1590. A Hybrid CMV Prevention Strategy Is Effective in Preventing CMV Disease Outcomes in Pediatric Solid Organ Transplant Patients
Lucia Dalle Ore, BS; Derek Boothroyd, PhD; Hayley Gans, MD, FIDP; and Sharon F. Chen, MD, MS; 1 University of Southern California, Los Angeles, California, Stanford University, Palo Alto, California, Pediatrics, Stanford University School of Medicine, Stanford, California and 2Pediatrics, Stanford University, Stanford, California
Session: 151. Viruses and Bacteria in Immunocompromised Patients
Friday, October 5, 2018: 12:30 PM

Background. Optimal CMV prevention strategies for pediatric solid-organ transplant (SOT) patients have not been clearly defined for early and late post-transplant periods.

Methods. We analyzed CMV prevention strategies in liver, kidney, heart, lung and intestinal SOT patients from 2005 to 2015 in our institution. A hybrid strategy was defined as prophylaxis for ≤6 months post-transplant and then transition to a empirical strategy for which an infectious etiology was identified or treatment of CMV disease in patients with CMV disease, of which 1 was a hybrid and the rest a prophylaxis strategy. The median time to CMV disease was 1.5 years from transplant. We found no significant differences in CMV disease frequency, rejection or mortality between hybrid and prophylaxis groups. In total, we found 13 cases of CMV disease, of which 1 was a hybrid and the rest a prophylaxis strategy. The median time to CMV disease was 1.5 years from transplant. We found no significant differences in frequency, rejection or mortality between hybrid and prophylaxis groups. In total, we found 13 cases of CMV disease, of which 1 was a hybrid and the rest a prophylaxis strategy.

Results. Of 833 patients, 769 were prophylaxis and 62 were hybrid strategies. Compared with prophylaxis, hybrid patients were more likely to have a D+/R− CMV serology status, be ≤1 year old and have a heart transplant (P = 0.001). We found no significant differences in CMV disease frequency, rejection or mortality between hybrid and prophylaxis groups. In total, we found 13 cases of CMV disease, of which 1 was a hybrid and the rest a prophylaxis strategy. The median time to CMV disease was 1.5 years from transplant. We found no significant differences in frequency, rejection or mortality between hybrid and prophylaxis groups. In total, we found 13 cases of CMV disease, of which 1 was a hybrid and the rest a prophylaxis strategy.

Conclusion. After introduction of GI PCR, infectious etiologies of diarrhea were identified in a higher proportion of HSCT recipients compared with traditional stool testing, without an increase in testing costs.

Disclosures. L Westblade, BioFire Diagnostics, LLC.: Research Contractor, Grant recipient. C. Crawford, Merck: Scientific Advisor and Speaker's Bureau, Consulting fee; Redhib. Speaker's Bureau, Speaker honorarium. M. Sallin, Biomerieux; Grant Investigator, Grant recipient.

1591. Infectious Outcomes of Levofloxacin Prophylaxis in Obese vs. Non-obese Patients with Hematologic Malignancies
Amanda Kurtti, PharmD; Kelly Fritz, PharmD, BCOP; Kathryn Elloson, PharmD and Russell Benefield, PharmD, BCPS (AQ-ID); 1 Huntsman Cancer Institute at the University of Utah, Salt Lake City, Utah
Session: 151. Viruses and Bacteria in Immunocompromised Patients
Friday, October 5, 2018: 12:30 PM

Background. Levofloxacin given at a standard dose of 500 mg daily is recommended for prophylactic antibacterial prophylaxis in patients receiving myeloablative chemotherapy. Obese patients have been shown to exhibit enhanced clearance of levofloxacin and may be at risk for prophylactic failure.

Methods. This was a single-center, retrospective cohort study evaluating the infectious outcomes of obese (BMI ≥ 30 kg/m²) and non-obese (BMI ≤ 30 kg/m²) adult patients who received standard dose levofloxacin as primary prophylaxis after chemotherapy. Patients were included if they were treated at our institution from June 1, 2014 through May 31, 2017 and had National Comprehensive Cancer Network (NCCN) defined intermediate infection risk at the time of admission. Patients were excluded if they were lost to follow-up, treated at another institution for febrile neutropenia (FN), or had renal impairment (estimated creatinine clearance (CrCl) less than 50 mL/minute). The primary endpoint was incidence of FN as defined by NCCN guidelines. Secondary endpoints included 30-day mortality and the correlation between estimated levofloxacin AUC and rates of FN. Levofloxacin AUC was estimated from CrCl using the method of Paí et al.

Results. A total of 98 patients met the inclusion criteria (34 obese and 64 non-obese). Estimated CrCl was similar between obese and non-obese patients (mean 84.7 vs. 81.1 mL/minute, P = 0.61), as was estimated levofloxacin AUC (mean 115.1 mg.hour/L vs. 107.8 mg.hour/L, P = 0.25). FN occurred in 26 patients: 12 (35.3%) obese and 14 (21.9%) non-obese (P = 0.16). Bivariate comparisons between patients who did and did not experience FN found no significant associations with the weight-related variables total body weight (mean 84.7 vs. 82.9 kg, P = 0.65), BMI (mean 28.8 vs. 28.0 kg/m², P = 0.51), or body surface area (1.99 vs. 1.96 m², P = 0.62). Multivariate analysis identified presence of mucositis and diagnosis of multiple myeloma as variables independently associated with FN. No patients died within 30 days of the FN event.

Conclusion. There were no significant associations between body weight-related variables and FN in this cohort of patients with similar renal function. Obesity should not be a justification for more aggressive levofloxacin dosing schemes when used for FN prophylaxis.

Disclosures. All authors: No reported disclosures.
1593. Recurrence of Clostridium difficile Infection in Multiple Myeloma Patients Receiving Prophylactic Oral Vancomycin or Oral Metronidazole vs. No Prophylaxis

Gisele Moran, MPH; Naveen Yarlagadda, MD; Sandra Susanizar, MD; Atul Kohar; MD; Juan Carlos Rico, MD; and Mary J Burgess, MD; College of Medicine, University of Arkansas for Medical Sciences, Little Rock, Arkansas, 2Internal Medicine, UAMS, Little Rock, Arkansas, 3Myeloma Institute, University of Arkansas for Medical Sciences, Little Rock, Arkansas, 4Division of Infectious Diseases, UAMS, Little Rock, Arkansas

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). However, no studies have shown that oral vancomycin or metronidazole is effective 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 a prior CDI. Sixty-two patients received prophylaxis, and 44 received no prophylaxis. The regimen of cefepime 1 g Q6h provides similar clinical outcomes compared with the traditional FDA-approved regimen of 2 g Q8h for febrile neutropenia. The lower total daily dose will result in less drug exposure and a potential decreased risk of cephalosporin-related adverse drug events.

Figure 1. Time to Defervescence

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

Manuela Haicuc, PharmD; Derek Bremmer, PharmD, BCPS; Naveen Yarlagadda, MD; Thomas Walsh, MD and Matthew Moffa, DO; Allegheny Health Network, Pittsburgh, Pennsylvania

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 hours; 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 cephalosporin-related adverse drug events.

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

Matthew Ziegler, MD; Jennifer H. Han, MD, MSCF; Daniel Landberg, MD; David Pegues, MD, FIDSA, FSHEA; Emily Reese, MS; Cheryl Gilmaz, MS; MT, CIC; Theresa Gorman, MSN, RN; BC; Andrew Leininger, MD; Kristen Reik, MSN, RN, ACNS-BC; Amy Moore, MSN, RN, ACNS-BC; Brendan J. Kelly, MD, MS; and CDC Prevention Epicenters Program; 1Division of Infectious Diseases, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania; 2Center for Clinical Epidemiology and Biostatistics, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania; 3Division of Hematology and Oncology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania; 4Healthcare Epidemiology, Infection Prevention and Control, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania; 5Infection Prevention and Control, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania; 6Division of Infectious Diseases, Dept. of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

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

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.

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.

Disclosures. D. Pegues, DaVita / Total Renal Care: Consultant, Consulting fee.