Reduction in Urinary Tract Infections with Fecal Microbiota Transplantation for Recurrent *C difficile* Infection: A Case Control Study

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BACKGROUND

Recurrent urinary tract infections (UTIs) are one of the most common bacterial infections in the community.

UTIs require repeated antibiotic therapy that predisposes patients to primary and recurrent *C difficile* infection.

Antibiotics disrupt the gut microbiome and facilitate emergence of multidrug resistant organisms (MDRO) in the gut.

MDROs are the major pathogens causing recurrent UTI.

Fecal Microbiota Transplantation (FMT) is an effective treatment for recurrent *C difficile* infection (CDI).

FMT has been shown to lead to MDRO decolonization.

HYPOTHESIS

FMT would lead to MDRO decolonization in the gut and reduce the frequency of recurrent UTIs from these antibiotic-resistant organisms.

METHODS

A retrospective review of clinical records of patients with a history of 3 or more UTIs in the year prior to FMT who received FMT for CDI.

UTI was defined as the presence of urinary symptoms and urinary bacterial cultures with >10^5 colony-forming units/mL.

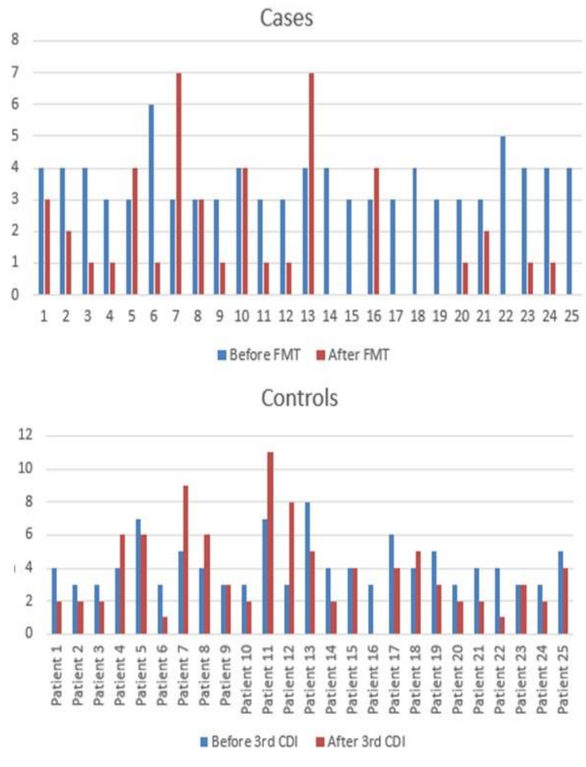
Data collected included demographics, CDI history, frequency of UTIs 1-year pre and post FMT, bacterial organisms and antibiotic resistance patterns.

RESULTS

Clinical Characteristics

Total Patients	Cases 25	Controls 25
Female	84%	84%
Age (median)	67 (24-92)	75 (38-87)
Median CDI episodes	4 (3-7)	4(3-7)
Median prior courses of metronidazole	1.5 (1-3)	1.5 (2-4)
Median prior courses of vancomycin	3 (1-5)	3 (1-5)
UTI episodes before FMT /3rd CDI(median)	4 (3-9)	4(3-8)
UTI episodes after FMT/ 3rd CDI (median)	1 (0-7)	3 (0-11)

FIGURE 1



DISCUSSION

Widespread use of antibiotics causes a dysbiotic microbiome and impairs colonization resistance.

Impaired colonization resistance increases the risk of MDRO colonization and *C difficile* infection.

FMT leads to restoration of healthy gut microbiome and may decolonize MDROs.

CONCLUSIONS

FMT may decrease the frequency of MDRO UTIs possibly by reestablishment of colonization resistance and lead to improved antimicrobial susceptibility profiling.

REFERENCES

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