# Clostridium difficile infection: causes and treatment

Clostridium difficile

## Introduction

Clostridium difficile generally written as C. difficile is a bacterium (germ). It presents in a small quantity in the gut of many people without harming person. But, when the quantity of C. difficile bacteria increases in the gut, then it can cause infection. The C. difficile bacteria usually do not create infection in healthy people. Though, someantibioticscan disturb the regular balance of usual bacteria in the gut that shield against C. difficile infection. This infection most commonly affects people whose treatment requires prolonged use of antibiotics. During use of antibiotics, if other harmless bacteria are killed, then this will allows C. difficile to grow in larger numbers than normal circumstances. The bacteria start to produce toxins that cause the symptoms given below.

Therefore, if a person is taking antibiotics and He/she has C. difficile bacteria in gut, then bacteria may flourish and can cause an infection. This is a problem normally occur while taking many of the commonly used antibiotics.

## Spread of Clostridium difficile infection

C. difficile bacteria are usually found in whole the environment — in air, soil, water, human and animal faeces. It is also found in food products, such as processed meats. C. difficile infection commonly associated with hospitals where a higher percentage of people carry the bacteria. C. difficile bacteria spread to food, surfaces when infectious people do not clearly wash their hands. The bacteria creates spores that can be persevered in a place for

months. If you touch a surface polluted with C. difficile, then you may then unintentionally swallow the bacteria.

## Symptoms of the disease

The symptoms of adisease can range from mild diarrhoea to a severe life-threatening inflammation of the bowel. The symptoms of a Clostridium difficileinfection generally grow when you are taking, or just finished taking an antibiotic. Seldom, symptoms mayappear up to 10 weeks after you finish takingantibiotics.

List of symptoms include:

- Watery diarrhoea (sometimes can be blood-stained) three to four times a day; may be more.
- Colitis (inflammation of a larger bowel).
- Loss of appetite
- abdominal cramping and pain
- Nausea
- a high temperature (fever) of above 38ºC (100. 4ºF)
- painful abdominal cramps

No treatment may be required in mild cases only abandoning the antibiotics or drinking plenty of fluids is required to cure infection. However, cure with specific antibiotics is desirable in more severe cases.

## Identification of Clostridium difficile Infection

Clostridium difficile Infection is identified in a patient in following cases;

- Anyone who develops diarrhoea who had used antibiotics within the previous two months, and/or
- When diarrhoea was developed due to stay at hospital, or after few weeks of releasing from hospital.
- Anyone has abdominal pain, or fever;
- Anyone has a diagnosis of colonoscopy, pseudo membranes on sigmoidoscopy or histological/pathological diagnosis of CDI;
- Anyone has a diagnosis of toxic mega colon.
- Laboratory testing of a sample of stool can be carried out to confirm the diagnosis. The test identifies the toxin material in the stool sample that is produced by C. difficile.
- An X-ray of abdomen, CT scan, or a Blood tests can be conducted if a patient more severe infection.

## Treatment of Clostridium difficile infection

Clostridium difficile infection treatment depends upon severity of the illness. No treatment is necessary if one has no symptom. However, symptoms are shown various treatment are suggested for mild to severe infection.

## Mild infection treatment

Patients having mild infection can be treated at home. If patient has mild symptoms of aC. difficile infection, infection can be controlled by just withdrawing antibiotics that have caused the problem. This will let the normal harmless bacteria to regrow in your gut. The excess growth of C. difficile should then decrease and symptoms often ease. Actually, many people will stopped the antibiotic anyway, after the completion of antibiotic

course. In many cases where the signs are minor, stopping the antibiotics proved sufficient to clear the infection.

## Modest to severe infection

If infection is of severe nature, patient will usually be admitted into hospital, so that patient can be treated and closely look after. If you have symptoms that are more bothersome, such as severediarrhoeaor colitis, following treatment is prescribed to cure the infection:

## 1. Taking an antibiotic

In case of severe symptoms such as severe diarrhoea or colitis, patients will be given antibiotics that can damage C. difficile bacteria. In the start, in moderate cases metronidazole is prescribed to cure the infection. But in severe casesvancomycinor fidaxomicin may be used to ease any colitis and stop perforation of colon. Symptoms then usually ease within two to three days, although it can take a week to make a significant recovery. Likely side effects of these antibiotics are stomach pain, feeling or being sick.

## 2. Fluid replacement

In diarrhoea lot of fluid released from body and body becomes dehydrated. So, it is very important that fluid must be replaced in the body to maintain body’s water level. This reduction can easily be eliminated by drinking extra fluids. But, in case of severe, fluids should be given through a drip into veins or by nasogastric tube.

## 3. Surgery in rare cases

Surgery cases are less than 1%. It is required only in life-threatening cases to remove a damaged section of bowel. Severe cases ofC. difficile infection can befatal, especially when they occur in those people who faces severe illness.

## Prevention

C. difficile infection can be spread very easily. Normally, it can be prevented by maintaining good hygiene in healthcare surroundings, such as regularly washing hands and cleaning surfaces using bleach products.

When someone is attending the patient having C. difficile infection, he/she can reduce the risk of spreading the infection by washing hands before and after entering the patient room. Soap and water should be preferred over Alcohol gel as in not effective against germs.

## Preventing the spread of infection into hospital

I would implement strict guidelines about maintaining the hygienic environment in the hospital to avoid the spread of C. difficile infection. Possible guidelines would be;

- If possible, infectious patient should have their own room, washbasin and toilet facilities.
- Everyone should regularly wash their hands thoroughly with soap and water, particularly after using the toilet or anyone coming from outside to meet the patient.
- All the hospital staff must wear disposable gloves and aprons and they must wash their hands with water and soap before and after attending patient.

- Practice will be made of using soap and water should be used as a medium of washing instead of Hand gel because hand gel not kill the spores created by C. difficile.
- Visitors must also wear disposable gloves and aprons and must wash their hands before entering and leaving the room.
- Floors, Toilets, surfaces, bedpans, bedding, etc. should be clean washed regularly.

## Conclusion

Clostridium difficile infection is caused by bacteria. It can range from severe to mild. Proper prevention and use of medicine can reduce the infection in very limited time.

## References

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