CLOSTRIDIOIDES DIFFICILE (C. DIFF COLITIS)

(Last updated 5/8/2019; Reviewers: Sahil Khanna M.B.B.S.; Chaomeng Wu, M.D)

PRESENTING COMPLAINT: Soft or watery non-bloody stools, abdominal pain

FINDINGS

- **A** Check airway
- **B** ↑ RR or normal
- **C** ↓ BP (severe)
- **D** Variable altered (V,P,U,D)*, Abdominal pain
- **E** ↑ T, ↓ bowel sounds (+/-), lower abdominal tenderness; ascites and peripheral edema (severe)
- **L_{PC}** ↑ WBC, ↑ serum creatinine, ↑ Lactate, ↓ALB, do stool test (+)
- **U_{PC}** Adynamic ileus, ↓ blood volume (severe)

***V** (verbal), **P (**pain), **U** (unconsciousness), **D** (delirious)

U_{PC} (point of care ultrasound) **L_{PC}** (point of care labs)

OTHER HISTORY

- **Symptoms:** Soft to watery grossly non bloody diarrhea (≥3 unformed stools in 24 hours), bloating, weak.
- **Exposure:** Ongoing or recent (up to 3 months) exposure to antibiotics.
- **Classification:**
  - **Non-severe:** White cell count ≤15000 cells/mL and serum creatinine <1.5 mg/dL.
  - **Severe:** White cell count ≥15000 cells/mL or serum creatinine ≥1.5 mg/dL, hypoalbuminemia, hypovolemia, lactic acidosis.
  - **Fulminant:** Hypotension, shock, sepsis, ileus, megacolon.

DIFFERENTIAL DIAGNOSES

Other infections: Staph aureus, Clostridium perfringes, Klebsiella oxytoca; post-infectious irritable bowel syndrome; inflammatory bowel disease flare (high rates of co-occurrence)

OTHER INVESTIGATIONS

- **Stool testing is diagnostic in the clinical setting:**
  - Multi-step algorithm for testing：Glutamate dehydrogenase (GDH) plus toxin; GDH plus toxin, arbitrated by nucleic acid amplification testing (NAAT); or NAAT plus toxin
  - Nucleic acid amplification testing (NAAT): for toxins A and B
  - Enzyme Immunoassay for Glutamate dehydrogenase and Toxin A and B

- **Imaging:** Plain abdominal X ray to look for ileus and perforation
- **Endoscopy:** (if clinical suspicion high and stool tests/imaging negative) - pseudomembranes in up to 50%. Contraindicated in severe disease due to risk of perforation

THERAPEUTIC INTERVENTIONS

- **Non pharmacological:**
  - Stop inciting antibiotic, if possible.
  - Use narrow spectrum targeted systemic antibiotics if needed
  - Manage fluid and electrolytes
  - Contact precautions, hand hygiene with soap and water
  - Nasogastric tube decompression for ileus
- **Pharmacological:**
  - Non-severe:
    - Vancomycin 125 mg q6h PO
    - Fidaxomicin 200 mg q12h for 10 days
    - If above agents are not available: Metronidazole 500 mg q8h PO for 10 days
  - Severe: Vancomycin 125 mg q6h PO or fidaxomicin 200 mg q12h for 10 days
  - Fulminant:
    - Vancomycin 500 mg q6h PO or EN, plus metronidazole 500 mg q8h IV.
    - If ileus is present: consider adding vancomycin enema 500 mg in 100 ml NS q6h
- **Monitoring:**
  - Abdominal distension with diminution of diarrhea suggests toxic megacolon
  - Peritoneal signs suggest perforation
- **Consults:**
  - Gastroenterology: severe, recurrent or unresponsive CDI
  - General surgery: Fulminant CDI, worsening diarrhea despite optimal therapy, age ≥ 65 y with WBC ≥ 20,000/μl or plasma lactate = 2.2 – 4.9 mEq/L

ONGOING MANAGEMENT

- **Recurrent C. difficile**
  - Defined as symptomatic diarrhea with positive stool test within 56 days of previous episode after interim symptom resolution; 20-25% patients have recurrence after 1st episode
  - First recurrence:
    - Use a prolonged tapered and pulsed oral vancomycin regimen (125 mg q6h for 10–14 days, q12h for a week, qd for a week, and then every 2 or 3 days for 2–8 weeks), or

- Fidaxomicin 200 mg q12h for 10 days if vancomycin was used for 1st episode, or
- Vancomycin 125 mg q6h PO for 10 days if metronidazole was used for 1st episode

o Second recurrence:

- Vancomycin in a tapered and pulsed regimen, or
- Vancomycin 125 mg q6h PO for 10 days followed by rifaximin 400 mg q8h for 20 days, or
- Fidaxomicin 200 mg bid for 10 days, or fecal microbiota transplantation

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Acknowledgements: *Harsheen Kaur, MD; Lisbeth Garcia Arguello, MD; Markos Kashiouris, MD*

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