myalgias/arthralgias
  - “breakbone “ fever
  - GI symptoms can be major feature
  - Rash in ½ cases – generalized erythema early to later maculopapular rash
  - Minor bleeding – petechiae, nosebleeds, gingival bleeding, hematuria
  - Positive tourniquet sign
  - Retroorbital pain
- Most infections are mild/self-limited
  - Ratio of asymptomatic to symptomatic infections can range from 2:1to 10:1

Clinical Presentation

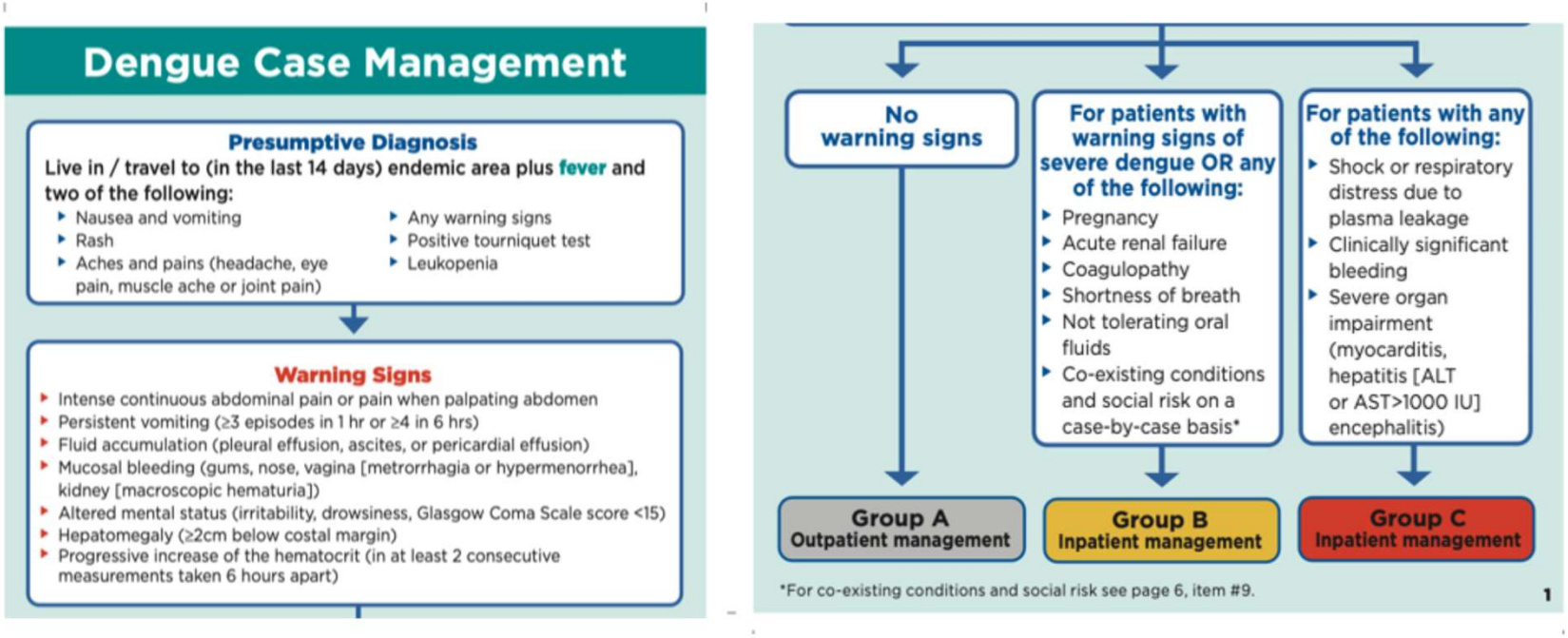
- Febrile phase
  - Lasts 2-7 day, sometimes biphasic
  - Other symptoms present as per prior slide
  - Warning signs in the late febrile phase
- Critical phase
  - Lasts 24-48 hours as fever subsides
  - Most patients improve
  - Some (1 in 20 patients) go on to severe dengue

- Laboratory findings
  - Leukopenia, thrombocytopenia
  - Hyponatremia
  - Elevated AST / ALT
  - Normal ESR
  - Hemoconcentration

Clinical Presentation

- Severe dengue
  - Plasma leakage: pleural effusions, ascites, hemoconcentration
  - Hemorrhagic manifestations
  - Less common – hepatitis, myocarditis, pancreatitis, encephalitis
- Convalescent phase
  - Reabsorption of extravasated fluids
  - Diuresis
  - Rash may desquamate, become itchy
- Prolonged systems
  - Fatigue, brain fog

Symptoms to look out for



https://www.cdc.gov/dengue/hcp/pocketguide/index.html

References

- Ross TM. Dengue Virus. Clin Lab Med 30 (2010): 149-160.
- Chen LH and Wilson ME. Dengue and chikungunya infections in travelers. Current Opinion in Infectious Diseases 2010, 23:438-444.
- Centers for Disease Control and Prevention: Pocket guide for dengue case management, including recommendations by patient group (outpatient, inpatient, and inpatient with compensated or hypotensive shock). Last updated: May 21, 2024