Disclosures. All authors: No reported disclosures.

2442. Ganciclovir-resistant CMV (GCV-R CMV) Infection Leads to Poor Clinical Outcomes and Economic Burden of Ganciclovir-resistant Cytomegalovirus Infection in Lung Transplant Recipients
Twisha Patel, PharmD; Hannah Imlay, MD; Daniel Kaul, MD, FIDSA; Linda Stuckey, PharmD and Kevin Gregg, MD; Michigan Medicine, Ann Arbor, Michigan, Infectious Disease, University of Washington, Seattle, Washington, University of Michigan Medical School, Ann Arbor, Michigan, University of Michigan, Ann Arbor, Michigan, Infectious Diseases, University of Michigan, Ann Arbor, Michigan
Session: 259. Viral Infections in Transplantation Saturday, October 7, 2017: 12:30 PM
Background. GCV-R CMV infection is an emerging cause of morbidity and mortality in lung transplant recipients. The purpose of this study was to evaluate the clinical and economic impact of GCV-R CMV infection in a high-risk population.
Methods. We performed a single-center, retrospective cohort study of lung transplant recipients with genotype confirmed GCV-R CMV and ganciclovir-sensitive (GCV-S) CMV infection, matched (1:3) by year of diagnosis. Clinical outcomes within 1 year following the onset of CMV infection and total hospital costs were assessed.
Results. Twenty-eight patients were included in the analysis: 7 with GCV-R CMV infection and 21 with GCV-S CMV infection. Baseline demographics (Table 1) were similar in the two groups. CMV load at diagnosis was numerically higher (282,932 copies/mL (range, 8.6–10.0) vs. 44,664 IU/mL (IQR, 6,314 IU/mL to 86,797 IU/mL), P = 0.01) and days to CMV infection following discontinuation of antiviral prophylaxis was numerically lower (20 [IQR, 0–137] vs. 175 [IQR, 123–190], P = 0.07) in the GCV-R CMV group. All-cause mortality (71.4% vs. 19.0%, P = 0.02) and total hospital days due to CMV infection (63 [IQR, 34–76] vs. 6 [IQR, 2–9], P < 0.01) were significantly higher in the GCV-R CMV cohort. There were no differences in allograft rejection and hospital readmission between the two groups. Total hospital costs were significantly higher amongst patients with GCV-R CMV infection ($208,924 [IQR, 114,555–253,191] vs. $20,419 [IQR, 12,438–27,892], P < 0.01).
Conclusion. GCV-R CMV infection is associated with poor outcomes and considerable healthcare costs. Novel prophylaxis and treatment strategies are needed to combat CMV infection in lung transplant recipients.
Table 1. Baseline Demographics

2444. Correlation of Cytomegalovirus Infection with Renal Dysfunction in Hematopoietic Stem Cell Transplant Recipients
Emily Eichenberger, MD; Michael Satlin, MD; Dana Zappetti, MD; Catherine Small, MD; Tziporah Shore, MD; Koen Van Besien, MD, PhD and Rosemary Soave, MD, FIDSA; Internal Medicine, New York Presbyterian Hospital- Weill Cornell Medical Center, New York, New York, Weill Cornell Medical Center/ New York Presbyterian Hospital, New York, New York, Memorial Sloan Kettering Cancer Center, New York, New York, New York-Presbyterian Weill Cornell Medical Center, New York, New York
Session: 259. Viral Infections in Transplantation Saturday, October 7, 2017: 12:30 PM
Background. Cytomegalovirus (CMV) nephropathy (BKVN) is a well-established cause of allograft loss after kidney transplantation. In contrast BKVN is rarely been reported in hematopoietic cell transplant (HCT) recipients. Renal dysfunction after HCT is common and often attributed to total body irradiation, drug toxicity, hypertension or microangiopathy. As kidney biopsies are rarely performed after HCT, BKVN may be underdiagnosed. We report a single-center experience of BKVN in HCT recipients.
Methods. Retrospective chart review of HCT recipients from January 1, 2016 through March 31, 2017. Only cases of BKVN confirmed by immunohistochemical stain on renal biopsy are included. Urine and blood BKV PCR was performed at Viracor Eurofins (Lee’s Summit, MO). Glomerular filtration rate (GFR) was estimated by Chronic Kidney Disease Epidemiology Collaboration equation.
Results. From 2016 to 2017, 320 patients received HCT and 6 patients underwent kidney transplantation and 4 had BKV infection. Baseline characteristics are shown in Table 1. Three patients (75%) received ex vivo T-cell depleted (CD34+ selected) peripheral blood (PB) HCT and did not receive pharmacologic GVHD prophylaxis; one patient received cord blood allograft. All patients had BKV viremia with a median BKV viral load of 9.3 log_{10} copies/mL (range, 8.6–10.0) and median onset 18 days (range 6–41) post HCT. BKVN was diagnosed at a median of 275.5 days post-HCT (range, 141–637). All patients presented with decreased GFR (median 47.5% reduction, range 16–75%) from GFR at transplant. One patient had proteinuria (3 g over 24 hours); one patient had hydropnephrosis. At BKVN diagnosis plasma BKV viral load was a median of 6.2 log_{10} copies/mL range, 6.0–6.3), absolute lymphocyte count median 1027 (range 335–2,536) and CD4+ lymphocyte count median 145 (range 64–172).
Conclusion. BKVN should be considered in HCT recipients with worsening renal function and high BKV viremia. Early, noninvasive predictors of BKVN could aid in identifying high-risk patients for early intervention prior to irreversible loss of renal function. (2) Early, noninvasive predictors of BKVN could aid in identifying high-risk patients for early intervention prior to irreversible loss of renal function.
Disclosures. G. Papanicolaou, Chimerix: Consultant, Grant Investigator and Research grant
received an autologous HSCT. The coronavirus serotypes were: OC43 (n = 19, 33%), NL63 (n = 18, 31%), HKU1 (n = 16, 28%), and 229E (n = 5, 9%). The median time from transplant until detection of HoCV infection was 135 days (IQR=256). Seventeen (29%) patients were lymphopenic at the time of diagnosis and 17 (29%) were receiving corticosteroids. The most common initial symptoms were cough (n = 41, 71%), rhinorrhea (n = 31, 53%), and dyspnea (n = 17, 29%), and 19 (33%) and 16 (28%) patients had fever and hypoxia, respectively. Seventeen patients (29%) developed a LRTI within 30 days of diagnosis and 43% harbored a co-pathogen in the blood or respiratory tract. Three patients (5%) were intubated for respiratory failure and 1 (2%) died due to renal failure.

Conclusion. HoCV infection is common in HSCT recipients and is caused by multiple serotypes. Nearly one-third of patients have fever and hypoxia upon initial diagnosis or progress to LRTI. Further research is needed to identify risk factors for HoCV LRTI in this population.

Disclosures. All authors: No reported disclosures.

2445. Respiratory Viral Infections in Multiple Myeloma Patients
Mary I Burgess, MD; Meera Mohan, MD; Juan Carlos Rico Crescenzo, MD; Frankie Wolfe, RN, GIC; William Bellamy, PhD; and Atul Kohari, MD; Division of Infectious Diseases, University of Arkansas for Medical Sciences, Little Rock, Arkansas; 3Mymoline Institute, Little Rock, Arkansas; 4UMS, Little Rock, Arkansas

Session: 259. Viral Infections in Transplantation
Saturday, October 7, 2017: 12:30 PM

Background. Multiple myeloma (MM) patients are at increased risk of respiratory viral infections (RVIs) due to disease-related alterations in their immune systems. Data in the literature specific to MM patients is limited. We reviewed four years of multiplex respiratory viral panel (RVP) data in MM patients at our institution to evaluate incidence and timing of RVIs. The methods. The results from all positive RVPs, obtained via nasopharyngeal swab and as identified by polymerase chain reaction during the years 2013 to 2016, were analyzed. A positive result less than 6 weeks apart was considered a duplicate and removed. All specimens were analyzed in the molecular diagnostics laboratory using the GeneXpert Respiratory Viral Panel (Cepheid, Carlsbad, CA). This assay is a qualitative nucleic acid multiplex in vitro diagnostic test that provides for the simultaneous detection and identification of 14 respiratory viral nucleic acids. Results. RVIs were reported in every month in all four years. The peak months were January and February, driven by the peak activity of Influenza and respiratory syncytial virus (RSV). Rhinovirus was isolated the most frequently. The least isolated was Adenovirus. A seasonality was observed with Influenza, RSV, human parainfluenza and human metapneumovirus; however, infections with each virus occurred outside of peak months including an outbreak of Influenza in July and August 2013. The total number of viral infections varied each year as did the total number for each virus. The year 2015 had the lowest number of RVIs reported at 427, followed by the year 2016 with the most RVIs reported at 515. However, 2016 was not the peak incidence for each virus; it was the peak incidence for RSV and Rhinovirus. In fact, Influenza had its lowest number of cases in 2016. Conclusion. At our institution, we have shown that RVIs are more common than previously described in MM patients. Disclosures. W. Schaffner, Pfizer: Scientific Advisor, Consulting fee. Merck: Scientific Advisor, Consulting fee. Novavax: Consultant, Consulting fee, Dynavax: Consultant, Consulting fee, Sanofi-pasteur: Consultant, Consulting fee, GSK: Consultant, Consulting fee. AbbVie: Consultant, Consulting fee. NovaVax: Research Contractor, Research support. Regeneron: Research Contractor, Research grant. MedImmune: Research Contractor, Research grant and Research support.

2446. Clinical Features and Outcomes of Immunocompromised Adults Hospitalized with Laboratory-confirmed Influenza in the USA, 2011–2015
Jennifer Collins, MD; Kyle Openo, MPH; Monica Farley, MD, FIDSA; Charisse Nitaum Cammings, MPH; Patricia Ryan, MS; Kimberly Yousey-Hines, MPH; CPHP; Elizabeth Dufort, MD; Ruth Lynfield, MD, FIDSA; Krista Lung, MPH; Ann Thomas, MD, MPH; Nisha Alden, MPH; Pam D. Kirley, MPH; Seth Ekel, MPH; Nancy M. Bennett, MD; William Schaffner, MD, FIDSA, FSHEA; Mary Louise Lindgren, MD, MPH; Mary Hill, MPH; Joan Baumbach, MD, MPH, MS; Angela P. Campbell, MD, MPH, EPIDS, FIDSA; Shikha Garg, MD, MPH and Evan J. Anderson, MD

Session: 259. Viral Infections in Transplantation
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Background. Outcomes of CMV infection among HSCT recipients likely vary with patient population and treatment modality. However, data on these outcomes have been reported by relatively few centers. Methods. This was a retrospective cohort study of allogeneic HSCT recipients age ≥18 years at Oregon Health and Science University Hospital (OHSU) between 2010–2015. During the study period, OHSU standard practice was to preemptively treat CMV viremic patients (quantitative PCR assay ≥ 200 copies/mL or consecutive PCR assays ≥ 200 copies/mL with first-line ganciclovir or ganciclovir and second line foscarinet if there were contraindications to first-line agents. Data were collected from an electronic health record repository and local Center for International Blood and Marrow Transplant Research (CIBMTR) database. Primary outcomes were clinical manifestations of CMV disease, death, and cause of death within 1 year of transplant.

Results. Among 409 HSCT recipients, mean age was 53 (standard deviation: 13) years and 41% were female. 192 (47%) patients had CMV viremia and the median (interquartile range) time to CMV reactivation was 42 (31–53) days (Figure 1). Patients with severe lymphoid leukemia who are less likely to have CMV reactivation (39% vs. 55%, P < 0.01) and those with myelodysplastic syndromes had a non-significantly higher risk (24% vs. 17%, P = 0.06). 4 (1%) patients had a documented clinical manifestation of CMV disease (3 pneumonia and 1 pancreatitis). One-year mortality was 36% (110/303); there was no significant difference in mortality (37.5% vs. 35.8%, P = 0.60) or cause of death (P = 0.30) between patients with and without CMV reactivation (Figure 2). The most frequent causes of death among CMV viremic patients were recurrent/persistent disease (35%), acute graft vs. host disease (GVHD) (22%), infection (19%), and chronic GVHD (11%). CMV was documented as the primary cause of death for 2 patients.

Disclosures. All authors: No reported disclosures.