

CASE 1.4
Gastrointestinal Infection—*Clostridium difficile* | Level 1

Demographics

PATIENT NAME: James Worthington

AGE: 42

SEX: Male

HEIGHT: 6'0"

WEIGHT: 180 lb

RACE: White

ALLERGIES: Azithromycin (skin rash)

CHIEF COMPLAINT: J. W. is a 42-year-old man who presents to the ED with a 3- to 4-day history of diarrhea and intermittent abdominal pain and cramping.

HISTORY OF PRESENT ILLNESS: J. W. and his family have been vacationing for the past week out-of-state in the region. His diarrhea had its onset 3 days ago and has worsened. Although he reports four to six bowel movements daily during that time, he suffers from urgency and reports the feeling he “has to sit on the toilet all day.” Stools have been watery until this morning, when he passed a mucous, blood-tinged stool. He has taken two tablets of Imodium for each of the past 2 days, which slowed the diarrhea and allowed him to attend work. His illness has been associated with fatigue, occasional chills, and intermittent lower left abdominal pain and cramping. He reports no change in his appetite or weight and no night sweats since the onset of his illness. He presents to the ED concerned about the bloody stool. Just before his vacation, he finished a 10-day course of cefuroxime axetil that he received for a painful sore throat with laryngitis and cough productive of a greenish sputum. J. W. believes the diarrhea is related to the antibiotic use, despite his use of probiotics.

REVIEW OF SYSTEMS: Otherwise noncontributory

PAST MEDICAL HISTORY: No history of diverticulitis or constipation; appendectomy 15 years ago, without complications

SOCIAL HISTORY: Married with a 10-year-old son; healthy wife and son without current illness; denies tobacco or drug use; estimates 3 alcoholic drinks per month

FAMILY HISTORY: Healthy parents in their 70s (mother had a colonic polyp removed a few years ago); no history of colon cancer or inflammatory bowel disease in the family

Physical Examination

GEN: Alert, oriented white male comfortable in NAD; appears slightly thin

VS: Afebrile T 97.8°F, BP 131/72 mm Hg, HR 79 bpm, RR 16 rpm, Wt 180 lb, Ht 6'0"

HEENT: PERRLA, unremarkable

NECK: Supple with normal ROM

CHEST: Clear to auscultation

CV: Regular rhythm

ABD: Flat, soft, with present BS diminished; tenderness only to very deep palpation in left lower quadrant; no guarding or rebound; no masses or peritoneal signs; no CVA tenderness

RECT: Small hemorrhoid that is not swollen, not tender, and without bright red blood present; no stool on exam; no tenderness noted

Laboratory and Diagnostic Tests

WBC: 9,700 cells/mm³ with 75% PMNs, 13% lymphocytes, 11% monocytes, 1% basophils

HEMOGLOBIN: 15.5 g/dL

HEMATOCRIT: 45.6%

PLATELETS: 158,000 cells/mm³

SODIUM: 144 mEq/L

POTASSIUM: 4.0 mEq/L

CHLORIDE: 103 mEq/L

CO₂ CONTENT: 26 mEq/L

SERUM CREATININE: 0.8 mg/dL

BUN: 10 mg/dL

GLUCOSE: 98 mg/dL

CALCIUM: 9.2 mg/dL

PULSE OXIMETRY: 98% on room air

STOOL ANALYSIS: (+) occult blood, moderate WBCs

STOOL CULTURE: (–) *Salmonella*, *Shigella*, *Campylobacter*, *E. coli* 0157, *Yersinia*, *Aeromonas*, *Plesiomonas*; no significant number of *Candida*; (+) *Clostridium difficile* (*C. difficile*) toxin A and/or B

Diagnosis

C. difficile infection (CDI)

SELF-ASSESSMENT QUESTIONS

- Develop a pharmacologic plan for the treatment of the CDI.
- Which one of the following statements is **true** regarding *C. difficile* enterocolitis testing and diagnosis?
 - C. difficile* enterocolitis is typically diagnosed in clinical settings by isolation of the organism from the stool.
 - Isolation of the *C. difficile* organism is rare in neonates or infants.
 - False-negative testing results for *C. difficile* are common.
 - The majority of patients in whom the *C. difficile* organism could be isolated will remain asymptomatic for diarrhea.
 - Laboratory testing for *C. difficile* is recommended in all ICU patients because outbreaks commonly occur in this setting.
- Name at least three risk factors for developing a CDI.
- Which of the following statements is **true** regarding metronidazole (Flagyl) treatment of *C. difficile* enterocolitis?
 - The drug is effective only if given by the oral route of administration.
 - Relapse rate following a course of metronidazole is less than 2%.
 - The drug is an appropriate first choice in patients of all conditions and ages with *C. difficile* enterocolitis.
 - The failure rate for metronidazole treatment of *C. difficile* enterocolitis appears to be increasing.
 - A 3- to 5-day course of metronidazole therapy may be used in patients presenting with mild *C. difficile* enterocolitis.

5. A medical resident asks you when vancomycin should be used as an appropriate alternative to metronidazole for *C. difficile* enterocolitis. Vancomycin should be considered for therapy in all **except** which one of the following patient types?
 - a. The patient is intolerant to metronidazole.
 - b. The patient has failed to respond to an adequate course of metronidazole.
 - c. The patient has gastrointestinal tract complications and must be treated with IV drug therapy.
 - d. The patient has severe, life-threatening *C. difficile* enterocolitis.
 - e. The patient is suffering a second recurrence of *C. difficile* enterocolitis.
6. Which of the following statements is **true** regarding options for the treatment of *C. difficile* enterocolitis?
 - a. Treatment with recommended pharmacotherapeutic agents is always required when *C. difficile* enterocolitis is diagnosed.
 - b. Fidaxomicin is a newer treatment option that is superior in efficacy to vancomycin for treatment of an initial episode of *C. difficile* enterocolitis.
 - c. Fidaxomicin has been proven to be a cost-effective treatment for all patients with recurrent *C. difficile* enterocolitis.
 - d. Probiotics have been proven to help prevent *C. difficile* enterocolitis when added to antimicrobial therapy.
 - e. Combination therapy with oral vancomycin plus IV metronidazole is recommended for initial treatment of severe, complicated *C. difficile* enterocolitis.

