FMT in Clostridium difficile: frozen or fresh?

Adrija Hajra¹, Dhrubajyoti Bandyopadhyay²

Pseudomembranous colitis is caused almost exclusively by toxins produced by Clostridium difficile (CD). There may be mild nonspecific diarrhea to severe colitis with toxic megacolon, perforation, and death.[1]

It is a well-known fact that Clostridium difficile infection (CDI) is a significant problem for patients as well as physicians. CDI recurrence is a more complicated issue. Limited treatment options and infection control issues make the condition worse. Though fecal microbiota transplantation (FMT) is a promising therapy, it is not readily available. Randomized, double-blind, noninferiority trial has been done to determine whether frozen-and-thawed FMT is noninferior to fresh FMT regarding clinical efficacy.

Fecal microbiota transplantation has been demonstrated to be linked to the resolution of symptoms of recurrent CDI. Its efficacy in primary and severe CDI is yet to be established.[2]

Recently, 232 adults were enrolled in this trial (NCT01398969) with recurrent or refractory CDI. It was conducted between July 2012 and September 2014. Patients were randomly given frozen (n=114) or fresh (n=118) FMT via enema. Resolution of diarrhea clinically without relapse at 13 weeks and adverse events were the primary outcomes. The number of patients with clinical improvement for the frozen FMT group and the fresh FMT group showed no significant difference. (P-value for non-inferiority =0.01). The use of frozen in comparison to fresh FMT did not show the worse proportion of clinical resolution of diarrhea in recurrent or refractory CDI. Frozen FMT can be a reasonable option in this setting.[3]

Recurrent CDI is a problematic issue for long especially for old patients, patients in critical care and patients with other comorbidities. One-fourth of patients may have recurrent infection. CDI is often refractory to given antimicrobial agents. Naturally, clinicians are in search of more data about the efficacy of fecal microbiota transplantation (FMT) (“stool transplant”).[4]

Reconstitution of normal flora by a stool transplant is done for this FMT. The FMT procedures previously have been performed with fresh stool preparation from related donors. One study had been done using capsulized frozen inoculum in oral route. It was done with the aim of evaluating the safety and rate of diarrhea resolution. But the main limitations of this study were the small sample size and lack of placebo. Although the overall rate of clinical resolution of diarrhea was 90%, it might be due to the small cohort (n=20).[5] So whether fresh or frozen preparation is useful is a matter of discussion.

Naturally, it is imperative that studies involving a larger number of patients are necessary for the more conclusive result. This study definitely will be helpful for further research in this field.

REFERENCES


Cite this article: Hajra A, Bandyopadhyay D. FMT in Clostridium difficile: frozen or fresh?. OGH Reports. 2017;6(1):43.