

CLOSTRIDIUM DIFFICILE COLITIS - 2



Background

- 3 million cases of diarrhea and colitis per year
- Described in 1935 as a component of the fecal flora of healthy newborns
- Named *difficile* because it grows slowly and is difficult to culture
- *C difficile* is present in 2-3% of healthy adults and in as many as 70% of healthy infants
- *C difficile* infection is more common in elderly people
- 20% of individuals who are hospitalized acquire *C difficile*
- Pseudomembranes, adherent yellowish-white plaques on the intestinal mucosa

Pathophysiology

- *Clostridium difficile* is a gram-positive, anaerobic, spore-forming bacillus
- Normal gut flora resists colonization and overgrowth with *C difficile*.
- Antibiotic use, which suppresses the normal flora, allows proliferation of *C difficile*.
- 2 distinct toxins. Toxin A is an enterotoxin, and toxin B is a cytotoxin
- Colonization occurs by the fecal-oral route
- forms heat-resistant spores that can persist in the environment for several months to years

Clinical Diagnosis

- Suspected in any patient with diarrhea who has received antibiotics within the previous 2 months and/or when diarrhea occurs 72 hours or more after hospitalization.
- Mild to moderate crampy diarrhea, fever, abdominal pain
- Report use of antibiotics up to 10wks PTA
- Most common: Clindamycin, 2nd and 3rd gen. Cephalosporins, Ampicillin/Amoxicillin
- Can occur with the use of any antibiotics
- Risk increased when 2 or more antibiotics are used

Labs/Assays/Studies

- CBC- very elevated WBC
- Stool assay-cytotoxin test has high sensitivity and specificity (ie, 94-100% and 99% respectively) and is the test of choice. expensive, and it requires an overnight incubation and a tissue culture facility
- ELIZA immunoassays available and provide more rapid results at less cost with reasonable sensitivity (ie, 69-87%) and specificity (ie, 99-100%). Isolates only toxin A. Repeating this test may be necessary in patients in whom the pretest probability of *C difficile* infection is high and an initial test result is negative
- Endoscopy- generally not recommended, but can help in cases where clinical suspicion is high and assays are negative.

Treatment

- The decision to treat *C difficile* infection and the type of therapy may depend on the severity of the disease.
- Diarrhea → Colitis → pseudomembranous colitis → fulminant colitis
- Stop offending antibiotic if possible
- Flagyl (PO/IV) vs. Vancomycin (PO) equally effective
- Symptomatic improvement can be expected within 2-3 days
- The PO administration of these medications is the preferred route because *C difficile* remains within the colonic lumen without invading the colonic mucosa.
- Metronidazole 500 mg PO tid for 10-14 d is the drug of first choice because of its lower cost. (approximate wholesale cost for a 10-d supply is \$1)
- For patients who are unable to tolerate PO medication, IV metronidazole is effective. Excretion of the drug into bile and exudation from the inflamed colon results in bactericidal levels in feces.
- Vancomycin 125mg PO Tid -. Kills organism by inhibiting cell wall synthesis.
- Significant luminal levels after PO vancomycin can be obtained because it is poorly absorbed from the GI tract.
- Major disadvantage \$\$\$\$. PO vancomycin is relatively expensive, with a wholesale cost of approximately \$150 for a 10-d supply.
- Selects for VRE
- Reserved for patients who cannot tolerate metronidazole
- By using oral metronidazole or vancomycin, response rates greater than 95% are obtained, with symptomatic improvement in as little as 2-3 days and complete resolution in 7-10 days.
- Not necessary to recheck stool cultures

IVIG

Based on studies that patients with IgG antibodies against toxin A improved symptoms of patients with recurrent colitis.

Complications:

- Fulminant colitis is a rare form of *C difficile* infection, occurring in only 3% of patients but accounting for most of the serious complications. These include toxic megacolon (severe toxicity, the presence of a tender abdomen, and a dilated colon on plain radiograph of the abdomen), colonic perforation, and death.
- 1 to 3% of patients with *C. difficile* colitis develop severe disease requiring admission to an intensive care unit
- severely ill patients require emergency colectomy because of impending perforation, severe ileus with megacolon, or refractory septicemia.
- Indications for surgery include peritoneal signs, bacteremia unresponsiveness to antibiotics, progressive fever, an elevated white blood cell count, or CT scan evidence of significant pericolonic inflammation with increasing bowel wall edema.
- The recommended surgical procedure is subtotal colectomy with ileostomy. This can be converted to an ileorectal anastomosis after colonic inflammation has subsided

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