

PREVALENCE, TREATMENT, AND CONTROL OF HYPERTENSION AMONG AFRICAN AMERICANS AND CAUCASIANS AT PRIMARY CARE SITES FOR MEDICALLY UNDER-SERVED PATIENTS

Context: Hypertension is a major contributor to ethnic disparities in cardiovascular disease, especially among low-income African Americans in the southeast United States.

Objective: To assess differences between African Americans and Caucasians in the prevalence, treatment, and control of hypertension in outpatient clinics for under-served patients in South Carolina.

Design: A random sample of outpatient charts on 7,795 adults was abstracted from 31 primary care clinics providing health care for ~180,000 medically under-served patients. Variables included visit dates, blood pressures (BP), diagnosis of hypertension, and medications.

Results: Data were abstracted from outpatient medical records on 4,694 African Americans (1,483 men, 3,195 women, 16 gender unknown, age 46.8 ± 0.3 years) and 2,540 Caucasians (1,031 men, 1,492 women, 17 gender unknown, age 47.7 ± 0.4 years). The prevalence of hypertension was greater in African Americans than Caucasians (47.6% vs 31.0%, $P < .001$). The percentages of hypertensive African Americans and Caucasians receiving BP medications were similar (83.4% vs 81.6%, $P = \text{NS}$). Although African-American hypertensives were more likely than Caucasian hypertensives to receive diuretics and calcium channel blockers and less likely to receive beta-blockers, the number of BP medications was similar for both groups (1.44 ± 0.02 vs 1.40 ± 0.04 , $P = \text{NS}$). Despite comparable treatment, African Americans were less likely than Caucasians to have BP controlled to $<140/90$ mm Hg at the most recent clinic visit (40.9% vs 46.3%, $P = .01$).

Conclusions: In healthcare settings for medically under-served patients, the greater prevalence and lesser control of hypertension, despite similar treatment intensity, may contribute to higher rates of cardiovascular disease among African Americans than Caucasians. (*Ethn Dis.* 2005;15:25–32)

Key Words: Control, Ethnic Differences, Hypertension, Prevalence, Treatment

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INTRODUCTION

Hypertension is a major contributor to disparities in cardiovascular health and longevity between African Americans and Caucasians, especially in the southeastern region of the United States. Ethnic disparities in hypertension and related outcomes are further compounded by higher rates of poverty and less preventive health care among African Americans than Caucasians.^{1–5}

Despite concerted efforts to reduce health disparities, particularly in the past decade, data suggest that disparities in hypertension control have widened. In 1999–2000, the prevalence of hypertension was greater in non-Hispanic Blacks (Blacks) at 33.5% than non-Hispanic Whites (Whites) at 28.9% and Hispanic Americans at 20.7%.⁶ Hypertension control rates were similar for Blacks and Whites in 1988–1991, at 24.4% and 25.6%, respectively. While hypertension control increased by 1999–2000 to 28.1% in Blacks and 33.4% in Whites, the improvement was greater in Whites (7.8% vs 3.7%). The increase in hypertension control for Whites was explained by the change in men from 20.7% to 36.5%, since hypertension control in White women did

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not change between the two survey periods (30.3% vs 30.5%).

Access to health care and medication are important in combating hypertension.^{7–13} Lower rates of healthcare insurance and higher rates of poverty account for an estimated 20% of health disparities between African Americans and Caucasians.^{10–13} Evidence also indicates that African Americans on Medicare receive a lower quality of care than Caucasians on Medicare.¹²

The primary purpose of this analysis is to assess the prevalence, treatment, and control of hypertension in African Americans and Caucasians at primary care sites in South Carolina that serve a disproportionate share of low income and ethnic minority patients. The objective is to obtain information that can guide and inform interventions to improve hypertension control for low-income clients and reduce disparities in cardiovascular risk-factor control and outcomes.

METHODS

The study was reviewed and approved by the Office of Research Protection and Integrity at the Medical University of South Carolina. Thirty-one primary care sites for medically under-served patients in South Carolina participated in this study that included a baseline chart review on a random sample of adult patients in each practice. Each participating practice site signed an off-site study agreement form prior to participating. The sites were eligible for participation based on arbitrary recognition for serving a higher proportion of low income, Medicaid,

*Lower rates of healthcare insurance and higher rates of poverty account for an estimated 20% of health disparities between African Americans and Caucasians.*¹⁰⁻¹³

and uninsured patients compared to other practice locations. The primary care practice sites enrolled in the study include community health centers, private practices, and family medicine residency training programs. Collectively, the clinics provide healthcare services for nearly 180,000 low-income, medically under-served, disproportionately African-American patients.

Chart Abstraction

A database of unique numbers was obtained from all practices for each of their adult patients and a random sequence of these numbers was generated. A list with the random sequence of numbers was returned to the respective practices, which then located the medical records for review in the sequence provided. Medical records were abstracted by one of two registered nurses or a physician until a specified number of hypertensive patients was reviewed on the basis of the total number of clients in the practice. The chart abstractors signed a confidentiality agreement approved by the Office of Research Protection and Integrity and reviewed by legal counsel for the university. The abstractor reviewed the medical records and entered the data on the abstraction form, which contained another unique number linked to the original identifier. No identifying information, including name, address, zip code, phone number, social security number, e-mail address, or medical record number, was entered

on the abstract form to ensure compliance with the research regulations of the Health Insurance and Portability Accountability Act (HIPAA).

Information abstracted from the medical record included patient demographics (age, gender, ethnicity [African American, Caucasian, Hispanic, other]); height and weight; dates of medical visits; blood pressures and heart rates recorded beginning with the most recent visit, cardiovascular risk factors, including hypertension, diabetes mellitus (type 1 and type 2), and lipid disorders; and selected target-organ complications, including stroke and/or transient ischemic attack, heart failure, myocardial infarction and/or angina, nephropathy, and peripheral arterial disease. The most recent values were recorded for selected laboratory data recommended in the hypertension guidelines as routine (urinalysis, serum potassium, sodium, creatinine, fasting glucose, total cholesterol, and high-density lipoprotein cholesterol) and optional (microalbumin, 24-hour urinary protein, fasting triglycerides, low-density lipoprotein cholesterol, and glycosylated hemoglobin).¹⁴ We evaluated ethnic differences in use of these laboratory tests previously.¹⁵

A registered nurse that was not involved in the initial baseline chart review abstracted a random sample of 10% of the charts reviewed by the other nurse or the physician in order to verify the accuracy of the data. A member of the investigative team (BME) examined each chart abstraction form for completeness and clarity including both the original and verification reviews. Coding of the forms was adequate to ensure that the data analyst could match the two abstract forms from the original and verification session on an individual patient. After all questions on each chart abstract were resolved, the forms were forwarded for entry into the database and subsequent analysis.

Diagnosis of Hypertension

The principal criterion for determining the presence of hypertension was

based on the problem list or diagnoses in the progress notes generated by the primary care provider for each patient. The patient was also designated hypertensive if blood pressures >140 mm Hg systolic or >90 mm Hg diastolic were recorded on three or more consecutive visits in the past year or if the patient was prescribed antihypertensive medications without another indication. Blood pressure readings typically represented a single value recorded at each visit, and cuff size was usually not noted.

Antihypertensive Treatment (Medications)

The major categories of antihypertensive medications were α_1 -receptor blockers, angiotensin converting enzyme (ACE) inhibitors, angiotensin receptor blockers (ARBs), β -receptor blockers, dihydropyridine calcium channel blockers (CCBs), non-dihydropyridine CCBs, diuretics, and other.

Hypertension Control

Hypertension control was determined by the blood pressure recorded on the most recent clinical visit. Blood pressure was defined as controlled when the most recent clinic reading for both systolic and diastolic blood pressure was $<140/90$ mm Hg. Blood pressure was defined as partially controlled when the higher of the systolic or diastolic was $140-149/90-94$ mm Hg at the most recent visit. Blood pressure was determined to be uncontrolled when the systolic or diastolic reading was $\geq 150/95$ mm Hg at the last clinic encounter. No formal attempt was undertaken to assess patient adherence, eg, interview, pill counts, or verifying refill rates with pharmacies.

Data Analysis

Data are reported as mean \pm SD for descriptive purposes and as mean \pm SEM when mean values for the African-American and Caucasian groups were compared. When appropriate, data are

also reported as percentages. The random chart review database was analyzed for ethnic differences in prevalence, treatment, and control of hypertension between African-American and Caucasian patients by using chi-square tests. The data in these two ethnic groups were further analyzed controlling for age and gender by using the Cochran-Mantel-Haenszel method. Statistical Analysis Software SAS 8.2 (SAS, Cary, NC) was used for all data analysis. *P* values <.05 were accepted as statistically significant.

RESULTS

Data were abstracted from 7,795 medical records at 31 different primary care sites in South Carolina that collectively provided care for approximately 180,000 patients. Data were obtained on 4,694 African Americans, 2,540 Caucasians, 425 Hispanics, and 136 other ethnic groups. Hispanics (33.4 ± 0.6 years) were significantly younger than African Americans and Caucasians (Table 1), and the number of Hispanic patients was inadequate for statistical comparisons with the other two groups. The gender distribution varied by ethnicity, with a higher proportion of women and lower proportion of men in African Americans than Caucasians (Table 1, *P*<.001). The ethnic difference in gender distribution persisted in hypertensive patients (*P*<.001). Caucasian hypertensives were older than African American hypertensives (*P*<.001).

Prevalence

As shown in Table 2, the prevalence of hypertension was higher among African-American than Caucasian patients, 47.6% (2,235/4,694) vs 31.0% (788/2,540), respectively (*P*<.001). These differences remained significant after stratifying for age in young (<35), middle-age (35–49), and older (≥ 50 years) adults (*P*<.001) and after controlling for gender (*P*<.001). The prevalence of hypertension increased with age in both

ethnic groups, (*P*<.001). Overall, the prevalence of hypertension was higher among women than men (42.7% vs 40.1%, *P*=.04). The gender difference in the prevalence of hypertension was no longer significant after controlling for ethnicity (*P*=.39).

Prevalence of Comorbidities Among African-American and Caucasian Hypertensives

Obesity was diagnosed in the medical record of 24.7% of African American and 22.5% of Caucasian hypertensives (*P*=NS). Body mass index (BMI), calculated from height and weight data or estimated from actual weight and mean height for gender and ethnic group indicated that African Americans were more likely to be obese, ie, BMI ≥ 30 kg/m² (60.6% vs 50.6%, *P*<.001) than Caucasians. African-American hypertensives were more likely to have a diagnosis of Type 2 diabetes (31.3% vs 22.6%, *P*<.001) and nephropathy (6.1% vs 3.3%, *P*<.01). In contrast, Caucasian hypertensives had a higher proportion with a comorbid diagnosis of lipid disorder (46.5% vs 37.1%, *P*<.001), heart failure (8.4% vs 5.7%, *P*<.05), and coronary heart disease (15.6% vs 6.8%, *P*<.01) than African-American hypertensives. No significant ethnic differences were found in comorbid diagnoses of type 1 diabetes mellitus or stroke.

Treatment

Ethnic Differences

Based on the chart review, 83.4% of African-American hypertensive patients and 81.6% of Caucasian hypertensive patients had pharmacologic therapy recommended for high blood pressure (*P*=.26). Controlling for age and gender (Table 2) did not alter the significance of differences in the proportion of hypertensives on treatment. African-American and Caucasian hypertensive patients received a similar mean number of antihypertensive medications (1.44 ± 0.02 vs 1.40 ± 0.04 [SEM], *P*=.24).

As shown in Figure 1a, African-American hypertensives were more likely to have treatment with diuretics and dihydropyridine calcium channel blockers (*P*<.01) and less likely to have treatment with β -blockers recorded in their medical records (*P*<.001) than Caucasian hypertensives.

Gender-Related Treatment Differences

More women than men were treated for hypertension (84.5% vs 80.1%, *P*<.05) overall and when controlling for ethnicity (*P*<.005). However, among patients on treatment, the mean number of antihypertensive medications was not different in women and men (*P*=NS). Men were more likely than women to receive α_1 -receptor blockers (Figure 1c, *P*<.001), whereas women were more likely than men to receive diuretics (Figure 1c, *P*<.001) overall and in both ethnic groups separately (Figure 1b).

Age-Related Treatment Differences

Based on information in the medical record, older hypertensives were more likely to be treated than younger hypertensives in both ethnic groups (Table 2, *P*<.001). Older patients were more likely than younger patients to receive two or more antihypertensive medications in both ethnic groups (*P*<.0001). Older patients were more likely to receive α_1 -receptor blockers (*P*<.05), ACE inhibitors, (*P*<.001), dihydropyridine CCBs (*P*<.001), nondihydropyridine CCBs (*P*<.05), and diuretics (*P*=.01), than younger patients in both ethnic groups (Figure 1c).

Hypertension Control

African-American hypertensives were less likely than Caucasian hypertensives to have blood pressure controlled to <140/90 mm Hg on the most recent clinic visit (Table 2, 40.9% vs 46.3%, *P*=.01, odds ratio [OR] 0.83, 95% confidence interval 0.70–0.98). This difference between the two groups remained significant after stratifying for age or gender, and no signifi-

Table 1. The numbers and percentages of African Americans and Caucasians stratified by age and gender are shown for all patients combined and for hypertensive patients only

	African-American		Caucasian		P Value
	N	Mean, %	N	Mean, %	
All patients					
Age, years	4,694	46.8 ± 0.3	2,540	47.7 ± 0.4	.06
18–34	1,361	29.0%	733	28.9%	
35–49	1,422	30.3%	743	29.3%	
≥50	1,911	40.7%	1,064	41.9%	
Gender					
M	1,483	31.7%	1,031	40.9%	
F	3,195	68.3%	1,492	59.1%	<.0001
Hypertensive patients					
Age, years	2,235	57.1 ± 0.3	788	61.0 ± 0.6	<.0001
18–34	160	7.2%	47	6.0%	
35–49	600	26.9%	146	18.5%	
≥50	1,475	66.0%	595	75.5%	
Gender					
M	669	30.0%	340	43.6%	<.0001
F	1,561	70.0%	440	56.4%	

cant age- or gender-related differences were seen in hypertension control rates ($P=NS$). The ethnic difference in blood pressure control to $<140/90$ mm Hg was not significantly altered when controlling for obesity, diabetes mellitus, lipid disorders, heart failure, coronary heart disease, stroke, and nephropathy. However, blood pressure control to $<140/90$ mm Hg was greater in hypertensive patients with comorbid heart failure (1.41, 1.03–1.92) and coronary heart disease (1.38, 1.06–1.79) and lower in patients with nephropathy (0.63, 0.45–0.87).

Partial blood pressure control ($<150/95$ but $>140/90$ mm Hg) was documented in 22.2% of African Americans and 21.7% of Caucasians with a diagnosis of hypertension ($P=NS$). Thus, 63.0% of African-American and 68.0% ($P=.01$) of Caucasian hypertensive patients had a blood pressure reading of $<150/95$ mm Hg on their most recent clinic visit (OR 0.81, 0.68–0.97). The ethnic difference in blood pressure control to $<150/95$ mm Hg remained significant after controlling separately for age, gender and comorbid obesity, diabetes mellitus, lipid disorders, heart

failure, coronary heart disease, stroke, and nephropathy. Of note, hypertensive patients receiving medications were more likely to have blood pressure controlled ($<140/90$ mm Hg, OR 1.28, 1.04–1.57) and partially controlled (OR 1.33, 1.03–1.72).

DISCUSSION

Previous studies suggest that low-income and ethnic minorities receive a lower standard of health care than individuals of higher income and ethnic majority status. Since low-income, medically under-served patients are at greatest risk for hypertension and its complications, effective treatment of this at-risk group has great potential to prevent adverse outcomes. In this study on the prevalence, treatment, and control of hypertension at 31 clinical sites providing healthcare services for patients that are disproportionately ethnic minority and low income, hypertension was identified in ~48% of African Americans compared to ~31% of Caucasians. Since the prevalence of hypertension increases with age, the difference is even

more impressive given the older mean age of Caucasian than African-American hypertensive patients.

The prevalence of hypertension is greater at these primary care practice sites providing services to a disproportionately minority and low-income clientele than reported in a previous population-based survey.⁶ The disparity in the prevalence of hypertension between African Americans and Caucasians is also larger. The greater prevalence and large ethnic disparity in prevalence may reflect several factors, including the possibility that hypertensives are more likely to seek primary care services than normotensive patients as well as the comparatively low socioeconomic status of patients and the Southeast location of sites included in the study.¹⁶

Hypertension is a major contributor to ethnic disparities in stroke, end-stage renal disease, and decreased longevity.^{2,3,17–20} Low-income African Americans living in the southeastern United States are at particularly high risk for hypertensive complications.¹⁶ The ethnic difference in prevalence of hypertension was prominent at ages 35–50 years at which 42.2% of African Americans

Table 2. Hypertension prevalence, treatment, and control in African Americans and Caucasians overall and stratified by age and gender

	Prevalence (% of All Patients)	
	African-American, N, % 2,235/4,694, 47.6%‡	Caucasian, N, % 788/2,540, 31.0%
Age groups		
18–34	11.8%‡	6.4%
35–49	42.2%‡	19.7%
≥50	77.2%‡	55.9%
Gender		
Male	45.1%‡	33.0%
Female	48.9%‡	29.5%
	Drug Treatment (% of Hypertensive Patients)	
	African-American, N, % 1863/2,235, 83.4%	Caucasian, N % 643/788, 81.6%
Age groups		
18–34	65.0%	53.2%
35–49	81.3%	75.3%
≥50	86.2%	85.4%
Gender		
Male	81.6%	77.1%
Female	84.2%	85.5%
	Control (<140/90, <150/95 [% of Hypertensives]§)	
	African-American (2,235) 40.9%†, 63.0%	Caucasian (788) 46.3%, 68.0%
Age groups		
18–34	40.5%, 62.8%	45.5%, 75.0%
35–49	41.5%, 64.4%	45.7%, 71.4%
≥50	40.6%†, 62.5%	46.5%, 66.6%
Gender		
Male	40.1%*, 60.8%*	48.3%, 67.6%
Female	41.2%, 64.0%	44.6%, 68.5%

* $P < .05$; † $P < .01$; ‡ $P < .0001$ vs Caucasian.

§ The denominator for calculating percentage of control is based on all hypertensive patients and is the same number indicated for treatment.

and 19.7% of Caucasians were hypertensive (Table 2). The high prevalence of hypertension among early middle-aged African Americans in South Carolina emerges as a major contributor to the greater incidence and earlier occurrence of target-organ complications, especially stroke and end-stage renal disease.^{2,3,18,19}

In our study, the prevalence of hypertension was similar in African-American men and women, while in the NHANES 1999–2000 data, the prevalence was higher in women.⁶ The gender differences in prevalence of hypertension likely reflect a selection bias in

the clinical setting with relative oversampling of hypertensive men. Men are less likely than women, particularly in the young and early-middle-aged adult years to obtain routine preventive healthcare services.²¹ Thus, normotensive men are more likely to be underrepresented in primary care setting than are normotensive women.

Treatment

More than 80% of African Americans and Caucasians with hypertension received a recommendation for blood pressure lowering medications from their primary care providers as docu-

mented in the medical record (Table 2). African Americans were more likely to receive diuretics and dihydropyridine CCBs and less likely to receive β -blockers than Caucasian hypertensive patients. Both groups were equally likely to receive ACE inhibitors and ARBs. Overall, the mean number of antihypertensive medications recommended was comparable in the two ethnic groups at ~ 1.4 each. These data raise the possibility that African Americans require more antihypertensive medication to achieve the same level of blood pressure control as Caucasians.

From the vantage point of predominantly rural clinics for medically underserved patients, poorer cardiovascular and renal outcomes among African Americans than Caucasians do not appear to reflect ethnic differences in the effort of providers to treat hypertension. This finding is at variance with a previous report that indicated African Americans received less care than Caucasians, even when both had Medicare coverage.¹² Moreover, a previous analysis of data from these practices by our group found that the laboratory tests were obtained with similar frequency in African-American and Caucasian patients. In fact, African Americans were more likely than Caucasians to have selected laboratory tests.¹⁵ Nevertheless, more intensive therapeutic efforts may be required in African-American hypertensive patients to achieve outcomes comparable to those in Caucasian hypertensives.

Control

The percentage of patients attaining a blood pressure <140/90 mm Hg on the most recent clinic visit was significantly greater among Caucasian than African-American hypertensive patients (Table 2). The proportion of treated hypertensive patients achieving blood pressure control to <140/90 mm Hg in this study was less than one in two at 43%. In contrast, in a recent national survey 53% of treated hypertensive patients

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were controlled to <140/90 mm Hg (31%/58%). Several clinical trials indicate that a mean of 2 to ~3.5 antihypertensive medications are required to control high blood pressure.^{22,23} Moreover, hypertension tends to be more severe and require more medications in low-income and African-American patients.^{7,24} A mean of 1.4 medications for each hypertensive patient in these practices is probably insufficient when the majority require combination therapy to reach goal blood pressure. Achieving ethnic parity in blood pressure control may require a more intensive therapeutic approach among African Americans, especially in the Southeast.²⁴

Comorbidities such as obesity, diabetes mellitus, nephropathy, and cardiovascular disease may affect blood pressure control. Ethnic differences in these key comorbid diagnoses could contribute to the observed disparities in control rates. Obesity, type 2 diabetes mellitus, and nephropathy were significantly more common among African Americans, whereas lipid disorders, heart failure, and coronary heart disease were more common among Caucasians. Adjusting blood pressure control rates for these variables did not significantly alter the ethnic difference in hypertension control.

Hypertension is a major contributor to the greater burden of cardiovascular morbidity and mortality in African Americans than Caucasians.¹⁻³ Although mortality from heart disease and stroke has declined dramatically for African Americans and Caucasians from the 1960s to the 1990s,¹⁶ ethnic health disparities related to hypertension and the associated cardiovascular and renal complications persist. During the past decade, the awareness of health disparities has increased substantially along with efforts to reduce those disparities. Despite the efforts, little progress has occurred in actually reducing the relative ethnic disparities, particularly in cardiovascular health. In fact, a recent report on trends in hypertension⁶ from 1988-

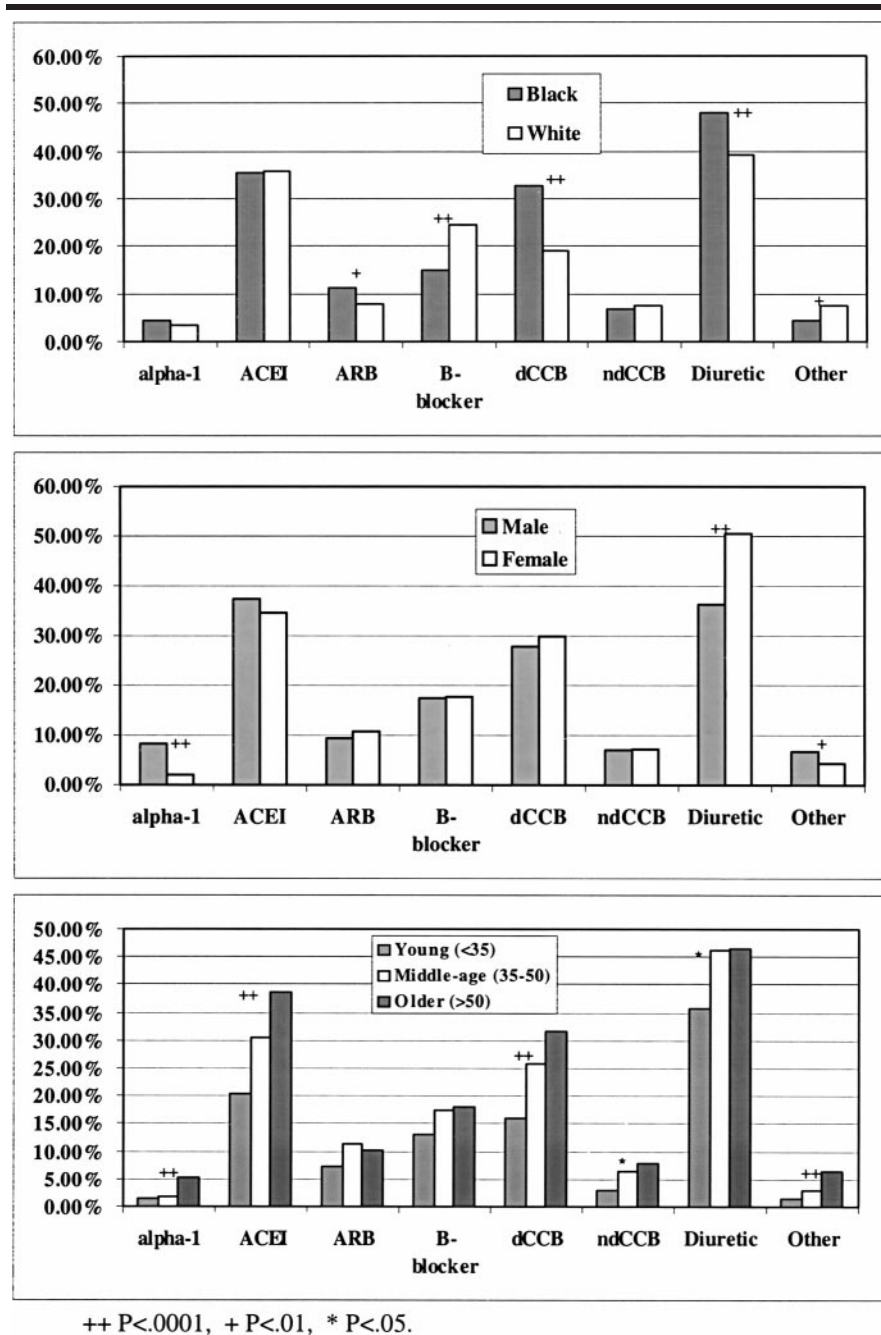


Fig 1a-c. Percentage of hypertensive patients receiving classes of antihypertensive medications according to major demographic characteristics.

2000 suggests that hypertension-related disparities between African Americans and Caucasians may increase further in the years ahead. More specifically, the prevalence of hypertension appears to be increasing more among African Americans, while control has increased more

among Caucasians, especially men, than in African Americans.

Control rates did not vary significantly by gender in either ethnic group. In contrast, a review of NHANES 1988-2000 data indicated that non-Hispanic White men showed the largest

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increase in control rates over time and have attained control rates higher than other ethnicity-gender subgroups.⁶ While Caucasian men in our study had a tendency to a greater level of controlled hypertension than the other ethnic-gender subgroups, the difference was not statistically significant. The difference between our study and NHANES control reflect the smaller sample of White men in our study, lower income of patients at the medical sites in our study, and variations in medical care between the sites in this study and the national average.

More than one fifth of hypertensive African-American and Caucasian patients had a most recent blood pressure reading of <150/95 mm Hg (Table 2), and were within 10 mm Hg systolic or 5 mm Hg diastolic of target blood pressure. The large proportion of partially controlled hypertensive patients is consistent with a previous report.²⁵ The fact that the majority of hypertensive patients has either met or is near target blood pressure represents a potentially constructive variation on the usual message that hypertension control rates are poor. Greater attention to the large

group of hypertensive patients near the goal of <140/90 mm Hg could improve outcomes^{26,27} and attain the Healthy People 2010 target of controlling hypertension in 50% of all affected individuals.²⁸

Men were more likely than women to receive α_1 -receptor antagonists and less likely to receive diuretics. The α_1 -receptor antagonists were associated with poorer blood pressure control and more adverse cardiovascular outcomes than diuretics in a large, randomized clinical trial.²⁹ Gender-related differences in selecting specific classes of medication could contribute to worse cardiovascular outcomes in men than women.

Older patients in this study not only had a higher prevalence of hypertension, which is expected,^{6,29} but they also received more antihypertensive medications than younger patients, particularly diuretics, ACE inhibitors, and dihydropyridine CCBs. Despite receiving more medications, older patients had similar hypertension control rates overall compared to younger patients. On the other hand, previous reports suggest that hypertension control rates decline with increasing age.³⁰ The more aggressive therapeutic approach of providers in older patients receiving care at clinics surveyed in this study may have offset the tendency to an age-related decline in blood pressure control.

Limitations

The data were obtained by abstracting a random sample of medical records from adults receiving care in the selected practices recognized for serving low income and ethnic minority patients. While the selection was arbitrary, African Americans made up more than 60% of patients in these settings, which is greater than the statewide average of 30%. Although severe hypertension is more common in African Americans than Caucasians and typically requires more medication to control, this information was often unavailable and not assessed in this study. Medication ad-

herence is also an important consideration in assessing demographic differences in hypertension control but could not be evaluated from chart abstraction.

Summary

At healthcare sites providing services for disproportionately more low-income and ethnic minority patients, the prevalence of hypertension was ~50% higher in African Americans than Caucasians, and these ethnic differences were particularly striking in adults <50 years of age. Despite evidence for comparable overall treatment intensity, hypertension control rates were greater in Caucasians than African Americans. Nearly 20% of hypertensive patients in both ethnic groups had no evidence of pharmacologic treatment, and these patients were significantly less likely to achieve blood pressure control to <140/90 or <150/95.

While fewer than 50% of hypertensive patients were controlled to the goal of <140/90, nearly two thirds had blood pressure <150/95 mm Hg at their most recent clinic visit. Efforts directed at application of evidence-based antihypertensive therapy have great potential to substantially improve hypertension control and reduce the burden of disease for a large number of low-income and ethnic minority patients. Given the high burden of complications and associated expenses, such interventions are likely to also be a cost-effective approach to reducing health disparities.

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Acquisition of funding: Egan

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