Article examines fecal microbiota transplantation

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Fecal microbiota transplantation (FMT) has emerged as a highly effective treatment for recurrent *Clostridium difficile* (*C. difficile*) infection, with very early experience suggesting that it may also play a role in treating other gastrointestinal (GI) and non-GI diseases. The topic is examined in the Review Article, "An overview of fecal microbiota transplantation: techniques, indications, and outcomes" in the August issue of *GIE: Gastrointestinal Endoscopy*, the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE). Also in this issue, the journal launches a new section called VideoGIE, which features high-quality videos of endoscopic procedures.

Fecal microbiota transplantation refers to the infusion of a suspension of fecal matter from a healthy individual into the GI tract of another person to cure a specific disease. FMT has received public attention recently with the publication of several studies showing that stool is a biologically active, complex mixture of living organisms with great therapeutic potential for *Clostridium difficile* infection and perhaps other GI and non-GI disorders. *C. difficile* is a bacterium recognized as the major causative agent of colitis (inflammation of the colon) and diarrhea that may occur following antibiotic intake. The disruption of the normal balance of colonic microbiota as a consequence of antibiotic use or other stresses can result in *C. difficile* infection. It is now estimated that 500,000 to 3 million cases of *C. difficile* occur annually in U.S. hospitals and long-term care facilities.

According to authors Lawrence J. Brandt, MD and Olga C. Aroniadis, MD, Montefiore Medical Center, Bronx, New York, current first-line treatment for *C. difficile* includes cessation of the culprit antibiotic, if possible, and treatment with metronidazole, vancomycin, or fidaxomicin, depending on disease severity. Most patients with *C. difficile* initially respond to this treatment, but recurrence rates are 15 percent to 35 percent. Patients who have one recurrence have up to a 45 percent chance of a second recurrence, and after a second recurrence, up to 65 percent of patients will have a third. Recurrences are usually treated with additional courses of metronidazole, oral vancomycin, or prolonged oral vancomycin in various pulsed-tapered regimens, occasionally "chased" by other antibiotics such as rifaximin. The high recurrence rates of *C. difficile* prompted the need for alternative therapies, to which the authors believe FMT offers a rational and relatively simple approach.

The Review Article addresses FMT methodology, including donor and recipient screening, donor selection, how FMT is performed and safety. FMT is most commonly performed via colonoscopy; however, donor feces also have been administered via a nasogastric or nasoenteric tube, gastroduodenoscopy, and enema. All the studies have reported remarkable cure rates without serious adverse effects directly attributable to FMT. The article notes that current literature on FMT for *C. difficile* predominantly comprises single-center case series and case reports, but also a meta-analysis, two systematic reviews, and one recently published randomized, controlled trial. In all, 92 percent of patients were cured of their recurrent *C. difficile*, with a range of 81 percent to 100 percent. In the only long-term follow-up study of FMT to date that included 5-medical centers and 77 patients who had FMT, the patients experienced a 91 percent primary cure rate and an astounding 98 percent secondary cure rate, the latter defined as cure enabled by use of antibiotics to which the patient had not responded before the FMT or by a second FMT. Patients in this study had symptoms for an average of 11 months before FMT, and most (74 percent) reported resolution of

diarrhea within three days. FMT also has been successfully used to treat a variety of other GI disorders including inflammatory bowel disease, irritable bowel syndrome, and constipation. There is a growing literature on an altered intestinal microbiome in these and other disorders.

More information: www.giejournal.org/

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