

Effect of Race and Insurance Status on Outcomes after Vascular Access Placement for Hemodialysis

Jeffrey J. Siracuse, Heather L. Gill, Irene Epelboym, Adi Wollstein, Yuriy Kotsurovskyy, Diana Catz, In-Kyong Kim, and Nicholas J. Morrissey, New York, New York

Background: Race and insurance status are seen as potential barriers to health care access and maintenance. Our goal was to see how these, as well as other patient and procedural characteristics, affected our populations' upper extremity vascular access outcomes.

Methods: We retrospectively reviewed 601 vascular access patients from 2004 through 2012 in our urban university hospital. We recorded patient demographics, insurance status, comorbidities, and complications. Primary outcomes were reintervention, long-term mortality, and transplantation.

Results: Median age was 62 ± 15.8 years, and 58% were male. Most operations were arteriovenous fistulas (66%). The majority of patients identified themselves as Hispanic (50%), followed by white (22%), and black (19%). Most patients had Medicare only (42%), 31% had private insurance, and 27% had Medicaid as their insurance. Black/African American patients were more likely to receive an arteriovenous graft (AVG) compared with white and Hispanic patients (44% vs. 28% and 33%, $P < 0.05$). White patients were significantly older (68) than Hispanics (61) or blacks (58). Freedom from reintervention at 5 years was 55% with previous tunneled catheter use predictive. Mortality at 5 years was 35% and predicted by age, AVG placement, white race, and not receiving a kidney transplant. Predictors of not receiving a transplant included older age, lower albumin, AVG placement, and coronary artery disease.

Conclusions: There were no disparities with insurance status in long-term outcomes in our population. Race was not a factor for reintervention or transplantation; however, black/African American patients were more likely have an AVG placed, and white patients had a lower long-term survival after access placement.

INTRODUCTION

Race and insurance status have been implicated as potential barriers to health care access, health care maintenance, and even survival. Many studies have described racial minorities, those with a lower socioeconomic status, and uninsured patients as

being at the highest risk for adverse outcomes.¹⁻³ This disparity extends to patients undergoing vascular surgery procedures.⁴⁻⁶ Also, African American, Hispanic, and uninsured patients with chronic renal insufficiency in particular have worse overall outcomes because they have poorer predialysis access to care and health maintenance, higher predialysis mortality, and longer times on waitlists for kidney transplantation.⁷⁻⁹ Hemodialysis is ideally a temporary measure in this population because those who undergo a successful renal transplant have been shown to have improved survival, quality of life, decreased hospitalization rates, and fewer exacerbations of existing comorbidities.⁷⁻¹⁰ However, because of issues related to the availability of suitable organs, many patients in this population will nevertheless remain on hemodialysis as a destination modality for renal replacement therapy. Although race

New York-Presbyterian Hospital, College of Physicians and Surgeons, Columbia University, New York, NY.

Correspondence to: Jeffrey J. Siracuse, MD, New York-Presbyterian Hospital, Columbia University, College of Physicians and Surgeons, Surgery, 161 Fort Washington Avenue, New York, NY 10035, USA; E-mail: jes9061@nyp.org

Ann Vasc Surg 2014; 28: 964-969

<http://dx.doi.org/10.1016/j.avsg.2013.10.016>

© 2014 Elsevier Inc. All rights reserved.

Manuscript received: August 8, 2013; manuscript accepted: October 31, 2013.

and insurance status have been shown to correlate with outcomes of procedures in many surgical fields, there are no data relating these to long-term outcomes after placement of vascular access regarding patency, transplantation, and survival. This is important because reinterventions for vascular access are costly and not uncommon. Vascular access dysfunction accounts for 20% of hospitalizations among patients with end-stage renal disease, leading to more than \$1 billion in Medicare spending annually.¹¹

Our medical center is a tertiary care institution that not only serves a large and diverse urban population but also functions as a regional and international referral center for complex vascular procedures and is a high-volume kidney transplant center. In this study, we sought to evaluate the contribution of race and insurance status to the survival, transplantation, and patency in this complex patient population.

METHODS

We retrospectively reviewed medical records of all patients who received vascular access placement between 2004 and 2012 with the Section of Vascular Surgery and Endovascular Interventions at the New York-Presbyterian Hospital, Columbia University Medical Center, New York, NY. This includes patients who have had previous access elsewhere. We recorded demographic variables, including age, gender, race, and insurance status, as well as any preexisting medical comorbidities. Postoperative course was evaluated, and any short- and long-term complications, particularly those related to functional status of the vascular access, were tracked. Primary outcomes were overall survival, patency, and renal transplantation.

Our institutional practice is to evaluate all patients with vascular access that are unable to achieve adequate flow during hemodialysis 6 weeks after access placement with ultrasound and to perform a fistulogram for rates <600 mL/min or 1000 mL/min with a 25% decrease in the previous 4 months. We will generally intervene on >50% stenosis.

Variables were compared using Student's *t* test or analysis of variance for continuous data and chi-squared or Fisher's exact test for categorical data. Prediction models were constructed using linear or logistic regression where appropriate. Survival probability was estimated with Kaplan-Meier method and compared using log-rank test. Univariable and multivariable Cox proportional hazards models were constructed to describe the survival experience among time-dependent outcomes. All tests were 2-sided, and a *P* value <0.05 was considered statistically

significant. Statistical analyses were conducted using STATA software (version 12, College Station, TX).

RESULTS

The medical and postoperative course of 601 patients who received vascular access placement at our institution between 2004 and 2012 was evaluated. In this group, the median age was 62 ± 15.8 years, and 58% of the patients were male. Mean follow-up was 1066 days. Race was a patient-reported variable, and patients most frequently self-identified as Hispanic (50%), white (22%), or black/African American (19%). Asian, Indian, and Middle Eastern were recorded at $\leq 1\%$ each, and the remainder did not self-identify. White patients were significantly older (68 years) than Hispanic (61 years) or black/African American patients (58 years; *P* < 0.05). Insurance information, obtained by querying billing records, was noted to be private 31% of the time, Medicare in 43% of the cases, and Medicaid in 26% of patients. The most common comorbidities included hypertension (84%), diabetes mellitus (59%), coronary artery disease (47%), obesity (14%), chronic obstructive pulmonary disease (7%), and peripheral vascular disease (6%). Smoking history was positive in a third of the patients (34%), and 5% were current smokers.

At the time of vascular access placement, 47% of the patients had been previously dialyzed either through a previous vascular access or catheter, and 2.5% of patients had a previous failed kidney transplant. Patients had previous tunneled dialysis catheters in 19% of cases with black/African American patients having higher rates (23%) compared with Hispanic (18%) and white (13%) patients (*P* < .05). The average preoperative hematocrit was 31.9 ± 5.7 , and the average albumin was 3.6 ± 0.7 . Medication profile was notable for 44% of the patients being on epoetin alfa, 57% on aspirin or antiplatelet agents, 72% on a beta-blocker, 65% of calcium channel blockers, 15% on corticosteroids, and 62% on a statin medication (Table I).

Arteriovenous fistulas (AVF; 66%) comprised the majority of the operations. The cephalic vein was used in 61% and the brachial artery in 83% of cases. Black/African American patients were more likely to receive an arteriovenous graft (AVG) compared with white and Hispanic patients (44% vs. 28% and 33%, *P* < 0.05). Complications included bleeding/hematoma (2.5%), infectious complications (5.8%), stenosis (14.8%), thrombosis (11.5%), aneurysm formation (3%), and steal (3.2%). Infectious and thrombotic complications were more commonly associated with AVG compared with AVF (11.2% vs. 3.4% and 18.5

Download English Version:

<https://daneshyari.com/en/article/2886694>

Download Persian Version:

<https://daneshyari.com/article/2886694>

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