Fecal transplantation for recurrent *Clostridium difficile* colitis, an underused treatment modality

R. Hellemans, S. Naegels, J. Holvoet

Department of Internal Medicine, Service of Gastroenterology, Middelheim Hospital Antwerp, Antwerp, Belgium.

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To the Editor,

Recently we successfully treated a patient who suffered from recurrent *Clostridium difficile* colitis with a fecal transplant (fecal bacteriotherapy) from a first degree relative. To our knowledge this is the first case of a successful transplant of this kind in Belgium. Also of interest is the fact that in our patient a cure was obtained using the supernatant after centrifugation of the fecal material.

The patient was a 59-year-old woman with lithium induced chronic renal failure who presented with four episodes of clinically and endoscopically severe *Clostridium difficile* colitis. No typing of the strain was done. The first episode occurred after treatment of an infected wound on one of her toes with amoxicillin-clavulanic acid. She was not receiving proton pump inhibitors nor was she immunocompromised.

The first attack was treated with five days of metronidazole 3×500 mg/day and because of persisting symptoms an additional ten days of oral vancomycin 4×500 mg/day. The second and third episodes were treated with two weeks of oral vancomycin 4×500 mg/day and a tapered/pulsed scheme of vancomycin (1, 2). However, each time only a few days after stopping treatment the patient relapsed.

After seven days of oral vancomycin 4 x 500 mg/day for the fourth episode her symptoms had only improved moderately. The patient then consented to the possibility of a fecal transplant. Vancomycin was stopped the day before fecal bacteriotherapy. Her brother was screened for transmittable diseases (HIV, hepatitis A, B and C, stool culture for *Clostridium*, other bacteria and parasites) and donated his morning stools on five consecutive days. The material was immediately mixed in our laboratory with +/-300 cc normal saline and then centrifugated. The supernatant was delivered to the endoscopy room.

The patient refused a nasogastric tube. We developed a protocol similar to that of Borody, who proposes one ileal infusion followed by five retention enemas with a success rate of 90% in his not yet published-experience (3, 4). However, because of severe diverticular disease in the left colon and diffuse colitis we were afraid that retention enemas would not be sufficient so we opted for five instillations through a colonoscope. The first day she received a polyethylene glycol bowel prep after which the supernatant of the fecal material was instilled in the terminal ileum and throughout the colon through the channel of a colonoscope. The four following days colonoscopy was repeated without bowel prep and supernatant was infused into the right colon. Each time an extra dose was injected in the diverticular area. Within 24 hours the patient felt better with disappearance of her diarrhea and at endoscopy there was marked improvement of the colitis with visible formation of solid stools and almost complete normalisation of the colonic mucosa on day 5 (on day 1 there were still extensive areas of colitis with focal ulcers and erythema).

The patient was discharged on day 6 and is still without symptoms after 4 months (while before she always relapsed within one week of stopping vancomycin). Stool cultures and toxin assay for *Clostridium* were negative on week 1-2-3-4-5-9 of follow up.

Fecal bacteriotherapy has been used in the treatment of relapsing *Clostridium difficile*-associated diarrhea and colitis with a success rate between 81 and 100% but also in constipation and inflammatory bowel disease (3, 4).

Case series involving more than ten patients with *Clostridium* colitis are scarce (5-7).

Two recent reports draw the attention to the potential use as a rescue therapy when one is confronted with a desperate situation of recurring (8) or fulminant disease (9). Most notably the treatment was also effective in two patients with the virulent 027 strain in the Dutch study (8) although one of these patients had to be retreated with another donor.

In the published case reports and series, the material is infused through a nasogastric or -enteric tube (7), administered as one or several retention enemas (5) or through the channel of a colonoscope (6). Ideally the first administration is done in the ileum to treat a possible ileal reservoir (4).

Correspondence to : Naegels Serge, M.D., Department of Internal Medicine, Service of Gastroenterology, Middelheim Hospital Antwerp, Lindendreef 1, 2020 Antwerp, Belgium. E-mail: serge.naegels@zna.be

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We opted for the use of the supernatant after centrifugation. This is particularly appealing since there is no risk of obstruction of the colonoscope channel and we assumed that it would contain the necessary bacteria for the recolonisation of the bowel.

Fecotherapy is safe (no significant side effects), simple, rapidly effective and cost-effective (compared to prolonged or repeated admissions and vancomycin treatments) and is the only treatment that effectively restores the normal intestinal flora (particularly *Bacteroides* seems to play a crucial role) (4).

Potential drawbacks are the need to find a suitable/willing donor, psychological and ethical issues, the potential to introduce other pathogens, and the risks associated with nasogastric or -enteric intubation, enemas and colonoscopy (4).

In their recent review Kelly and La Mont describe fecal bacteriotherapy as "unpopular for practical and aesthetic reasons" and they stress the fact that there are no prospective data (10). However a prospective randomized study on this subject (in which vancomycin will be compared with vancomycin + polyethylene glycol or vancomycin + polyethylene glycol + feces transplantation) has been initiated in the Netherlands (11). We await the results of this trial with great interest.

To our knowledge no other cases of successful fecal transplantation for recurrent *Clostridium* colitis have been reported in Belgium. However we strongly believe this treatment modality should be seriously considered when one is confronted with a second or third recurrence or in the case of fulminant colitis resistant to metronidazole and vancomycin as a last alternative before colectomy. Our case also suggests that administrating the supernatant after centrifugation of the fecal material can be sufficient.

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