Severe Leukemoid Reaction Due To Clostridium Difficile Colitis.

Aiham Albaeni MD, Suresh Ravuri MD, Isha Dua MD, Noah Kornblum MD, Judith Berger MD
St. Barnabas Hospital Affiliated with Albert Einstein College of Medicine of Yeshiva University

INTRODUCTION

Clostridium difficile is a spore-forming bacillus that is the most common cause of acute care hospital-acquired diarrhea, accounting for 15% to 30% of all cases of antibiotic-associated diarrhea. It can present with severe leukemoid reaction that is associated with increased mortality. We are reporting a case of severe leukemoid reaction due to clostridium difficile colitis with WBC of 110,000 micro liter.

CASE PRESENTATION

A 74 y/o Hispanic male presented with complaints of non-bloody diarrhea 5-6 times per day for 5 days with diffuse abdominal pain, and non-bloody vomiting. He denied fever, relation to food, recent travel, cough and chest pain. Past medical history included diabetes mellitus, hypertension, pancreatic cancer on chemotherapy, and recent hospitalization during which he received amoxicillin for tonsillitis.

He was hypotensive with blood pressure of 75/51, pulse 95 and temperature 98 F. On exam he had diffuse abdominal tenderness without rebound or guarding with hyperactive bowel sounds. Labs: WBC 95,000/micro liter with neutrophil 68%, hemoglobin 12.3, hematocrit 36.8, platelets 136, creatinine 1.7, albumin 1.7, and Na 131. His baseline WBC was normal (10,000) and he was not on steroids or colony stimulating factors.

Boluses of normal saline were given. He was pan-cultured and started on intravenous metronidazole, intravenous vancomycin, oral vancomycin, intravenous amikacin with contact isolation. CT abdomen showed diffuse colonic wall thickening with adjacent fat stranding and free fluid in peritoneum along paracolic gutters (Figure 1). The next day he was still having diarrhea. WBC 110K, afebrile with normal blood pressure on fluids and same antibiotics.

Clostridium difficile toxin was positive in three samples, his WBC came down to 85K then 69K then 28K. LAP was done to differentiate the leukemoid reaction from leukemia and it was elevated 226 and peripheral smear revealed leukocytosis with mature polymorphonuclear without blasts or numerous immature myeloid cells.

His diarrhea frequency decreased, WBC decreased to 10K. Blood cultures were negative and antibiotics adjusted to metronidazole IV and vancomycin po. Stool sample became negative for clostridium difficile and patient was discharged on vancomycin po.

DISCUSSION

• This article emphasizes that clostridium difficile can present with severe leukemoid reaction even with WBC count greater than 100,000 cell/microliter.
• Factors that may play a role in mortality include persistence of clostridium toxin in stool after 7 days of treatment, a fall in serum albumin at the onset of symptoms, and WBC greater than 35K.
• A retrospective study showed increase mortality form 7.7% to 50% with leukemoid reaction (1).
• Leukocytosis can occur secondary to many etiologies: infectious, inflammatory, medications, toxins, and malignancy (leukemia, solid tumors especially lung carcinomas) and myeloproliferative disorders. Our patient WBC count above 100,000 raises concern about leukemia which was ruled out by lack of blasts in peripheral smear, high LAP score, positive clostridium toxin in stool, and decrease WBC to normal range in response to antibiotics.
• Risk factors for clostridium difficile infection in our patient are age, recent hospitalization, antibiotics, and cancer with chemotherapy.

BIBLIOGRAPHY