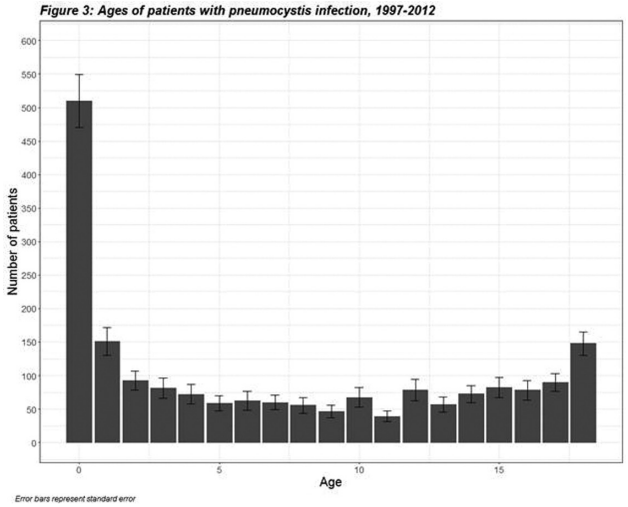

Disclosures. **All authors:** No reported disclosures.

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
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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%), tracheobronchial (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.

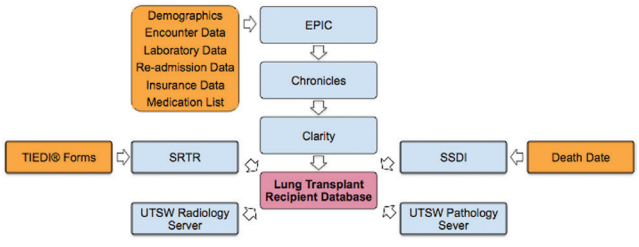

Fig 1. Flow chart of data sources and mining tools adapted to create an integrated database of LT recipients.
EPIC, Chronicles, Clarity, UTSW Radiology Server and UTSW Pathology Server are electronic health records databases. SRTR = Scientific Registry of Transplant Recipients. SSDI = Social Security Death Index.

	All Patients (N=393)
Age, Median (IQR)	61 (52-66)
Male Sex, N (%)	235 (60)
Race, N (%)	
White	309 (79)
Black	41 (10)
Hispanic	33 (8)
Other	10 (3)
Diabetes, N (%)	90 (23)
Smoking History, N (%)	243 (62)
Pre-transplant Steroid Use, N (%)	210 (53)
CMV Status, N (%)	
D+/R-	103 (26)
D+/R+ or D-/R+	237 (60)
D-/R-	53 (13)
Pre-transplant Diagnosis, N (%)	
Obstructive	109 (28)
Restrictive	216 (55)
CF/ Non-CF Bronchiectasis	37 (9)
Vascular	23 (6)
Other	8 (2)
Lung Allocation Score, Median (IQR)	42.2 (35.7-53.4)
Single Lung Transplant, N (%)	47 (12)
Maximum Lung Ischemia Time in Minutes, Median (IQR)	291 (245-334)
ECMO at Transplant, N (%)	15 (4)
Renal Replacement Therapy at Transplant, N (%)	3 (1)
Pulse Steroids after Transplant, N (%)	193 (49)
ATG after Transplant, N (%)	25 (6)
CMV Viremia Episode, N (%)	25 (6)
CMV Disease Episode, N (%)	11 (3)
Grade A1 Cellular Rejection Episode, N (%)	221 (56)
Grade A2 or A3 Cellular Rejection Episode, N (%)	59 (15)
Cumulative Acute Rejection Score, Mean (SD)	1.17 (0.37)
Grade B Low Grade Cellular Rejection Episode, N (%)	104 (26)
Grade B High Grade Cellular Rejection Episode, N (%)	3 (1)

Fig 2. Baseline characteristics and extracted variables of lung transplant recipients.
IQR= Interquartile range; CMV= Cytomegalovirus; D*/R*= Donor/Recipient serostatus (+/-); CF= Cystic fibrosis; ECMO= Extracorporeal membrane oxygenation; ATG= Antithymocyte globulin.

Variable	p-value	Hazard Ratio	95% Confidence Interval
Male Sex, N (%)	0.02	2.05	1.14 - 3.68
Age, Median (IQR)	0.42	0.99	0.97 - 1.01
Lung Allocation Score, Median (IQR)	0.56	1.00	0.99 - 1.02
Maximum Lung Ischemia Time in Minutes, Median (IQR)	0.83	1.00	0.99 - 1.01
CMV Donor/ Recipient Serostatus (CMV D+/R- as reference)			
CMV D-/R-	0.77	1.12	0.51 - 2.46
CMV D+/R+, CMV D-/R+	0.80	0.93	0.53 - 1.64
Pulse Steroids after Transplant, N (%)	0.58	0.86	0.52 - 1.44
CMV Disease Episode, N (%)	0.003	4.16	1.65 - 10.50
Any Grade A Rejection Episode, N (%)	<0.001	0.37	0.22 - 0.62
Any Grade B Rejection Episode, N(%)	0.43	0.78	0.42 - 1.45

Fig 3. Multivariable analysis of risk factors associated with incidence of invasive fungal disease.
IQR= Interquartile range; CMV= Cytomegalovirus; D*/R*= Donor/Recipient serostatus (+/-).

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