**Disclosures.** All authors: No reported disclosures.

1133. Epidemiology of Invasive Fungal Infections in Lung Transplant Recipients: Harnessing Data Mining Tools to Build a Comprehensive Database

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**Session:** 134. Fungi and Parasites in Immunocompromised Patients

**Friday, October 5, 2018: 12:30 PM**

**Background.** Despite advances in diagnostic and therapeutic tools, mortality of invasive fungal disease (IFD) in lung transplant (LT) recipients remains high. This study aimed to describe the epidemiology of IFD in LT recipients at a large academic center.

**Methods.** This retrospective single-center cohort study included all first-time LT recipients transplanted between 2010 and 2016 at the University of Texas Southwestern Medical Center in Dallas, TX. Data mining tools were used to extract data from the electronic health record and merge it with information from the Scientific Registry of Transplant Recipients and the Social Security Death Index (Figure 1). Medical records of subjects with positive fungal serologies, cultures or histopathology were manually reviewed and presence of IFD adjudicated using standardized definitions. Multivariable analysis was conducted using Cox proportional hazard models, with input variables treated as time dependent covariates where applicable, to identify risk factors for IFD and 1-year mortality.

**Results.** Of 393 LT recipients that met inclusion criteria, 68 (17%) developed a proven or probable IFD with median time to onset of 110 days (IQR 46–213) (Figure 2). The most common pathogens were: Aspergillus sp. (41%), and Candida sp. (34%). The most common sites of IFD were: lower respiratory tract (38%), tra-cheobronchial (25%), pleural/pericardial (15%), and bloodstream (7%). In multivariable analysis, incidence of IFD was associated with male gender ($P = 0.02; HR=2.05, 95% CI 1.14–3.68), and prior CMV disease ($P = 0.003; HR=4.16, 95% CI 1.65–10.50) (Figure 3). The 12-week mortality after the first episode of IFD was 3%; IFD was not associated with 1-year mortality ($P = 0.51, HR = 1.27, 95% CI 0.63–2.53).

**Conclusion.** IFD is a frequent complication after LT. Efforts to identify risk factors may help guide the development of targeted interventions to reduce the burden of IFD in this vulnerable population.

1134. Novel T2Candida Panel Assay Compared With Blood Cultures for Detection of Candidemia in Transplant and Non-Transplant Patients

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**Session:** 134. Fungi and Parasites in Immunocompromised Patients

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**Background.** Blood culture (BC) the current “gold” standard for detection of candidemia has a sensitivity of ~50% and turnaround time (TAT) of 2–5 days. T2Candida (T2) a magnetic resonance nano-diagnostic test done directly on blood samples detects C. albicans/C. tropicalis, C. krusei/C. glabrata, and C. parapsilosis. Clinical trials of T2 showed good sensitivity, specificity, NPV 99% and TAT of 3–5 hours. The performance of T2 in high-risk transplant (Tx) population is unknown. T2 was implemented at our institution in October 2015. We evaluated the performance characteristics of T2 and BC in our Tx and non-transplant (non-Tx) patient populations.

**Methods.** This was an observational, retrospective, cross-sectional evaluation of patients with suspected candidemia that had T2 done from October 2015 to October 2017 at a multihospital healthcare system in Detroit, MI. Performance characteristics.
of the T2 and BC in Tx and non-Tx patients were compared. BC obtained within 7 days before or after the T2 test were included in the analysis. TAT, sensitivity, specificity, PPV and NPV were calculated using positive BC as the standard. Differences between groups were assessed using two sample proportions testing at α = 0.05.

Results. A total of 1,272 patients with suspected candidemia had T2 done: 1,162 (91%) non-Tx and 110 (9%) Tx patients. Average TAT for T2 was 13 hours (5–41) vs. 34 hours (21–109) to initial positive BC result and 4 days (3–10) to species-specific BC result. In four non-Tx patients with negative T2, C. lusitaniae, C. dublinesis, and C. kefyr were isolated in BC. Performance characteristics of T2 and BC in the two groups are shown (Table S1). Of the 12+/BC- cases (n = 103), 9% had retinoids and 9% had invasive candidiasis.

Conclusion. The rapid TAT, good sensitivity, and high PPV of T2 in Tx patients has clinical implications and can help support antifungal stewardship efforts in this population. The clinical significance of T2 positivity in the presence of negative BC needs further investigation.

Table 1: Performance Characteristics of T2 Compared with BC (N = 1,272)

| T2 (n = 110) | Non-Tx (n = 1162) | P-value |
|-------------|------------------|---------|
| T2 + and blood culture + | 5 (4.5%) | 35 (3.01%) | 0.0003 |
| T2 + and blood culture - | 19 (17.3%) | 86 (7.4%) | 0.1431 |
| T2 - and blood culture + | 1 (0.9%) | 41 (3.5%) | 0.0003 |
| Sensitivity | 83.3% | 46.1% | |
| Specificity | 91.9% | 92.4% | |
| PPV | 20.8% | 28.9% | |
| NPV | 98.1% | 96.2% | |

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113. Strongyloides Stercolaris Serology in Transplant Patients: To Test or Not? Karla Rivera Rivera, MD; Tulsi Shah, MBBS; Julia Garcia-Diaz, MD, FIDS; and Jonathan Hand, MD.

Methods. Patients were identified using EPIC-CLARITY with ICD-9 and ICD-10 codes for any solid-organ transplant at OMC from July 1, 2012 to December 2016. Inclusion criteria were age 18 or older, patients evaluated for solid-organ transplant, and Strongyloides IgG testing. Patients were excluded if they had other immunocompromising conditions or exposures including but not limited to steroids, TNF-alpha, or biologic agent use. The primary outcome was the overall prevalence rate of Strongyloides at OMC. Secondary outcome was the comparison of prevalence between January 1, 2012 to July 31, 2016 (when testing was ordered based on risk stratification) vs. August 1, 2016 to December 31, 2016 (when routine testing was implemented).

Results. We analyzed a total of 1,047 patients which had 1,128 tests ordered for Strongyloides serology-based screening for strongyloides at our transplant center, located in a metropolitan non- endemic area. We reviewed adherence to the screening recommendation by program type and the medical record of seropositive patients for country of origin, history of eosinophilia (>500 cell/μL), Gram-negative bacteremia, ova and parasite (O&P) exam and treatment.

Conclusion. Our data suggest that the implementation of universal antifungal prophylaxis with itraconazole may not be efficacious in preventing IA in lung transplant recipients. On the other hand, surveillance with BAL GM is a strategy that can lead to early detection of IA in patients during the first year after lung transplantation.

Disclosures. All authors: No reported disclosures.

113. Implementation of Universal Screening for Strongyloidiasis Among Solid-Organ and Hematopoietic Stem Cell Transplantation Candidates in a Non-endemic Area Angelica Kotkamp, MD; and Sapna Mehta, MD.

Methods. A retrospective analysis was performed on 45 consecutive lung transplant recipients between January 2015 and February 2016 at UF Health Shands Hospital. All patients were placed on prophylactic itraconazole post-transplant. Screening for Strongyloides was performed at 2 weeks, 1 month, 3 months, 6 months, 9 months, and 12 months post-transplant. During each bronchoscopy, bacterial, fungal, and acid-fast bacterial cultures along with BAL GM (an optical density (OD) index of ≥0.5 considered positive) were obtained. If BAL GM ≥1.0, the patient was switched to voriconazole for further treatment. CT Chest was also evaluated. If BAL GM remained ≤1.0 at the 6 month interval, then prophylaxis was complete. IA was defined using the EORTC/MSG criteria for invasive fungal disease (i.e., patient classified as either having proven, probable or possible IA).

Results. There was a total of 225 observations from the 45 patients. Two patients (4.4%) had proven IA with a mean GM of 4.153 (SE, 0.629) and seven patients (15%) had probable IA with a mean of 2.169 (SE, 0.409). There was no correlation of cold ischemic time (P = 0.86), primary graft dysfunction (PGD, P = 0.38), presence of Candida species (P = 0.048) or non-tuberculous mycobacteria (NTM) in bronchoalveolar lavage (P = 0.044), and viral pneumonitis (P = 0.047) with a positive BAL GM. All nine patients with GM >1 were switched to voriconazole from itraconazole which resulted in negative GM levels on follow-up bronchoscopy.

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113. Fungi and Parasites in Immunocompromised Patients

Case Study: Strongyloides Stercolaris Infection in Solid-Organ Transplant Recipients

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