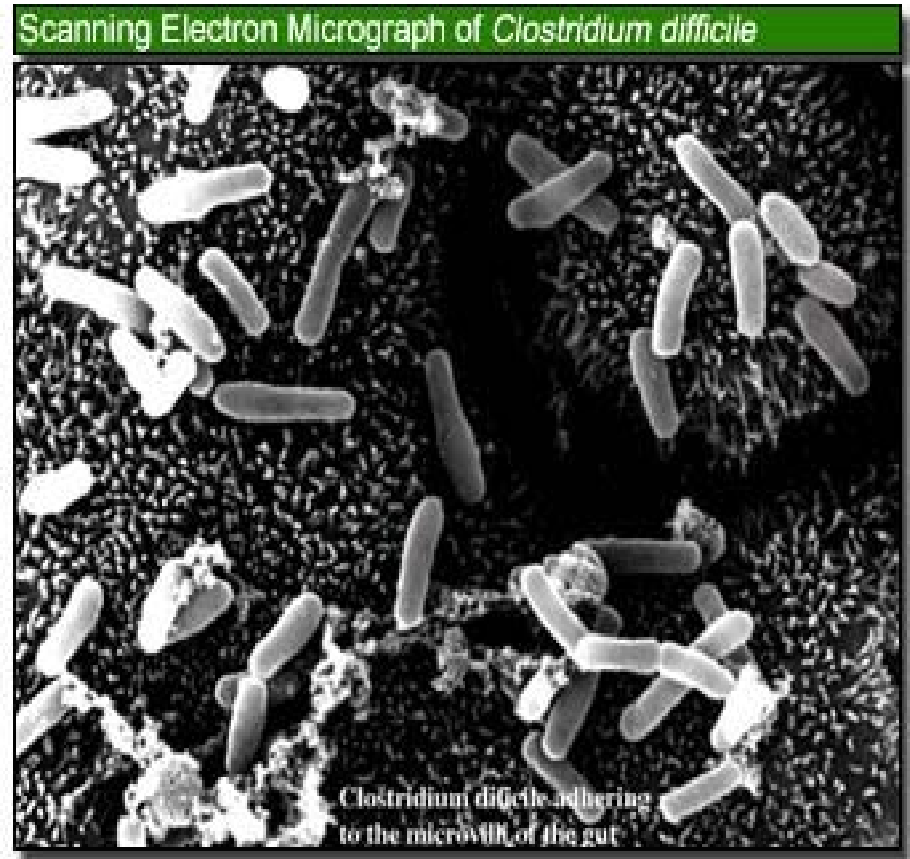


# *Clostridium difficile*

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# Discussion

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- Background
- Risk Factors
- Recent Events
- Type 027
- Presentation
- Treatment
- Infection Prevention and Control
- Conclusion



# *Clostridium difficile* (CDAD) Background

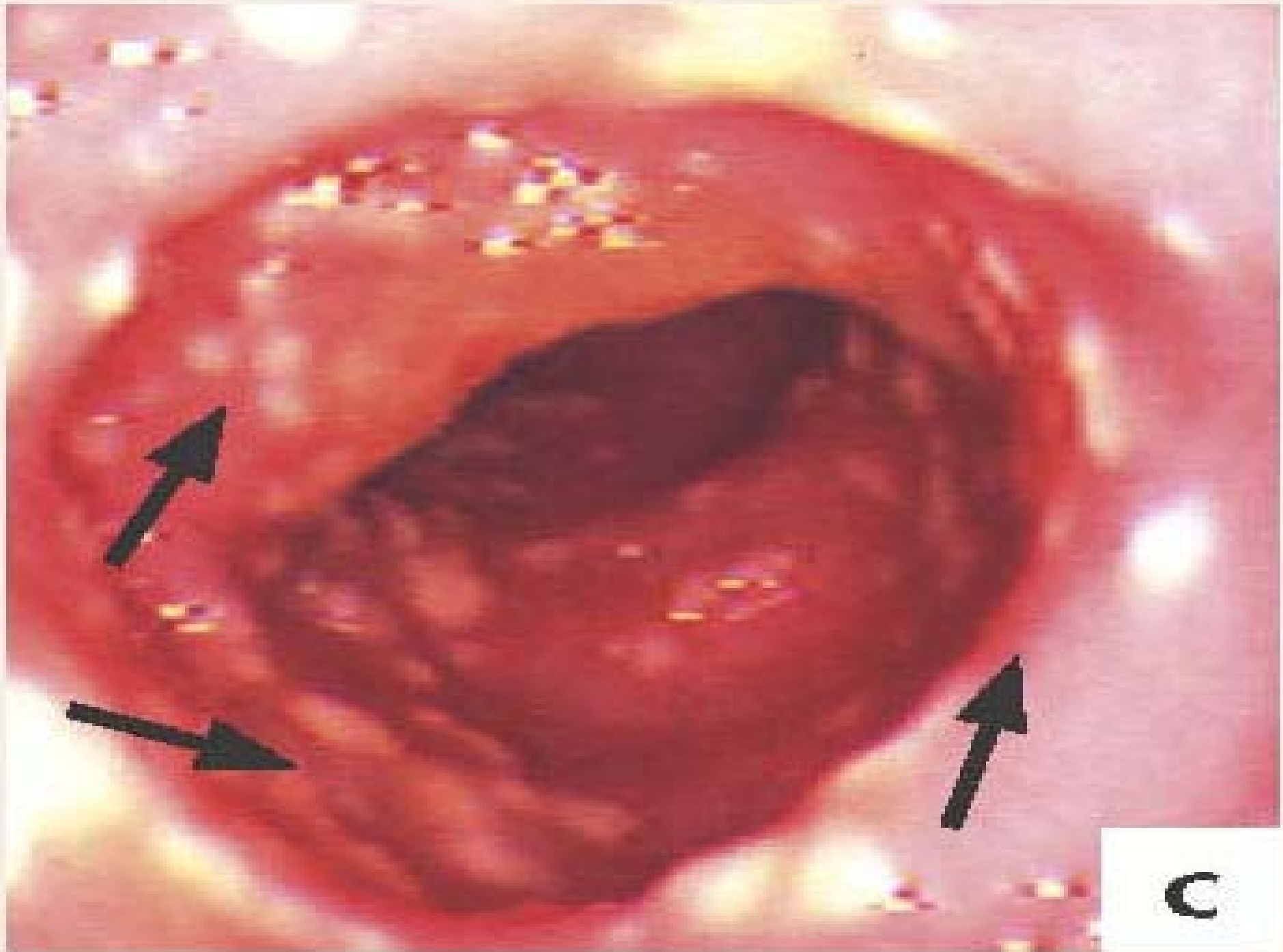
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- C difficile Associated Disease (CDAD)
- Spore forming anaerobic bacterium
- Bacterium produces toxins, which damage the gut wall
- Mainly Healthcare associated infection
- Increasing recognition of community-associated cases

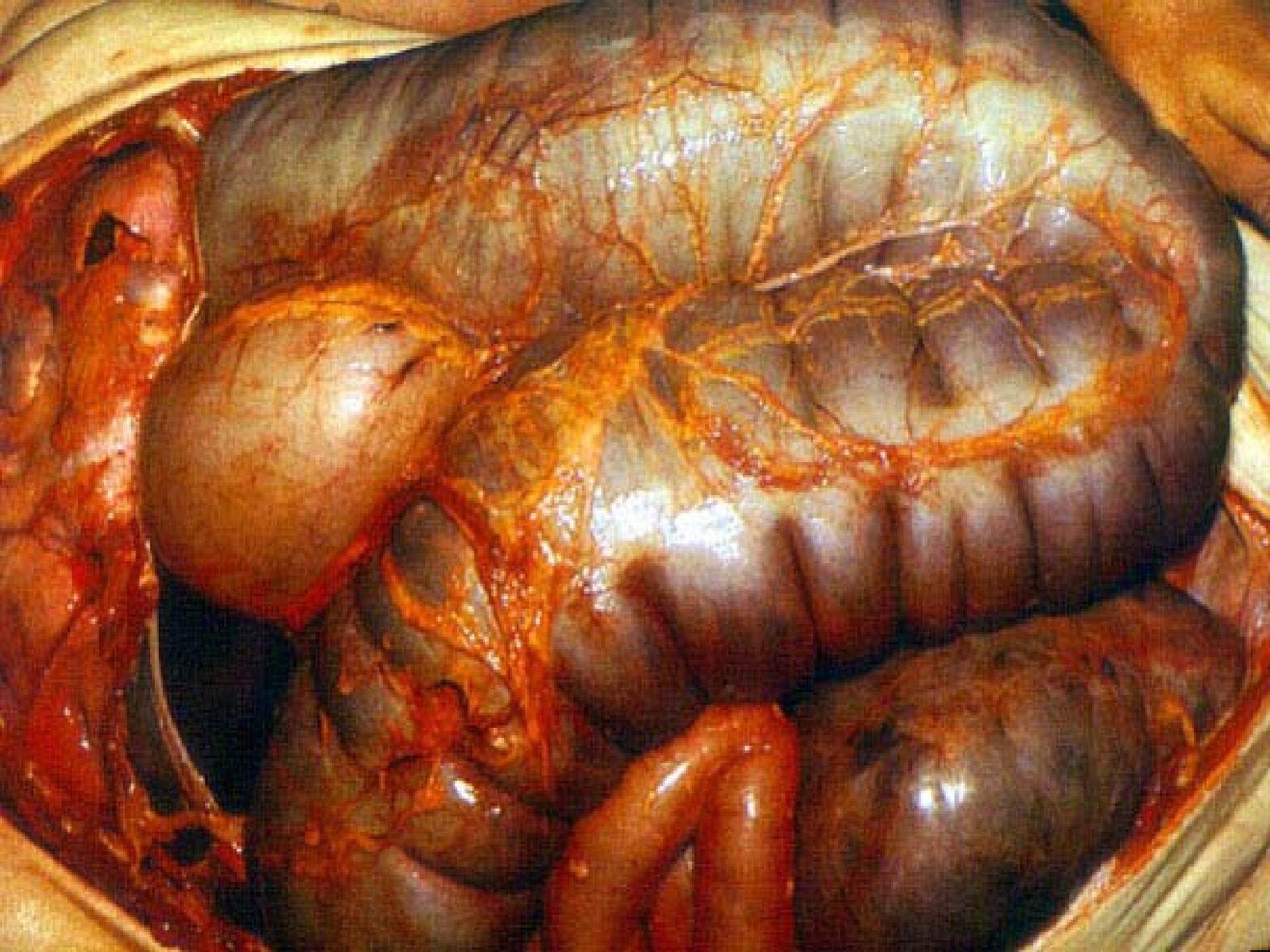


# *Clostridium difficile*

- In severe cases, may progress to colitis
- Pseudomembraneous colitis( raised white and yellowish plaques)
- Toxic megacolon may occur- inflamed large bowel becomes massively distended with gas
- May perforate
- If does not resolve quickly, colectomy indicated and may lead to death



C





# Risk Factors

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- Exposure to antibiotics (broad spectrum cephalosporins and fluroquinolones clindamycin)
- Advanced age
- Hospitalisation
- Recent gastro-intestinal surgery
- Immunosuppressive therapy



# Recent Events

- From 2002 to 2005, Quebec experienced an epidemic of *Clostridium difficile*
- 165 C diff sufferers died in Quebec in a 14 week period, ending on Dec 11, 2004
- Some had co morbidities but 71 deaths were directly attributed to CDAD, eg 9% mortality rate



# Ribotype 027 (Toxinotype 111)

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- Hypervirulent strain of *C diff* identified in Quebec
- Characterized by PCR testing
- As well as in Canada and USA, there have been hospital outbreaks of *C diff* 027 in France, Belgium, The Netherlands and the UK.
- Large recognised outbreak in Stoke Mandeville Hospital in 2005.



# *Clostridium difficile*

## Symptoms

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- Diarrhoea, watery / mucoid /smelly
- Abdominal cramps
- Fever
- Leucocytosis

Occurs within several days or up to 10 weeks after antibiotic therapy.



# Treatment of symptomatic patients

- Discontinue/ review precipitating antibiotics
- Oral Metronidazole 400mgs TDS x 10/7
- Vancomycin may be given on direction of Microbiologist
- Little evidence for usage of probiotics.
- Avoid antiperistaltic agents – slows clearance



# *Clostridium difficile*

## Infection Control

- Prompt isolation in single room with clinical hand washing sink ensuite or designated toilet/ commode until 48 hours without diarrhoea and patient has had a formed/normal stool
- Standard and Contact precautions - Apron/ glove usage for patient and environmental contact
- Hand Hygiene-hand washing with soap and water must be preformed before and after patient contact



# *Clostridium difficile* Infection Control

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- Alcohol-based rubs/gels do not have reliable sporicidal activity
- Strict environmental decontamination-Hypochlorite 1,000ppm
- Strict patient equipment decontamination-Hypochlorite 1,000ppm
- Disposable equipment should be used where possible



# *Clostridium difficile*

## Infection control

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- Toilet/commodes should be decontaminated after each use
- Bedpan washers must reach a temperature of 80°C for a minimum of 1 minute
- Cutlery and crockery should be washed in a dishwasher or manually in hot water and detergent



# *Clostridium difficile* Infection Control

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- Linen should be heat disinfected by washing at 65°C for 10 minutes or 71°C for 3 minutes
- Manually rinsing soiled linen is not recommended
- Healthcare waste that is soiled with faeces should be disposed of as HC Risk waste/clinical waste



# *Clostridium difficile*

## Infection Prevention

- Proactive antibiotic stewardship
- Restriction of antimicrobial therapy duration
- Specific use of narrow spectrum antimicrobials for specific infections
- Prompt symptom recognition and specimen collection
- Testing for clearance not required



# Clostridium difficile

## Conclusion

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- Education of all healthcare staff
- Early identification of C. diff.
- Prompt action
- Clear guidelines locally are necessary to prevent and control patient acquisition of CDAD



# Thank you!



