1255. Probiotics to Reduce Rehospitalization in Patients with Recurrent Clostridium difficile Infection

Matthew O’Connell, PharMD1; Judianne Slish, Pharm. D., BCPS2 and Mark Shelly, Prophylaxis at Reducing the Risk of Recurrent C. difficile Infection

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Background. There is conflicting clinical data regarding the efficacy of probiotics to prevent Clostridium difficile infection (CDI). The goal of this study is to compare rates of hospital acquired Clostridium difficile infection (HA-CDI) among patients receiving antibiotics with or without concomitant administration of probiotics.

Methods. This retrospective cohort study compared hospitalized patients who received antibiotics alone vs. antibiotics plus a multi-strain probiotic preparation of lactobacillus over a six month time period. Probiotics were given at the discretion of the physician. The primary outcome was incidence in HA-CDI (defined as onset after hospital day three) between the two groups.

Results. A total of 1,576 patients met selection criteria, with 927 patients receiving antibiotics alone and 649 patients receiving antibiotics plus probiotics. HA-CDI rates were 0.9% and 1.8% (P = 0.16), respectively. In a subgroup analysis of patients in the antibiotic only group, patients who received similar antibiotic exposure as the probiotics group (n = 284) had no difference in rates of HA-CDI (1.8% vs. 1.8%; P = 1.0).

Conclusion. Probiotic administration did not decrease rates of HA-CDI in our institution. We recommend prioritizing resources to other CDI reduction measures such as decreasing antibiotic exposure and preventing transmission.

Disclosures. All authors: No reported disclosures.

1256. Efficacy of Oral Vancomycin, Oral Metronidazole, or IV Metronidazole in Preventing Clostridium difficile Infection:

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Background. Fecal microbiota transplantation (FMT) has shown to be effective for recurrent Clostridium difficile infection (rCDI). However, significant and laborious costs for donor screening and a lack of suitable donors and laboratory facility have restricted the availability of the treatment. In order to expand access to FMT, we have investigated the efficacy of lyophilized FMT, comparing it to the published historical efficacy of frozen FMT in preventing further episodes of CDI in patients with recurrent CDI. This study was designed to be open-labeled to expedite and minimize costs associated with conducting a two-armed randomized controlled trial, given that the efficacy of frozen FMT is known to be 85%. Additionally, using lyophilized FMT offers two major advantages: 1) its prolonged shelf life reduces costs because fewer donors need to be screened, and 2) it can be transported without freezing.

Methods. This is an open-labeled, prospective study involving 50 patients with a history of 2 or more rCDI who have failed at least 1 course of tapered vancomycin therapy. Eligible patients received lyophilized FMT via retention enema within 8 days of each treatment and were followed for 13 weeks post last FMT to determine efficacy and safety of FMT.

Results. The efficacy of lyophilized FMT is preventing further episodes of CDI in patients with rCDI was 80%. The adverse events associated with lyophilized FMT were similar to frozen FMT.

Conclusion. Lyophilized FMT in treating rCDI showed similar efficacy and safety to frozen FMT. Lyophilized FMT appears to be promising in preventing further episode of CDI and increasing accessibility for patients with rCDI.

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1257. Tetracyclines are Associated with a Reduced Risk of Clostridium difficile Infection:

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Background. Tetracyclines are associated with a lower risk of developing CDI compared with other antibiotics. It is reasonable to use these over other antibiotics when appropriate (community acquired pneumonia, bronchitis, chlamydia, rickettsial infections) to reduce the risk of C. difficile infection.

Forest plot demonstrating decreased odds of CDI with tetracyclines use by a random-effects model

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to be reached with listed phone number. Of the remaining 190 eligible patients, 137 patients completed the survey.

**Results.** The median time-period between FMT and follow up was 22 months. Median number of failed antibiotic courses for RCDI post FMT was 4. Overall, 82% (113/137) of patients experienced resolution of RCDI post-FMT (non-RCDI group) while 18% (24/137) of patients had recurrence of CDI post-FMT (RCDI group). In the RCDI and non-RCDI groups, antibiotic use post-FMT for non-**C. difficile**-related infections was 75% and 38% (**P** = 0.0004), respectively. PPI use post-FMT was 38% and 31% (**P** = 0.028), and probiotic use post-FMT was 63% and 41% (**P** = 0.026) in the RCDI and non-RCDI groups, respectively. There were 18 hospitalizations in the RCDI group and 9 were related to **C. difficile** complications; of the 36 hospitalizations in the non-RCDI group, only 1 was related to chronic complication of a previous **C. difficile** infection. Overall, 11% of patients reported improvement or resolution of medical conditions not related to CDI post-FMT while 33% reported diagnosis of a new medical condition or development of new symptoms; none of the new medical conditions or symptoms were attributable to the procedure. In all, 95% of patients indicated willingness to undergo FMT in the future if they experience another bout of **C. difficile** infection.

**Conclusion.** The findings show that FMT is a highly effective treatment option for RCDI with a cure rate, defined as resolution of RCDI post-FMT or recurrence attributable to antibiotic use post-FMT, of 96% (131/137) in the study group. Furthermore, clinical outcomes and patient satisfaction post-FMT indicate the safety of the procedure.

**Disclosures.** All authors: No reported disclosures.

**1259. Clinical and Economic Evaluation of commercialized Fecal Microbiota Transplant (cFMT) for Patients with Recurrent Clostridium difficile Infection (CDI) in a Large Community Hospital**

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**Background.** Recurrent CDI is common despite antibiotic therapy; FMT is effective to reduce recurrent infections. We report our experience with Commercialized FMT (cFMT) products by providing ready-to-use capsules, for oral administration, or solution, for administration via colonoscopy.

**Methods.** The study was approved by IRB for adult patients with at least 3 episodes of recurrent CDI despite antibiotic therapy, patients with severe infection were excluded. cFMT was administered in the hospital or at outpatient center. Each patient was evaluated 8 weeks post-transplant to assess for sustained clinical cure and side effects. The economic impact of cFMT was evaluated using historical data from EHR including: CDI rate, CDI readmission rate, rate of CDI-associated death, cost of CDI admissions, and rate of use of each antimicrobial regimen.

**Results.** 33 patients enrolled (solution/colonoscopy 20 and capsule 13). Mean age was 74 vs. 67 y, female 56% vs. 64%, recurrent episode 4 vs. 3.1, CDI severity score 1.4 vs. 1.2, 95% (19/20) of patients who received cFMT via colonoscopy experienced sustained clinical cure vs. 85% (11/13) of patients who received capsule. One patient experienced an adverse event from capsule with nausea and vomiting, which resolved without sequelae. 2 of the 3 patients that experienced treatment failure received cFMT from the same donor. Due to recurrent episodes. The cost of cFMT was $835 for capsules and $485 for solution which was far less than recurrent CDI associated cost.

**Conclusion.** cFMT is a viable alternative to traditional FMT and was both clinically and economically beneficial in patients with recurrent CDI in a community hospital. Further studies needed to confirm above findings.

**Disclosures.** All authors: No reported disclosures.

**1261. Weight Changes in Fecal Microbiota Transplant for Clostridium difficile**

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**Session:** 148. C. difficile: From the Bench to Bedside

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**Background.** FMT is an effective treatment for recurrent and refractory CDI. The outcomes of FMT treatment for recurrent CDI have been well described in adult populations; however, the data for immunocompromised (IC) patients especially among children are limited. We describe the experience of FMT for treatment of CDI in immunocompromised pediatric patients.

**Methods.** We collected clinical data for IC patients <1 years in our pediatric institution who had received FMT for recurrent, refractory, and/or severe CDI. IC patients included those with: solid organ transplantation (SOT) receiving immunosuppressive medications; neoplasms; hematopoietic stem cell transplantation (HSCT); inflammatory bowel disease (IBD) requiring immunosuppressive medication(s). We collected demographic and clinical data, as well as outcomes, including: resolution of diarrhea, CDI relapse, and adverse events within 3 months post-FMT.

**Results.** We performed 37 pediatric FMT for recurrent, refractory, and/or severe CDI between September 2012 and February 2017. Of these, 12 were immunocompromised: children: 2 with SOT; 3 with neoplasm and/or HSCT; and 7 with IBD on immunosuppressive medication(s). Median age was 11.9 years old (range 3-16 years). 6 (50%) experienced resolution of diarrhea within 1 week post-FMT, and 9 (67%) were CDI-negative within 3 months of FMT (3 patients did not have follow-up testing). None had CDI relapse within 3 months post-FMT. 3 (25%) had adverse event(s) within 3 months post-FMT, 2 of whom had SAEs: 1 had graft rejection at 2 months post-FMT which ultimately required re-transplantation and 1 had aspiration pneumonitis immediately following FMT. 4 (50%) of the IBD patients had disease remission (clinical, biologic, and/or histologic) in the 3 months post-FMT.

**Conclusion.** FMT appears to be effective and reasonably safe for recurrent CDI in immunocompromised paediatric patients. However, the small numbers limit conclusions, especially about safety. Larger multicentre studies are needed to precisely determine safety and efficacy in this specialized population.

**Disclosures.** All authors: No reported disclosures.

**1260. Fecal Microbiota Transplantation (FMT) for Recurrent/Refractory Clostridium difficile Infection (CDI) in Pediatric Immunocompromised Patients: A Single-center Experience**

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**Session:** 148. C. difficile: From the Bench to Bedside

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**Background.** **C. difficile** is a common cause of bacterial diarrhea, especially in immunocompromised patients. Fecal Microbiota Transplantation (FMT) has been shown to be an effective treatment for recurrent and refractory CDI. The outcomes of FMT treatment for recurrent CDI have been well described in adult populations; however, the data for immunocompromised (IC) patients especially among children are limited. We describe the experience of FMT for treatment of CDI in immunocompromised pediatric patients.

**Methods.** We collected clinical data for IC patients <2 years in our pediatric institution who had received FMT for recurrent, refractory, and/or severe CDI. IC patients included those with: solid organ transplantation (SOT) receiving immunosuppressive medications; neoplasms; hematopoietic stem cell transplantation (HSCT); inflammatory bowel disease (IBD) requiring immunosuppressive medication(s). We collected demographic and clinical data, as well as outcomes, including: resolution of diarrhea, CDI relapse, and adverse events within 3 months post-FMT.

**Results.** We performed 37 pediatric FMT for recurrent, refractory, and/or severe CDI between September 2012 and February 2017. Of these, 12 were immunocompromised (IC) patients who experienced another bout of CDI. IC patients included those with: solid organ transplantation (SOT) receiving immunosuppressive medications; neoplasms; hematopoietic stem cell transplantation (HSCT); inflammatory bowel disease (IBD) requiring immunosuppressive medication(s). We collected demographic and clinical data, as well as outcomes, including: resolution of diarrhea, CDI relapse, and adverse events within 3 months post-FMT.

**Results.** We performed 37 pediatric FMT for recurrent, refractory, and/or severe CDI between September 2012 and February 2017. Of these, 12 were immunocompromised (IC) patients who experienced another bout of CDI. IC patients included those with: solid organ transplantation (SOT) receiving immunosuppressive medications; neoplasms; hematopoietic stem cell transplantation (HSCT); inflammatory bowel disease (IBD) requiring immunosuppressive medication(s). We collected demographic and clinical data, as well as outcomes, including: resolution of diarrhea, CDI relapse, and adverse events within 3 months post-FMT.

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