University Hospitals of Derby and Burton NHS Foundation Trust

Clostridioides difficile infection - Microbiology Summary Clinical Guideline

Reference number: CG-ANTI/2016/007

Clinical concerns re CDI: manifesting symptoms and signs include diarrhoea, abdominal pain, abdominal distension, abdominal tenderness, and fever

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Screen for complications: ileus, toxic megacolon, perforation, peritonitis, sepsis, and septic shock

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IPC

- Patient: to isolate in a side room; to engage with gastrointestinal tract hygiene
- Healthcare professionals, before entry into the side room: to wash their hands with soap and water (not hand sanitiser); and don PPE (apron first, gloves second)
- Healthcare professionals, before exiting the side room: to doff PPE (gloves first, apron second); and to wash their hands with soap and water (not hand sanitiser)

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Investigation

- Microbiology: faeces for *C. difficile* investigation ± other microbial investigations
- Blood sciences: FBC, CRP, lactate, U&Es, and LFTs
- ± Radiology: ± AXR ± CXR ± CT abdomen pelvis (e.g. if symptoms, signs, etc. raise the differential diagnosis of toxic megacolon, perforation, and/or peritonitis)

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Treatment

- If there is a high pre-test probability of CDI:
  - For example, diarrhoea and drug history of antibiotics (fluoroquinolones [e.g. ciprofloxacin], clindamycin, carbapenems, cephalosporins, or penicillins [e.g. co-amoxiclav]); or
- If there is diarrhoea and *C. difficile* GDH and toxin positive; or
- If there is diarrhoea and *C. difficile* GDH and toxin gene positive

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Treatment: **Mild, Moderate, and Severe**

- Start vancomycin 125 mg per oral (capsule or liquid) 6 hourly
- If there is evidence of severe colitis (abdominal or radiological signs), early discussion with the surgical registrar/consultant on call regarding potential intervention is recommended

Treatment: **Life-Threatening**

- Early discussion with the surgical registrar/consultant on call regarding intervention is recommended for life-threatening CDI
- Start vancomycin 500 mg per oral (or nasogastric) 6 hourly; and
- Start metronidazole 500 mg intravenously 8 hourly; and
- ± Vancomycin enema (indications for usage include ileus)

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Treatment: **Mild, Moderate, Severe, and Life-Threatening**

- ± Discontinuation - or modification - of CDI risk factors: (1) empiric, broad spectrum antibiotics (e.g. piperacillin tazobactam); antimotility drugs (e.g. loperamide); (2) antimotility drugs (e.g. loperamide); ± (3) proton pump inhibitors (e.g. omeprazole)

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Screening and IPC: **Mild, Moderate, Severe, and Life-Threatening**

- Daily review including a screen for complications (ileus, toxic megacolon, perforation, peritonitis, sepsis, and septic shock)
- Daily monitoring of the diarrhoea with the Bristol Stool Chart
- Medical/nursing equipment and fomites to be cleaned at least daily using chlorine-containing cleaning agents (1:1000 ppm available chlorine)

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Treatment: **Mild, Moderate, and Severe**

- If the symptoms and signs of CDI are resolving on vancomycin after 7 days:
  - Continue vancomycin 125 mg per oral 6 hourly for an extra 3 days
- If the symptoms and signs of CDI are persisting on vancomycin after 7 days, in collaboration with the *C. difficile* review group or gastroenterology:
  - Stop vancomycin; and
  - Start fidaxomicin 200 mg per oral 12 hourly for 10 days

Treatment: **Life-Threatening**

- If the symptoms and signs of CDI are resolving on vancomycin and metronidazole after 7 days:
  - Continue vancomycin 500 mg per oral (or nasogastric) 6 hourly and metronidazole 500 mg intravenously (or 400 mg per oral) 8 hourly for an extra 3 days
- If the symptoms and signs of CDI are persisting on vancomycin and metronidazole after 7 days, collaborate with the *C. difficile* review group or gastroenterology

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IPC: **Mild, Moderate, Severe, and Life-Threatening**

- After discharge: deep clean ± hydrogen peroxide fog

C. difficile colonisation:

- *C. difficile* GDH positivity and toxin gene negativity are consistent with carriage/colonisation
- *C. difficile* GDH positivity and toxin negativity are, in general, consistent with carriage/colonisation. However, toxin levels vary and specific thresholds (100-1000 pg) are required for detection. Therefore, if there was a high pre-test probability of CDI, repeat sampling and treatment can be considered

C. difficile infection:

- Diarrhoea plus (1) faeces toxin positive, or (2) faeces toxin gene positive
- Mild, “Not associated with an increased white cell count (WCC). Typically associated with fewer than 3 episodes of loose stools (defined as loose enough to take the shape of the container used to sample them) per day.”
- Moderate, “Associated with an increased WCC (but less than 15×10^9 per litre). Typically associated with 3 to 5 loose stools per day.”
- Severe, “Associated with a WCC greater than 15×10^9 per litre, or an acutely increased serum creatinine concentration (greater than 50% increase above baseline), or a temperature higher than 38.5 degrees Celsius, or evidence of severe colitis (abdominal or radiological signs). The number of stools may be a less reliable indicator of severity.”
- Life-threatening, “Symptoms and signs include hypotension, partial or complete ileus, toxic megacolon or CT evidence of severe disease.”

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Document Control

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