Objective: To examine ace-inhibitor (ACEI) and angiotensin receptor blockers (ARB) prescription and adherence patterns by race in diabetic public aid recipients.

Design, Participants, and Measures: We analyzed prescription records of 27,529 adults aged 18-64 with diabetes who had at least one clinical indication for receiving an ACEI/ARB prescription and were enrolled in the State of Illinois public aid program during 2007. We calculated proportion of days covered (PDC) to assess adherence. Multivariate models adjusted for age, sex, ACEI/ARB indication, and any significant interaction terms.

Results: Only 47.4% of individuals with at least one indication for ACEI/ARB had filled an ACEI/ARB prescription. African American men were more likely than Caucasian men to ever fill an ACEI/ARB prescription (adjusted odds ratio, [AOR] [95% CI] 1.69 [1.55–1.83]). Hispanic English and Spanish speaking men were also more likely than Caucasian men to ever fill an ACEI/ARB prescription (AOR [95% CI] 1.37 [1.16–1.62] and 1.27 [1.05–1.53], respectively). Similarly, African American and Hispanic English and Spanish speaking women were more likely than Caucasian women to ever fill an ACEI/ARB prescription (AOR [95% CI] 1.70 [1.59–1.81], 1.55 [1.36–1.76], and 1.98 [1.73–2.28], respectively). However, African Americans and Hispanics were less likely than Caucasians to achieve a PDC≥80%. Compared to Caucasians, Hispanic Spanish speaking women were the least likely to be adherent (AOR [95% CI] .49 [.41–.58]). Furthermore, older individuals were more likely to achieve a PDC≥80% than younger individuals.

Conclusion: African Americans and Hispanics with diabetes receiving public aid in Illinois were more likely than Caucasians to have filled at least one ACEI/ARB prescription. However, they were less adherent with these medications. Future studies should assess barriers to medication adherence in this population. (Ethn Dis. 2013;23[2]:189–195)

Key Words: ACE inhibitor, angiotensin receptor blockers, diabetes

INTRODUCTION

Diabetes currently affects more than 26 million Americans1 and is the leading cause of kidney failure in the United States, accounting for almost 45% of new cases of end stage renal disease (ESRD) in 2007.2 Diabetes disproportionately impacts African Americans and Hispanics with an age-adjusted prevalence of 11.0% and 10.7%, respectively, compared to 7.0% in Caucasians.3 Hispanics also have a higher age-adjusted incidence rate of diabetes compared to African American and Caucasians (11.5 vs 8.0 and 8.0, respectively).3 Furthermore, ethnic minorities have higher rates of diabetic complications compared to Caucasians.4,5 In particular, the rate of ESRD is almost three times higher in African Americans and Hispanics.6 The reasons behind these racial differences in ESRD are not fully understood, but may involve complex factors including socioeconomic status, access to care, disease management and other behavioral and genetic factors.7

Angiotensin converting enzyme inhibitors (ACEI) and angiotensin receptor blockers (ARB) have well-documented effects in delaying the progression of diabetic kidney disease and decreasing proteinuria in both type 1 and type 2 diabetes.8–13 For this reason, the American Diabetes Association clinical practice guidelines recommend that pharmacologic therapy for patients with diabetes and hypertension include an ACEI/ARB.14 Despite these known benefits, inadequate numbers of persons with clinical indications for ACEI/ARB use these agents. For example, in a survey of 742 older adults with diabetes, only 43% received ACEI/ARB medication, though an estimated 92% had guideline indications for such therapy.15 Given the beneficial effects of ACEI/ARB use on delaying the progression of ESRD, the unequal rates of ESRD diagnoses among racial and ethnic minority groups may in part be due to variability by ethnicity in the use of ACEI/ARB.

It has been widely established that minorities receive fewer and lower quality services compared to Caucasians.16,17 African American and Hispanic Medicare beneficiaries aged ≥65 use 10% to 40% fewer medications than Caucasians with the same illnesses.16 These findings suggest that inadequate medication use may contribute to differences in diabetic outcomes. A review of patients with diabetes enrolled in the Kaiser Permanente Northern California Diabetes registry showed no significant difference in the rate of ACEI/ARB use among different ethnic groups.18 However, among high-risk groups, African Americans with albuminuria were less likely to be prescribed an ACEI/ARB. It remains unclear what racial differences exist in ACE-inhibitor and ARB use between different ethnic groups, particularly among public aid populations.

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