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Prevalence Of *Clostridium Difficile* Infection In Patients With Bloody Diarrhea In North-Western Region Of Russia

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Background:



Bloody diarrhea is one of the most severe forms of intestinal infections. Among all causative agents of bloody diarrhea *Clostridium difficile* infection (CDI) is one of the most difficult in both treatment and diagnostics. Moreover CDI is the most common causative pathogen of health care-associated gastrointestinal infections.

<u>Aim:</u> The purpose of the study was to establish the prevalence of CDI in children with Bloody diarrhea.



Material and methods:

aged 1 to 17 (3,3±1,7 years) 27 boys / 23 girls severe bloody diarrhea (Vesicari score >12) 2019 Feb - Apr

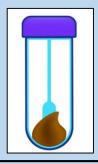
50 patients

1) 50 mariPOC CDI and Gastro test (ArcDia) glutamate dehydrogenase (GDH) toxin A/B, noro GI and GII.4, rota, adeno and Camp.spp

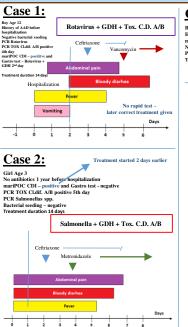
2) 50 PCR tests:

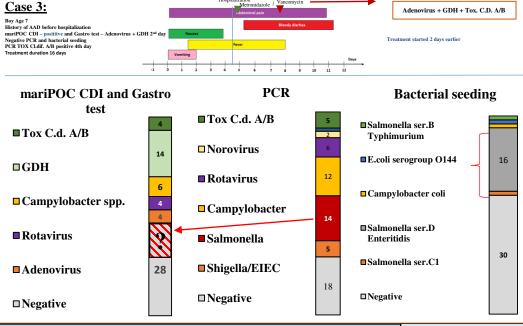
Rota, Noro, Adeno, Asro, Salm. spp., Camp. spp., C.dif. Tox A., Tox B 3) 50 bacterial seeding

50*3 stool samples:



Results: A high concentration of *C. difficile* GDH was found in samples from 14 children. Among them toxin producing strains of *C. difficile* were identified in 4 patients. 3 of them had an association of *C. difficile* and viruses: Rotaviruses (n=2) and Adenoviruses (n=1). The most common causative agent of bloody diarrhea according to PCR were *Salmonella spp* (n=14), *Campylobacter spp.* (n=12) and *Shigella*/EIEC (n=5). Pathogenic viruses were found in 9 samples. 6 of this samples contained also high level of *C. difficile* GDH.14 samples positive for *C. difficile* GDH were also positive in *C. difficile* PCR test and 2 in seeding. All tests positive for toxins of *C. difficile* with mariPOC CDI test have been positive with PCR.





Conclusion: The frequency of detection of *C. difficile* toxigenic strains in children with bloody diarrhea in North - Western Region of Russia is not less than 8%. The application of mariPOC CDI and Gastro test tests is a highly accurate, fast diagnostic tool which helps to speed up adequate treatment of CDI. The frequent association of viral pathogens and *C. difficile* in patients with bloody diarrhea may indicate a possible triggering role for Rotaviruses and Adenoviruses in the initiation of CDI. Larger cohort studies with a control group a needed to verify triggering role of viruses in CDI.

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