

Clostridium difficile (c.diff)

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Clostridium Difficile is a nosocomial infection acquired mostly in hospitals. In 2005 it was considered the most precarious infection to bombard North American in a decade. Armed with knowledge about the infection, transmission, environmental factors, alternative treatments, prevention and ways to control C. diff healthcare workers can better be prepared to help fight the spread of this deadly infection. A C. Diff, its transmission and environmental factors C. diff is a gram –positive, anaerobic, spore forming bacteria.

It colonizes the intestinal tract of those infected after normal intestinal flora has been disrupted by antibiotic therapy. Diagnosis of C. diff is based on clinical symptoms supported by endoscopic finding or stool testing for the presence of the pathogens or toxins. Patients that has taken antibiotics within the past 3 months or a patient that has diarrhea 72 hours after hospitalization should be tested. ELISA is the test used to diagnosis C. diff. It checks for the toxin A or B or both. C. diff incubation period is 1 to 2 weeks.

Asymptomatic carriage can range from severe diarrhea, pseudo membranous colitis, toxic mega colon, intestinal perforation, and death from secondary sepsis. C. diff toxin founded in stool ranges from 1% to 2% in normal population to 10% in hospital inpatients and up to 85% to 90% in patients with proven AAPMC. Some risk factors for C. diff includes being over the age of 65, patients who are immunocompromised, gastrointestinal surgery and procedures, gastrointestinal stimulants, antiperistaltic drugs and proton pump inhibitors.

The transmission of C. diff can be transmitted by another patient. The transmission can be via commodes, thermometers, bedside tables, floors, and other objects in rooms used by a patient with C. diff. It can also be transmitted from the hands of healthcare workers. That's why it's important for healthcare workers to use proper hand hygiene techniques. Healthcare workers must wash hands with soap and water because antiseptic hand sanitizers doesn't destroy C. diff. Environmental factors also play a huge part in the transmission of C. diff.

Healthcare professions should know the proper environmental disinfectants to use. Housekeeping staff should ensure proper cleaning and disinfection of equipment and the environment. Patient's rooms should be properly cleaned at least once a day with proper equipment for isolation rooms. In order to stop the transmission of C. diff all departments must work together to secure that C. diff transmission isn't constantly transmitted to other patients. Treatments C. diff will usually clear in 20% to 25% of patients with mild infection and the discontinuation of precipitating antibiotic.

When patients have moderate to severe diarrhea or colitis oral metronidazole is a treatment used for 10-14 days at a total of three times a day. Metronidazole achievement rate is usually 95% effective. Vancomycin is also used for 10-14 days at a total of four times a day. Vancomycin sometimes promote emergence of VRE (vancomycin-resistant enterococci). If a patient develops fulminant colitis admittance to ICU is necessary and an emergency colectomy is performed because of severe ileus or impending perforation. Mortality rate is 30% to 80% if surgery is performed.

Prevention. Prevention of C. diff starts with avoiding the use of antibiotics that are associated with high rates of C. diff. Healthcare staff, housekeeping, dietary, and maintenance should be informed on the transmission and precautions of C. diff. When C. diff is suspected or verified patient should be placed in isolation. The proper precautions should be placed on the door of the resident and visitors should be directed to nursing station before admittance into the room of a person with C. diff. Healthcare workers should drape with gowns and gloves for all contact to prevent the spreading of C. diff. Proper hand washing should be done with hand soap and water because sanitizer with alcohol doesn't help in the fight against C. diff. Patient care equipment should remain in the room throughout isolation. Patient rooms and equipment should be cleaned with bleach, alkaline gluteraldehyde, or ethylene oxide. Always remember never to mix different solutions because this can cause toxic vapors. All rooms should be terminal cleaned once patient is discharged to prevent further spreading of C. diff.

Health Promotion and Wellness Strategy. The Center for Disease Control and Prevention has tool kits for healthcare professional. CDC offers up-to-date information, recommended infection control measures, and tools for outbreak response coordination and reporting. CDC also has resources on how to implement and improve antibiotic stewardship efforts. To sum it up all educating healthcare professional on how to stop the transmission and prevention of C. diff can help stop the spreading of C. diff. Learning how to keep yourself as well as the patients free from C. diff can be controlled if everyone works together.