Vancomycin enema? A treatment option for Clostridium difficile localised in a rectal stump

Mia Skerda, BPharmSci, MPharm
Clinical Pharmacist, John Hunter Hospital, Newcastle

Objective
To report a case where vancomycin enemas were successfully used to treat a Clostridium difficile infection in a patient who had undergone a subtotal colectomy, with formation of end ileostomy, closed distal mucous fistula and rectal stump.

Background
Clostridium difficile infection is a disease of the large intestine caused by toxins produced by the spore-forming bacterium Clostridium difficile (C. difficile). Around 5-10% of healthy adults have this bacteria in their bowels without causing any symptoms. The main source of transmission of C. difficile is via faeces of patients with symptomatic infection. Signs and symptoms include:
- Diarrhoea (watery/bloody)
- Fever
- Loss of appetite
- Nausea
- Abdominal pain

The incubation period is around 2 to 3 days and a person with diarrhoea from C. difficile is infectious while symptoms persist. Treatment can be difficult due to high relapse rate and antibiotic treatment is usually required with metronidazole or oral vancomycin, in more severe disease.

Clinical Features
A 45-year-old female presented with severe abdominal pain and diarrhoea. She was admitted for an exacerbation of her Ulcerative Colitis with concurrent C. difficile infection.

Her medical conditions included:
- Ulcerative Colitis
- Atrial fibrillation
- Hypertension
- Hypercholesterolaemia
- Type 2 diabetes mellitus (T2DM)
- Depression
- Congenital heart defect (repaired in infancy)

Refer to table 1 for a complete medication history.

Clinical Considerations

Figure 1: Colectomy and end ileostomy

As C. difficile infection was confirmed with a stool culture on admission, she was suspected to have C. difficile in her rectal stump. Subsequent to the end ileostomy, oral absorption of vancomycin was questionable thus to target the area of C. difficile colonisation, vancomycin enemas were recommended.

Issue 2: How to administer Vancomycin as an enema?

Evidence indicated that in severe C. difficile infection associated with ileus, vancomycin could be administered as a retention enema (500mg in 100mL sodium chloride 0.9%, rectally, 6-hourly) in addition to oral or nasogastric vancomycin and intravenous metronidazole.

In collaboration with the infectious diseases team, it was decided to commence vancomycin enemas at a dose of 500mg every six hours. Importantly, the possibility of perforation secondary to vancomycin administration was raised as a concern by nursing staff.

A literature review was carried out and limited advice regarding rectal vancomycin administration was obtained. One study recommended rectal vancomycin solution in 250mL of normal saline 4-hourly as a retention enema, clamping rectal tube for 1 hour with each dose and avoiding vigorous or forceful administration to avoid perforation. One guideline recommended using an 18F red rubber catheter inserted up to 4 inches and administering 100mL at a time. Notably although the therapeutic guidelines and Australasian Society for Infectious Diseases Guidelines discussed use of rectal vancomycin no instructions for rectal administration were provided.

After four days of vancomycin enemas there was improvement in the patient’s condition and the enemas were continued for a further week, after which the patient was discharged without any further intervention.

Conclusion
This case demonstrates that despite this patient’s complicated anatomy, vancomycin enemas were an effective method for treating a localised C. difficile infection.

References

Acknowledgements
Case presented with permission of:
Dr Brian Draganic- Colorectal Surgeon
John Hunter Hospital

Contact Details
For more information please contact:
Mia Skerda at Mia.Skerda@hnhehealth.nsw.gov.au