



NACNS *C. difficile* case study

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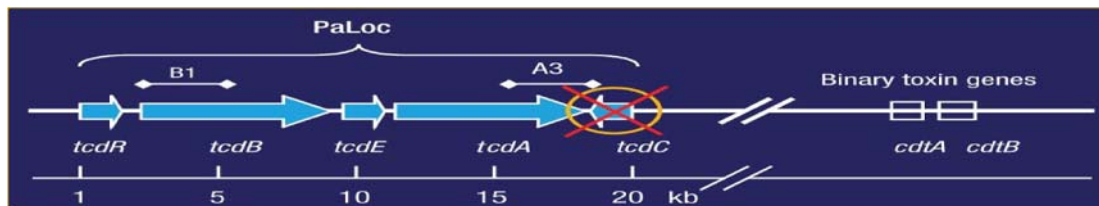
CDI Overview



- Spore-forming, anaerobic, gram-positive bacterium
- Causes gastrointestinal infections resulting in diarrhea and colitis
- Severity ranges from mild colitis to toxic megacolon and death
- Leading cause of healthcare-associated infectious diarrhea in US
- Rivals methicillin-resistant *Staphylococcus aureus* (MRSA) as the most common organism to cause healthcare-associated infections in US

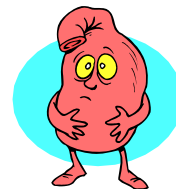
Strains of *C. difficile*

- Anaerobic, gram-positive, spore-forming, bacillus
- Non-toxin producing *C. difficile*
- Toxin A (*tcdA*)
- Toxin B (*tcdB*)
- NAP1/BI/027 (deletion *tcdC*)
 - Down regulation of toxin production
 - Enhance capability for production of toxin A and B.



Clinical Symptoms

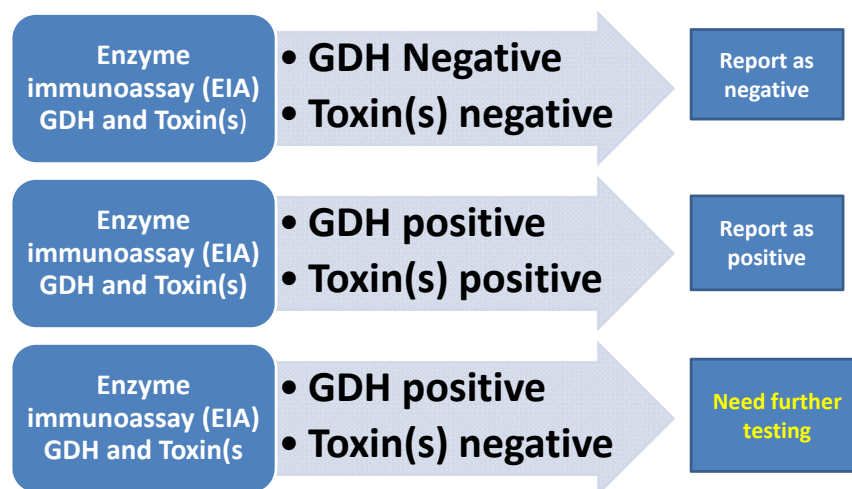
- Watery diarrhea is the cardinal clinical symptoms
- Diarrhea can be up to 15 times per day
- Fever, cramping, abdominal discomfort, and peripheral leukocytosis (Cohen, 2010)
- Colonic ileus or toxic dilatation may present with no or minimal diarrhea.



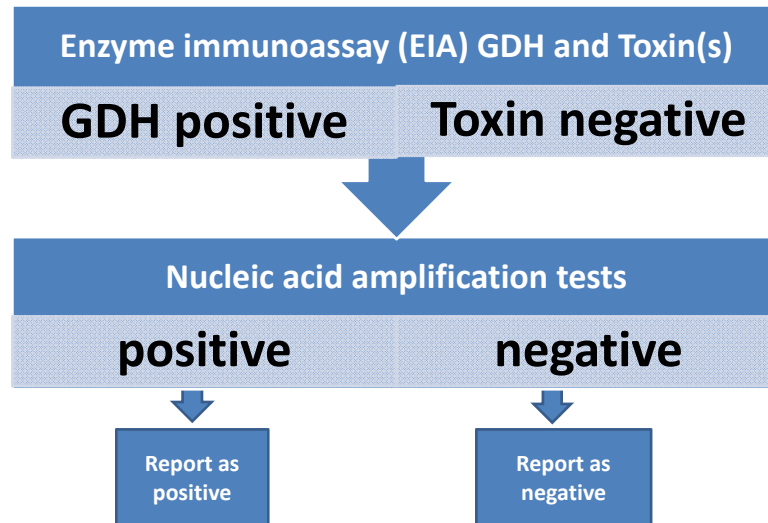
Methods of testing *C. difficile*

- Culture
- Cell cytotoxicity neutralization assay
- Enzyme immunoassays (EIA) *C. difficile* toxin A (Tcd A)
- EIA Tcd B or Tcd A/B
- EIA, glutamate dehydrogenase (GDH)
- Nucleic acid amplification tests

Combination method and algorithm



Combination method and algorithm

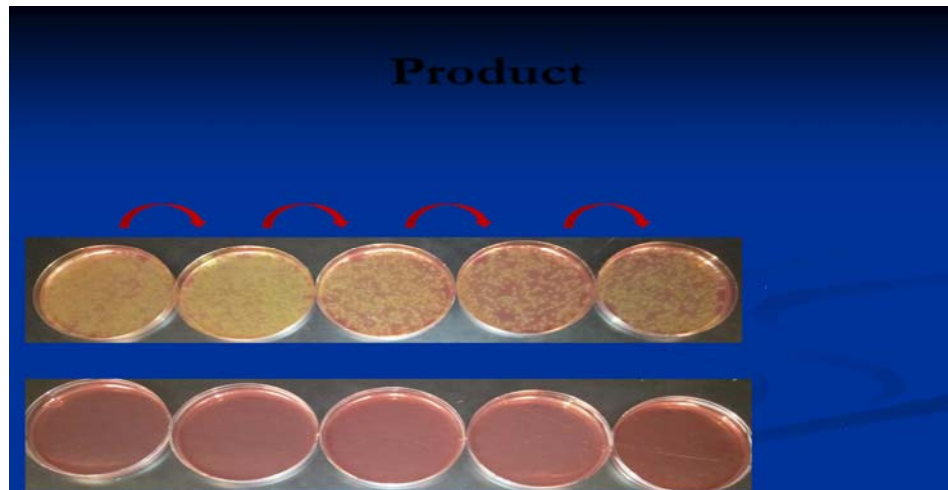


Clinical Practice Guidelines 2010 SHEA and IDSA Summary

- Test only unformed stool (exception: ileus)
- Do not perform a test of cure
- Stool cultures sensitive but not practical except for epidemiological studies
- EIA is rapid, not very sensitive and is sub-optimal
- 2 step GDH and EIA is a interim recommendation
- More data needed on PCR before they can recommend
- Repeat testing discouraged

Cohen, S.H. et al. 2010. ICHE. 31: 431-455

Quat vs. Bleach



Terminal/ Discharge Cleaning

- Clean all high-touch surfaces and all other area including wall with quaternary solution
- Then disinfect with bleach wipe / bleach solution or another sporicidal agent.
- Stay wet for 10 minutes



One bleach wipe multiple time vs. fresh one each time

