1593. Recurrence of *Clostridium difficile* Infection in Multiple Myeloma Patients Receiving Prophylactic Oral Vancomycin or Oral Metronidazole vs. No Prophylaxis

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Session: 151. Viruses and Bacteria in Immunocompromised Patients
Friday, October 5, 2018: 12:30 PM

Background. Multiple myeloma (MM) patients are at increased risk of *Clostridium difficile* infection (CDI) compared with the general population. In prior studies, 12–14% were diagnosed with CDI, and ~16% had recurrent CDI during subsequent treatments. Recent studies have shown that oral vancomycin is effective secondary prophylaxis for the prevention of recurrent CDI in the general population. This retrospective study examined if secondary prophylaxis with oral vancomycin or metronidazole is effective to prevent recurrent CDI in MM patients.

Methods. MM patients who tested positive for their first episode of CDI from January 2014–December 2016 were included, and the 3 months following the CDI diagnosis was reviewed. Patients who died, and those who did not receive additional chemotherapy or antibiotics during the 3-month review period were excluded. The patients were divided into 3 cohorts: (1) oral vancomycin as secondary prophylaxis, (2) oral metronidazole as secondary prophylaxis, and (3) no *C. difficile* prophylaxis.

Results. A total of 110 MM patients with a first episode of CDI were reviewed, six were excluded due to death and four were excluded due to no subsequent chemotherapy or antibiotics. This left 100 patients included for analysis. The median age was 62 years, range 34–81. 92 subjects (92%) had exposure to antibiotics and 76 (76%) received chemotherapy. A total of 38 (38%) received secondary prophylaxis: 16 (42%) with oral metronidazole and 22 (58%) with oral vancomycin. There was no significant difference in recurrent CDI in patients who received any secondary prophylaxis (7/38, 18.4%) and in those who received none (15/62, 24.2%), $P = 0.46$. Incidence of recurrent CDI in patients receiving oral vancomycin (3/22, 13.6%) was not significantly different from patients receiving oral metronidazole (4/16, 25%), $P = 0.56$. An analysis of risk factors for recurrent CDI showed no difference in recurrence in patients who received metronidazole vs. vancomycin as treatment for the initial CDI. Similar recurrent CDI occurred in patients who received antibiotics and those who received chemotherapy.

Conclusion. Secondary prophylaxis with either oral metronidazole or oral vancomycin did not reduce the incidence of recurrent CDI in MM patients.

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

1594. Evaluating Clinical Outcomes of an Alternative Cefepime Dosing Regimen as Empiric Antibiotic Therapy in Hospitalized Adults with Febrile Neutropenia

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Session: 151. Viruses and Bacteria in Immunocompromised Patients
Friday, October 5, 2018: 12:30 PM

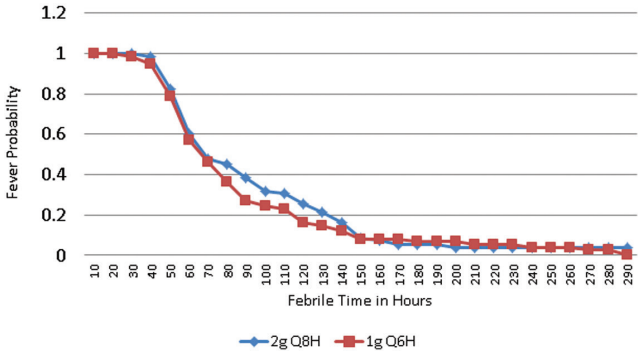
Background. A cefepime dosing regimen of 1 g every 6 hours (1 g Q6h) has shown to provide similar exposure above the target minimum inhibitory concentration than the higher FDA-approved regimen of 2 g Q8h for febrile neutropenia. We hypothesize clinical outcomes among patients receiving either dosing strategy will be similar.

Methods. A retrospective chart review of hospitalized patients who received cefepime for documented febrile neutropenia over a two-year period was performed. Patients were grouped based on cefepime dosing strategy: 1 g Q6h vs. 2 g Q8h. The primary objective was to compare time to defervescence after cefepime initiation. Secondary objectives looked at all-cause and infection-related 30-day mortality, duration of therapy, and length of stay (LOS).

Results. Seventy-five patients in each arm were included. There were no differences in baseline age or severity of illness between groups. There was no difference in the primary objective as average time to defervescence was similar between the 1 g Q6h and 2 g Q8h groups (85.9 hours vs. 89.7 hours: $P = 0.206$), respectively. Additionally, no differences were found in the secondary objectives including all-cause 30-day mortality (6.7% vs. 9.3%: $P = 0.547$), duration of therapy (95.7 hours vs. 99.1 h: $P = 0.174$), or LOS (9 vs. 7 days: $P = 0.251$).

Conclusion. The regimen of cefepime 1 g Q6h provides similar clinical outcomes as the traditional FDA-approved 2 g Q8h regimen in the treatment of febrile neutropenia. The lower total daily dose will result in less drug exposure and a potential decreased risk of cefepime-related adverse drug events.

Figure 1. Time to Defervescence



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

1595. Impact of Levofloxacin for the Prophylaxis of Bloodstream Infection on the Gut Microbiome in Patients with Hematologic Malignancy

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Background. Prophylactic antibiotics for the prevention of bloodstream infections (BSIs) during neutropenia (NTP) may reduce the incidence of BSIs, NTP fever, and mortality. However, antibiotics may also result in dysbiosis of the gut microbiome. We aimed to study the impact of levofloxacin prophylaxis compared with broad-spectrum β-lactam (BSBL) antibiotics used for the treatment of NTP fever on gut microbiome features in patients with hematologic malignancy.

Methods. Stool specimens from hematologic malignancy patients admitted for chemotherapy or stem cell transplant (SCT) in the setting of the evaluation of diarrhea were collected from September 2017 to November 2017. Levofloxacin prophylaxis was standard of care for patients undergoing autologous SCT or induction chemotherapy for acute myeloid leukemia (AML). 16S rRNA (V1–V2 amplicon) sequencing was performed using the Illumina HiSeq platform, formation of operational taxonomic units (OTUs) was performed using QIIME 1.9.1, and taxonomic assignment was performed via the GreenGenes database (13.8). Descriptive statistics were used to compare microbiome features.

Results. A total of 57 samples from 44 patients were included, most with AML (42%), multiple myeloma (33%), or non-Hodgkin's lymphoma (12%). In the 7 days prior to sample collection, 28 (49%) patients received a BSBL and 17 (29%) received levofloxacin. The gut microbiome of patients with BSBL exposure had significantly reduced Shannon alpha diversity compared with those without: median 1.96 (IQR 1.08–2.57) vs. 2.58 (IQR 2.05–2.93); $P < 0.01$. However, those with and without levofloxacin exposure showed no difference: median 2.37 (IQR 2.19–2.75) vs. 2.22 (IQR 1.71–2.81), respectively; $P = 0.48$. Additionally, those with BSBL exposure trended toward increased dominance with non-Bacteroidetes taxa: 14 (60%) vs. 14 (41%); $P = 0.14$. In contrast, levofloxacin exposure was associated with a lower risk of dominance: 2 (8%) vs. 15 (55%); $P < 0.01$ and was associated with a greater proportion of Bacteroidetes taxa: 75% vs. 27% ($P < 0.01$).

Conclusion. Our findings suggest that the impact of antibiotics on the gut microbiome vary by class, and that levofloxacin may have limited impact on the gut microbiome in this patient population. Further studies are needed to investigate this potential differential impact of antibiotic classes.

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