

Title: A Case of Community Acquired Clostridium Difficile Infection**Author(s): Rangit Vallapureddy, Mythri Mudireddy, Keyvan Ravakhah****Affiliation:** St Vincent Charity Medical Center

"Clostridium difficile infection is the most common cause of hospital acquired and antibiotic associated diarrhea. Approximately 4-5% of normal adults and 40-50% of long term care facility residents are asymptomatic carriers. Changes in the fecal microbiome are central in the development of C. difficile colonization. We report a case of a young male with C. difficile colitis with no known risk factors.

A 31 year old man with a significant medical history of ADHD, asthma and seasonal allergies was admitted with a 4 day history of progressively worsening watery diarrhea, abdominal pain, nausea and vomiting associated with on and off fever and chills. Stool was foul smelling associated with abdominal cramping before and during bowel movement. He denied any mucus or blood in the stool, recent antibiotic use or hospitalization, consumption of outside food or similar complaints in other family members. Physical examination was significant for pale conjunctiva and hyperactive bowel sounds. Labs showed leukocytosis with bandemia, severe iron deficiency anemia with Hemoglobin of 8 g/dL and thrombocytosis of 1236 k/uL. Stool occult blood was positive. Stool analysis was positive for WBC and C. difficile antigen. EGD showed antral gastritis and colonoscopy was significant for severe pseudomembranous colitis. Subsequently, he was diagnosed with community acquired clostridium difficile infection (CA-CDI) and was isolated with contact precautions. He was started on oral vancomycin and IV iron. He improved symptomatically by day 2 and was discharged home with instructions to continue vancomycin for 14 days.

CA-CDI is defined as symptom onset within the community or within 48 hours of hospital admission. Population-based studies in the USA have shown that approximately 33-41% of C. diff infection cases were CA-CDI. The majority (81%) of CA-CDI cases occur in patients living in their homes, while 19% occur in patients living in long-term care centers. Patients with CA-CDI tend to be younger with lower comorbidities. Possible risk factors include increased use of antacids, food or water contamination, outpatient hospital visits, proximity to farms and the emergence of hypervirulent strains of C. difficile. Presentation may range from simple diarrhea, through pseudomembranous colitis or fulminant colitis, to toxic megacolon. Bloody diarrhea can be seen occasionally and usually treated with metronidazole and oral vancomycin. Monoclonal antibodies (Bezlotoxumab) can be used in conjunction with standard-of-care antibiotics to reduce recurrence. Fecal microbiota transplantation (FMT) has shown promising results.

Overall, clinicians should have a high level of suspicion for C. diff infection when patients present with acute onset of diarrhea even without traditional risk factors. Early identification and adequate treatment of CA-CDI may prevent disease progression, decrease inpatient hospital stay and limit the risk of disease transmission."