

# CLOSTRIDUM DIFFICILE COLITIS

## Background

- First described in healthy newborns in 1935
- Obligatory anaerobic, gram-positive bacillus named for its difficulty to culture
- Clindamycin, ampicillin, cephalosporins were first antibiotics associated, now 2nd and 3rd generation cephalosporins -are most common culprit with Penicillin/ $\beta$ -lactamase combinations less frequent
- Fecal colonization in >20% of hospitalized patients, 1-3% community residents
- More common in Elderly and immunosuppressed

## Pathogenesis

- Ingestion of spores which germinate in small bowel
- Antibiotic use inhibits normal flora and allows proliferation of C diff
- Secretion of enterotoxin A or Cytotoxin B which lead to the disruption of epithelial-cell barrier causing diarrhea and pseudomembrane formation

## Clinical Manifestations and Diagnosis

- Diarrhea is most common symptom
- Stools are almost never bloody and range from soft to watery with a characteristic odor
- Can have up to 20 BMs per day or adynamic ileus (approximately 20% of cases)
- Fever 28%, leukocytosis 50%, abdominal pain 20%
- Recurs after treatment in approximately 20% of cases
- Diagnosis is based on clinical suspicion with lab studies (CBC, Stool culture, ELISA for toxin A or A/B, or endoscopy)
- Culture is most sensitive but slow turnaround
- ELISA is rapid but not as sensitive, therefore repeat if suspicion is high
- Endoscopy is reserved for cases with high clinical suspicion when assays are negative

## Treatment

- Stop offending antibiotic
- Most symptoms resolve after 2-3 days treatment with Flagyl or Vancomycin
- Not necessary to "test for cure" after treatment in asymptomatic patient
- Indications for surgery include peritoneal signs, bacteremia unresponsive to antibiotics, or CT scan with evidence of significant pericolonic inflammation with bowel wall edema
- Sub-Total Colectomy with ileostomy is recommended with ileorectal anastomosis once colonic inflammation has subsided

## **Longo et al. Diseases of the Colon & Rectum (2004) "Outcome after colectomy for C-diff Colitis"**

Retrospective study of 67 patients from 159 VA hospitals from 1997-2001

All patients had C-diff verified by colectomy

mean age 69, 99% males

30/67 (89%) developed C-diff after surgical procedure

31/67 (46%) developed C-diff at home

### **Risk Factors**

- Recent antibiotic use 65/67 (97%)
- Recent Surgery 30/67 (45%)
- Chemotherapy 14/67 (21%)
- Transplantation 8/67 (12%)
- Autoimmune disease 5/67 (7%)
- HIV/AIDS 1/67 (1%)

### **Severity of Disease**

- Diarrhea 42/67 (63%)
- Hemodynamic instability 33/67 (49%)
- Surgical Abdomen 43/67 (64%)
- Oliguria/anuria 18/67 (27%)
- Respiratory Compromise 12/67 (18%)

### **Studies**

- Mean WBC 27.2
- Negative assays 12/67 (18%)
- CT correctly diagnosed 45/46 (98%)
- endoscopy 26/67 (39%)

### **Surgical intervention**

- Total colectomy 53/67 (80%)--30% mortality
- Segmental resection 14/67 (20%)--14% mortality
- Perforation and Infarction found in 59/67 (58%)
- Overall Mortality 32/67 (48%)

### **Conclusion**

- Treat early with ABX based on clinical picture
- Perforation and infarction are frequently found in surgery
- Fulminant C-diff colitis remains high despite surgical intervention

Derrick Flint, M.D.  
March 28, 2005