

Fecal Microbiota Transplantation: A Solution for Recurrent *Clostridium difficile* Infections?

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Introduction

Clostridioides difficile (previously called as *clostridium difficile*) is a bacterium that affects individuals with imbalance in their gut health, also known as dysbiosis, causing an infection that can lead to varying symptoms from diarrhea, abdominal pain, to severe damage to the colon. The mainstay treatment for recurrent *Clostridioides difficile* infection (rCDI) are antibiotics, but this comes with the risk of exacerbating the dysbiosis already present. Once an individual is affected by a *Clostridioides difficile* infection, 20%-30% are seen to have a recurrence of the infection if treated with antibiotics initially, and 60% have an increased rate of recurrence after the second time. Fecal microbiota transplantation (FMT) is a procedure involving the transfer of a healthy individual's fecal microbes to those with rCDI. FMT has been shown high rates of efficacy in the treatment of those especially with rCDI, where observational studies have shown almost 90% of the cases were cured but further clinical trials must be conducted in order to prove its complete benefits.

Method

We used PubMed, Medline, EMBASE, CINAHL, and PEDro to perform a critical review of the literature based on a system of original research studies published between November 2014 and April 2023 that reported the effects of FMT for individuals suffering from rCDI.

Result

FMT was seen to effectively treat rCDIs, surpassing standard therapies. The cure rates ranged between 76% to 100%, with lower mortality. FMT achieved higher resolution and fewer recurrences than vancomycin or rectal bacteriotherapy. Donor FMT showed to yield superior outcomes, with fresh donor products being the most effective than frozen or lyophilized FMT product obtained via colonoscopy. The safety profile showed that FMT was well tolerated, and adverse events were minimal.

Conclusion

In conclusion, FMT emerges as a highly effective treatment for rCDIs. Fresh or frozen donor stool, administered via colonoscopy, yields superior outcomes compared to lyophilized or autologous FMT, or standard vancomycin regimen. The safety profile has also proven that FMT provides a superior treatment pathway for individuals with rCDIs. Further studies are still required to confirm long-term safety and efficacy, but it could possibly be the new mainstay treatment for those suffering from rCDIs.

Keyword

Fecal Microbiota Transplantation; Recurrent *Clostridioides Difficile* infection; Dysbiosis; Colonoscopy.