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Role of transplantation of fecal microbiota from healthy individuals to patients with Crohn's disease and its effect on achieving control of disease activity

Submission date
17/05/2024

Recruitment status
No longer recruiting

Registration date
11/06/2024

Overall study status
Completed

Last Edited
30/05/2024

Condition category
Digestive System

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
The gut microbiota (microbes that live in the gut) plays a significant role in causing inflammation in inflammatory bowel disease (IBD). Fecal microbiota transplantation (FMT) has shown success in treating ulcerative colitis, but there's limited information on its effectiveness and safety for treating active Crohn’s disease (CD). The main aim of this study is to determine the effectiveness of FMT compared to placebo in inducing clinical remission in patients with mild to moderate active CD.

Who can participate?
Patients with mild to moderate active CD aged 18-75 years

What does the study involve?
The participants are randomly assigned to either the FMT treatment group or the placebo group. A careful selection of healthy fecal donors is conducted, ensuring they meet stringent health criteria and have a balanced gut microbiota. Patients in both groups undergo regular follow-ups to monitor clinical symptoms, inflammatory markers, and gut microbiota composition. Stool samples from participants are collected and analyzed to assess changes in microbiota diversity and composition. Clinical assessments, including endoscopic evaluations and patient-reported outcomes, are conducted to measure disease activity and response to treatment. Safety and adverse events are closely monitored and documented to evaluate the treatment's safety profile. Finally, statistical analyses are performed to compare outcomes between the FMT and control groups.

What are the possible benefits and risks of participating?
Possible benefits of FMT in Crohn's disease:
1. Restoration of gut microbiota: FMT may help restore a healthy balance of gut microbiota, which is often disrupted in Crohn's disease patients, potentially leading to improved gut health.
2. Reduction in inflammation: by introducing beneficial bacteria, FMT could reduce intestinal

inflammation, which is a hallmark of Crohn's disease.
3. Symptom relief: patients might experience relief from symptoms such as abdominal pain, diarrhea, and fatigue, improving their overall quality of life.
4. Reduction in disease activity: FMT could help decrease the activity and severity of Crohn's disease, potentially leading to remission.
5. Decrease in medication use: successful FMT might reduce the need for long-term use of immunosuppressants, steroids, or other medications with significant side effects.
Possible risks of FMT in Crohn's disease:
1. Infection transmission: there is a risk of transmitting infections from the donor to the recipient, despite rigorous screening of donors.
2. Adverse reactions: patients may experience adverse reactions such as fever, diarrhea, or abdominal pain following the procedure.
3. Disease flare-ups: there is a potential risk that FMT could trigger a flare-up of Crohn's disease symptoms in some patients.
4. Allergic reactions: there is a possibility of allergic reactions to components in the donor stool.
5. Imbalance of microbiota: an inappropriate balance of bacteria introduced through FMT could potentially exacerbate symptoms or lead to new gastrointestinal issues.
6. Long-term effects unknown: the long-term effects of FMT are not yet fully understood, and there may be unforeseen consequences years after treatment.
7. Donor selection issues: finding a suitable donor with the optimal microbiota can be challenging and may limit the availability of FMT.
8. Procedural risks: depending on the method of administration (e.g., colonoscopy), there may be procedural risks such as bowel perforation or anesthesia-related complications.

Where is the study run from?
Dayanand Medical College and Hospital (India)

When is the study starting and how long is it expected to run for?
January 2022 to June 2025

Who is funding the study?
1. Dayanand Medical College and Hospital (India)
2. Digestive Diseases Care Foundation (India)

Who is the main contact?
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Type(s)
Public, Scientific, Principal Investigator

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
DMCH/P/2022/1121

Study information

Scientific Title
Fecal microbiota transplantation for induction of remission in mild to moderate active Crohn’s disease

Acronym
FMT-CD

Study objectives
Gut microbiota dysbiosis plays an important role in the development and sustenance of Inflammatory bowel disease. Fecal microbiota transplantation (FMT) aims to restore the gut microbiota, reduce inflammation, and modulate immune response. This may ultimately lead to the resolution of clinical symptoms.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 27/10/2022, Dayanand Medical College and Hospital Institutional Ethics Committee (Department of Gastroenterology, Ward Number 312, Third Floor, Endosurgical Complex, Dayanand Medical College and Hospital, Tagore Nagar Civil Lines, Ludhiana, 141001, India; +91 (0)8146545367; skaushal1@gmail.com), ref: DMCH/P/2022/1121

Study design
Randomized parallel-group placebo-controlled trial

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Hospital

Study type(s)
Treatment

Participant information sheet
Not available in web format, please use the contact details to request a participant information sheet

Health condition(s) or problem(s) studied
Crohn's disease of both small and large intestine

Interventions
Participants will be randomly assigned to receive either FMT or a placebo at four scheduled intervals: weeks 0, 4, 12, and 20. The placebo will consist of food-grade color mixed in normal saline. Both FMT and placebo will be administered via colonoscopy, with the fecal slurry or placebo solution delivered into the terminal ileum or cecum.

Preparation of fecal slurry:
The fecal slurry for FMT will be freshly prepared on the day of each intervention from healthy, unrelated voluntary donors. These donors will undergo thorough screening to ensure the absence of transmissible diseases and other health risks. The stool will be processed to create a slurry suitable for transplantation.

Assessment of disease activity and response:
At each visit, disease activity and response to therapy will be assessed using the Crohn's Disease Activity Index (CDAI). Endoscopic findings will be recorded, with disease activity graded according to the Simple Endoscopic Score for Crohn's Disease (SES-CD). These assessments will help monitor the clinical progression and response to treatment.

Study schedule:
Week 0: Initial FMT or placebo administration, baseline fecal sample collection, CDAI and SES-CD assessments
Week 4: Second FMT or placebo administration, CDAI and SES-CD assessments
Week 12: Third FMT or placebo administration, CDAI and SES-CD assessments
Week 20: Fourth FMT or placebo administration, CDAI and SES-CD assessments
Week 24: Final assessment of disease activity using CDAI and SES-CD, fecal sample collection for microbiome analysis, and evaluation of successful engraftment

Data analysis:
Data collected will be analyzed to determine the efficacy of FMT in inducing clinical remission and endoscopic response in patients with Crohn's disease. The similarity of microbiota between donors and recipients will be analyzed using advanced sequencing technologies to confirm successful engraftment. Adverse event data will be analyzed to evaluate the safety profile of FMT.

Intervention Type

Biological/Vaccine

Pharmaceutical study type(s)
Not Applicable

Phase
Not Applicable

Drug/device/biological/vaccine name(s)
Fecal slurry

Primary outcome measure
1. Clinical remission defined as a CDAI score of less than 150 at 24 weeks
2. Endoscopic response defined as a 50% reduction in the SES-CD score from baseline at 24 weeks

Secondary outcome measures
1. Gut microbiome composition assessed via fecal metagenome analysis at baseline and week 24
2. Safety and adverse events: adverse events related to FMT will be meticulously recorded using a pre-designed template throughout the study. The severity of these events will be graded according to the American Society of Gastrointestinal Endoscopy (ASGE) report criteria. This process will ensure comprehensive monitoring of any negative effects associated with the intervention.

Overall study start date
01/01/2022

Completion date
30/06/2025

Eligibility

Key inclusion criteria
1. Patients with mild to moderate active CD, defined as CDAI 150-449
2. Ileal, ileo-colonic or colonic disease location
3. Inflammatory (non-penetrating non-stricturing disease behavior)
4. Diagnosis (endoscopic or radiographic and histological) of IBD at least 6 months prior to enrolment into the study
5. Subjects who are willing and able to comply with treatment plan, laboratory tests
6. Subjects who are willing to provide written informed consent

Participant type(s)
Patient

Age group
Adult

Lower age limit
18 Years

Upper age limit
75 Years

Sex
Both

Target number of participants
36

Key exclusion criteria
Patients with severe, penetrating and stricturing, or perianal fistulizing CD

Date of first enrolment
01/01/2023

Date of final enrolment
30/12/2024

Locations

Countries of recruitment
India

Study participating centre
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Funder(s)

Funder type
University/education

Funder Name
Dayanand Medical College & Hospital

Funder Name
Digestive Diseases Care Foundation, Ludhiana

Results and Publications

Publication and dissemination plan
Planned publication in a peer-reviewed journal.

Intention to publish date
01/01/2025

Individual participant data (IPD) sharing plan
The data-sharing plans for the current study are unknown and will be made available at a later date.

IPD sharing plan summary
Data sharing statement to be made available at a later date