

## FAECAL TRANSPLANTATION

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### Abstract

Faecal transplantation is a modern gastrointestinal procedure where faeces are transferred from a healthy donor body to person infected with clostridium defficile and associated gastric diseases. The procedure, availability and suitability of donor, nursing focus issues are discussed in this paper.

**Keywords:** Faecal, Faecal Transplantation, Potential, Clinical, Clinical Nurse

### INTRODUCTION

Transplantation is a beneficial medical procedure to replace organ or living body matter from healthy human being to the sick or morbid persons to return functionality. Faecal transplantation is a transplantation procedure done for treating infective gastroenterological diseases. In better term, Faecal microbiota transplantation (FMT) has increasingly gained interest and rapid acceptance during the last decade<sup>1</sup>.

### DEFINITION

Faecal Microbiota Transplantation is defined as the infusion of stool from a healthy individual to patients with presumed gut dysbiosis. It can be delivered through an enteral route either via an endoscope, a naso-enteral tube, or in form of capsules for ingestion. Such mechanism of action appears to be the establishment of a new gut microbe community to restore the normal gut function<sup>2</sup>. On the basis of the concept of repopulating the gut with a healthy microbiome, FMT has been successfully used in the treatment of numbers of diseases. The efficacy and safety of FMT is evidenced by several randomized clinical trials, and guidelines recommend the use of FMT as a second-line treatment.

### INDICATION & CONTRAINDICATION OF THERAPY RECIPIENT

Faecal Transplantation, a special form of organ transplant, has been explored for reaching optimum therapeutic endeavor, including the disease conditions i.e. chronic intestinal and extra-intestinal conditions, which may be caused or contributed to by alterations in the gut micro biome, and it may be restored by renewal of normal gut flora patterns.

Sl. No.	Indications
1	Clostridium defficile infection
2	Inflammatory bowel disease
3	Irritable bowel syndrome
4	Obesity and diabetes mellitus
5	Multiple sclerosis and Parkinson disease
6	Atopy and rheumatoid arthritis
7	Autism
8	Depression
9	Ulcerative Colitis
10	Muscular Distrophy

## DONOR PROFILE

Donor selection represents a fundamental challenge in view of the implementation of FMT programs worldwide. To date, there is a broad debate regarding the preference of donor selection, whether the stool donor should be known to the patient or whether it is preferable to use feces from unrelated donor. Moreover, in the case of non-related donor, faecal material could be banked at dedicated structures that provide support to the hospital that will perform FMT<sup>3</sup>.

The ideal stool donor should be a healthy volunteer, without risk factors for infectious or other chronic diseases, and who is willing to “donate” frequently if needed. Unfortunately, although the conditions do not seem too selective, it is not always easy to identify an adequate number of donors to meet the needs of the FMT program. There are stool banks to keep registry of donors who can support the organizational infrastructure who run FMT Program.

The screening of potential donor consists in two key landmarks, the preliminary interview and the laboratory testing. A preliminary interview is usually performed by a structured questionnaire that investigated several risk factors to minimize the risk of transferring infections or adverse gut microbiota profile. In particular, the medical interview screen potential donors inquiring about the use of drugs that can alter gut microbiota, known history or risk behaviors for infectious disease and for disorders potentially associated with the disruption of gut microbiota. The focus points are as follows-

- Personal history of chronic gastrointestinal diseases like functional gastrointestinal disorders; inflammatory bowel disease; celiac disease; other chronic gastroenterological diseases or recent abnormal gastrointestinal symptoms (e.g., diarrhea, hematochezia, etc.)

- History of cancer, including gastrointestinal cancers or polyposis syndrome, and first-degree family history of premature colon cancer

- History of systemic autoimmune disorders

- Obesity (body mass index, BMI) > 30, and/or metabolic syndrome/diabetes

- History of neurological/neurodegenerative disorders

- History of psychiatric/neurodevelopmental conditions

Risky health behaviors for infectious diseases are following-

- History of HIV, Hepatitis B or C Viruses, Syphilis, human T-lymph tropic Virus I and II

- Generalized systemic infection

- Use of illicit drugs

- High-risk sexual behavior

- Previous incident of tissue or organ transplantation

- Hospitalization or discharge from long-term care facilities

- High-risk travel history

- Needle stick injury in the last six months

- Tattoo, piercing, acupuncture etc. invasive procedures in the last six months

- enteric pathogen infections in the last two months

- acute gastroenteritis with or without confirmatory test in two months

- Vaccination and immunisation with a live attenuated virus in the last two months

## PROCEDURE

The FMT provides Antibiotics for at least 3 days before infusion to reduce the amount of *C. defficile* and generally discontinued at 24–48 h before the FMT. In case of FMT is delivered by

colonoscopy, bowel preparation is recommended to improve the visualization of the colon. In patients with a severe ileus, bowel preparation is replaced by enemas or omitted. The standard dose of FMT is specific to each institutional protocol, however, about 50–100 g of donor fecal material that has been diluted to 250–500 ml. of infusate is most commonly used.

FMT can be administered either directly to the colon or from the upper gastrointestinal tract by capsule ingestion. Delivery to the colon is generally performed using colonoscopy, and less frequently through flexible sigmoidoscopy or in form of enema and is the modality of choice. The most serious risk that has been reported with respect to lower gastrointestinal tract administration is perforation. Theoretically, bleeding, adverse reaction to sedative drugs, cardiovascular events, transient fevers, or infections could occur, as with any colonoscopy procedure. For patients with ileus, severe colitis, or objection to colonoscopy, FMT can be provided through the upper gastrointestinal tract via nasoenteric tubes, esophagogastroduodenoscopy or by capsule ingestion.

### POTENTIAL NURSING PERSPECTIVES

Some issues of nursing management related to this procedure are following-

1. Bowel incontinence r/t infectious disease.
2. Fluid and electrolyte imbalance related to Diarrhoea
3. Pain in abdomen r/t force infusion
4. Cardiorespiratory monitoring r/t risk of cardiac overload by fluid infusion

### CONCLUSION

Success rates approaching 92% have been demonstrated in the treatment of infectious gastric diseases. The increased rate of FMT owing to its success in treating various diseases, there is growing demand for standardizing the preparation of faecal material, using accepted standards for the delivery, ensuring safety for the recipient, monitoring long-term outcomes, and continuously improving the procedural processes and safety. Colonoscopic delivery has efficacy of 84%–93%. The cure rate is achieved on a single infusion by colonoscopy is 93%.<sup>4</sup>

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