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Clostridium difficile infection

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**Introduction**

- Clostridium difficile infection (CDI) refers to bacterium that infects the gut thereby causing diarrhea.
- It is a spore-forming bacterium that lives in the colon. It provides an environment that is favorable for multiplication of spores (Deshpande, Pant, Olyaei, & Donskey, 2018).
- The use of antibiotics can lead to growth of Clostridium difficile.
- The bacteria appears as irregular cells when observed under a microscope.
- The bacteria is common in the gut (Deshpande et al., 2018).
- The use of antibiotics can lead to growth of Clostridium difficile.
- The topic focuses on prevalence of this infection in the United States.
- The pathogen is ubiquitous in nature.
- The bacteria is commonly found in the gut (Deshpande et al., 2018).
- The bacteria is common in the gut (Deshpande et al., 2018).
- The economic impact of CDI is expected to increase in coming years (Desai, Gupta, Dubberke, Prabhu, Browne, & Mast, 2016).

**Problem Statement**

- Clostridium difficile is a serious emerging healthcare issue.
- It is a public health problem.
- Nearly 500,000 infections and 29,000 deaths occur annually in the U.S are attributable to Clostridium difficile infection.
- This infection has led to an increase in the number of patients who need admission to ICU (Luo & Barlam, 2018).
- The problem can be prevented by using alternative treatment options and adhering to meticulous hand hygiene.

**The Topic of Choice**

- The topic of choice for this presentation is Clostridium difficile infection.
- The topic focuses on prevalence of this infection in the United States.
- The pathogen is ubiquitous in nature.
- The bacteria is commonly found in the gut (Deshpande et al., 2018).
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- The economic impact of CDI is expected to increase in coming years (Desai, Gupta, Dubberke, Prabhu, Browne, & Mast, 2016).

**Reasons for Choosing the Topic**

- Clostridium difficile infection is an enormous healthcare issue yet underappreciated.
- The public has limited knowledge on this issue.
- There is dearth of information in regards to the particular type of antibiotics that cause CDI.
- It is a public health problem.
- The last phase is window of vulnerability.
- The phase involves recurrence of the infection in the course of treatment (Luo & Barlam, 2018).
- Even though everyone is at risk of getting infected with Clostridium difficile, the degree of risk markedly varies.
- Long-term use of proton inhibitors is associated with Clostridium difficile infection leading to increased morbidity and mortality rates (McDonald, E.G, Milligan, J., Frenette, C., Lee, C. (2015)).
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**Illustrative Figure**

**Pathophysiological Processes**

- The pathophysiology of Clostridium difficile infection occurs in three phases:
  - The three phases include microbial suppression, collateral damage, and a window of vulnerability.
  - The microbial suppression phase entails the suppression of the protective ability of intestinal microbiota.
  - The suppression of intestinal microbiota is oftentimes caused by using antibiotics for treatments
  - The collateral damage phase entails the disruption of the intestinal microbiota.
  - Bacterium comes close to epithelium.
  - The last phase is window of vulnerability.
  - This phase involves recurrence of the infection in the course of treatment (Luo & Barlam, 2018).
  - Even though everyone is at risk of getting infected with Clostridium difficile, the degree of risk markedly varies.
  - Long-term use of proton inhibitors is associated with Clostridium difficile infection leading to increased morbidity and mortality rates (McDonald, E.G, Milligan, J., Frenette, C., Lee, C. (2015)).
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**Underlying Pathophysiology**

- Clostridium difficile infections are either endogenous or exogenous.
- Endogenous infection is caused by carrier strain.
- Exogenous infection is acquired from contaminated healthcare providers (Olsen, A., 2016).
- If infections spreads through the fecal oral route.
- The infection occurs in the large intestine.
- Another factor may be host susceptibility and bacteria virulence.
- The multiplication of the bacterium causes severe damage to intestinal crypts (Deshpande et al., 2018).

**Significance of Pathophysiology**

- Helps in early identification of signs and symptoms.
- Helps in immediate isolation of infected individuals.

**Conclusion**

- Clostridium difficile infection is a major healthcare concern yet under-appreciated.
- Causes significant morbidity and mortality.
- Prevalence of this problem in the US has been increasing steadily in recent years.
- There are multiple risk factors for Clostridium difficile infection.
- The most prominent risk factor is antibiotic treatment.
- The problem can be prevented by using alternative treatment options and adhering to meticulous hand hygiene.

**Implications for Nursing Care**

- There is a lot that needs to be known about Clostridium difficile infection especially early recognition and prevention of infection.
- The infection impacts negatively on quality of healthcare delivery.
- This infection has prompted search for alternative treatment options besides antibiotics.
- Patients needs has become increasingly difficult hence the need for patient and family education.
- Nurses have a role in treatment and prevention of Clostridium difficile infection through enhanced contact precautions and meticulous hand hygiene (Desai, et al., 2016).

**References**


