

C. difficile overgrowth successfully treated with infusion of feces from donors

From MayoClinic.com:

“Clostridium difficile (klos-TRID-e-uhm dif-uh-SEEL), often called C. difficile or C. diff, is a bacterium that can cause symptoms ranging from diarrhea to life-threatening inflammation of the colon. Illness from C. difficile most commonly affects older adults in hospitals or in long term care facilities and typically occurs after use of antibiotic medications.

In recent years, C. difficile infections have become more frequent, more severe and more difficult to treat. Each year, tens of thousands of people in the United States get sick from C. difficile, including some otherwise healthy people who aren't hospitalized or taking antibiotics.

Mild illness caused by C. difficile may get better if you stop taking antibiotics. Severe symptoms require treatment with a different antibiotic.”

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Colon infection of C. difficile can be life threatening. It is caused by treatment with antibiotics that diminish the normal flora in the colon allowing overgrowth of C. difficile. Ironically, C. difficile is first treated by discontinuing antibiotics, if they are still being prescribed. If that is unsuccessful, the infection is treated by switching to another antibiotic. However, treatment with another antibiotic frequently does not cure the C. difficile infection.

There have been sporadic reports of successful treatment by infusing feces from healthy donors into the duodenum of patients suffering from C. difficile. The efficacy of this approach was tested in a randomized clinical trial reported in New England Journal of Medicine in January 2013. The abstract is shown below.

Duodenal Infusion of Donor Feces for Recurrent *Clostridium difficile*

Els van Nood, Anne Vrieze, et al.: N. Engl. J. Med., Jan. 16, 2013

Abstract

Recurrent *Clostridium difficile* infection is difficult to treat, and failure rates for antibiotic therapy are high. We studied the effect of duodenal infusion of donor feces in patients with recurrent *C. difficile* infection.

Methods

We randomly assigned patients to receive one of three therapies: an initial vancomycin regimen (500 mg orally four times per day for 4 days), followed by bowel lavage and subsequent infusion of a solution of donor feces through a nasoduodenal tube; a standard vancomycin regimen (500 mg orally four times per day for 14 days); or a standard vancomycin regimen with bowel lavage. The primary end point was the resolution of diarrhea associated with *C. difficile* infection without relapse after 10 weeks.

Results

The study was stopped after an interim analysis. Of 16 patients in the infusion group, 13 (81%) had resolution of *C. difficile*-associated diarrhea after the first infusion. The 3 remaining patients received a second infusion with feces from a different donor, with resolution in 2 patients. Resolution of *C. difficile* infection occurred in 4 of 13 patients (31%) receiving vancomycin alone and in 3 of 13 patients (23%) receiving vancomycin with bowel lavage ($P < 0.001$ for both comparisons with the infusion group). No significant differences in adverse events among the three study groups were observed except for mild diarrhea and abdominal cramping in the infusion group on the infusion day. After donor-feces infusion, patients showed increased fecal bacterial diversity, similar to that in healthy donors, with an increase in Bacteroidetes species and clostridium clusters IV and XIVa and a decrease in Proteobacteria species.

Conclusions

The infusion of donor feces was significantly more effective for the treatment of recurrent *C. difficile* infection than the use of vancomycin.