

Association of Citizenship Status With Kidney Transplantation in Medicaid Patients

Jenny I. Shen, Daniel Hercz, Lilly M. Barba, Holly Wilhalme, Erik L. Lum, Edmund Huang, Uttam Reddy, Leslie Salas, Sitaram Vangala, and Keith C. Norris



Background: Although individuals classified as nonresident aliens, including undocumented immigrants, are entitled to receive emergency dialysis in the United States regardless of their ability to pay, most states do not provide them with subsidized care for maintenance dialysis or kidney transplantation. We explored whether nonresident aliens have similar outcomes to US citizens after receiving kidney transplants covered by Medicaid, a joint federal and state health insurance program.

Study Design: Retrospective observational cohort study.

Setting & Participants: All adult Medicaid patients in the US Renal Data System who received their first kidney transplant from 1990 to 2011.

Predictor: Citizenship status, categorized as US citizen, nonresident alien, or permanent resident.

Outcome: All-cause transplant loss.

Measurements: HRs and 95% CIs estimated by applying Cox proportional hazards frailty models with transplantation center as a random effect.

Results: Of 10,495 patients, 8,660 (82%) were US citizens, 1,489 (14%) were permanent residents, and 346 (3%) were nonresident aliens, whom we assumed were undocumented immigrants. Nonresident aliens were younger, healthier, receiving dialysis longer, and more likely to have had a living donor. 71% underwent transplantation in California, and 61% underwent transplantation after 2005. Nonresident aliens had a lower unadjusted risk for transplant loss compared with US citizens (HR, 0.48; 95% CI, 0.35-0.65). Results were attenuated but still significant when adjusted for demographics, comorbid conditions, dialysis, and transplant-related factors (HR, 0.67; 95% CI, 0.46-0.94).

Limitations: Citizenship status was self-reported, possible residual confounding.

Conclusions: Our study suggests that the select group of insured nonresident aliens who undergo transplantation with Medicaid do just as well as US citizens with Medicaid. Policymakers should consider expanding coverage for kidney transplantation in nonresident aliens, including undocumented immigrants, given the associated high-quality outcomes in these patients.

Complete author and article information provided before references.

Correspondence to
J.I. Shen (jshen@labiomed.org)

Am J Kidney Dis. 71(2):
182-190. Published online
November 8, 2017.

doi: [10.1053/
j.ajkd.2017.08.014](https://doi.org/10.1053/j.ajkd.2017.08.014)

© 2017 by the National
Kidney Foundation, Inc.

An estimated 6,000 undocumented immigrants in the United States have end-stage kidney disease, based on 2014 data.¹⁻³ Although the United States provides life-sustaining maintenance dialysis for virtually all its citizens with end-stage kidney disease, care for undocu-

Editorial, p. 157

mented immigrants is fragmented.¹ Although some states extend the benefit of scheduled maintenance dialysis to undocumented immigrants, most states dialyze them only when their condition is acutely life-threatening, a situation under which federal funding may be used to cover costs.¹

Access to kidney transplantation for this population is even more limited because there is no federal mandate to subsidize kidney transplantation for noncitizens.⁴ This is despite the fact that transplantation is a more cost-effective form of renal replacement therapy and provides better outcomes for patients with end-stage kidney disease.⁵⁻⁷ Although some states provide funding for kidney transplantation for this population, most undocumented immigrants must rely on either charitable donations or private insurance to cover the costs of this procedure, making it unfeasible for the vast majority of these

patients.⁸ Little is known about the outcomes of undocumented immigrant recipients of kidney transplants. Critics have voiced concerns that undocumented immigrants would not do well because they are subject to deportation, which could disrupt the social and financial stability necessary for proper posttransplantation health care.⁹

We hypothesized that undocumented immigrants would have similar outcomes to US citizens following kidney transplantation if they were equally insured. To test this, we analyzed a cohort of patients with Medicaid, a joint federal and state health insurance program for low-income patients, who received their first kidney transplant from 1990 through 2011. We compared the outcomes of presumed undocumented immigrants with those of US citizens.

Methods

Data Source and Study Population

From the US Renal Data System (USRDS), a national database of virtually all patients with end-stage kidney disease, we identified all adult (aged ≥ 18 years) patients with end-stage kidney disease who received their first kidney transplant from January 1, 1990, through December 31, 2011 (Fig S1). We excluded patients who underwent

transplantation after 2011 because the categories for recording citizenship status were changed in 2012 to a combination of US citizen/non-US citizen and US resident/non-US resident, such that undocumented immigrants would be indistinguishable from permanent residents (because both would be listed as non-US citizen/US resident).¹⁰ By restricting the cohort to patients whose primary payer was Medicaid, we also minimized the inclusion of patients who traveled to the United States for the purpose of transplantation because it would be unlikely that such “transplant tourists” would qualify for Medicaid.

Exposure and Outcomes

The primary exposure of interest was recipient citizenship status, which was self-reported on the Transplant Candidate Registration form (US citizen vs resident alien vs nonresident alien). The 3-category exposure was used for all analyses. We considered resident aliens to be permanent residents or individuals who are allowed to live and work in the United States indefinitely. We assumed nonresident aliens to be undocumented immigrants.

To assess the validity of the citizenship variable from the Transplant Candidate Registration form, we reviewed medical records of all patients covered by Medicaid who had received a kidney transplant from 2009 to 2011 at a single center to find their United Network for Organ Sharing (UNOS) registration number. For logistical reasons, we were unable to access records at other transplantation centers. Whereas US citizens and permanent residents are registered in UNOS using their social security numbers, nonresident aliens are given UNOS registration numbers beginning with 9FN. We also reviewed social work evaluations to determine whether patients had traveled to the United States for the purpose of receiving a transplant.

For survival analyses, our primary outcome was all-cause transplant failure. We analyzed nonfatal transplant failure and all-cause mortality individually as secondary outcomes. We treated death as a competing event for nonfatal transplant failure. All outcomes we ascertained from the USRDS transplantation file.

Patient Characteristics

We obtained demographics, dialysis characteristics, comorbid conditions, transplant characteristics, and donor characteristics from the USRDS transplantation files. These data are derived from Organ Procurement and Transplantation Network candidates, recipients, donors, and histocompatibility files.

Statistical Analysis

We tabulated transplant recipient characteristics by citizenship status using frequency and percentage and mean \pm standard deviation or median with interquartile range and compared the groups using analysis of variance or Kruskal-Wallis test for continuous variables and χ^2 or Fisher exact test for categorical variables, as appropriate.

We used Cox proportional hazards frailty models with transplantation center as a random effect to estimate the hazard ratio (HR) for all-cause transplant failure and all-cause mortality in nonresident aliens versus US citizens. In the presence of the competing event of death, we used cause-specific hazards frailty models with transplantation center as a random effect to estimate the cause-specific HRs for nonfatal transplant failure by treating the competing event as censoring. We defined the index date as the date of transplantation. Patients were censored after 5 years of follow-up or on end of study (January 1, 2012), whichever was earlier. All HRs were accompanied by their corresponding 95% confidence interval (CI).

We created the following models: (1) unadjusted analysis (citizenship status only), (2) adjusted for demographics (age at transplantation, sex, and race/ethnicity), (3) model 2 plus dialysis factors (years on dialysis therapy pretransplantation and cause of kidney failure), (4) model 3 plus transplant factors (HLA antigen 0 mismatch [vs any mismatch], living [vs deceased] donor, and transplantation before 2000 [vs 2000 or after]), and (5) model 4 plus comorbid condition count (number of comorbid conditions a patient has).

We assessed effect modification by living (vs deceased) donor, age (<50 or \geq 50 years), and race/ethnicity separately by including an interaction term between the variable of interest and citizenship in the full model. Age was treated as a binary variable in the effect modification analyses to ease interpretation.

Sensitivity Analyses

We conducted 2 sensitivity analyses. In the first, given the potential for misclassification of nonresident aliens as permanent residents and vice versa, we conducted analyses combining these 2 groups and comparing them against US citizens. Because we cannot capture outcomes of nonresident aliens who leave the United States and do not return, this may bias results toward a beneficial association with nonresident alien status. Thus, we conducted a second set of sensitivity analyses restricting the outcomes to 1- and 3-year survival because the shorter the follow-up, the less likely patients will have left the country.

All analyses were performed using R, version 3.3.0 (R Foundation for Statistical Computing). The Institutional Review Board of the Los Angeles Biomedical Institute at Harbor-UCLA Medical Center approved the study and waived the requirement for written consent owing to the deidentified nature of the data.

Results

Patient Characteristics

Of 278,779 adult patients who received their first kidney transplant from 1990 to 2011, Medicaid was the primary payer for 10,495 (Fig S1). Of these patients, 8,660 (82.4%) were US citizens, 1,489 (14.2%) were permanent residents, and 346 (3.3%) were nonresident aliens

Download English Version:

<https://daneshyari.com/en/article/8769976>

Download Persian Version:

<https://daneshyari.com/article/8769976>

[Daneshyari.com](https://daneshyari.com)