ID: 898969

Transplantation and Immigration: Comparing Infectious Complications Between Foreign-born vs. U.S.-born Kidney Transplant Recipients in Minnesota

Eloy E. Ordaya Espinoza[1,2], Megan Shaughnessy[1,3], Patricia F. Walker[1], Rachel Husmann[3], Gabriel Hale[4], Jacob Stauffer[4], William Stauffer[1]

University of Minnesota[1], Minneapolis VA Health Care System[2], Hennepin HealthCare[3], St. Olaf College[4]

Contact: Eloy E. Ordaya Espinoza
Address: 1 Veterans Dr, 3B-121
Minneapolis, MN 55417
Phone: (612) 229 - 8791
Email: eeordaya@umn.edu

INTRODUCTION

- Solid-organ transplantation (SOT) is the "last resort" treatment for many patients who suffer from end-stage organ diseases.
- Immigrants face challenges to transplantation due to language, cultural, insurance coverage, and other economic issues, with unprepared health systems and providers further contributing to health disparities in transplantation.
- Foreign-born (FB) patients are also at risk for reactivation of latent infections that differ from the U.S.-born (UB) population, so performing a tailored pre-transplant evaluation according to the country of birth could guide clinicians in the prevention, anticipation, diagnostics, and treatment of post-transplant infections.
- The main objective of this study is to compare the frequency and types of post-transplant infectious complications between FB and UB patients.

METHODS

- A multicenter, retrospective, observational study of adult patients that underwent kidney transplantation from 1/2014-12/2018 at the University of Minnesota Medical Center and Hennepin Healthcare is being conducted.
- Sociodemographic and clinical data are collected, including infectious complications during the first year post-transplant.

TABLE 1. BASELINE CHARACTERISTICS OF FOREIGN-BORN AND U.S.-BORN KIDNEY TRANSPLANT RECIPIENTS

Characteristics	Foreign-born transplant recipients N=53 (%)	U.S.-born transplant recipients N=107 (%)
Male sex	33 (62)	67 (63)
Age, median (range), y	46 (19-77)	56 (20-76)
Travel abroad before transplant	20 (38)	7 (7)
Previous kidney transplantation	4 (8)	21 (20)
Time in waiting list, months, median (range)	10 (0-156)	13 (0-98)
Time in dialysis, months, median (range)	36 (0-204)	7 (0-229)
Deceased donor	32 (60)	40 (37)
Comorbidities*		
- Latent TB	19 (36)	3 (3)
- Hepatitis B core positive	18 (34)	0
- Hepatitis C	2 (4)	2 (2)
- High-risk CMV status	1 (2)	35 (33)
Primary kidney disease*		
- Glomerular disease	21 (40)	26 (24)
- Diabetic nephropathy	12 (23)	25 (23)
- Hypertensive nephrosclerosis	8 (15)	16 (15)
- Graft failure	4 (8)	21 (20)
- Polycystic kidney disease	3 (6)	16 (15)
- Tubular and interstitial disease	3 (6)	18 (17)
- Unknown	9 (17)	4 (4)
- Others	1 (2)	8 (8)
Rejection	4 (8)	11 (10)
Mortality	0	2 (2)

*Patients may have presented more than one of the listed characteristics

Scan the code to download the updated abstract

RESULTS

- In this interim analysis, 160 patients were included; 100 (63%) were males, with a median age of 55 years. One hundred fourteen (71%) patients had infections in the first year post-transplant with a total of 267 infectious episodes: viral 48%, bacterial 46%, and fungal 6%.
- There were 107 UB and 53 FB patients. The baseline sociodemographic and clinical characteristics of both groups are noted in Table 1, Table 2, and Figure 1.
- FB patients were born in 25 countries that are highlighted in Figure 2.
- Overall, FB patients had a higher rates of latent tuberculosis infection (LTBI), hepatitis B core antibody-positive, number of patients with infections and infectious episodes in the first year post-transplant compared to UB patients. High-risk CMV status was more frequent in UB, but CMV reactivation was similar in both groups. Other significant differences between both groups are noted in Table 3.
- Only one FB patient presented with eumycetoma after six months post-transplantation; no other tropical diseases were observed.

FIG 1. SOCIAL CHARACTERISTICS OF THE FOREIGN-BORN (N=53) AND U.S.-BORN (N=107) KIDNEY TRANSPLANT RECIPIENTS

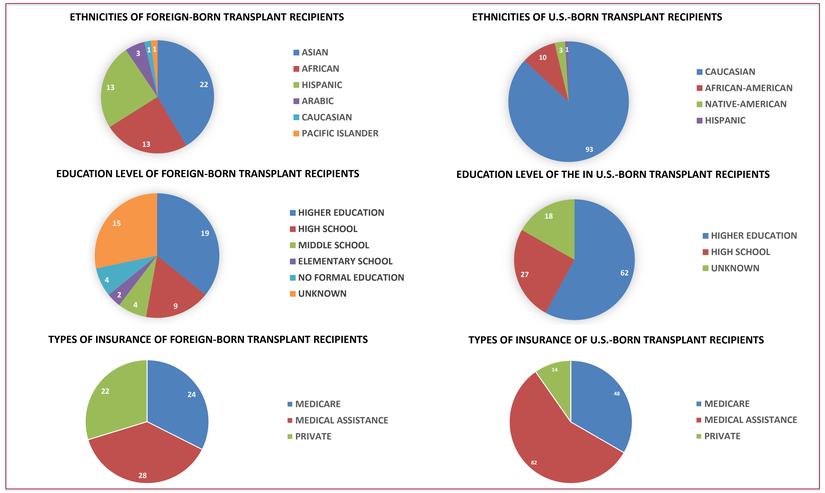

FIG 2. WORLD MAP HIGHLIGHTING THE 25 BIRTH COUNTRIES OF THE 53 FOREIGN-BORN KIDNEY TRANSPLANT RECIPIENTS

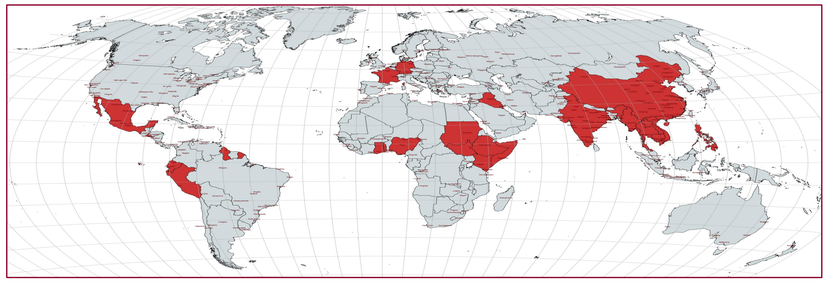

TABLE 2. POST-TRANSPLANT INFECTIOUS COMPLICATIONS IN FOREIGN-BORN VS U.S.-BORN KIDNEY TRANSPLANT RECIPIENTS

Characteristics	Foreign-born transplant recipients N=53 (%)	U.S.-born transplant recipients N=107 (%)
Patients with infectious complications	45 (85)	69 (65)
Number of infectious episodes	119	148
Bacterial*	53	69
▪ UTI	26	24
▪ Skin and soft tissue infection	2	18
▪ Pneumonia	6	7
▪ Intra-abdominal/GI infection	4	7
▪ Bacteremia	3	5
▪ Asymptomatic bacteriuria	1	4
▪ Others	11	4
Viral*	59	67
▪ BK viremia	26	20
▪ EBV viremia	8	17
▪ CMV reactivation	12	16
▪ Influenza A	1	4
▪ HSV reactivation	3	2
▪ Norovirus	1	3
▪ VZV reactivation	3	1
▪ Hepatitis B reactivation	3	0
▪ Others	2	4
Fungal*	7	12
▪ Oral/esophageal candidiasis	3	7
▪ Tinea/onychomycosis	1	4
▪ Genitourinary candidiasis	2	0
▪ Blastomycosis pneumonia	0	1
▪ Eumycetoma	1	0

*Patients frequently presented more than one type of infections

TABLE 3. SIGNIFICANT DIFFERENCES BETWEEN FOREIGN-BORN AND U.S.-BORN KIDNEY TRANSPLANT RECIPIENTS

Characteristics	Foreign-born transplant recipients n=53 (%)	U.S.-born transplant recipients n=107 (%)	*p* value
Time in dialysis, median (range)	36 (0 – 204)	7 (0 – 229)	<0.001
Travel abroad before transplantation	20 (38)	7 (7)	<0.001
Latent tuberculosis	19 (36)	3 (3)	<0.001
Hepatitis B core antibody positive	18 (34)	0	<0.001
Deceased donor	32 (60)	40 (37)	0.007
High-risk CMV status (D+/R-)	1 (2)	35 (33)	<0.001
Patients with infectious complications	45 (85)	69 (65)	<0.01
Median of infectious episodes (range)	2 (0 – 8)	1 (0 – 6)	0.002

CONCLUSIONS

- Per this preliminary data, FB patients had a longer time in dialysis, higher rates of traveling abroad before transplantation, LTBI, hepatitis B core antibody-positive, deceased donor and infectious complications during the first year of transplantation compared to UB patients.
- UB patients had more frequently high-risk CMV status, but similar CMV reactivation episodes compared to FB patients. Reactivation of tropical infections was rare.
- Further data collection and analysis may provide further information to better tailor and design care for FB patients undergoing kidney transplantation.