

Newborn infant with recovery after intestinal perforation complicated with severe *Clostridium difficile* infection

Skaistė Pečiulienė, Arūnas Liubšys, Laima Tamulienė, Rimutė Vaitkevičienė
Institute of Clinical Medicine, Medical Faculty of Vilnius University, Neonatal Center, Vilnius, Lithuania



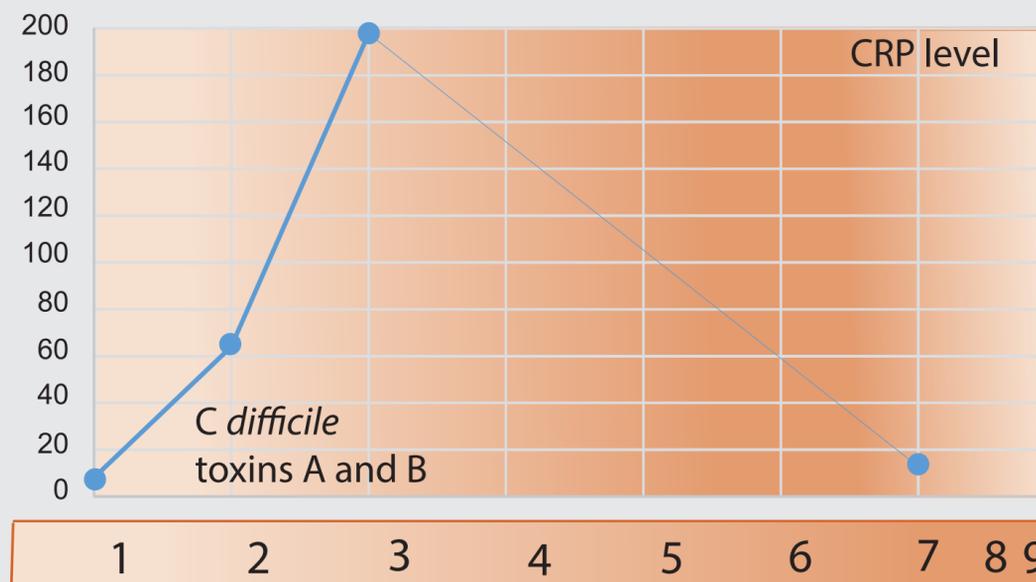
Background

Clostridium difficile is a Gram-positive, spore-forming bacteria found in soil, hospital environments, child care facilities and nursing homes. 15 to 63% of neonates are asymptomatic carriers of *C difficile* with the highest rate of colonisation in the NICU patients (33%), but also with the high prevalence in healthy outpatient and postnatal ward neonates (27 and 24% respectively). Wide spectrum antibiotic treatment, immunosuppression, surgery or manipulations, i.e. tube feeding, of GI are among the risk factors causing severe *C difficile* infection.

Case presentation

32-year-old gravida 2 para 1 mother. Polyhydramnios and fetal ascites identified on prenatal sonogram at 32nd GW. Emergency C-section was performed at 38th GW due to progression of fetal ascitis as well as deteriorating condition. 3,800 g infant boy was born with Apgar score 8/9. Surgery was performed on the 1st day of life, diagnosis of intrauterine peritonitis with intestinal perforation was confirmed and ileostomy formed. Antibiotics were administered until 15th day of life (cefuroxime 8 days, amikacin 7 days). Baby was transferred from NICU to step down neonatal department on the 10th day of life after reaching full enteral nutrition followed by parenteral nutrition with gradual increase of amount of maternal milk supplemented with probiotics. On the

25th day of life baby unexpectedly developed the symptoms of GI infection: fever, watery diarrhea and vomiting with progression of dehydration and decompensated metabolic acidosis, increased level of inflammatory markers. Blood and stool cultures, stool sample for viral antigens were negative. *C difficile* toxins A and B (enzyme immunoassay) were positive in the stool sample. Treatment with IV metronidazole and oral vancomycin was started and continued for 14 days due to the severity of the disease. Baby was discharged from the hospital on 62th day of life with no recurrent episodes of the *C difficile* infection.



Fever, watery diarrhea and vomiting with progression of dehydration

Parenteral feeding

Decompensated metabolic acidosis Symptoms of dynamic ileus

IV Metronidazole and oral Vancomycin

Improved clinical condition

Enteral feeding started

Treatment was continued for 14 days due to the severity of the disease

Ileostomy was closed after 7 days after discontinuation of antibiotic treatment NO recurrent episode of the *C difficile* infection were observed Baby was discharged from the hospital on 62 day of life

Conclusions

We speculate, that intrauterine infection and intrauterine bowel perforation could be the initial determinant of affected microbiota and activation of the *C difficile* infection with acute gastrointestinal symptoms in our newborn baby. We could not take into consideration long term use of broad spectrum antibiotics as another important factor responsible for the dysbiosis and activation of the *C difficile* infection. Identification of the *C difficile* toxins A and B, toxigenic culture or polymerase chain reaction should be used in neonates with acute gastrointestinal symptoms. Acute cases of the disease should be treated with combined antibiotic therapy including intravenous metronidazole and oral vancomycin as an optimal choice.