

Question 7 – Week of March 31

A 65-year-old woman is ambulating slowly 5 days after her hip replacement which was performed 48 hours after a fracture. She has developed abdominal distension, frequent loose stools, and a white blood cell count of 23,000 cells/mm³. Stool sent for *C. difficile* toxin assay by enzyme immunoassay (EIA) is negative. Which of the following is the most likely cause of the diarrhea?

- A. Salmonella
- B. *C. difficile*
- C. Dietary supplements
- D. Diarrheogenic *E. coli*
- E. Medications

Answer: B

Although non-infectious causes of diarrhea are common in hospitalized patients, *C. difficile* is the only enteric infectious agent that merits serious initial consideration in a patient who develops diarrhea after being in the hospital 3 days or more. Stool tests for other enteric pathogens (salmonella, shigella, campylobacter, and protozoa) are almost never positive in patients with hospital-acquired diarrhea. When the epidemiology suggests increased risk (inpatient, recent hospitalization or antibiotic use, or contact with health personnel), stool should be sent for *C. difficile* toxin assay. In this patient, not only the epidemiology is suggestive of *C. difficile* (hospitalized patient) but also the clinical features (diarrhea, high WBC, distension). The enzyme assays for toxin are only 55-85% sensitive. Therefore, negative toxin assays by EIA at times must prompt further testing - repeat EIA, colonoscopy, or the bioassay for cytotoxin using tissue cell culture. A dramatic increase in the frequency and severity of *C. difficile* infection is occurring. Presumptive treatment while awaiting test results is appropriate in severely ill patients when the epidemiology and clinical features are strongly suggestive.

References:

1. Gopal R, Ozerek A, Jeanes A. Rational protocols for testing faeces in the investigation of sporadic hospital-acquired diarrhoea. *J Hosp Infect* 2001; 47:79-83.
2. Archibald LK, Banerjee SN, Jarvis WR. Secular trends in hospital acquired *Clostridium difficile* disease in the United States, 1987-2001. *J Infect Dis* 2004;189:1585-9.