

## RESEARCH LETTER

## Home Dialysis Utilization Among Underrepresented Groups

To the Editor:

There has been an increase in home dialysis utilization rates in the United States. A 2012 regional analysis<sup>1</sup> of home dialysis utilization rates of all Centers for Medicare & Medicaid Services's Medicare fee-for-service patients who received dialysis found that—using the White race as the reference group—home dialysis utilization rates were in the range of 0.51–0.68 for African Americans and 0.69–0.80 for Hispanics. The latest US Renal Data System data<sup>2</sup> showed that, in 2018, 11.7% of White incident dialysis patients and 9.1% of African American incident dialysis patients were on peritoneal dialysis (PD), reflecting a PD utilization rate of ~0.77.

Prior studies have shown that African American and Hispanic patients were less likely to be on PD, demonstrating the effect of racial and socioeconomic factors on patient choices and outcomes.<sup>2,3</sup> To study this further, we set out to analyze patients on PD dropout in our urban PD center serving a predominantly underrepresented patient population, with a subanalysis focus on patients' race and ethnicity.

We conducted a single-center, retrospective chart review of patients enrolled in our PD program from January 1, 2017 to September 30, 2020. Detailed methods are shown in [Item S1](#). Our cohort was divided into 2 groups: incident and prevalent patients. Patients on PD ≥30 days during the study period were included. Patient demographics (including age, race, ethnicity, and sex), history of diabetes mellitus, and body mass index at the time of PD catheter insertion were obtained from the electronic medical record. Reasons for discontinuation of therapy were recorded. PD technique failure was defined as any patient who was transferred to hemodialysis for >30 days.

A total of 185 patients (108 incident and 77 prevalent) met the study criteria. There was no statistically significant difference between the 2 groups in terms of mean age at PD initiation, body mass index, sex, race, ethnicity, or prevalence of diabetes mellitus ([Table S1](#)).

During the study period, incident patients had a lower mean time on PD. Prevalent patients had a higher rate of transition from PD ([Table S2](#)). The rate of transition from PD to hemodialysis in the incident group was 16.8 per 100 patient-years. A higher proportion of incident patients were transferred to hemodialysis.

Subgroup analysis showed that both incident and prevalent African American patients had a similar time on PD, age at PD initiation, body mass index, and prevalence of diabetes mellitus compared with their White counterparts ([Table 1](#)). The only exception was that prevalent African American patients were younger at PD initiation. Rates of transition from PD and peritonitis were also similar across incident, prevalent, and combined analyses, with the exception of prevalent African American patients having lower rates of transition from PD.

Incident, prevalent, and combined patient analysis yielded no statistically significant difference in terms of time on PD, age at PD initiation, diabetes mellitus, and body mass index, as well as peritonitis and PD transition rates between Hispanic and non-Hispanic patients ([Table 2](#)).

In this study, we found no difference in rates of peritonitis and PD transition rates in both the White versus African American and Hispanic versus non-Hispanic subgroups. The only exception was a lower transition rate from PD in the prevalent African American patients compared with their White counterparts.

The rate of transition to hemodialysis in our incident cohort was lower than that noted in a large epidemiologic analysis of US Renal Data System data of incident patients on PD in 2014 (16.8 vs 21 per 100 patient-years).<sup>4</sup> Our



**Table 1.** Subgroup Analysis of Incident, Prevalent, and Combined White and African American Patients' Baseline Characteristics and Outcomes

	Incident			Prevalent			Combined		
	African American	White	P Value	African American	White	P Value	African American	White	P Value
	n = 57	n = 36		n = 37	n = 35		n = 94	n = 70	
Time on PD <sup>a</sup> , mo	15	12	0.24	26	23	0.40	19	18	0.46
Age at PD initiation, y, mean (SD)	55 (16.3)	56 (17.7)	0.91	51 (14.8)	59 (15.2)	0.02	53 (15.9)	57 (16.5)	0.13
Diabetes mellitus, No. (%)	33 (58)	17 (47)	0.26	26 (46)	21 (60)	0.37	59 (63)	38 (54)	0.62
Body mass index, kg/m <sup>2</sup> , mean (SD)	28 (6.3)	27 (5.7)	0.33	27 (6.7)	26 (4.1)	0.35	28 (6.5)	26 (4.9)	0.15
Peritonitis <sup>b</sup>	24.2	36.7	0.27	40.9	34.0	0.51	33.1	34.9	0.80
Transition rate <sup>b</sup>	34.2	39.5	0.66	19.8	39.9	0.03	26.5	39.8	0.07

Abbreviations: PD, Peritoneal dialysis; SD, standard deviation.

<sup>a</sup>During study period

<sup>b</sup>Per 100 patient-years

**Table 2.** Subgroup Analysis of Incident, Prevalent, and Combined Hispanic and Non-Hispanic Patients' Baseline Characteristics and Outcomes

	Incident			Prevalent			Combined		
	Hispanic	Non-Hispanic	P Value	Hispanic	Non-Hispanic	P Value	Hispanic	Non-Hispanic	P Value
	n = 34	n = 74		n = 17	n = 60		n = 51	n = 134	
Time on PD <sup>a</sup> , mo	13	12	0.38	25	24	0.22	17	18	0.36
Age at PD initiation, y, mean (SD)	54 (16.6)	56 (17.0)	0.57	51 (17.5)	55 (15.2)	0.43	53 (17.0)	56 (16.2)	0.40
Diabetes mellitus, No. (%)	15 (44)	43 (58)	0.18	6 (35)	20 (33)	0.15	21 (41)	63 (47)	0.48
Body mass index, kg/m <sup>2</sup> , mean (SD)	27 (5.4)	27 (6.1)	0.77	27 (3.6)	26 (5.9)	0.75	27 (4.9)	27 (6.1)	0.97
Peritonitis <sup>b</sup>	32.29	32.09	0.97	30.91	41.3	0.39	31.68	37.32	0.49
Transition rate <sup>b</sup>	43.06	39.57	0.77	30.91	37.17	0.60	39.84	40.08	0.99

Abbreviations: PD, Peritoneal dialysis; SD, standard deviation.

<sup>a</sup>During study period

<sup>b</sup>Per 100 patient-years

robust “prelude” to dialysis education program likely plays a role in reducing the racial disparity in access to and retention of PD. Additionally, we have a relatively large PD program and highly experienced staff, which are established factors associated with better outcomes in PD.

Despite the potential barriers in access to PD, our study suggests that once on PD, African American and Hispanic patients have similar outcomes in terms of technique survival and peritonitis rates compared with those of White patients. A study investigating the PD technique survival at a dialysis center that serves a similar patient population in an urban setting. At Rush-Presbyterian-St Lukes Medical Center's PD program in Chicago, where 61% of incident patients were African American, Korbet et al<sup>5</sup> set out to determine racial differences in technique and patient survival in incident patients on PD. After 5 years of follow-up, the rate of technique survival for African American patients was higher than that for White patients (47% vs 36%,  $P < 0.01$ ). This is further evidence that African American patients can do as well, if not better, than their White counterparts on PD.

A multitude of barriers has a direct impact on the health of non-White patients and impedes the growth of PD utilization. These include lower rates of “prelude” to dialysis care, higher body mass index, and higher rates of diabetes mellitus than their White counterparts. African Americans also have higher poverty and unemployment rates as well as lower levels of education.<sup>6</sup>

There has been legislative recognition by the Centers for Medicare & Medicaid Services of this disparity through the introduction of the Health Equity Incentive. This provides participating sites additional improvement points for showing significant improvements in home dialysis and/or transplant rates for low-income patients and those who are dually eligible for Medicare and Medicaid.

In conclusion, focusing our efforts on improving the recruitment of traditionally underrepresented groups,

especially in neighborhoods with large proportions of African American and/or Hispanic patients, is an important first step in improving the overall utilization of home kidney replacement therapies in the United States.

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## SUPPLEMENTARY MATERIAL

Supplementary File (PDF)

Item S1: Supplementary Methods

Table S1: Baseline Patient Characteristics

Table S2: Reasons for Transition From Peritoneal Dialysis

## ARTICLE INFORMATION

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