CLOSTRIDIODES 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

REFERENCES & ACKNOWLEDGEMENTS

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