



Clostridium difficile Overview

C. difficile is a bacterium, which under certain circumstances, usually after or during antibiotic therapy, can colonize the lower gastrointestinal tract where it may produce toxins (toxin A and B) which cause inflammation of the colon and diarrhea. Hospitalized patients, particularly the elderly who have received broad spectrum antibiotics, are at greater risk of acquiring diseases related to *C. difficile* infection, which is now one of the most common nosocomial (spread patient to patient in a hospital) infections.

Healthy people usually do not get *C. difficile* disease. However, people who have other illnesses or conditions requiring prolonged use of antibiotics and the elderly are at greater risk of acquiring this disease. *C. difficile* infection has become one of the most common nosocomial (spread patient to patient in a hospital) infections. Diarrhea is one of the most common complications of antibiotics, with an attack rate of 3.2 to 29 percent, causing approximately 3,000,000 cases of antibiotic associated diarrhea per year. *C. difficile* is the most frequent cause of antibiotic-associated diarrhea and colitis, accounting for 15 to 25 percent of all episodes of antibiotic-associated diarrhea, 50 to 75 percent of antibiotic-associated colitis, and 90 percent of all cases of pseudomembranous colitis. It is the most frequent cause of diarrhea in hospitalized patients.

Advanced age, gastrointestinal surgery/manipulation, long length of stay in healthcare settings, a serious underlying illness and immunocompromising conditions are associated with increased risk of disease. Gastrointestinal infections due to *C. difficile* range in severity from asymptomatic colonization to severe diarrhea, pseudomembranous colitis (PMC), toxic megacolon, colonic perforation and occasionally death.

C. difficile bacteria are found in the feces. People can become infected if they touch items or surfaces that are contaminated with feces and then touch their mouth or mucous membranes. Healthcare workers can spread the bacteria to other patients or contaminate surfaces through hand contact.

Increasing in incidence and severity

Throughout the US, Canada and Europe, the incidence and severity of *Clostridium difficile* infection (CDI) is increasing, primarily due to the emergence and spread of a new hypervirulent strain (called the "BI Strain") of *C. difficile*, with increased virulence and antimicrobial resistance. This strain produces 16 to 20-times the amount of toxin A and B of a traditional strain, and can cause severe disease within days of infection. In addition, it is more resistant to the antibiotic group known as fluoroquinolones than a typical strain. This strain has been identified in 24 states in the U.S. (as of June 2007), and in hospitals throughout Canada and Europe.

Predisposing factors for *C. difficile* disease

- Recent antimicrobial use, particularly broad spectrum, such as penicillins, cephalosporins, fluoroquinolones, and clindamycin
- Advanced age
- Severity of underlying illness
- Immunosuppression
- GI surgery or manipulations
- Drugs that alter bowel motility
- End-stage renal disease (uremia)
- Stool softeners
- Burn patients
- Hematologic malignancies

Please see your doctor for more information on *C. difficile* and the disease it causes

For more information on *C. difficile* infections, please visit the CDC website at: http://www.cdc.gov/ncidod/dhqp/id_Cdiff.html