

Inpatient Fecal Microbiota Transplant for Severe and Complicated *Clostridium difficile* Infections

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Background

- *Clostridium difficile* Infection (CDI) is increasing in incidence and mortality.
- Severe CDI (SCDI) has a marked inflammatory response with organ dysfunction, sometimes complicated by hypotension or ileus.
 - Traditional therapy for SCDI, oral vancomycin, has failure rates up to 30%.
- Fecal microbiota transplant (FMT) cure rates for recurrent CDI have approached and surpassed 90%.
 - Prior case series evaluating FMT in SCDI have used endoscopic delivery.

Methods

- Retrospective review of all patients receiving FMT between 2013-2016 at UAB Hospital with SCDI by IDSA guidelines who failed standard antimicrobials and were not surgical candidates.
- We collected data on co-morbidities, clinical outcomes, and long term follow-up.
- Charlson Comorbidity Index was calculated to further delineate underlying health of the patients.
- FMT was prepared from volunteers.
 - For NG tube 30gm stool was blended in 50cc NS
 - For lower endoscopy 30gm stool was blended in 200-300cc NS
- All patients received one follow-up visit, and later follow-up with phone calls.

Charlson Comorbidity Index	Demo-graphics	Precipitating Factors	# CDI's	CDI Classification	ICU stay?	Administration Route	Outcome	Follow-up
CCI 3	75 YOWF	Unknown Antibiotic	1	Severe	No	Colonoscopy	Cure	22 months
CCI 5	72 YOWF	Nursing Home Resident	1	Severe	No	Flexible Sigmoidoscopy	Cure	1.5 months
CCI 6	62 YOWF	Steroids, Pip/Tazo	1	Complicated with ileus	Yes	NG tube	Cure	24 months
CCI 6	71 YOAAF	Steroids, Cyclosporin, Antibiotic	3	Complicated with ileus	Yes	NG tube	Relapse, eventual cure by FMT	12 months.
CCI 7	61 YOWF	Steroids, MMF, Levofloxacin	1	Complicated with ileus	Yes	NG tube	Multi-organ failure, death	N/A
CCI 8	70 YOWM	Unknown Antibiotic	1	Complicated	Yes	Enema	Cure	24 months
CCI 8	68 YOAAF	Steroids, Infliximab, Moxifloxacin	3	Severe	No	NG tube	2 relapses, eventual cure by FMT	15 months
CCI 14	65 YOWF	Ciprofloxacin	1	Complicated with ileus	Yes	Enema	Multi-organ failure, death	N/A

References

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3. McFarland et. al. Breaking the cycle: treatment strategies for 163 cases of recurrent Clostridium difficile disease. Am J Gastroenterology. 2002; 97(7):1769-75
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Discussion

- Many patients were experiencing their first case of CDI that was refractory to initial therapy, a new population for FMT.
- Our eventual success rate of 75% is promising in a severely ill population with many comorbidities.
- The Charlson Comorbidity index is a mortality calculator.
 - Scores of >5 are associated with >30% mortality risk in following year.
- One half of our transplants were performed by NG, and 75% without endoscopic guidance, indicating less invasive measures can be successful.
- There were no complications from FMT in this series which is similar to findings in other studies.
- Strengths include duration of follow-up, diverse delivery methods, and severity of CDI.
- We are limited to a single institution and small case number.

Conclusions

- Our experience suggest FMT by non-invasive delivery can be a reasonable option for severe and complicated CDI.
- As FMT becomes widely available we need more prospective studies on optimal delivery method.
- We need prospective studies evaluating FMT as treatment for SCDI that is refractory to traditional medical therapies.