1555. A New Perspective About Disseminated Adenovirus Infection and Its Outcomes in Pediatric Solid Organ Transplantation

Coralie Del Valle Moutjou, MD MPH; Sharon E. Chen, MD, MS2 and Hayley Gan, MD, FPIDS; 1Pediatrics, Stanford University, Stanford, California; 2Pediatrics, Stanford University School of Medicine, Stanford, California

Session: 151. Viruses and Bacteria in Immunocompromised Patients
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Background. Adenovirus (AdV) in solid-organ transplants (SOT) was historically associated with increased morbidity and mortality. Detection of AdV at ≥2 sites is predictive of invasive disease in other immunocompromised populations; however, data is lacking for SOT.

Methods. All SOT in children ≤18 years from January 2005 to June 2017 (n = 1,024). We evaluated host and viral risk factors associated with disseminated AdV infection (defined as AdV from ≥2 sites or DNAemia alone) and the clinical spectrum of disease.

Results. Ninety-two patients had ≥2 AdV infections. Overall prevalence was 9% with one death. Thirty-nine percent of patients had disseminated infection and of those, 44% received cidofovir. Patients with disseminated infection were more likely to be ≥2 years compared with <2 years (P = 0.003), infected in first-year post-transplant compared with >1 year (P = 0.05), and present with fever compared with no fever (P = 0.02). No difference was observed for organ subtypes, presence of gastrointestinal or upper respiratory tract symptoms, peak DNAemia, mean viral load (mean 3.909 ± 4.090), between patients with dissemination compared with without dissemination. For patients who received a biopsy, dissemination was not different between patients with a positive biopsy vs. negative biopsy (46% vs. 54%). Cidofovir was given to 64% of the positive biopsy patients. No difference for age at infection or time to infection was observed between the treated and not treated groups.

Conclusion. Our data shows that younger age at infection, shorter time to infection and clinical fever are risk factors for disseminated adenovirus infection in pediatric SOT patients, supporting primary infection and enhanced immunosuppression as main factors that allow viral dissemination. Some patients with high viral loads and biopsy-proven disease were not treated with cidofovir with very low mortality, reflecting a broader spectrum of infection than previously recognized. Our data begins to define a high-risk clinical and viral phenotype for adenovirus dissemination, which can inform management strategies.

Disclosures. All authors: No reported disclosures.

1556. Infectious Disease Complications with Use of Checkpoint Inhibitors in Solid Organ Malignancies

Kelle Konoda, PharmD1; Justine Abella Ross, PharmD2; Kim Margolin, MD3; Sumanta Pal, MD3; Jana Dickert, MD3; James Im, MD3; Ravi Salgia, MD and Sanjeev Dadvand, MD1, 2City of Hope National Medical Center, Duarte, California; 3City of Hope, Duarte, California, Infectious Diseases, Kaiser Permanente, Fontana, California, Division of Infectious Diseases, City of Hope, Duarte, California

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Background. Immune checkpoint inhibitors (ICIs) are innovative cancer immunotherapies used for solid-organ and hematologic malignancies. ICIs are known for their immune-related adverse events (irAE) but there are limited reports on infectious complications of immunosuppression for these complications. The purpose of this study was to describe the spectrum of infections in patients with melanoma, renal cell carcinoma or non-small cell lung cancer receiving ICI.

Methods. Retrospective review of City of Hope patients with melanoma, renal cell carcinoma or non-small cell lung cancer on nivolumab, pembrolizumab, and/or ipilimumab from January to November 2017 and received two or more doses of ICI. Pt demographics, risk factors, age, prior chemotherapy, steroid use, and type of immunsuppression for irAE. Microbiology records were used to identify infections.

Results. Thirty-nine infectious episodes (35 bacterial, four viral) were identified among 111 patients. Four bacteriaemia (two B. cereus,幕墙erase-negative staphylococci), 1 S. aureus, 12 urinary tract infections, 10 Gram-negative rods, 2 Gram-positive cocci, one intra-abdominal, eight skin and soft-tissue infections (one S. aureus, one Actinomyces radingae, one E. faecalis, and one E. cloacae). There were two probable viral pneumonias (two rhinovirus, two enterovirus) and no fungal infections. Fourteen (12.6%) infections were defined as serious (requiring intravenous antimicrobials and/or hospitalization). There was no association between the specific malignancy or ICI used and risk of infection. Steroid use was significantly associated with serious infections: 12/14 (85.7%) vs. 27/95 (28.4%); P = 0.0003), and no patients had received infliximab or oral immunosuppressant.

Conclusion. Bacterial infections were most common, and the only risk factor associated with serious infections in our study was steroid use. Type of ICI did not impact the rate of infection.

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1557. Acyclovir-Resistant (ACV-R) Herpes Simplex Virus (HSV) Disease in Patients with Hematologic Malignancies (HM) and Hematopoietic-Cell Transplant (HCT) Recipients

Alisha Pandit, BA1; Matthew P. Cheng, MD2,3,4; Alexis Liakos, PA-C2,5; Nathanelli Trifster, DMD, DMS4; Lindsey R. Baden, MD2,3,4, Nicolas C. Issa, MD2,3,4; Francisco M. Marty, MD2,3,4 and Sarah P. Hammond, MD1,2,3,4 Dana-Farber Cancer Institute, Boston, Massachusetts, 1Division of Infectious Diseases, Brigham and Women’s Hospital, Boston, Massachusetts, 2Harvard Medical School, Boston, Massachusetts, 3Division of Oral Medicine and Dentistry, Brigham and Women’s Hospital, Boston, Massachusetts, 4Department of Oral Medicine, Infection and Immunity, Harvard School of Dental Medicine, Boston, Massachusetts

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Background. HSV reactivation is a challenging complication of HM and HCT. ACV prophylaxis effectively decreases the incidence of symptomatic HSV episodes, but may contribute to development of ACV-R HSV disease in this population. Outcomes in patients with ACV-R HSV disease remain poorly characterized.

Methods. We identified adult HM patients and HCT recipients treated at Dana-Farber Cancer Institute who developed clinically significant ACV-R HSV disease between January 1, 2006 and March 1, 2018. HCT recipients typically receive 1 year of ACV prophylaxis after HCT, or longer in those with graft-vs.-host disease. Clinical, microbiological and treatment details were collected.

Results. Nineteen patients had 27 episodes of ACV-R HSV disease during the study. Median age was 50 years (range 31–77); 15 (79%) were men. Fifteen (79%) were allogeneic HCT recipients and 4 (21%) had HM (3 CLL, 1 NHL). Thirteen (68%) had oral ulcers (HSV1), four (21%) had perianal ulcers (3 HSV2, 1 HSV1), one had HSV1 vesicles on the trunk and one had concurrent oral HSV1 and perianal HSV2 ulcers. Three patients had recurrent ACV-R HSV: two had one recurrence each and one had six recurrences. Of 19 first episodes of ACV-R HSV, 15 (79%) were confirmed by culture and showed phenotypic resistance to ACV.

Most episodes (20/27, 74%) were treated with foscarnet at clinical diagnosis or after failure of high-dose val-ACV; four of these episodes were also treated with topical cidofovir without success before foscarnet. Three episodes resolved on high-dose val-ACV or ACV alone and three were treated with cidofovir or brincidofovir initially. Co-infection was present in 19 episodes (70%), most often bacterial pneumonia or blood stream infection. Twenty-two episodes (81%) resolved completely after a median of 36 days (range 10–88) of treatment. No patient died of HSV disease but five (26%) died before resolution of ACV-R HSV, a median of 25 days (range 1–117) after treatment started. Eight patients died after ACV-R HSV resolved, a median of 111 days (range 27–382) after treatment started. Among HCT recipients, six (37%) died within 12 weeks of diagnosis.

Conclusion. ACV-R HSV disease is an uncommon complication of HM and allo- generic HCT. While ACV-resistant HSV did not cause death in this cohort, death within 12 weeks of infection was common.

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1558. Commensal Neisseria Species as a Cause of Disease in Patients Taking Eculizumab

Page Grace, PharmD, MPH1; Lucy McNamara, PhD, MS2; Peter Waldron, MD3; Lynna McCalley, PharmD4; S. Christopher Jones, PharmD, MS, MPH5 and Susan Bersoff-Matcha, MD1; 1Division of Pharmacovigilance, Office of Surveillance and Epidemiology, Center for Drug Evaluation and Research, US Food and Drug Administration, Silver Spring, Maryland, 2National Center for Immunization and Respiratory Diseases, CDC, Atlanta, Georgia