

C.difficile

Clostridium difficile is a spore forming, gram-positive anaerobic bacillus and is the most frequently identified cause of healthcare associated diarrhoea.

C.difficile occurs when the normal intestinal flora is altered allowing *C.difficile* to proliferate in the intestinal tract producing toxins that cause watery diarrhoea.

C.difficile bacteria produce toxins called toxin A and B. The toxins damage the mucosal lining creating colonic inflammation and diarrhoea amongst other symptoms.

Symptoms and signs of *C.difficile*

A wide range of symptoms can occur and most cases develop 4-9 days after commencing antibiotics. Mild cases are characterised by frequent, foul smelling, watery diarrhoea.

More severe symptoms include blood and mucus in the stools and abdominal cramps. Toxic megacolon, colonic perforation and death have also occurred in severe cases.

The most serious form of *C.difficile* infection, fulminant colitis, is a severe, sudden inflammation of the colon and is often associated with very serious complications.

This severe form is uncommon and generally occurs in the elderly and patients debilitated by other diseases. Symptoms include severe lower abdominal pain, diarrhoea, fever and rigors.

Risk factors

Treatment with antibiotics has been identified as the main risk factor for developing *C.difficile*. Patients who have received multiple antibiotics for treatment of infection are at increased risk compared with those who have a brief prophylactic course of treatment.

The most common offenders are clindamycin, cephalosporins and penicillins although virtually almost all classes of antibiotics have been implicated.

Patients treated with chemotherapy are at increased risk as many of these agents have antimicrobial activity that causes a bacterial imbalance in the bowel. These patients also often receive prophylactic antibiotics to prevent infection associated with severe neutropenia.

Other possible risk factors are gastrointestinal surgery and other gastrointestinal manipulations, older age, excess antibiotic use and immuno-compromised states such as

patients with HIV or bone marrow transplant recipients.

Transmission

Individuals with *C.difficile* shed spores in their faeces. Spores can survive up to 70 days in the environment and within hospitals. They can then be spread from patient to patient on the unwashed hands of healthcare workers who have direct contact with infected patients and surfaces that have been contaminated.

Treatment of *c.difficile*

Treatment is directed against eradicating the microorganism from the bowel. In patients with mild symptoms, discontinuation of antibiotics (if appropriate) is often enough to stop the diarrhoea and symptoms.

Patients with severe diarrhoea and other symptoms should receive specific antibiotics such as metronidazole for 10 – 14 days.

Prevention

Strict adherence to hand washing with a disinfectant detergent, cleaning of equipment between patients and good environmental housekeeping is necessary for the prevention of the spread of *C.difficile*.

The use of alcohol hand rubs in the prevention of the spread of *C.difficile* is not recommended as alcohol does not destroy spores.

For further information contact-

The Alfred Hospital Infection Control & Hospital Epidemiology Unit on 03 9076 3139 between 8.00 – 4.30 Monday to Friday or visit our web page at www.alfred.org.au/departments/index.html or contact your site-specific Infection Control nurse.

Image obtained from

<http://phil.cdc.gov/Phil/default.asp>

References

<http://www.cdd.com.au/index.html>

<http://www.cda.gov.au>

www.icg.health.gov.au