Inc.: Employee and Shareholder, Salary. **E. Mozaffari**, Chimerix, Inc.: Employee and Shareholder, Salary. **G. Nichols**, Chimerix, Inc.: Employee and Shareholder, Salary.

1733. 10 Years of DTAC Experience With Donor-Derived Cryptococcus Transmission in Solid-Organ Transplantation in the United States

Aneesh K Mehta, MD, FIDSA, FAST[1]; Maricar Malinis, MD, FACP, FIDSA[2]; Gabriel Vece, MSPH[3]; Lara Danziger-Isakov, MD, MPH[4]; Diana F. Florescu, MD[5]; Marian Michaels, MD, MPH[6]; Cameron R. Wolfe, MBBS (Hons), MPH, FIDSA[7]; Lynne Strasfeld, MD[8] and Susan Tlusty, BA[3], [1]Emory University School of Medicine, Atlanta, Georgia, [2]Department of Internal Medicine, Section of Infectious Diseases, Yale School of Medicine, New Haven, Connecticut, [3]United Network for Organ Sharing, Richmond, Virginia, [4]Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, [5]Infectious Diseases, University of Nebraska Medical Center, Omaha, Nebraska, [6]Pediatrics, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, Pennsylvania, [7]Division of Infectious Diseases, Duke University Medical Center, Durham, North Carolina and [8]Division of Infectious Disease, Oregon Health and Science University, Portland, Oregon

Session: 202. Transplant and Immunocompromised Hosts: Emerging Issues
Saturday, October 6, 2018: 8:45 AM

Background. Cryptococcosis is an important fungal complication of solid organ transplantation (SOT); cases occurring within 6 months posttransplant are often severe and sometimes donor derived. Morbidity can be related to delayed recognition of clinical symptoms or lack of communications among the SOT recipient centers. To better understand transmission of *Cryptococcus* (Crypto) and to identify opportunities for improved identification and communication, all potential donor-derived transmission events (PDDTE) of Crypto reported to OPTN/UNOS ad hoc Disease Transmission Advisory Committee (DTAC) over 10 years were analyzed.

Methods. All Crypto cases reported to DTAC between January 2008 and December 2017 were reviewed retrospectively as potential donor-derived transmission events (PDDTE). Likelihood of donor-derivation was adjudicated based on recipient and donor data.

Results. Fourty-six cases of Crypto were reported to DTAC during this period, involving 145 SOT recipients. Of the Proven or Probable donor-derived Crypto cases ($n = 9$), transmission occurred in 15 recipients; 2 donors each transmitted Crypto to 3 different recipients. Of the Possible cases, 9 recipients were affected. Six recipients with PDDTE Crypto died. Eight recipients received antifungal medications that would prevent transmission of Crypto (classified as intervention without disease transmission).

UNOS Region 7 had the highest number donors with 10, with 6 and 7 from Regions 2 and 3, respectively. No cases *C. gattii* were reported; however, most of the reports to DTAC did not discriminate between *C. neoformans* and *C. gattii*.

Conclusion. This DTAC case series highlights both donor and recipient-derived cryptococcal infections and their potential to have devastating clinical impact. These data also highlight important delays in recognizing Crypto in SOT and in communicating these results to other centers when a PDDTE is possible. Transplant teams should have a high level of suspicion for Crypto in SOT, particularly in those with fever of unknown etiology, pulmonary infiltrates, headaches, and mental status changes. In the future, it may be helpful for transplant center to perform specific testing to discriminate between *Cryptococcus* species to understand their differential impact in SOT.

Disclosures. **D. F. Florescu**, Astellas: Grant Investigator, Grant recipient. **C. R. Wolfe**, Merck: Scientific Advisor, Consulting fee.

1734. Cytokine Levels in Bronchoalveolar Lavage Fluid of Rhinovirus-Infected Hematopoietic Cell Transplant Recipients: Associations With Mortality

Alpana Waghmare, MD[1,2,3]; Isaac Jenkins, MS[1]; Brad Edmison, BA[4]; Tillie Loeffelholz, BA[4]; Terry Stevens-Ayers, MS[5]; Alex Greninger, MD PhD[3]; Jane Kuypers, PhD[3]; Keith Jerome, MD, PhD[3,5]; Janet Englund, MD, FIDSA[6,7]; Wendy Leisenring, ScD[1] and Michael Boeckh, MD, PhD, FIDSA[3,5], [1]Fred Hutchinson Cancer Research Center, Seattle, Washington, [2]Seattle Children's Hospital, Seattle, Washington, [3]University of Washington, Seattle, Washington, [4]Fred Hutchinson Cancer Research Center, Seatte, Washington, [5]Vaccine and Infectious Disease Division, Fred Hutchinson Cancer Research Center, Seattle, Washington, [6]Pediatrics, Seattle Children's Hospital, Seattle, Washington and [7]Department of Pediatrics, University of Washington, Seattle, Washington

Session: 202. Transplant and Immunocompromised Hosts: Emerging Issues
Saturday, October 6, 2018: 8:45 AM

Background. Human rhinovirus (HRV) lower respiratory tract infection (LRTI) is associated with significant mortality in hematopoietic cell transplant (HCT) recipients. The associations between specific cytokine responses and mortality after HRV LRTI are not known.

Methods. Stored frozen BALF samples from adult and pediatric HCT recipients with HRV detected in BALF were analyzed for 30 cytokines (Mesoscale, Rockville, MD). An elasticnet model with Cox regression was used to identify cytokines and other covariates most associated with overall and pulmonary mortality at 90 days, including cytopenias, baseline oxygen (O_2) use, copathogens, steroid use, viral load, and viral species. Identified variables were evaluated in multivariable models and the impact of each variable on the bootstrapped optimism corrected concordance statistic (c-statistic) was calculated. Cytokine levels as outcomes were evaluated using multivariable linear regression.

Results. BALF from 84 HCT recipients with HRV detected in BALF from 1998 to 2015 were included in the analysis. Variables identified in the elasticnet model included: baseline O_2, monocyte count, lymphocyte count, steroid use, endothelial neutrophil activator 78 (ENA-78), IL-4, IL-15, IFN-a2a, and MCP-2. Viral load and species were not associated with mortality. In the model with the highest c-statistic, baseline O_2, monocyte count, lymphocyte count, steroid use, and ENA-78 [adjusted hazard ratio (aHR) 1.19, 95% confidence interval (CI) 1.05–1.35] were significantly associated with overall mortality. For pulmonary mortality, the same clinical factors (except for steroids) and IL-4 (aHR 1.27, 95% CI 1.06–1.54) were associated with the outcome (Figure 1). Models including multiple cytokines did not improve the c-statistic. IL-4 levels were associated with viral load but not with host or clinical factors (slope 0.36, 95% CI 0.1–0.61) (Figure 2).

Conclusion. Elevated IL-4 levels in BALF of HCT recipients with HRV LRTI were associated with increased risk of day 90 pulmonary mortality and may provide unique prognostic information. Viral load and species were not associated with mortality, suggesting that host immune responses play a larger role than viral factors in disease severity. Cytokines may be possible targets for intervention.

Figure 1

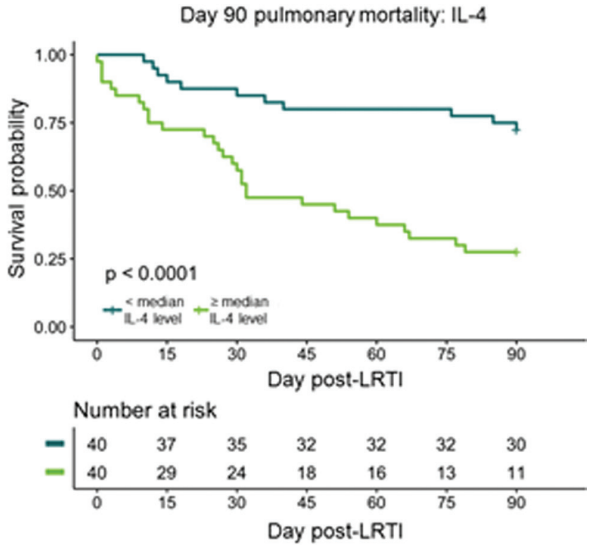

Figure 2