

## Letter to the Editor

# Fecal microbiota transplantation: the need for effective treatment of *Clostridioides difficile* infection in Pakistan

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Dear Editor,

*Clostridioides difficile* infection (CDI) is one of the most typical hospital-acquired infections affecting the gastrointestinal tract, caused by gram-positive anaerobic bacteria. In some patients, it may remain asymptomatic, whereas, in the vast majority of cases, it results in a spectrum of clinical presentations, ranging from recurrent diarrhea to life-threatening conditions caused by septicemia, toxic megacolon, and intestinal perforation. CDI most frequently affects people on antibiotics, as long-term use of antibiotics disrupts normal, beneficial colonic microbiota leading to *C. difficile* overgrowth in the colon. Moreover, immunocompromised patients, the elderly, and individuals with inflammatory bowel disease are at high risk of acquiring the infection as well [1].

In recent years, the incidence of CDI has increased worldwide, owing to the advancements in antibiotic treatment against microbial infections. Furthermore, accelerating rates of antibiotic resistance have led to the development and employment of newer classes of antibiotic drugs. According to a CDC report, *C. difficile* is responsible for at least 223,900 cases in the United States alone, with increased mortality seen mainly among the elderly and reinfection [2]. In Pakistan, CDI was found to be affecting at least 29% of patient with antibiotic-associated diarrhea [3].

Developing countries like Pakistan are also, particularly at high risk of acquiring such infections, which is attributable to the practice of widely prescribing antibiotics to patients and unregulated consumption by the masses. In Pakistan and its contiguous geographical territories, *C. difficile* is found

to be the causative organism in 29% of patients having antibiotic-associated nosocomial diarrhea.

Owing to its increased Global burden of disease and increased risk of life-threatening outcomes, the key to effective management lies in the early initiation of treatments. A multitude of modalities has been developed to counter CDI efficiently. Antibiotics, such as metronidazole, vancomycin, and fidaxomicin, have been the mainstay treatment of CDI for many years [4]. However, some recent clinical trials have shifted the focus toward fecal microbiota transplant (FMT), which has shown promising results in the treatment of *C. difficile* infections in contrast to contemporary therapies, especially against recurrent CDI [5].

The National Institute for Health and Care Excellence (NICE), UK, published its recent recommendations for the treatment of recurrent CDI, approving FMT as an effective, safe, and cost-friendly treatment option for adults who have had two or more CDI that have not responded to antibiotics [6].

Although the organism's susceptibility to a few antibiotics is high, the efficacy of these antibiotics decreases with each subsequent attack. The currently recommended therapy for recurrent CDI includes tapering doses of vancomycin as standard therapy, however, the cure rates are still reported to be low [7]. Due to the higher rates of complications and morbidity associated with subsequent attacks, there is a need for an efficacious mode of therapy to prevent life-threatening outcomes. A recent systematic analysis carried out under the heading showed FMT to be more effective than vancomycin in resolving recurrent CDI, where the clinical resolution of infection was found to be around 92% among all cases. Moreover, methods of

transfer of Fecal Microbiota were found to be significant as they carry a considerable difference in outcomes, with resolution rates for lower GI transfer and upper GI delivery of Fecal Microbiota observed to be 95% and 88%, respectively [8].

Every therapy comes with the side effects of its own. The risks of FMT are not much defined owing to the lack of clinical trials in this area, however, it is associated with abdominal pain, bloating, flatulence, diarrhea, constipation, vomiting, and fever. These symptoms are often transient and resolve within a few hours. Other risks are related to the procedure itself, such as the fecal pathogen exposure. Even though the overall risk of pathogen exposure is low, there is a potential for the transmission of notorious pathogens [2].

In countries like Pakistan, where *Clostridioides difficile* is becoming one of the significant causes of morbidity, the practice of FMT is significantly limited in routine clinical practice [9]. Doctors rely mainly on conventional treatments for CDI. Moreover, there is a significant lack of clinical trials in this region as well, which aids in the scarcity of data on successful therapies regarding FMT. The recommendation in NICE Guidelines has come as an endorsement of the Fecal Microbiota Transplant therapy to enter into clinical practice and helps us modify our treatment approaches toward CDI. It is really important to keep up with the new, more efficacious modalities of treatment, as they can help to give us a head start not only in the management of CDI but also in conserving limited medical resources and in identifying the limitations that we face in adopting this new treatment and discovering more therapeutic avenues of FMT.

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