1255. Probiotics to Reduce Clostridium difficile Infection: Clinical Experience in a Tertiary Care Center
Maggie Box, PharmD, BCPS, AO-IP1; Kristine Ortwine, MS, MPH2 and Scripps Antimicrobial Stewardship Program; 2Scripps Memorial Hospital La Jolla, La Jolla, California, USA

**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 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 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 alone group who received similar antibiotic exposure as the probiotics group (n = 284) there was 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 Prophylaxis at Reducing the Risk of Clostridium difficile Recurrence
Matthew O’Connell, PharMD1; Judianne Slish, Pharm. D., BCPS2 and Mark Shelly, MD3

**Background.** Secondary prophylaxis (SP) for Clostridium difficile infection (CDI) with oral vancomycin or oral/IV metronidazole when initiating antibiotics is common, though few studies are available to support this practice. The purpose of this study was to assess the efficacy of prophylaxis within a year of index CDI.

**Methods.** This retrospective chart review looks at subsequent courses of antibiotics and CDI in patients with initial positive CDI testing in 2013–16. A positive CDI test within 90 days of antibiotics was a recurrence. The use of antibiotics for SP was noted, along with other factors associated with CDI relapse. Non-parametric and exact tests were used for univariate analysis. These variables were included in a multivariate proportional hazards model.

**Results.** We found 597 antibiotic episodes in 230 patients. 130 episodes (21.8%) were classified as recurrent CDI (CDI following antibiotic use). However, significant laboratory 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 lyophilized FMT in preventing further episodes of CDI in patients with recurrent rCDI. 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 cost because fewer donors need to be screened; and 2) it can be transported without freezing.

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

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

1257. Tetracyclines are Associated with a Reduced Risk of Clostridium difficile Infection: A Systematic Review and Meta-analysis
Rasen Tariq, MBBS1; Janice Cho, MD3; Saloni Kapoor, MBBS2; Robert Orenstein, DO, FIDSA1; Siddharth Singh, MBBS, MSc2; Darrel Pardi, MD, MS1 and Sahil Khanna, MBBS, MSc2, 1Gastroenterology and Hepatology, Mayo Clinic, Rochester, Minnesota, Internal Medicine, Mayo Clinic, Rochester, Minnesota, Infectious Diseases, Mayo Clinic Arizona, Phoenix, Arizona, 2Gastroenterology and Hepatology, University of California San Diego, La Jolla, California

**Background.** Efforts towards antibiotic stewardship help reduce risk of Clostridium difficile infection (CDI) but there is a need to delineate antibiotic choices to reduce CDI risk. Tetracyclines may be associated with a low risk for CDI but the evidence is conflicting. We conducted a systematic review and meta-analysis to determine the relationship between tetracyclines use and CDI.

**Methods.** A systematic search of Medline, Embase, and Web of Science was performed from January 1978 up to December 2016 including studies assessing the association between tetracycline and CDI. Four authors independently assessed the quality of the included studies and extracted data. Random effects model was used to calculate pooled odds-ratio (OR) with 95% confidence intervals (CI) to assess the risk of CDI after exposure to tetracyclines vs. other antibiotics. Study quality was assessed using the Newcastle-Ottawa scale. Weighted summary estimates were calculated using generalized inverse variance with random-effects model using Review Manager version 5.3 (Cochrane Inc).

**Results.** Six studies; 4 case control and 2 cohort studies reported the association of CDI with tetracyclines or other antibiotics prior to CDI including patients from 1993 to 2012. Meta-analysis of all studies using the random-effects model demonstrated that tetracyclines were associated with decreased risk of CDI compared with other antibiotics (OR, 0.62; 95% CI, 0.47–0.81; P = 0.005). There was significant heterogeneity among the studies, with an I^2 of 53% (Figure 1). No publication bias was seen.

**Conclusion.** Subgroup analysis of studies evaluating the risk of CDI with doxycycline only demonstrated a decreased risk of CDI with doxycycline compared with other antibiotics (OR, 0.55; 95% CI, 0.40–0.75; P = 0.002). A subgroup analysis based on CDI diagnosis definitions revealed a decreased risk of CDI with tetracyclines (OR, 0.59; 95% CI, 0.44–0.80; P = 0.006) in studies that used clinical definitions (presence of diarrhea with a positive stool test), but not among the studies that used ICD-9 codes for CDI diagnosis (OR, 0.95; 95% CI, 0.45–2.01; P = 0.90).

**Disclosure.** 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 or spirochetal infections) to reduce CDI risk.

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

1258. Durability and Long-Term Clinical Outcomes of Fecal Microbiota Transplant (FMT) Treatment in Patients with Recurrent C. difficile Infection
Yafet Mamo, BSc1; Michael Woodworth, MD2; Katlin Sitchenko, BS2; Tanvi Dhere, MD1 and Colleen Kraft, MD, MSc1, 1Emory University School of Medicine, Atlanta, Georgia, 2Department of Pathology and Laboratory Medicine, Emory University School of Medicine, Atlanta, Georgia

**Background.** Fecal microbiota transplant (FMT) has been shown to be safe and effective for treatment of recurrent C. difficile infection (rCDI). The aim of this study is to determine factors impacting the durability of FMT and assess patient long-term clinical outcomes and satisfaction with the procedure.

**Methods.** Eligible patients who had received FMT for rCDI at Emory Hospital between July 1, 2012 and December 31, 2016 were contacted via telephone for a follow up survey. Of 232 patients who received FMT, 27 were deceased and 15 were unable to reach. The survey included questions about patient satisfaction with FMT, recurrence after FMT, and a request for a follow up FMT. Patient demographic and indication for FMT were collected from the medical records.

**Results.** The median time from FMT to follow up survey was 16 months (IQR, 7-34). 152 patients (65%) completed the survey. The majority of patients (91%) were satisfied with the FMT procedure. Sixty-three percent of patients were recurrence free at follow up. Patients who had more severe rCDI were more likely to have recurrence. Patient satisfaction with FMT was not associated with recurrence after FMT.

**Conclusion.** FMT is durable and safe. Most patients are satisfied with FMT and have a low recurrence rate after FMT.

**Disclosures.** All authors: No reported disclosures.
Results. The median time-period between FMT and follow up was 22 months. Median number of failed antibiotic courses for RCDI before 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 infec-
tions was 75% and 38% (P = 0.0004), respectively. PPI use post-FMT was 38% and 31% (P = 0.28), 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 attribut-
able to antibiotic use post-FMT, of 96% (131/137) in the study group. Furthermore, clin-
i cal 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

Ali Hassoun, MD FIDSA FACP1; Jonathan Edwards, PharmD, BCPS AQ-ID2 and Brian Boyett, Pharm. D.1; 1Alabama Infectious Diseases Center, Huntsville, Alabama, 2Huntvile Hospital, Huntsville, Alabama

Session: 148. C. difficile: From the Bench to Bedside
Friday, October 6, 2017: 12:30 PM

Background. Recurrent C. difficile is common despite antibiotic therapy. FMT is effect-
tive 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 epi-

dose of recurrent C. difficile despite antibiotic therapy, patients with severe infection were excluded. cFMT was administered in the hospital or outpatient setting. 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: C. difficile rate, C. difficile readmission rate, rate of C. difficile-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, C. difficile 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 cap-

sules 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 clinic-

ally and economically beneficial in patients with recurrent CDI in a community hospi-
tial. Further studies needed to confirm above findings.

Disclosures. All authors: No reported disclosures.

1261. Weight Changes in Fecal Microbiota Transplant for Clostridium difficile

Dina Hussan, MD1; Marci Drees, MD, MS2; Scott Myerson, MD1; Chad Buffallo, MD, MPH1; Danielle Mosby, MPH1; Christine Herdman, MD2; Fedele Depalma, MD3; Patty Mckew, RN, MS1 and Alfred E. Bacon III, MD1; 1Medicine, Chrisitana Care Health System, Newark, Delaware, 2Christiana Care Health System, Newark, Delaware

Session: 148. C. difficile: From the Bench to Bedside
Friday, October 6, 2017: 12:30 PM

Background. Fecal microbiota transplant (FMT) for relapsing Clostridium diffi-
cile infections (CDI) allows for rapid repopulation of the colonic microbiome and may prevent future relapses. FMT is considered safe, however subsequent impact on weight and metabolism are incompletely understood. Animal studies have shown that alter-
ations in the microbiota lead to changes in weight; this is also suggested in humans, based on limited anecdotal evidence. This study explores changes in weight associated with FMT.

Methods. We conducted a retrospective observational study of patients who underwent FMT at our 1100-bed community-based academic healthcare system. FMT protocol requires 2 documented CDI relapses and failed vancomycin taper. FMT methods include colonoscopy, EGD and oral capsules. Of note, donor stool (OpenBiome, Boston, Massachusetts) criteria include BMI ≤30. We conducted chart review for documented provider-measured weights pre- and post- FMT (≤ 1 year), and compared pre-FMT weights to last recorded weight within 1-year period. We also evaluated weights in a subset of patients in the acute (2-6 week post FMT) timeframe.

Results. Between April 2014- Oct 2016, 41 patients underwent FMT. Of these, 31 (75%) patients had adequate weight data available for review (Table). Overall patients gained an average 2.4%. During the acute phase, 20 patients (65%) had documented weights; of these 50 lost and 50 gained weight, with overall weight loss of 0.7%.

<table>
<thead>
<tr>
<th>Baseline Weight Change</th>
<th>1-year Weight Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight Change, %</td>
<td>Weight Change, %</td>
</tr>
<tr>
<td>%</td>
<td></td>
</tr>
<tr>
<td>&gt;5% gain</td>
<td>&gt;5% gain</td>
</tr>
<tr>
<td>&gt;10% gain</td>
<td>&gt;10% gain</td>
</tr>
<tr>
<td>&gt;15% gain</td>
<td>&gt;15% gain</td>
</tr>
<tr>
<td>&gt;20% gain</td>
<td>&gt;20% gain</td>
</tr>
<tr>
<td>&gt;25% gain</td>
<td>&gt;25% gain</td>
</tr>
<tr>
<td>&gt;30% gain</td>
<td>&gt;30% gain</td>
</tr>
<tr>
<td>&gt;35% gain</td>
<td>&gt;35% gain</td>
</tr>
<tr>
<td>&gt;40% gain</td>
<td>&gt;40% gain</td>
</tr>
<tr>
<td>&gt;45% gain</td>
<td>&gt;45% gain</td>
</tr>
<tr>
<td>&gt;50% gain</td>
<td>&gt;50% gain</td>
</tr>
<tr>
<td>&gt;55% gain</td>
<td>&gt;55% gain</td>
</tr>
<tr>
<td>&gt;60% gain</td>
<td>&gt;60% gain</td>
</tr>
<tr>
<td>&gt;65% gain</td>
<td>&gt;65% gain</td>
</tr>
<tr>
<td>&gt;70% gain</td>
<td>&gt;70% gain</td>
</tr>
<tr>
<td>&gt;75% gain</td>
<td>&gt;75% gain</td>
</tr>
<tr>
<td>&gt;80% gain</td>
<td>&gt;80% gain</td>
</tr>
<tr>
<td>&gt;85% gain</td>
<td>&gt;85% gain</td>
</tr>
<tr>
<td>&gt;90% gain</td>
<td>&gt;90% gain</td>
</tr>
<tr>
<td>&gt;95% gain</td>
<td>&gt;95% gain</td>
</tr>
<tr>
<td>&gt;100% gain</td>
<td>&gt;100% gain</td>
</tr>
</tbody>
</table>

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

Natalia Kwendakwema, BA1; M. Kyle Jensen, MD2; Andrew Paria, MD, FIDSA, FSHEA, FACP1; and Elise Abraham Doby Knackstedt, MD, FAAP3; 1University of Utah School of Medicine, Salt Lake City, Utah, 2Department of Pediatrics, Division of Gastroenterology, University of Utah School of Medicine, Salt Lake City, Utah, 3Department of Pediatrics, Division of Pediatric Infectious Diseases, University of Utah School of Medicine, Salt Lake City, Utah

Session: 148. C. difficile: From the Bench to Bedside
Friday, October 6, 2017: 12:30 PM

Background. CDI is a common cause of bacterial diarrhea, especially in immuno-

compromised patients. Fecal Microbiota Transplant (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 <21 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 immunocom-

promised children: 2 with SOT; 3 with neoplasms 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 C. difficile 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 imme-

diately 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 conclu-

sions, especially about safety. Larger multicentre studies are needed to precisely deter-

mine safety and efficacy in this specialized population.

Disclosures. All authors: No reported disclosures.