1101. Pulmonary Aspergillosis Complicating Non-Influenza Respiratory Virus Infections Among Solid Organ Transplant Recipients
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Session: P-49. Infections in Immunocompromised Individuals

Background. Invasive pulmonary aspergillosis (IPA) complicating influenza (flu) has been increasingly recognized. We have shown that IPA occurred in 22% of solid organ transplant (SOT) patients with flu. Associations between IPA and non-flu respiratory infections (non-flu-RVI) in SOT are unknown.

Methods. Retrospective review of consecutive pts transplanted from Jan 15, 2010-Dec 19, 2017. Pts who died within 100 days of SOT were excluded. Non-flu-RVI IPA was defined according to revised EORTC/MSG criteria. IPA had to occur within 100 days of non-flu-RVI. Colonization (COL) was defined as recovery of mold from airways in absence of IFI.

Results. 3,077 pts were included. 256 cases of non-flu-RVI were identified in 17% of non-flu-RVI pts. No other fungi were identified. Median time from non-flu-RVI to + culture was 29 days (Figure). 23% of pts with + culture had proven IPA. Colonization (COL) was defined as recovery of mold from airways in absence of IFI.

Conclusion. IPA and COL occurred in 4% and 13% of non-flu-RVI in SOT recipients. Routine antifungal prophylaxis is not recommended for SOT pts with non-flu-RVI. The value of prophylaxis at time of PIV infection for lung transplant pts with recent steroid augmentation should be studied.

Disclosures. Cornelius J. Clancy, MD, Astellas (Consultant, Research Grant or Support); Melinta (Consultant, Research Grant or Support); Merck (Consultant, Grant/Research Support); Needham Associates (Consultant); Qxiqun (Consultant); Shionogi (Consultant)

1102. Reconstitution of CMV-specific cell-mediated immunity during letemovir prophylaxis in hematopoietic stem cell recipients
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Session: P-49. Infections in Immunocompromised Individuals

Background. Patients who are cytomegalovirus (CMV) seropositive (R+) prior to hematopoietic cell transplant (HCT), have 30% incidence of clinically significant CMV reactivation in the absence of prophylaxis. At our institution, letemovir prophylaxis through Day 100 is used in CMV R+ high-risk (HR) (cord blood, haploidentical, haploidentical) HCT recipients. We hypothesized that clinically nonsignificant CMV reactivation during letemovir prophylaxis may lead to reconstitution of CMV specific cell mediated immunity (CMV CMI), which may protect the host against CMV disease after letemovir discontinuation.

Methods. Blood samples from CMV R+ HR HCT recipients on letemovir were tested by dual color CMV specific IL2/IFN FLUOROSpot pre-transplant and on Days 100, 182 and 360 post-transplant. Clinical and virologic information were obtained from medical records.

Results. Among 35 participants enrolled to date, 19 were eligible for this analysis, which included only participants with CMV CMI defined as ≥20 spot-forming cells/10⁶ PBMC pre-transplant and follow up ≥180 post-transplantation. Median age was 51.5 years (range 22-75), 9 were women, 9 were white non-Hispanic, 8 were Hispanic and the most common underlying malignancy was acute myeloid leukemia (n=10). 14 participants had CMV CMI reconstitution at Day 100; including 5 with and 9 without low level CMV DNAemia, defined as <5000 international units/ml in whole blood. Prerative polymerase chain reaction assay, while on letemovir prophylaxis.

Conclusion. IPA+ COL occurred in 4% and 13% of non-flu-RVI in SOT recipients. Routine antifungal prophylaxis is not recommended for SOT pts with non-flu-RVI. The value of prophylaxis at time of PIV infection for lung transplant pts with recent steroid augmentation should be studied.

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1103. Respiratory Virus Infections In Solid Organ Transplant Recipients: A Single Center Experience
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Session: P-49. Infections in Immunocompromised Individuals

Background. Respiratory virus infections are common in solid organ transplant (SOT) recipients. Infections with human coronavirus (HCoV) and respiratory syncytial virus (RSV) have been associated with severe outcomes in SOT recipients. This study examined the epidemiology, clinical presentation and outcomes of respiratory virus infections among a single center SOT cohort.

Methods. Retrospective study of all SOT recipients at a single center from 2015-2019 who were positive for respiratory virus by molecular or viral culture. Demographics, comorbidities, viral burden, oxygenation and outcomes were collected.

Results. Among 202 patients with respiratory virus positive results, respiratory syncytial virus (RSV) was the most common virus identified (55%), followed by human coronavirus (HCoV) (26%). Median age was 51.5 years (range 22-75), 9 were women, 9 were white non-Hispanic, 8 were Hispanic and the most common underlying malignancy was acute myeloid leukemia (n=10). 14 participants had CMV CMI reconstitution at Day 100; including 5 with and 9 without low level CMV DNAemia, defined as <5000 international units/ml in whole blood. Prerative polymerase chain reaction assay, while on letemovir prophylaxis.

Conclusion. IPA+ COL occurred in 4% and 13% of non-flu-RVI in SOT recipients. Routine antifungal prophylaxis is not recommended for SOT pts with non-flu-RVI. The value of prophylaxis at time of PIV infection for lung transplant pts with recent steroid augmentation should be studied.

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Session: P-49. Infections in Immunocompromised Individuals

Background. Community acquired respiratory virus infections (RVI) are a major concern in solid organ transplant (SOT) recipients due to severe complications such as lower respiratory tract infection (LRTI), superimposed fungal and bacterial pneumonia, intensive care admission and mortality. Besides influenza and respiratory syncytial virus (RSV), there is paucity of data of RVI in SOT recipients.

Methods. Retrospective cohort study of a single large transplant center was performed. Data of multiple qualitative PCR-based respiratory viral panel (RVP) samples collected between January 2017 and December 2019 were included. It is important to mention that our institution generally performs the RSV/influenza rapid detection assay as an initial test; if negative, the multiplex PCR panel is usually done. We did not include results from the RSV/influenza rapid test in this study.

Results. One hundred transplant patients with a single positive RVP were included (table 1). Transplanted organs include kidney (40%), followed by lung (33%) and liver (9%). Most common presenting symptoms were cough (52%), shortness of breath (28%) and rhinorrhea (28%). No patient had fever in 24% of cases. The most common RVI was Rhinovirus/Enterovirus (RHV/ENT) (59%), followed by non-SARS-CoV-2 Coronavirus (19%) and Parainfluenza (PIV) (14%). None of the patients had neutropenia, however, 52% had lymphopenia. Lung transplant patients developed LRTI in 70% of cases compared to non-lung transplant 64% (p=0.012). Multivariate analysis showed patients with PIV 3 were less likely to develop LRTI (p= 0.038). Significant Cytomegalovirus (CMV) DNAemia (>137 IU/mL) was noted in 9.8% of the recipients. No proven or probable pulmonary fungal infection were noted within 3 months after diagnosis of RVI. Five patients were admitted to the Intensive care unit due to septic shock. Three patients died at 4, 5 and 35 days after diagnosis of RHV/ENT, PIV-3 and RHV/ENT respectively.

Conclusion. Most of the cases of RVI were due to RHV/ENT. Patients with PIV 3 were less likely to develop LRTI. Lung transplant recipients developed LRTI with similar incidence to non-lung recipients. Our data shows a very low mortality of 3% after RVI in our SOT cohort, which warrants larger studies.

Disclosures. Michele I. Morris, MD, Viracor Eurofins (Advisor or Review Panel member)

1104. Risk Factors and Outcomes of Refractory and/or Resistant Cytomegalovirus (CMV) Infection after Allogeneic Hematopoietic Stem Cell Transplantation

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Session: P-49. Infections in Immunocompromised Individuals

Background. The epidemiology of CMV end-organ disease (EOD) after Hematopoietic Cell Transplant (HCT) in the era of preemptive therapy (PET) is defined. In contrast, less data exists on refractory and/or resistant (R/R) CMV. We report on 1) the incidence; 2) risk factors and outcomes of R/R CMV by 1-year post HCT.

Methods. Retrospective review of 167 CMV seropositive (R+) recipients of first HCT to CMV viremia (VL) after 14 day of PET. Resistant CMV required genotypic confirmation of resistance mutation(s) in UL54 and/or UL97 genes. End organ disease (EOD) was defined by standard criteria. Patients (pts) were followed through 1-year after R/R CMV.

Results. Of 167 PET recipients, 91 (54.5%) received ex vivo T cell depleted (TCD) HCT; 40 (24.0%) had mismatched donor; and 26 (15.6%) had multiple myeloma. 66/167 (39.5%) pts developed refractory CMV (6 pts also had resistant CMV). Time from HCT to CMV viremia was shorter in R/R group: median (IQR) 17.2 (12.7-27.8) days compared to no R/R group: 26 (19-32) days (p=0.031). Maximum VL was higher for R/R compared to no R/R: median (IQR) 9,118 (2,849-18,456) IU/mL after ≥14 day of PET. Significant CMV seropositive donor (p=0.035) was protective (Figure 1). CMV R/R included TCD HCT (p< 0.0001) and higher VL at PET initiation (p=0.0002). In contrast, CMV seropositive donor (p=0.035) was protective (Figure 1). CMV EOD developed in 28.2% of R/R and 16.2% of no R/R groups (p=0.085) (Figure 2). Overall survival at 1 year was 59.1% for R/R compared to 83.1% for no R/R group (p=0.00027) (Figure 3).

Figure 1. Adjusted odds ratio (OR) and 95% confidence interval (CI) from multivariable model evaluating risk factors of refractory/resistant (R/R) CMV.