



## FACT SHEET

### **Clostridium difficile**

#### **Common clinical features**

*Clostridium difficile* is the most commonly identified cause of clinically significant antibiotic-associated diarrhoea. Many antibiotics cause loose stools but *Clostridium difficile* infection (CDI) may be associated with mild or severe diarrhoea and there is often fever and abdominal pain. In severe cases colitis may develop. There may be relapses after treatment. The incubation period is variable within one day of starting or several weeks after finishing a course of antibiotics.

#### **Where is it found?**

*C.difficile* is a spore forming bacterium that is found in the faeces of humans and other animals, in soil and water, and on environmental surfaces in homes and hospitals. Carriage rates are low (less than 3%) in healthy adults with no diarrhoea. Rates are high (greater than 50%) in children up to the age of 2 years and moderate rates (greater than 10%) are found in the elderly, with higher rates in those in hospital and in residential care.

#### **How is it acquired by affected individuals?**

Spores may be ingested from the environment. Colonisation rates are higher in the elderly, particularly in hospitals and residential homes where antibiotic use is common. The environment is more heavily contaminated around individuals who have diarrhoea. Antibiotics kill some of the normal “healthy” gut bacteria and allow *C.difficile* to multiply, producing toxins that cause ulceration and diarrhoea.

#### **How does the laboratory confirm the diagnosis?**

A faeces sample is tested for the presence of *C.difficile* by a combination of tests. These are usually detection of specific *C.difficile* toxins and Glutamate Dehydrogenase (GDH) using immunoassay tests. Some laboratories also use a molecular test to detect toxin genes. Results will usually be available within two days.

Toxins can be detected in the faeces of healthy, asymptomatic children up to the age of 2 years, and a positive test result is not clinically significant in this age group. Studies have shown that toxins are rarely detected in asymptomatic older children or adults living in the community. However, toxins may be detected in the faeces of individuals who have received antibiotics recently, but who do not have diarrhoea.

In this **study** all samples will be tested by a molecular test (Luminex xTAG® GPP) and results will be available within 24 hours. Since the detection of *C.difficile* toxin genes does not indicate active infection any positives by this method will be confirmed by testing for toxins. Only samples that are confirmed positive for toxins in the faeces will be reported. This may delay the reporting of the results.

### **How is it treated?**

CDI can be severe (colitis) and even life threatening. If a patient has significant diarrhoea while on antibiotics or has a positive *C.difficile* toxin test, the causative antibiotics should be discontinued. If the patient requires continuing treatment for their initial infection a Consultant Microbiologist should be consulted. Fluid and electrolyte losses should be replaced and the use of anti-motility agents should be avoided.

For the first episode of CDI or if symptoms are moderate to severe or measures above are ineffective, oral metronidazole 400 mg three times daily for ten days is the usual first line treatment. In more severe cases or in those patients who have a recurrence alternatives are vancomycin and fidaxomicin. In these cases contact a consultant microbiologist for advice.