

05-002

OVERWEIGHT AND OBESITY IN SOMALI IMMIGRANTS TO USA

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Background. The prevalence of overweight and obesity in most developed countries (and in urban areas of many less developed countries) has been increasing markedly over the past two decades. Sixty four percent of US population is overweight, and 31% are obese. Overweight and obesity are significantly associated with diabetes, high blood pressure, high cholesterol, asthma, arthritis, and poor health status.

Migrants to the United States usually adopt the eating and exercise patterns of the US population. Migration is also associated with improvement in standard of living and increases in psychosocial stress, weight, salt intake, alcohol intake, blood pressure, lipids, and more diabetes and coronary artery disease. The migration of 10,000 Somalis to the Minneapolis area since 1993 offers the opportunity to assess the prevalence and trends of overweight, obesity, and associated diseases after an average of 5 years living in the United States.

Methods. We used the Centers for Disease Control rapid epidemiologic survey to assess cardiovascular risk factors in Somali immigrants in Minneapolis. We sampled 36 clusters with at least 7 subjects per cluster ≥ 18 years who were home at the time of the sample. Height, weight and three seated blood pressures (BP) were taken by trained observers (Shared Care Method), and blood was sampled for HbA1c, cholesterol (TC), and HDL.

Results. The average age was 38.5 (SD 16.3), and the mean BMI was 24 (CI 23–25) in men and 29 (CI 28–30) in women. One hundred-fifty (61%) were overweight or obese, and 67 (27%) were obese. Of obese subjects, 54 (67%) were women; only 2 were men. Twenty-two subjects (20 women and 2 men) had morbid obesity (BMI ≥ 35). Most morbidly obese women (60%) were aged 40–65 years. The prevalence of HTN (SBP ≥ 140 and/or DPB ≥ 90 or on HTN medication) in overweight and obese subjects was only 4%. The prevalence of diabetes mellitus (HbA1c ≥ 7.0 or on diabetes medication) was 0.06%. The prevalence of hyperlipidemia (TC:HDL ratio $>5:1$) was 5%.

Conclusions. Somali immigrants in Minneapolis not only adopted the eating habits of the US population but also reached the same epidemic rate of overweight and obesity. Fortunately the obesity in Somalis even among women age 40–65 was not associated with diabetes, HTN, or hypercholesterolemia. A follow-up study will tell if this trend holds. At this time in the epidemiologic transition major focus should be health education in the areas of exercise and balanced diet.

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05-003

RECOMMENDED LEVELS OF PHYSICAL ACTIVITY AND HEALTH-RELATED QUALITY OF LIFE AMONG HYPERTENSIVE ADULTS

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Hypertension (HTN) affects more than 60 million Americans and is associated with poor health-related quality of life (HRQOL). Regular physical activity (PA) has been shown to reduce blood pressure and is associated with higher levels of HRQOL.

Using data from the 2003 Behavioral Risk Factor Surveillance System, we examine the independent relationship between recommended levels of vigorous (at least 30 min on ≥ 5 more days per week) or moderate (at least 20 min on ≥ 3 days per week) PA and 4 HRQOL measures developed by the Centers for Disease Control and Prevention among 59,642 adults aged ≥ 18 years with HTN. We used multivariable logistic regression to obtain odds ratios (ORs) and 95% confidence intervals (CIs) adjusted for age, race/ethnicity, sex, education, smoking, and body mass index.

The age-standardized prevalence of HTN among US adults in 2003 was 25%. Among adults with HTN, the age-standardized prevalence of ≥ 14 unhealthy (physical or mental) days during the previous 30 days was 26%. The proportion of adults with HTN reporting ≥ 14 unhealthy days (physical or mental) was significantly lower among those who attained recommended levels of PA than physically inactive adults for all age, racial/ethnic, and sex groups. After multivariable adjustment, the relative odds of ≥ 14 unhealthy days (physical or mental) comparing those with the recommended level of PA to physically inactive adults was 0.49 (95% CI 0.38–0.64) for adults 18–44 years, 0.39 (95% CI 0.33–0.45) for adults 45–64 years, and 0.36 (95% CI 0.31–0.42) for adults ≥ 65 years.

Participation in regular PA is one of several lifestyle strategies available to control and prevent high blood pressure. These results highlight the need for health programs that increase participation in regular PA.

05-004

PREVALENCE OF SELF-REPORTED HIGH BLOOD PRESSURE AWARENESS, PHYSICIAN ADVICE, AND ACTIONS TAKEN TO REDUCE HIGH BLOOD PRESSURE AMONG US ADULTS—HEALTHSTYLES, 2002

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Objectives. To determine prevalence of awareness of having high blood pressure (HBP), physician advice, and action taking to reduce HBP.

Methods. A stratified, random sample of 4,397 adults completed a mail survey in August 2002. Respondents were asked if they were ever told by a healthcare provider that they had HBP, about current medication use, whether they had received advice from a health professional, and whether they were taking actions to reduce their HBP. Associations of HBP status to healthcare provider advice and actions taken were assessed with weighted age-adjusted logistic regression.

Results. Approximately 21% of respondents had been told that they have HBP, and 53% of those were currently taking medications to lower blood pressure (44% of Hispanics, 52% of Blacks, and 54% of Whites). Compared to persons who had never been told that they have HBP, respondents with HBP were 5.1 times more likely to report having received advice from a healthcare professional to go on a diet or change eating habits (95% CI 4.2–6.1), reduce salt or sodium in diet (OR 5.7, 95% CI 4.7–6.9), and to exercise (OR 5.5, 95% CI 4.5–6.7), after adjustment for differences in sex, race/ethnicity, and age. Compared with those not reporting HBP, those with self-reported HBP were twice as likely to reduce salt or sodium in diet (95% CI 1.3–3.1), but similar for actions of dieting or changing eating habits (OR 1.2, 95% CI 0.9–1.7) or exercise (OR 1.1, 95% CI 0.7–1.4), after adjustment.

Conclusions. Prevention initiatives are needed to promote the heart-healthy actions needed for risk-reduction and control of HBP, specifically among Hispanics and Blacks.

05-005

THE METABOLIC SYNDROME IN NONOBESSE NORMOGLYCEMIC ADULT GHANAISAGB AMOAH¹; DP Schuster²; T Gaillard²; K Osei².¹Diabetes Research Laboratory, Department of Medicine and Therapeutics, University of Ghana Medical School, Accra, Ghana;²Division of Endocrinology and Metabolism, Department of internal medicine, The Ohio State University Hospitals, Columbus, Ohio.

Objective. The objective of the present study was to examine the prevalence of components of metabolic syndrome (MS) in nonobese, normotensive adult Ghanaian females and males.

Methods. The study comprised 192 indigenous Ghanaian subjects, age range 25–74 years, mean age 40.9±13.0 years, residing in the Accra Metropolitan area. Anthropometric parameters, systolic and diastolic blood pressure (BP), fasting serum glucose, insulin, triglycerides, cholesterol, and high-density lipoprotein cholesterol (HDL-C) were measured. Homeostasis model assessment (HOMA) was used to estimate insulin resistance (HOMA-IR). MS was defined by the European Group on the Study of Insulin Resistance (EGIR) Criteria.

Results. Except for BMI, which was higher in the females, anthropometric and metabolic parameters, insulin, and HOMA-IR were not significantly different in males and females. The prevalence of MS appeared to be lower in males (13.3%) compared to females (20.2%), but this did not attain statistical significance. The overall prevalence of MS was 17.2%. Also the prevalence of components of MS was similar in males and females except for central obesity. The various components of MS and overall MS in Ghanaians increased with age, being 2–4 times greater in the 5th to 7th decades when compared to the 3rd and 4th decades in both genders.

Conclusions. In the present study, we found that MS and its components were very low in Ghanaians. The prevalence of MS and its components increased with age in both genders. We speculate that as the population ages there will be an increase in MS patients with attendant morbidity and mortality.

05-006

SUBJECT COMPLIANCE AND RETENTION IN THE AFRICAN AMERICAN STUDY OF KIDNEY DISEASE AND HYPERTENSION (AASK)

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Subject compliance and retention are critical to the outcome of any clinical trial. Long-term trials and those involving minority populations may have additional challenges including socioeconomic and psychosocial issues. Compliance to treatment regimen, protocol adherence, and subject retention were major considerations in the African American Study of Kidney Disease and Hypertension (AASK), a 7-year, 21-center, randomized, double-blind trial sponsored by the National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases (NIH/NIDDK).

Of the 1094 randomized subjects, 1090 had sufficient data to analyze compliance to protocol visits. Missing 3 consecutive protocol visits (6 months) was "noncompliance." Of the 246 noncompliant subjects, 170 returned to the study and 76 had no follow-up data. Cox regression analysis for time to first occurrence, either unadjusted or adjusted to 5 pre-specified baseline characteristics, showed that subjects assigned to a usual blood pressure goal (mean arterial pressure [MAP] 102–107 mm Hg) had a 42% higher risk for noncompliance as compared to those assigned to a low goal (MAP \leq 92) ($P=.0082$). Higher baseline systolic blood pressure showed a strong co-relationship with the relative risk of noncompliance ($P=.0007$).

The overall subject retention rate in the AASK was 89%. Contributing strategies, identified from questionnaires completed by each center's coordinator, for this high retention include staff dedication, subjects' commitment for better self-health, family support, resolution of impediments to clinic visit attendance, and appropriate compensation. This study supports the importance of aggressive blood pressure management and greater vigilance. A strong commitment by all is vital for subject compliance and retention.

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05-007

THE ERITREAN NATIONAL BLOOD PRESSURE SURVEY: SOME SALIENT FINDINGS

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Introduction. The prevalence of cardiovascular diseases is increasing in Africa, based on hospital-based information. However it is imperative to conduct national surveys to determine the accurate picture of the disease pattern in order to implement appropriate interventions to prevent risk factors and reduce disease morbidity. A recent report on analysis of data from health information management systems highlighted an increasing burden of noncommunicable diseases (NCD) in Eritrea, with the incidence of hypertension more than doubling in a space of six years.

Methods. In 2004, a national survey of NCD risk factors was conducted to assist the development of a program of interventions that would help prevent and minimize the further increase in the NCD epidemic. The WHO STEPwise approach to surveillance of NCDs was used. This report focuses on hypertension as an NCD risk factor.

Results. A total of 2352 people in age groups 15–64 years participated in the survey. The prevalence of hypertension, defined as BP $>$ 140/90 mm Hg, was 16% in the general population, with a higher levels in urban (16%) than in rural areas (14%) and higher in males (17%) than in females (15%). Eighty percent of the people with hypertension were previously undiagnosed and were therefore not aware of their condition.

Conclusion. The report recommends the establishment of NCD prevention and control program to design, implement, and monitor interventions, including community awareness, that will prevent the further spread of the NCD epidemic in Eritrea.

05-008

DECREASED URINARY POTASSIUM EXCRETION IN AFRICAN AMERICANS IS NOT CAUSED BY DECREASED GASTROINTESTINAL ABSORPTION OF POTASSIUM

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African Americans (AA) behave as though they are potassium (K⁺) deficient compared with Caucasian Americans (CA), since their cumulative urinary K⁺ excretion is less on diets fixed for K⁺ content. To determine whether diminished urinary K⁺ excretion is the result of decreased net gastrointestinal absorption, the cumulative urinary and fecal excretion of K⁺ were measured in normal subjects of both races while on a fixed K⁺ diet.

Eleven AA (5 female, 6 male) and 12 CA (5 female, 7 male) were placed on a constant K⁺ (100 mEq/d), Na⁺ (180 mEq/d), and Cl⁻ (150 mEq/d) diet for 9 days. All urine and stools were collected daily and analyzed for electrolytes. Blood for glucose, insulin, renin, and aldosterone was obtained at the beginning and end of the 9-day period. Data were analyzed using a two-factor (race and sex) analysis of variance with repeated measures.

Cumulative urinary K⁺ excretion was lower in AA (mean \pm SEM, AA 601.6 \pm 36.3 mEq and CA 712.6 \pm 21.9 mEq, $P < .02$). The cumulative stool K⁺ excretion, however, did not differ between the races (AA 105.1 \pm 11.1 mEq and CA 94.6 \pm 8.7 mEq, $P = \text{NS}$). Blood determinations for glucose, insulin, and supine renin did not differ between AA and CA. Aldosterone, on the other hand, was slightly lower in AA ($P < .05$). Serum K⁺ did not differ between the races either at the beginning or at the end of the 9-day period.

Decreased urinary K⁺ excretion in AA is not explained by either decreased dietary intake or decreased net gastrointestinal absorption of K⁺. The etiology of relative K⁺ deficiency in AA warrants further investigation given the important role of K⁺ in the control of blood pressure.

05-009

RACIAL DISPARITIES IN PREDICTORS OF HEART FAILURE IN COPD MEDICAID PATIENTSFT Shaya^{1,2}; E SAUNDERS³; AC ElKhoury¹.

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Introduction. This study assesses the impact of race and hypertension on heart failure (HF) in a chronic obstructive pulmonary disease (COPD) Medicaid population, to inform disease management for patients with hypertension and COPD.

Methods. A retrospective analysis was performed for all medical claims of Medicaid COPD patients, between 1/1/01 and 12/31/03. COPD patients were included if they had at least one claim with ICD-9 codes 491.xx, 4922.xx, or 496.xx. Multivariate logistic regression was used to evaluate associations between hypertension, heart failure, race, age, gender, cardiovascular diseases, and risk factors.

Results. In the adjusted model, out of a total of 13,924 COPD patients, mean age 42, African Americans (OR 1.25, $P = .0001$, CI 1.12–1.40) were more likely to have HF than Whites during their follow up. Patients older than 60 (OR 5.13, $P < .0001$, CI 4.16–6.32) and those between 40 and 60 (OR 3.34, $P < .0001$, CI 2.75–4.05) were more likely to have HF than those younger than 40. Hypertension (OR 2.30, $P < .0001$, CI 2.02–2.61), diabetes (OR 2.16, $P < .0001$, CI 1.93–2.42), obesity (OR 2.18, $P < .0001$, CI 1.91–2.48), acute myocardial infarction (OR 3.09, $P < .0001$, CI 2.56–3.73), and cardiomyopathy (OR 15.76, $P < .0001$, CI 12.95–19.18) were significant predictors of heart failure.

Conclusion. Among Medicaid patients with COPD, African Americans who are 40 and older and who have hypertension, obesity, diabetes, cardiomyopathy, and myocardial infarctions are at significantly higher risk of heart failure than others. Healthcare plans should consider those risk factors in managing patients with COPD.

05-010

BRIDGING THE GAP: COMMUNITY PROGRAMS TO REDUCE CARDIOVASCULAR DISPARITIES

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Objectives. Cardiovascular disparities place a disproportionate burden on minorities and African Americans. The purpose of this presentation is to assess the effect of the physician/patient communication and education on outcomes of hypertension control.

Methods. Patients with uncontrolled hypertension are enrolled into the study. The relative impact of physician and/or patient interventions for controlling hypertension is assessed. This is a hypothesis-testing, prospective study, with an experimental 2x2 factorial design; it is a four-arm randomized controlled trial. Outcomes include adherence and improved knowledge/awareness of guidelines (of patients and their physicians), as well as patient clinical and quality of life measures. The study is powered for the proportion of patients who get to goal. We use logistic regression for the probability of reaching goal, multiple linear regression for relative changes in mm Hg (hypertension), and survival analysis to model time to reach goal.

Results. In the interim stage, we will expect to report on results of improved knowledge, adherence to treatment, and outcomes of blood pressure reduction.

Conclusions. We expect to see improved blood pressure outcomes, and longer term cardiovascular events, when patients and their physicians have good communication, undergo continuing education, and adhere to guidelines/therapies. Such models are easily replicable and sustainable in similar communities.

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05-011

INCREASING FRUIT AND VEGETABLE CONSUMPTION AMONG LOW-INCOME PREGNANT WOMEN AND YOUNG CHILDREN IN GEORGIA'S WIC FARMERS' MARKET NUTRITION PROGRAM

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Methods. The goal of the Georgia Women, Infants and Children (WIC) Program is to save lives and improve the health of nutritionally at-risk women, infants, and children. The WIC population represents 32% White non-Hispanic, 44% Black non-Hispanic, 20% Hispanic, 2% Asian/Pacific Islander, and 2% multiracial. The Georgia Farmers' Market Nutrition Program (FMNP) was developed to help ameliorate the needs of participants who may be at risk of inadequate fruit and vegetable consumption. This program has been in existence since 1998 and has served 74,263 participants from its inception. Nutrition education is a major component of the FMNP. Each participant received instruction on making health food choices, including eating more fresh fruits and vegetables. To better understand fruit and vegetable consumption and its health effects, a 7-item questionnaire was distributed to participants enrolled in the FMNP between 2002 and 2004. A survey was distributed to all FMNP participants at their next follow-up visit to the clinic. In 2002, a total of 313 surveys were completed; in 2003, 1897; and in 2004, 1267 surveys were completed.

Results. WIC Participants ate more fruits and vegetables while participating in the FMNP Program. In 2002, 71% reported that they ate more fruits and vegetables; 62% reported improvement in 2003 and 65% in 2004. In 2002, 45% said they learned new ways to cook fresh fruits and vegetables, 48% in 2003, and 48% in 2004.

Conclusion. FMNP participants increased fruit and vegetable consumption and learned ways to prepare them between 2002 and 2004.

05-013

THE IMPACT OF WISEWOMAN AMONG WHITE AND BLACK PARTICIPANTS WITH HYPERTENSION

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Objectives. The purpose of this analysis is to assess the impact of CDC's WISEWOMAN program on reducing racial disparities among enrollees with hypertension. WISEWOMAN provides low-income uninsured women with chronic disease risk factor screenings, lifestyle interventions, and referral services in an effort to prevent coronary heart disease and improve health.

Methods. We used 2000–2004 WISEWOMAN baseline and follow-up data for White and Black participants to assess racial disparities in 1) baseline prevalence of hypertension, 2) intervention attendance among women with hypertension, and 3) blood pressure reductions stratified by baseline hypertension status.

Results. As expected, Black women were significantly more likely to be hypertensive than White women (36% vs. 24%). Black participants with hypertension were also significantly more likely to attend at least 1 intervention session than White participants (72% vs. 65%). Although average reductions in blood pressure were statistically significant among Black and White participants with hypertension, we found no evidence of racial disparities in reductions. Average reductions in systolic blood pressure among women with baseline Stage I hypertension were 4.4% (6.3 mm Hg) among Blacks and 5.4% (7.7 mm Hg) among Whites. Black and White women with Stage II hypertension at baseline reduced their average systolic blood pressure by 13.4% (22.4 mm Hg) and 14.2% (23.3 mm Hg), respectively. Differences in reductions between Black and White participants were not statistically significant.

Conclusions. WISEWOMAN lifestyle interventions successfully attract both Black and White hypertensive participants. Through lifestyle interventions and appropriate use of medications, the program is equally effective at reducing blood pressure of Black and White participants with hypertension.

05-014

RACE, RELIGION, AND HYPERTENSION: DEVELOPING A THEORETICAL FRAMEWORK

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African Americans (AA) have the highest rates of hypertension (HTN) in the world, contributing to the significant disparities in cardiovascular disease (CVD) between them and other ethnic groups. Heightened stress experienced through racial residential segregation and other macrosocial forms of discrimination are theorized to increase stress contributing to negative health outcomes and disparities. Certain psychosocial variables, particularly religion and spirituality (R/S), have been introduced as potential buffers that may protect AAs from increased levels of stress.

The high prevalence of R/S among AAs and a growing research literature on the R/S-health connection suggests that religious involvement may reduce hypertension. Theoretical models are needed to elucidate the potential mechanisms by which these variables affect health outcomes. One recently developed model will be presented.

The model builds on David Williams' Model of Race and Health and Harold Koenig's Model of Religion and Health to theorize basic macrosocial causes as eminent determinants of HTN. R/S are placed as independent variables, positioned to be partial predictors of HTN.

Sociodemographic variables are taken into account, and explanatory behavioral, psychosocial, and physiologic variables are presented to assist in explaining the relationship between R/S and HTN. Specifically, hypothalamic-pituitary-adrenal axis dysregulation is posited and will assist in understanding the biologic connection. Exploring the relationship between R/S and HTN may lead to the development of interventions to eliminate health disparities. Examples will be presented.

05-015

MANAGING UNCERTAINTY IN DIABETES: AN INTERVENTION FOR OLDER AFRICAN-AMERICAN WOMEN

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Objective. Because old age, ethnic minority status, lower socioeconomic status, and female gender increase the likelihood of developing diabetes and its complications, older African-American women (OAAW) are among the groups with the highest rates (20%) of diabetes and compromised self-care in this country. The purpose of this study was to test the efficacy of an individualized psycho-educational diabetes uncertainty management intervention (DM-UMI) directed at managing the uncertainties of diabetes self-care (DS-C) and delivered by a nurse via telephone to OAAW with diabetes.

Method. Sixty-eight participants with mean age 61 (SD 10) who had been diagnosed with diabetes within two years were randomly assigned to an experimental or a control group. Participants in the experimental group received the DM-UMI, which was delivered for four weeks. The DU-UMI was composed of four strategies (intervention variables): improving diabetes knowledge, patient-provider communication, problem-solving, and cognitive reframing. Uncertainty was the mediating variable, and the outcome variables were psychosocial adjustment and DS-C (diet, exercise, blood sugar testing, and taking medications). The control group received their usual care. Measurement occurred at two time points for all participants: at enrollment in the study (time 1: baseline) and at six weeks post-baseline (time 2).

Results. Only problem-solving ($P<.001$) was significantly related to greater decrease in uncertainty ($P=.01$), leading to improved psychosocial adjustment ($P<.001$) and increased participation in exercise ($P<.001$).

Conclusion. Telephone interventions can be a viable option to increase services and access to health care needed to improve DS-C for OAAW.

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05-016

"UNDER PRESSURE": BELIEFS ABOUT HYPERTENSION FROM GHANAIAN HYPERTENSIVE PATIENTS IN GENERAL PRACTICE

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Objectives. According to Kleinman, patients and doctors have their own explanatory models (EM) of health and illness. This can lead to misunderstandings in doctor-patient communication. The Ghanaian population is the biggest sub-Saharan African migrant group in the Netherlands. Given the higher prevalence of hypertension among Blacks generally, and the varying EM on illness and treatment across different ethnic groups, we investigated the EM of hypertension and its management of Ghanaian hypertensives.

Methods. Qualitative approach using semi-structured interviews with 20 Ghanaian hypertensive patients, age 35–65 years, no structural organ damage, and no comorbidity, recruited among GPs. Participants were asked about their understandings of causes, everyday experiences, consequences, severity, prognosis, and treatment of hypertension.

Results. Participants viewed stress as the main reason for their hypertension, mainly as a result of their migration. All experienced symptoms due to hypertension. They expected that hypertension could have fatal consequences at any moment and they worried about how hypertension affected their lives. Participants found it difficult to view hypertension as a risk factor and were often not aware of their own risk profile. These understandings sometimes lead to modification of the physician's medication advice.

Conclusions. The EM of Ghanaian hypertensives differs from the current medical EM. It is important that the GP pays attention and knows about these EM of their ethnic hypertensive patients because these are currently not reflected in the clinical guidelines. The findings may give GPs a tool to discuss EM during the care process. Such a discussion may contribute to better mutual understanding between doctor and patient about hypertension control and possibly lead to greater treatment adherence and improved quality of care.

05-017

CLINICAL OUTCOMES BY RACE IN NONDIABETIC PARTICIPANTS WITH CARDIOVASCULAR METABOLIC SYNDROME IN THE ANTIHYPERTENSIVE AND LIPID-LOWERING TREATMENT TO PREVENT HEART ATTACK TRIAL

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Introduction. This randomized, double-blind, active-controlled clinical trial assessed efficacy of first-step drug therapy with calcium channel blocker or ACE-inhibitor compared with thiazide-type diuretic in Black and non-Black nondiabetic persons with/without cardiovascular metabolic syndrome (CVMS).

Methods. ALLHAT was a practice-based study of 33,357 hypertensive participants age ≥ 55 years with at least one other risk factor for coronary heart disease (CHD). Interventions were chlorthalidone (C), amlodipine (A), or lisinopril (L), plus open-label step-up drugs to reach blood pressure goal. The primary outcome (PO) was combined fatal CHD or nonfatal MI. CVMS was defined as two or more of the following: fasting glucose 100–125 mg/dL, BMI ≥ 30 , fasting triglycerides ≥ 150 mg/dL, HDL cholesterol < 40 mg/dL (men) or < 50 mg/dL (women). Nondiabetic participants (N=17,515) were classified as having CVMS (n=8,013) or not (n=9,502). Of nondiabetic participants, 35% of Blacks (n=5,539) and 51% of non-Blacks (n=11,976) had CVMS.

Results. The relative risk (95% confidence interval) in CVMS assigned to A or L compared with C was 0.96 (0.79–1.16) and 1.05 (0.88–1.27), respectively; in non-CVMS, 1.09 (0.91–1.30) and 1.06 (0.89–1.27). No treatment differences by race were observed for stroke, mortality, or combined cardiovascular events (PO, stroke, heart failure [HF], angina, coronary revascularization, peripheral arterial disease).

Conclusions. There was no evidence of superiority for prevention of CHD events during first-step therapy of hypertension with amlodipine or lisinopril compared with chlorthalidone in nondiabetic persons with CVMS. Diuretics are more efficacious in preventing other clinical outcomes, especially HF, regardless of presence/absence of CVMS.

05-019

THE JACKSON HEART STUDY: COHORT RECRUITMENT, RESPONSE RATES, AND SAMPLE DESCRIPTION

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Objectives. To detail the recruitment methods, response rates, and sample distribution for the all-African-American cohort of the Jackson Heart Study (JHS).

Methods. Recruitment methods focused on building trust through family and community relationships. A complex sampling strategy including Jackson-Atherosclerosis Risk in Communities Study participants, random selection of households, volunteers, and an embedded family sample was implemented. The recruitment protocol included sample contact via letter, personal visit, and telephone to complete a household enumeration and household induction interview (HII), followed by a separate clinic examination (CE). Multiple strategies for enhancing recruitment success were put into practice.

Results. 13,551 individual contacts were made. Men and women (n=5307) of widely varying ages, education levels, and socioeconomic statuses who reside in the Jackson, Mississippi, metropolitan statistical area were recruited to complete all phases of enumeration, HII, and CE (39% response rate). The response rate for completed HII/contact was 46%, and the yield of completed HII to CE was 86%. The sample will be described.

Conclusions. Recruitment was the challenge anticipated. In addition to the culture-specific trust issues, impediments included the general suspicion of strangers heightened by increased telemarketing and fraudulent solicitation and sensitized by fears of terrorism or crime. People's busy lives coupled with the complex sampling design for the JHS also impacted recruitment. The majority of persons completing a HII completed the CE. By addressing their trust and other issues, a large cohort of African Americans was assembled who provide a rich resource for the study of heart disease in African Americans.

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05-020

PARTICIPATION IN AN OBSERVATIONAL STUDY ALTERS HEALTH BEHAVIORS IN AFRICAN AMERICANS: THE JACKSON HEART STUDY BASELINE EXAM

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Objectives. The interim between the first and second clinical examinations in the Jackson Heart Study (JHS) provided a unique scientific opportunity to ascertain the effectiveness of providing health-screening information in an epidemiologic examination of African Americans on subsequent health behavior.

Methods. Following completion of JHS Exam 1, a telephone survey was conducted to determine what self-care actions participants took to improve health status as a result of the examination results reports and health screening data received from the study. All persons who completed Exam 1 (N=5307) were contacted by trained interviewers between September 1, 2004, and June 1, 2005, and requested to respond to questions regarding specific health knowledge gained and health behaviors initiated as a result of their study findings. The interviewer reminded each participant that they had received either normal or abnormal study results.

Results. To date, 2401 surveys have been completed. Reported changes initiated as a result of the JHS examination included >50% positive health behaviors, 66% health maintenance activities, and 26% psychosocial changes. Seventy percent reported seeing a healthcare provider for follow-up of abnormal exam results. Final results will be reported by age, gender, and socioeconomic status.

Conclusions. Participation in an epidemiologic cohort study was positively associated with health behavior changes in African Americans. Specifically, participants learned new information regarding their health status and they made substantive changes in health practices, health maintenance, and psychosocial behaviors as a result of taking part in the JHS. These findings have important implications for study design and cohort retention.

05-021

SOCIOECONOMIC STATUS, STRESS, AND CORTISOL IN RELATION TO WAIST CIRCUMFERENCE IN A SAMPLE OF AFRICAN-AMERICAN AND WHITE WOMEN

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Background. Abdominal fat deposition has been shown to be related to hypertension, dyslipidemia, and diabetes. Studies have shown a correlation between cortisol (a stress hormone) and abdominal fat deposition. Low socioeconomic status (SES) has also been shown to be related to abdominal fat deposition. It is hypothesized that chronic stress associated with low SES leads to high cortisol levels which in turn lead to abdominal fat deposition. The purpose of this study was to examine the evidence for the SES-chronic stress-cortisol-abdominal fat hypothesis in a sample of African-American and White American women, as most previous studies have used European samples.

Methods. Data from the Regional Assessment Health Surveillance Study (RAHSS), a survey and physical examination of a representative sample of African-American and White adults residing in six counties in Georgia, were utilized. The study population included 111 African-American and 119 White women. Abdominal fat deposition was measured by waist circumference (inches). Education and income were the measures of SES. Other exposures examined included serum cortisol, self-reported daily stress level, cigarette smoking, marital status, and number of children. Associations were examined using multiple linear regression models adjusted for age and BMI.

Results. Among White women, those less educated women had a waist circumference 2.08 inches larger ($P<.05$) than more highly educated women. Among African-American separated or divorced women (+2.64 inches, $P<.01$) and widowed women (+2.99 inches, $P<.01$) had larger waist circumferences than married women. No other factors were significantly associated with waist circumference.

Conclusions. The SES-chronic stress-abdominal fat accumulation hypothesis was only partially supported by the data. Different stressors may be important in producing abdominal fat accumulation in African-American and White women.

05-022

STRATEGIES TO INCREASE ETHNIC MINORITIES IN CLINICAL RESEARCH

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Hypothesis. To determine whether minority enrollment in clinical research differs between two recruitment strategies. We conducted a comparative study of enrollment in a multicenter prospective cohort study designed to examine morbidity and mortality associated with chronic renal insufficiency.

Methods. Two recruitment strategies were compared with respect to patient accrual over a six-month period. Strategy #1. Recruitment site: University of Michigan Clinic. Two study coordinators recruited from a computer-based schedule from the nephrology clinic. Chart reviews, follow-up calls, and screening visits were done at the university for targeted subjects. Strategy #2. Community-based practices involved a partnership with community physicians. A study coordinator and a co-investigator introduced the study protocol. Community-based physicians identified potential candidates. Eligible patients received letters from their physicians and follow-up calls from research coordinators. Screening visits were performed in the offices of the community-based practitioners.

Results. Recruitment values of minorities screened and enrolled in the clinical trial are shown in the Table and Figure.

| | Completed Baseline Visits | Completed Screening Visits | Eligible Patients | Total Charts Screened |
|-------------------|------------------------------|-------------------------------|----------------------|--------------------------|
| Clinic Population | | | | |
| University | 6 | 12 | 50 | 344 |
| Community-based | 17 | 29 | 87 | 558 |

Conclusion. The community-based strategy yielded 67% more minorities enrolled compared to the university-based strategy in a prospective study. Successful recruitment of minority subjects to participate in clinical trials increased by engaging community based physicians' support.

05-023

EFFECTS OF AEROBIC FITNESS ON CARDIOVASCULAR RISK FACTORS IN AFRICAN-AMERICAN FEMALES WITH VARYING DEGREES OF VO_{2max}

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Background. Aerobic fitness (AF) is an independent risk factor for obesity, cardiovascular disease (CVD), and type 2 diabetes (T2DM). African-American (AA) females suffer from higher rates of CVD and T2DM than Caucasian females. Thus, the purpose of this study was to examine the clinical and metabolic characteristics in nondiabetic AA females with varying degrees of AF.

Methods. Forty six AA females completed measurements of body composition via BOD POD, standardized OGTT ([0 and 120min] glucose, insulin, and C-peptide) and insulin sensitivity by HOMA-IR. VO_{2max} was categorized as very low AF (VLAF, VO_{2max} <21 mL/kg/min), low AF (LAF, 21–24.4 mL/kg/min), and modest AF (MAF, >24.4 mL/kg/min).

| Parameter | VLAF | LAF | MAF |
|--------------------------------|------------|-------------|-------------|
| Age (y) | 47.3±4.5 | 38.9±8.7* | 43.4±9.4 |
| BMI (kg/m ²) | 35.0±5.8 | 34.1±3.7 | 27.6±4.3†‡ |
| Glucose (mg/dL) | 82.4±11.9 | 83.2±10.5 | 77.4±11.9 |
| Insulin (μU/mL) | 14.4±8.9 | 14.7±7.9 | 7.9±4.6†‡ |
| C-peptide (ng/mL) | 3.4±1.3 | 3.8±1.7 | 2.2±1.2†‡ |
| HOMA-IR | 3.0±1.9 | 3.1±1.8 | 1.6±1.1†‡ |
| Cholesterol (mg/dL) | 203.3±37.3 | 183.2±37.3 | 181.6±26‡ |
| HDL (mg/dL) | 43.4±9.1 | 47.6±11.7 | 54.2±13.7‡ |
| Triglycerides (mg/dL) | 91.4±37.6 | 68.6±60.1 | 67.8±20.2‡ |
| LDL (mg/dL) | 141.8±32.9 | 121.8±29.8 | 141.8±32.9‡ |
| SBP mm Hg | 133.7±19.8 | 125.8±3.7 | 119±15.4‡ |
| DBP mm Hg | 80.4±9.7 | 77.5±8.5 | 69.7±11.1†‡ |
| VO _{2max} (mL/kg/min) | 17±3.2 | 23.2±0.715* | 30.7±5†‡ |

*Statistically different between VLAF vs. LAF, $P < .01$.

†Statistically significant between LAF vs. MAF, $P < .01$.

‡Statistically significant between VLAF vs. MAF, $P < .01$.

In summary, we found no metabolic differences in our VLAF vs. LAF group despite differences in VO_{2max}. We found significant differences in BMI, fasting insulin and C-peptide, HOMA-IR, BP, and VO_{2max} between our VLAF vs. MAF. All these parameters were also significantly different in our LAF vs. MAF, except for SBP and lipids and lipoproteins.

Conclusions. Our study demonstrated that in obese sedentary AA females, there is a threshold of AF (VO_{2max} <25 mL/kg/min) that predicts increase CVD risks. Therefore, we recommend VO_{2max} >25 mL/kg/min to be the minimum target to reduce CVD and T2DM in AA females.

05-024

REACHING AFRICAN-AMERICAN WOMEN THROUGH A COMMUNITY-BASED BREAST AND CERVICAL CANCER EDUCATION PROGRAM: THE WITNESS PROJECT OF MADISON

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Objectives. Traditional educational methods of cancer education have not been effective in the African-American community. The Witness Project of Madison was developed to promote early detection of cancer. The purpose of our study is to describe the innovative strategies that the Witness Project has implemented to increase breast cancer screenings among African-American women.

Methods. The Witness Project, established in an academic setting, trains lay health advisors (LHAs) and cancer survivors to be Witness Role Models (WRMs) who "witness" about the importance of screening for early detection of breast and cervical cancer. Narrative stories are shared at local churches and community events, along with culturally specific and culturally tailored cancer education information. This intervention has allowed participants to learn breast and cervical cancer facts through viewing the Witness Project video and reviewing printed materials used for education. Pre- and post-test are administered.

Results. The Witness Project has trained 12 WRMs and 13 LHAs and conducted 120 educational sessions reaching over 1800 women. Seventy five percent of the women have been >50 years of age, and >200 women have been had referrals to the state screening program.

Conclusion. It is critical for academic settings to integrate and partner with African-American cancer survivors and African-American lay community members in health promotion programs to increase participation in cancer prevention and early detection. This outreach project will transition to a research project to validate the impact of participation in this project.

05-025

RETENTION OF MINORITIES IN A BEHAVIORAL CLINICAL TRIAL: A PATIENT PERSPECTIVE

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Objective. Heart failure (HF) is an increasingly prevalent condition contributing to significant morbidity and mortality among African Americans. The Heart Failure Adherence and Retention Trial (HART) is a large behavioral clinical trial of patients with HF. The HART trial has recruited 37% African-American participants. The purpose of this qualitative study is to conduct an in-depth examination of the subjective experience of African-American participants in the intervention arm of the HART.

Methods. Five focus groups were conducted (N=25).

Results. The mean age of those attending was 55 years. Fifty-two percent of the participants were female, and 92 percent were African American. Participants gained general medical knowledge about HF and how HF influenced their lives. Participants appeared not only to understand the self-management skills that were taught, but also how to apply them. They also demonstrated understanding of the connection between lifestyle and HF. Factors that may promote retention include mutual support, the opportunity to engage in meaningful social activity, and feeling cared for. Factors that may limit retention include anxiety and denial about HF and logistic and emotional barriers to attending groups. Factors with unclear effects on retention include remuneration, ethnicity of the group leader, and the role of religious or spiritual content in meetings.

Conclusions. While a number of perceived benefits exist to group participation, there are significant and logistical barriers to retention. Ongoing attention to cultural sensitivity is a likely factor in successful retention of study participants.

05-026

ROLE OF RELIGION AND WITCH-CRAFT IN STROKE-ASSOCIATED DEATHS AMONG AFRICANS

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Hypertension is the most important risk factor for stroke. Death rate from stroke among Black Americans is estimated to be 66% higher than among Whites. Death rate from stroke among Black Africans is estimated to be about 10% higher than in Black Americans. In 2003, PEFAH-M, a nonprofit organization, went on a medical mission to a town in Nigeria to educate people on HIV/AIDS and hypertension. Twelve hundred primary school children and 200 adults attended the one-day seminar. BP of the adults was measured, and mean BP for 15 adults was $170.6 \pm 13/106.7 \pm 8$ mm Hg (range 160–200/100–120 mm Hg).

In 2004, PEFAH-M revisited the town. Six hundred pupils and 800 adults attended the three-day seminar. One hundred six (13%) adults were hypertensive (BP 140/100–230/130 mm Hg). Forty-eight (45%) of these had BP of 170–230/100–130 mm Hg.

Three with BP of 190/120, 180/110, and 180/120 mm Hg never had their BP measured. Interviews with physicians revealed lack of education on hypertension, witch-craft, religion, poverty, and noncompliance to therapy as risk factors for the high incidence of stroke-associated deaths. Preliminary results of our study in Houston indicate noncompliance as important risk factor for stroke. High incidence of stroke-associated deaths in Blacks can be reduced with education about hypertension and improvement in compliance to therapy.

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05-027

SAFETY AND EFFICACY OF NEBIVOLOL IN REDUCING BLOOD PRESSURE IN HYPERTENSIVE AFRICAN-AMERICAN PATIENTS: A PLACEBO-CONTROLLED STUDY

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The purpose of this study was to evaluate the antihypertensive efficacy and safety of nebivolol (NEB), a highly cardioselective β -blocker, in 300 African-American patients with mild-to-moderate hypertension (sitting diastolic blood pressure [SiDBP] ≥ 95 and ≤ 109 mm Hg).

In this multicenter, randomized, double-blind, placebo-controlled trial, patients were randomized to receive NEB (2.5, 5, 10, 20, or 40 mg) or placebo (PBO) once daily for 12 weeks. Nebivolol achieved statistically significant reductions versus PBO in trough SiDBP from baseline to study end, the primary endpoint, with doses of 5, 10, 20 and 40 mg ($P \leq .004$). Placebo-subtracted reductions in SiDBP ranged from 4.9 to 6.1 mm Hg across these doses. Significant reductions in trough sitting systolic blood pressure (SiSBP) versus PBO were also observed at NEB doses 10, 20, and 40 mg ($P \leq .044$). A clear dose response was observed, with numerically greater improvements in both SiDBP and SiSBP with increasing NEB doses up to 20 mg once daily. The response rate (SiDBP ≤ 90 or reduced by ≥ 10 mm Hg) was significantly higher at doses ≥ 5 mg versus PBO ($P \leq .002$). There were no statistically significant differences in the incidence of adverse events (AEs) between NEB and PBO. The most commonly reported AEs ($>2\%$ in any nebivolol group) were headache (NEB 5.6%, PBO 4.1%), dizziness (3.6%, 0%), arthralgia (3.6%, 2.0%), diarrhea (3.2%, 2.0%), fatigue (2.8%, 0%), nasopharyngitis (2.4%, 0%), and urinary tract infections (2.4%, 0%).

NEB significantly reduced systolic and diastolic BP among African-American hypertensive patients, with a tolerability profile similar to PBO.

05-028

AORTIC PULSE PRESSURE IN RELATION TO THE PRESENCE AND EXTENT OF CORONARY ARTERY DISEASE IN AFRICAN-AMERICAN WOMEN

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Objectives. The relation between aortic pulse pressure (APP) and severity of coronary artery diseases (CAD) is still controversial. This present study seeks to determine the relation between APP and extent of CAD in African American women (AAW).

Methods. We identified women who had coronary angiograms from January 2000 to June 2004 at Howard University Hospital. Results of the coronary angiogram were obtained from the cardiac catheterization laboratory records. Demographics were abstracted from the patients' medical records. Significant coronary artery disease was defined as an obstruction of >50% in the left anterior descending artery, the circumflex artery, and the right coronary artery.

Results. Two hundred twenty one AAW with complete data were included in the study.

Table. Invasive aortic pulse pressure and other risk factors in relation to CAD.

| | No CAD | Obstruction <50% | Obstruction ≥50% | P |
|---------------------------|-----------|------------------|------------------|-------|
| Age (years, mean) | 55.4±12.5 | 65±13.3 | 65.4±13 | <.001 |
| Hypertension (%) | 17.6 | 24.2 | 58.1 | .031 |
| Diabetes mellitus (%) | 15.3 | 28.2 | 56.5 | .068 |
| Dyslipidemia (%) | 11.4 | 19.3 | 69.3 | <.001 |
| Tobacco smoking (%) | 18.4 | 17.6 | 64 | .26 |
| Pulse pressure (mean APP) | 70±21.4 | 72.6 ± 25.3 | 82.5±26.7 | .006 |

Conclusion. Age, dyslipidemia, and invasive APP relation to severity of CAD was highly significant. To the best of our knowledge this is the first report of APP relation to severity of CAD in AAW.

05-029

THE MANAGEMENT OF HYPERTENSION IN PATIENTS WITH ATRIAL FIBRILLATION: IMPACT OF SPECIALIST CARE

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Background. Both atrial fibrillation (AF) and hypertension increase stroke risk. More than 50% of patients with AF have hypertension. Although blood pressure (BP) lowering prevents stroke, it is rarely a priority in the management of AF.

Objective. To determine how effectively hypertension is managed in ambulatory patients referred for specialist care of AF, and to characterize the specialist's role in treating hypertension.

Methods. A chart review was conducted at the offices of 3 cardiologists, 4 electrophysiologists, and 6 internists. The management of hypertension over time was assessed in patients with AF and a history of hypertension.

Results. Two hundred nine patients with AF were screened; 118 patients were identified as hypertensive. BP was measured in 93% of initial visits and 73% of all visits. Hypertension was identified as an important problem in only 57% of hypertensive patients, with antihypertensives either initiated or suggested in 77% of patients. The use of all classes of antihypertensives increased over time. One year after the initial visit, systolic BP was significantly lower in this patient population (140±20 versus 148±23 mm Hg, $P=.015$), although 50% still had a BP >140/90 mm Hg.

Conclusions. Systolic BP is significantly reduced in AF patients followed by specialists, however 50% continue to have suboptimal blood pressure control at one year. In many patients, hypertension was not identified as an important comorbid illness and antihypertensives were neither recommended nor initiated by the specialist. In patients with AF, improved identification and treatment of hypertension could lead to an additional important reduction in stroke.

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05-030

THE PREVALENCE OF THE METABOLIC SYNDROME BY BLOOD PRESSURE STATUS: FINDINGS FROM TWO NATIONAL SURVEYS

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The prevalence of the metabolic syndrome is high among US adults. Because its prevalence by class of blood pressure is not well known, we used data from the Third National Health and Nutrition Examination Survey (1988–1994) and National Health and Nutrition Examination Survey 1999–2000 to examine this issue. The metabolic syndrome was defined according to the definition of the National Cholesterol Education Program (hyperglycemia was defined as a fasting glucose concentration of ≥ 100 mg/dL). Prehypertension and hypertension were defined according to the Seventh Report of the Joint National Committee. In NHANES III, the age-adjusted prevalence of the metabolic syndrome was 13.8% (95% confidence interval [CI] 11.5%–16.1%) among normotensive participants, 31.0% (95% CI 27.3%–34.7%) among participants with prehypertension, and 65% (95% CI 59.6%–70.5%) among participants with hypertension. In NHANES 1999–2000, these percentages were 17.5% (95% CI 11.9%–23.1%), 30.3% (95% CI 24.6%–35.9%), and 61.1% (95% CI 51.8%–71.4%), respectively. At each classification of blood pressure, African Americans had the lowest and Mexican Americans had the highest prevalence of the metabolic syndrome. Because this syndrome is common among people with prehypertension and extremely common among people with hypertension, healthcare professionals should evaluate patients with prehypertension or hypertension for the presence of the metabolic syndrome.

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05-031

WAIST CIRCUMFERENCE PREDICTS HYPERTENSION AND HYPERCHOLESTEROLEMIA IN AFRICAN AMERICANS

S KRISHNASWAMI; JM Kotchen; CE Grim; D Lee; TA Kotchen.

Objective. To identify the most prominent obesity-related predictor of hypertension and high cholesterol in African Americans.

Methods. Standardized blood pressure and anthropometric measurements were obtained in 1363 African-American volunteers (mean age 43.2 years \pm 0.19 SE).

Results. Fifty-seven percent were women, 57% had hypertension, 42% had hypercholesterolemia, and 26% had both hypertension and high cholesterol. Average blood pressures of hypertensives and normotensives were 141/94 mm Hg and 118/76 mm Hg, respectively. BMI of hypertensives ($31.1 \text{ kg/m}^2 \pm 0.3$) was greater ($P < .0001$) than normotensives ($28.2 \text{ kg/m}^2 \pm 0.2$). Percent body fat and all indices of central and peripheral obesity were also greater in hypertensives ($P \leq .002$) and were correlated with blood pressure ($P \leq .04$). Serum cholesterol was also correlated with both central and peripheral adiposity ($P \leq .002$), but not with blood pressure. BMI, percent body fat, and indices of central and peripheral obesity were greater in women than men ($P < .0001$). Serum cholesterol was higher in men ($P = .03$). There was no gender difference in waist circumference. In a multivariate analysis, waist circumference was the only anthropometric measure associated with each of the following: 1) hypertension alone, 2) high cholesterol alone, 3) hypertension plus high cholesterol. Age and waist circumference correctly identified those at risk for hypertension plus high cholesterol with a sensitivity of 0.65 and specificity of 0.65.

Conclusion. In this population with relatively high BMI, hypertension and high cholesterol are associated with both central and peripheral adiposity in both men and women. Of all the measures of adiposity, hypertension and hypercholesterolemia are most closely related to waist circumference.

05-032

ISOLATION AND CHARACTERIZATION OF MESENCHYMAL ENDOTHELIAL PROGENITOR CELLS FROM EMBRYONIC MOUSE LUNGSGL SANFORD; C Nokkaew; S Harris-Hooker.
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Increasing evidence suggests that mesenchymal stem cells, primarily from bone marrow, mobilize to the circulation and may differentiate into circulating endothelial progenitor cells (EPC). These EPCs may contribute to vascular injury repair and neovascularization of ischemic or cancerous tissues. EPC also arise from hematopoietic cells or from other tissue mesenchymal cells. Although EPC can come from different sources, all show the expression of endothelial markers, eg, CD34, Flk-1, and von Willebrand factor. We were investigating mechanisms of lung vasculogenesis in the mouse. This provided an opportunity to isolate and characterize mesenchymal EPC from embryonic mouse lungs. Embryonic mice were surgically removed from the mother at 13 days, the lungs excised, minced, and digested with trypsin/collagenase. Lung mesenchymal cells were isolated by differential plating and EPCs isolated from the mesenchymal cells using anti-CD117-magnetic beads. Putative EPC were grown for 7 days in mesenchymal stem cell medium and characterized for the expression of endothelial cell markers. Early passage cells (2 days) had positive expression for Sca-1 and BCRP (stem cell markers), CD34, CD29, Flk-1, and von Willebrand factor. After 7 days, cells had increased expression of von Willebrand factor and FLK-1 but were negative for Sca-1, CD45, and CD29, suggesting that cells differentiated in culture to an endothelial lineage. Additional studies found that the EPC formed capillary-like structures when grown on fibronectin but not on uncoated plates. Hence, lung mesenchymal EPC will not only differentiate into mature endothelial cells but can be induced to form capillary-like structures by matrix components.

05-033

PREDICTORS OF UNCONTROLLED HYPERTENSION AMONG VETERANS

V WELCH; J Grant; S Waller; J Ren.

Background. Despite proven efficacious pharmacologic therapy and lifestyle modifications for management of hypertension, most adults with hypertension remain uncontrolled.

Objective. Determine predictors of blood pressure (BP) control among veterans seeking care at the Atlanta Veterans Administration Medical Center.

Methods. Data from outpatient medical records, including BP, comorbidities, and medications for 7200 veterans newly diagnosed as hypertensive (ie, no prior diagnosis of hypertension and no prior prescription for antihypertensive medications) were abstracted for visits between October 1, 2001, and September 30, 2003. Veterans with congestive heart failure were excluded. Uncontrolled BP for diabetics was defined as systolic blood pressure (SBP) ≥ 130 and diastolic blood pressure (DBP) ≥ 80 mm Hg; uncontrolled for nondiabetics was SBP ≥ 140 and DBP ≥ 90 mm Hg.

Results. The mean age was 60 ± 12 years, and 95% were male. The mean SBP was 144 ± 16 mm Hg, and DBP was 79 ± 11 mm Hg; 68.9% had a mean BP $\geq 140/90$. Multivariate analysis revealed several independent predictors of uncontrolled BP: older age, lack of social support as measured by not being married or a member of an unmarried couple, and multiple-drug regimens. Veterans with a history of diabetes and high cholesterol had a higher likelihood of uncontrolled BP.

Conclusion. The prevalence of uncontrolled BP among Atlanta veterans was slightly higher than the national prevalence of 66%. Several of the determinants of poor BP control identified are amenable to modification. These results can serve as a framework for identifying veterans at increased risk of poor BP control who can be candidates for disease management interventions.

05-034

GENDER AND RACE DIFFERENCES IN HOSPITAL MORTALITY AFTER ACUTE MYOCARDIAL INFARCTION: THE INFLUENCE OF SOCIOECONOMIC STATUS

V WELCH; V Vaccarino; J Ren.

Background. Socioeconomic status (SES) has been suggested as a possible explanation for the more frequent adverse outcomes after acute myocardial infarction (AMI) among younger women compared to men.

Objective. Assess influence of SES on gender and race differences in mortality rates after AMI.

Methods. We studied 25,589 patients aged 60 and younger (mean 50 years) with a diagnostic code for AMI in the 2000 National Inpatient Sample. Logistic regression was used to examine whether measures of SES (eg, median income, payer status) explained hospital mortality differences by gender and race.

Results. The in-hospital mortality after AMI was higher for women within each race/ethnicity group and for Blacks within each gender (White women: 3.6%; Black women: 5.5%; other women: 4.4%; White men: 2.3%; Black men: 3.7%; other men: 2.7%). Adjusting for demographic and clinical factors (Table), women and Black patients retained a higher in-hospital mortality compared with White men, with Black women showing highest mortality risk. Further adjustment for SES only mildly attenuated these differences.

| | Model 1* | | Model 2† | |
|-------------|------------|-----------|------------|-----------|
| | Odds Ratio | 95% CI | Odds Ratio | 95% CI |
| White women | 1.42 | 1.18–1.72 | 1.38 | 1.14–1.67 |
| Black women | 2.30 | 1.70–3.08 | 1.89 | 1.38–2.56 |
| Black men | 1.49 | 1.13–1.96 | 1.23 | 0.92–1.64 |

Reference: White men.

*Adjusted for race, gender, age, region, comorbidities, cardiac procedures.

†Adjusted for median income, payee status, and variables in model 1.

Conclusion. SES may not be a prominent factor in explaining gender and race differences in hospital mortality after AMI. Behavioral, psychological, and social factors should be considered as alternative explanations for observed differences.

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05-035

LIPOPROTEIN AND CARDIOVASCULAR RISK FACTORS IN MOROCCAN WOMEN

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Objective. Assessment of some cardiovascular risk factor prevalence and lipoprotein metabolism parameters in an agricultural community of Moroccan women.

Methods. A sample of 213 women aged 25–55 years were selected from urban area of El Jadida city, an agricultural province of Morocco. Plasma triglycerides (TG), plasma cholesterol (TC), triglyceride-rich lipoprotein triglycerides (TRL-TG), TRL-cholesterol (TRL-C), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), and apolipoproteins A1, B, B48, CIII, and E were measured as well as body mass index (BMI) and blood pressure (BP).

Results. High TC and LDL-C levels were observed in 10% and 19.4%, respectively. The results show also low HDL-C levels in 45.3%, elevated TG levels in 11.8%, and elevated TRL-C (>.6 mmol/L) and TRL-TG (>.8 mmol/L) in 13.4%. Obesity was prevalent in 23.9% and hypertension in 16.5% of women. The concentrations of TG were correlated with plasma concentrations of TRL-TG ($R=.86$, $P=.0001$), apoB ($R=.50$, $P=.0001$), apoCIII ($R=.52$, $P=.0001$), HDL-C ($R=-.3$, $P=.0001$), and with BMI ($R=.4$, $P=.0001$). BMI and systolic (BP) were positively associated ($R=.3$, $P=.0001$). Obesity, BP, TRL-C, TRL-TG, TG, apoB, and apoCIII increased with age.

Conclusion. The results show that in the Moroccan urban women studied, cardiovascular disease risk factors were highly prevalent. Also these factors were associated with altered lipid and lipoprotein profiles, and some of them were age dependent.

05-036

ARE THERE RACIAL/ETHNIC DISPARITIES IN THE USE OF EXERCISE COUNSELING IN ADULTS WITH HYPERTENSION? FINDINGS FROM A NATIONALLY REPRESENTATIVE DATABASE, NHANES III (1988–1994)

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Objective. To determine whether racial/ethnic and gender differences exist among hypertensive adult patients in the receipt of exercise counseling in managing high blood pressure (HBP).

Method. Subjects from the database NHANES-III were adults aged ≥ 20 years who reported being told at least once by their healthcare provider that they had HBP. Bivariate analyses were used to determine significant differences between race/ethnicity and gender and the outcome variable, receipt of exercise counseling for HBP. Logistic regression analysis was used to adjust for the independent effects of race/ethnicity and gender on the receipt of exercise counseling for HBP.

Results. Bivariate analyses revealed that African Americans were more likely to report receiving exercise counseling than Whites (OR 1.54, 95% CI 1.03–2.2, $P=.04$) and men were more likely than women (OR 1.5, 95% CI 1.1–2.2, $P=.02$). However, after adjusting for confounding variables in the logistic regression model, the P values approached but did not reach statistically significant levels, ie, $P=.07$ for African Americans and $P=.06$, for men. Analysis for significant interaction among race/ethnicity and gender revealed that African-American women were, however, more likely to report receipt of exercise counseling for HBP (OR 2.6, 95% CI 1.4–4.7, $P=.002$).

Conclusion. There appears to be no significant racial/ethnic and gender differences in the use of exercise counseling in managing patients with HBP, but a trend suggests that minorities, ie, African-Americans and women with HBP, may actually be more likely to receive exercise counseling as part of HBP management.

05-037

UNDIAGNOSED DIABETES AMONG ADULT MOROCCAN SAHRAOUI WOMEN

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Objective. The goal of this work was to evaluate the prevalence and to examine associated risk factors of undiagnosed diabetes among urban Moroccan Sahraoui women.

Methods. Data were collected from a randomized sample of adult women aged 15 and older, nonpregnant, who visited the public health centers during an immunization campaign in Laayoune, in south Morocco. Only subjects identified as belonging to Sahraoui ethnic group were eligible for this investigation. Body weight, height, circumferences of waist (WC) and hip, blood pressure, fasting plasma glucose (FPG), triglycerides (TG), dietary intake, and physical activity were collected. Waist/hip ratio (WHR) and body mass index (BMI) were calculated.

Results. Undiagnosed diabetes was prevalent in 6.4% of women. Obesity, hypertension, hypertriglyceridemia, and familial history of diabetes were more common among diabetic women than those with normal glycemia. Similarly, means of age, BMI, WC, WHR, sucrose intake, TG, and systolic and diastolic blood pressure were higher in women with diabetes than those with normal glycemia. The physical activity estimated by the time spent walking was negatively associated with FPG. Also, regression analyses showed that age, obesity, family history of diabetes, and TG were independently associated with diabetes.

Conclusion. The high proportion of unknown diabetes suggests a need for increased diabetes awareness in this population. The data suggest also the involvement of obesity in diabetes and the potential importance for intervention strategies to reduce population adiposity in the goal to prevent and manage cardiovascular risk factors.

05-038

JESUSFIT—A FAITH-BASED APPROACH TO PHYSICAL ACTIVITY AND NUTRITION AMONG AFRICAN-AMERICAN WOMEN

M HARGRAVES.

Objectives. We conducted a year-long pilot study, grounded in a community-based participatory model (CBPM), to gather qualitative and quantitative markers to assess the relationship of a faith-based approach to exercise adherence and cultural food preparation to reductions in risk factors for cardiovascular disease.

Methods. The study engendered a community mobilization involving churches concurrent with pre- and mid-program focus groups to recruit self-selected participants (N=135). The program developed partnerships among a range of key community resources who acted as advisory council. Biological markers were secured from each participant and from surveys identifying existing chronic conditions (SF-36). Participant self-efficacy and health experiences were recorded at baseline and program completion.

Results (n=94). Sixty percent of participants had ≥ 1 chronic health condition; 13% had 2 or more. Prevalence of hypertension was 51%, 18% had diabetes, 11% had established heart disease, and 3% had had heart attacks. Body mass index ranged from 20 to 57, with a mean of 35. Focus groups identified barriers as medical, financial, family/social support, time, lack of knowledge, fear of failure, and cultural cooking/food habits. Weight loss was minimal—mean weight loss was 1.2 lbs, and highest losses were 5.6–18.1 lbs. Greatest weight loss was achieved by those who participated in both exercise and nutrition support programs.

Conclusion. In this study population, quantitative data provide only a partial view of participants' needs while qualitative data direct the design of the successful intervention program.

05-039

DIFFERENTIAL EFFECTS OF INTERVENTIONS ON BLOOD PRESSURE REDUCTION DEPENDING ON BASELINE COGNITIVE REPRESENTATIONS OF SELF BLOOD PRESSURE USE AND DISCUSSION OF MEDICATION TAKING WITH HEALTHCARE PROVIDERS

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Individuals use cognitive representations or enduring memories to structure and organize knowledge to guide self-care behaviors for controlling hypertension. The major aim of this study was to explore the extent to which assessing baseline cognitive representations could be used to differentiate blood pressure reductions from two home-based interventions in subjects recruited for the Manage Associated Perceptions Study (MAP).

Methods. Women (N=161, 40% African American) in treatment for stages 1 and 2 hypertension were recruited from two hypertension clinics and included in a randomized, clinical trial to evaluate the effects of 30-day self-administered interventions on 24-hour ambulatory blood pressure monitoring (ABPM), electronic medication monitoring, and measures for cognitive representations of medication discussion with healthcare providers (CRMD) and self blood pressure use (CRBP). At baseline, participants were administered the three-item CRMD scale ($\alpha=.85$) and the three-item CRBP scale ($\alpha=.80$) and assigned to reading tailored message and self blood pressure use (experimental group) or self blood pressure use alone (control group). Mean scores for CRMD and CRBP scales were categorized into four groups and labeled as strongCRMD-strongCRBP, strongCRMD-weakCRBP, strongCRBP-weakCRMD, and weakCRMD-weakCRBP.

Results. Sample baseline mean 24-hour ABPM was 131/86 mm Hg. Significant differences were found for mean CRBP scores according to age; younger women were more likely to measure their BP at home. Mean CRMD scores by ethnic identity showed African Americans were significantly more likely than Caucasian women to discuss BP medication with healthcare providers. Women with uncontrolled blood pressure (n=83) showed greatest SBP/DBP (SD) reductions for those in the experimental group labeled as strongCRMD-weakCRBP, -9.40 (14.0)/ -2.0 (7.31) and weakCRMD-weakCRBP, -8.44 (10.66)/ -4.0 (13.18). BP reductions for those in the control group labeled as strongCRMD-strongCRBP and strong CRBP-weakCRMD were -10.50 (5.90)/ -7.50 (5.04) and -14.0 (11.98)/ -8.37 (7.42), respectively.

Conclusion. These preliminary data suggest that by using CRMD and CRBP assessment, we can predict which intervention will best improve BP in particular patients; this awaits confirmation by larger studies.

05-040

MICROALBUMINURIA AMONG PERSONS WITH HYPERTENSION: THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY (NHANES) (1999–2002)MO OGUNNIYI^{1,2}; WH Giles¹.¹Centers for Disease Control and Prevention, Emerging Investigations and Analytic Methods Branch, Division of Adult and Community Health; ²Department of Internal Medicine, Morehouse School of Medicine, Atlanta, Georgia.

Background. Microalbuminuria and hypertension are independent risk factors for cardiovascular disease. Together, they are significant predictors of cardiovascular morbidity and mortality.

Objective. To determine the prevalence of microalbuminuria (MA) among persons with hypertension and to examine racial/ethnic differences.

Methods. We analyzed data from NHANES (1999–2002), a cross-sectional survey of noninstitutionalized US civilians aged ≥ 20 years (N=4397). Blood pressure was categorized according to the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7). MA was defined as spot urinary albumin/creatinine ratio (ACR) of 30–299 mg/g. The main outcome measure was the proportion of persons with hypertension who also had microalbuminuria. Logistic regression was used to determine the odds of developing MA in persons with hypertension after adjusting for age, race, sex, educational status, smoking status, body mass index (BMI), and the presence of diabetes.

Results. The prevalence of MA was 12.9% among persons with hypertension. A graded relationship existed between MA and blood pressure (BP). In the crude analysis comparing persons with normal blood pressure (120/80 mm Hg) to others within the JNC 7 classification, the odds ratios were 1.88 for prehypertension, 3.17 for stage 1 hypertension, and 7.49 for stages 2 and 3 hypertension. Even after adjusting for age, race, sex, educational status, smoking status, BMI, and presence of diabetes, the odds ratios were 1.51 (1.01–2.27), 2.04 (1.44–2.90), and 4.10 (2.51–6.68), respectively.

In the subgroup analysis by race, women had a higher prevalence of MA across BP stages. Among men, Mexican Americans had a higher prevalence of MA across all BP stages. For prehypertension and stage 1, Mexican-American women had a higher prevalence of MA compared with non-Hispanic Blacks and non-Hispanic Whites. However, non-Hispanic Black women had a higher prevalence of MA for stages 2 and 3 hypertension. Compared with non-Hispanic Whites, non-Hispanic Blacks and Mexican Americans had higher odds of developing MA: 1.59 (1.11–1.27) and 1.86 (1.17–2.96), respectively.

Conclusions. Microalbuminuria is highly prevalent in all race/ethnic groups, particularly non-Hispanic Blacks and Mexican Americans. Compared with persons with normal blood pressure, even those with prehypertension have an increased likelihood for developing microalbuminuria. Clinicians should consider screening patients with hypertension and prehypertension for microalbuminuria.

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05-041

SCHOOL AND NEIGHBORHOOD ENVIRONMENTS AND THE FOOD CHOICES OF PUERTO RICAN GIRLSRL BOWEN¹; CM Devine².¹School of Public Health, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina; ²Division of Nutritional Sciences, Cornell University, Ithaca, New York.

Understanding the processes through which acculturation contributes to food choices has great importance for the health of ethnic minority children. Acculturation into US mainstream society is associated with poor dietary behaviors and increased overweight among later-generation Hispanic girls, and neighborhood characteristics influence food choices of female youth. Past studies linking individual and family acculturative traits to food choices of Hispanic girls have not examined the influence of built environments on dietary acculturation. Acculturation theory, cultural idealism, and an ecological framework guided this study aimed at examining the relationships between acculturation, food and school environments, and the food choices of Puerto Rican girls. A purposive sample of 23 (10- to 18-year-old) girls was recruited. They included 1) recent migrants and 2) later-generation girls living in an urban upstate New York community and 3) girls living in Puerto Rico. Multiple, semistructured, in-depth interviews explored influences of culture, migration, social networks, and school and neighborhood environments on girls' food choices. Extensive participant and community observation in New York and Puerto Rico supplemented interview findings. In qualitative data analysis using a grounded theory approach, girls' cultural orientations interacted with structural aspects of environments to influence school and neighborhood food choices. Social networks and resources moderated the relationship. These findings have generated a conceptual framework that underscores the importance of the built environment in understanding dietary acculturation among Hispanic girls and their families and can inform the development of culturally sensitive research, health policy, and health promotion programs for Puerto Rican adolescent girls.

05-042

LOSARTAN (L) AND ATENOLOL (A) MODULATION OF REACTIVE OXYGEN SPECIES PRODUCTION (ROSp) BY THE RENAL ARTERY IN HYPERTENSIVE RATS INGESTING SALT

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Blockade of the renin-angiotensin system (RAS) reduces vascular ROSp and improves endothelial function in HTN. We compared the effect of blood pressure reduction by RAS blockade with L to the antihypertensive effects of a β -blocker (A) on ROSp and vascular structure in SHR rats with or without a salt load. SHR (10 in each group, 12 weeks old) drank for 5 months either a) water with no salt (SHR), b) 1.5% NaCl (SHR+S), c) 1.5%NaCl+L (30 mg/kg day) (SHR+S+L), d) 1.5%NaCl+A (50 mg/kg day) (SHR+S+A). WKY rats (n=10) acted as controls. In SHR+S+L and SHR+S+A, systolic pressure was greater than in WKY, but lower than in SHR and SHR+S. SHR+S+L and WKY had higher CrCl values and lower urine protein content than in SHR, SHR+S, and SHR+S+A. L, but not A, prevented structural changes in the renal artery. Salt ingestion in the absence of blood pressure control by L or A increased ROSp and MDA activity (lipoperoxidation) while reducing superoxide dismutase activity (SODa) by renal artery rings or their homogenates. L but not A increased SODa. A but not L diminished ROSp and SODa.

The potential beneficial effect of A ROSp reduction in homogenates is counteracted by reduction in SODa. L but not A is an effective inhibitor of renal vascular ROSp in hypertension with high salt ingestion, independent of its effect on blood pressure. The partially beneficial effects of A on oxidative damage are also blood pressure independent and may be related to the well-known renin secretion inhibitory action of β -blockers. Vascular protection in HTN and salt load can be achieved by RAS blockade.

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05-043

ROLE OF POTASSIUM EXCRETION AND BODY MASS ON ETHNIC DIFFERENCES IN ALDOSTERONE LEVELS

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Aldosterone, though necessary for blood pressure (BP) regulation, can contribute to the development of cardiovascular disease when elevated. Previous reports suggest ethnic differences in plasma aldosterone (PA) levels, with lower levels in African Americans (AA) compared to Whites. Possible explanations include differences in K⁺ intake and body mass; however, this remains to be evaluated.

Objective. Determine whether PA levels differed between AA and White prehypertensives and whether these differences could be attributed to differences in K⁺ excretion and body mass index (BMI).

Methods. Participants were on a standardized diet. Blood samples were collected under fasting supine conditions, and PA was measured by RIA.

Results. We evaluated 61 (28 AA, 33 White) prehypertensives (systolic BP [SBP] 131±10 mm Hg, diastolic BP [DBP] 85±6 mm Hg). There were no differences in SBP ($P=.36$) and DBP ($P=.54$) between the two ethnic groups. PA levels were lower in AA compared to Whites (62±7 vs. 107±12 pg/mL, $P=.002$). Twenty-four-hour K⁺ excretion was lower among AA compared to Whites (51±7 vs. 70±4 mmol/d, $P=.002$), and after adjusting for K⁺ excretion, PA levels remained significantly different between the two ethnic groups ($P=.002$). BMI did not differ between the two ethnic groups ($P=.56$), and after adjusting for BMI, PA levels remained significantly different between the two ethnic groups ($P=.005$).

Conclusion. Compared to Whites, reduced PA levels among AA were not due to K⁺ excretion or BMI differences. Lower PA levels may suggest differences in aldosterone regulation among prehypertensive AA.

05-044

UPREGULATION OF NITRIC OXIDE BY SIMULATED MICROGRAVITY OR EXTENDED BED REST—POTENTIAL CAUSE OF ORTHOSTATIC INTOLERANCE

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Increased nitric oxide (NO) production may be involved in cardiovascular deconditioning leading to orthostatic hypotension. Microgravity during space flight as well as extended bed rest produces such cardiovascular deconditioning. We have investigated enhanced NO production and possible signaling mechanisms in cells cultured in a horizontally rotating bioreactor (HRB), which mimics several aspects of a microgravity environment. Endothelial cells (EC) were grown in either the HRB or the spinner bioreactor (control cells were maintained in monolayer culture). We found that EC cultured in the HRB had a basal NO production that was ~30% higher (10-fold higher with L-arginine added) than for spinner cultures. The addition of L-NAME, cytochalasin D, or phalloidin blocked the increased NO production, suggesting that an intact actin cytoskeleton was required. We also assessed possible signaling mechanisms for the enhanced NO production, employing an inhibitor approach. Cultures were treated with PD98509 (MEK inhibitor) or chelerythrine chloride (CC, a protein kinase C inhibitor). EC cultured in the HRB showed a five-fold enhancement of NO production compared to controls, which was greatly reduced by either PD98509 or CC. Neither inhibitor affected the level of NO produced by control monolayer cultures. The expression eNOS was not different for HRB cultures compared to monolayers, which was not altered by either inhibitor. These results suggest that the enhanced NO production may be due to the activation of existing eNOS rather than increased expression, involving both protein kinase and MEK signaling pathways. These findings are relevant to orthostatic intolerance in persons subjected to bed rest and provide an in vitro model for examining potential therapeutics.

05-045

PLASMA ALDOSTERONE BUT NOT RENIN ACTIVITY IS ASSOCIATED WITH THE RISK OF HYPERTENSION IN AFRICAN AMERICANS

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Plasma aldosterone (PA) is a risk factor for the increase in blood pressure (BP) with age in US Whites, and we have reported a correlation between PA and BP in African Americans (AA).

Objective. To evaluate PA, plasma renin activity (PRA), and the ratio of PA/PRA as risk factors for hypertension (HTN) in AA.

Methods. During a 2-day in hospital stay with a standardized protocol, 24 hour, awake and sleep BP, PA, PRA in 279 volunteers (mean age 43.4 years \pm 0.42 SE) were measured. Antihypertensive medications had been discontinued prior to study.

Results. Fifty-five percent were women, and 60% had outpatient HTN (\geq 140/90 mm Hg or on BP medication). We defined inpatient HTN as 24-hour BP \geq 135/85 mm Hg. The association of PA, PRA, PA/PRA tertiles (T) with the risk of HTN was tested after adjusting for age, gender, waist circumference, and sodium excretion. As PA increased, BP increased by ~8/5 mm Hg per tertile, and the risk of HTN doubled from T1 to T2 ($P=.03$) and from T2 to T3 ($P<.0001$). In contrast, as PRA increased, BP decreased by ~3/5 mm Hg, but the association with the risk of HTN was not significant. As the PA/PRA increased, BP increased by ~8/5 mmHg, and the risk of HTN increased five-fold in T3 ($P=.0003$).

Conclusion. The risk of HTN increases with higher levels of PA and PA/PRA. Failure to suppress PA as PRA decreases may indicate early primary aldosteronism or some stimulus other than renin for aldosterone secretion.

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05-046

REDUCTION IN THE ACTIVITY, BUT NOT THE PROTEIN LEVEL, OF PLASMA ANTIOXIDANT ENZYMES IN AFRICAN-AMERICAN HYPERTENSIVE PATIENTS

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The objective of this study was to assess the relationship between hypertension and two major antioxidant enzymes in the plasma, ie, extracellular-superoxide dismutase (EC-SOD) and plasma glutathione peroxidase (GPx-3). Plasma was obtained from 22 hypertensive patients and 23 normotensive controls. All the participants were African Americans, ranged from 33 to 64 years of age (controls: 46.5±7.5, patients: 44.5±7.5). The blood pressure of patients was significantly higher than controls (150±34/83±9 vs. 122±10/73±8 mm Hg). As compared to normotensive controls, hypertensive patients significantly reduced EC-SOD activity in the plasma (307±91 vs. 234±70 unit/g protein, $P=.011$). However, the protein level of EC-SOD was comparable in patients and controls (controls: 1.20±1.17, patients: 1.45±1.36 relative intensity of Western blots, $P=.48$). Similarly, hypertensive patients significantly reduced the activity of GPx-3 compared to controls (254±68 vs. 185±51 unit/g protein, $P=.001$) but not the protein level of GPx-3 (controls: 2.01±.66, patients: 1.83±1.47 relative intensity, $P=.68$). The activity and protein level was poorly correlated in EC-SOD ($r=-.04$) and GPx-3 ($r=.02$). These results suggest that the reduced activity in EC-SOD and GPx-3 in the plasma of hypertensive patients was not due to a down-regulated expression but a dysfunction of these proteins. (This work is supported by NIH grants RR03032 and RR011792.)

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05-047

HEIGHT AND BLOOD PRESSURE OF PYGMIES FROM GABON

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We have found that environment and lifestyle can deeply influence the height of Pygmies from Gabon. The investigation was made on 72 individuals (males and females) Pygmies from the same tribe and families living in two different zones. The first group comprised 25 subjects (14 males and 11 females) who were born and live in a modern city (Libreville), while participants in the second group (14 males and 32 females) never go away from their village (Mekambo), 1000 km northeast. Both groups were homogenous, with no difference for age (31±3.5 to 38±3.45 years old). Their blood pressures >140/90 mm Hg were similar and reflected values observed 30 years ago, with a significant plasma aldosterone increase in pygmies compared to Bantu. Data showed that females were always shorter than males (-92, -93%, $P<.05$) from the same region. Male subjects from Mekambo were significantly shorter than those males (+108.28%, $P<.01$) or females (+116, $P<.001$) from Libreville. Females from Libreville were only taller than females (+107, $P<.05$) from Mekambo. Although bodyweight of males or females from Libreville was significantly higher than males ($P<.001$) or females ($P<.05$) from Mekambo. These data suggest that Pygmies can grow taller and emphasize the possible role of environmental factors and/or lifestyle in their stature.

05-048

USING COMMUNITY-BASED PARTICIPATORY RESEARCH APPROACHES TO UNDERSTAND BARRIERS TO HEALTH IN AFRICAN-AMERICAN POPULATIONS

KJ WILLIAMS; Martha Hargraves.

To understand barriers faced by African Americans in achieving health, The University of Texas Medical Branch at Galveston formed a partnership with local churches, initiating a community-based participatory action research (CBPR) project called JesusFIT (Fitness Instruction and Training). CBPR is a “collaborative approach to research that equitably involves all partners in the research process.”

Objectives. Qualitative portion of the research included strengthening community members’ capacity to analyze barriers that women face related to nutrition and physical activity and opportunities to address these barriers, training community members in CBPR to improve community health, and facilitating qualitative data collection to strengthen portions of the ongoing nutrition education and physical activity program.

Methods. Participatory rural appraisal methods (PRA) were employed in a series of 8 focus groups.

Results. Participants cited healthcare system, personal finance, and food/cooking issues as their primary barriers to health. Participants identified lack of individual commitment, problems dealing with food in African-American culture, an unwelcoming healthcare system, and not knowing how to mix valuable cultural traditions with new knowledge about health as root causes of these barriers. Participants cited having faith as a foundation, looking inside their own community for help, and learning to get financial assistance from outside the community for health programs as factors to remove root causes.

Conclusions. CBPR enhances knowledge about barriers to health faced by African Americans. This knowledge can be used to tailor nutrition education and fitness programs and build community capacity for further research.

05-049

TREATMENT OF HYPERTENSION IN BLACKS UTILIZING AN OLMESARTAN MEDOXOMIL (OLM)-BASED TREATMENT ALGORITHMDHG Smith¹; W Bailey²; M JONES²; F Walker².¹Integrium, Tustin, California; ²Sankyo Pharma Inc., Parsippany, New Jersey

Objectives. This study analyzed the efficacy of a stepped-treatment algorithm that included OLM, hydrochlorothiazide (HCTZ), and amlodipine besylate (AML) in patients with essential hypertension. In this subanalysis, we studied the efficacy of this OLM-based algorithm for treating hypertensive Black patients.

Methods. Thirty-two Black patients (mean systolic blood pressure [SBP]/diastolic BP [DBP] 160/97 mmHg) were enrolled in a 24-week open-label study and followed a six-step algorithm until attaining a BP goal $\leq 130/85$ mm Hg. Initially, patients received OLM 20 mg/day for four weeks. The regimen was modified every four weeks until BP goal was achieved: uptitrate OLM to 40 mg/day, add HCTZ 12.5 mg/day, uptitrate HCTZ to 25 mg/day, add AML 5 mg/day, and uptitrate AML to 10 mg/day.

Results. With OLM monotherapy, 25% and 18% of patients achieved BP goals of $\leq 140/90$ mm Hg and $\leq 130/85$ mm Hg, respectively (Table). Adding HCTZ allowed 75% and 61% of patients, respectively, to achieve these goals; AML increased goal rates to 86% and 79%, respectively. Increased goal rates were driven by greater reductions in SBP/DBP.

Conclusion. An OLM-based treatment regimen effectively controlled hypertension in Black patients, with a majority achieving the more stringent goal of $\leq 130/85$ mm Hg with OLM/HCTZ.

| Algorithm Step | Mean Δ SBP/DBP (mm Hg)* | BP $\leq 140/90$ mm Hg (%)† | BP $\leq 130/85$ mm Hg (%)† |
|---|-----------------------------------|--------------------------------|--------------------------------|
| OLM 20–40 mg/day | –8.7/–5.3 | 25.0 | 17.9 |
| OLM/HCTZ 20–40/12.5–25 mg/day | –26.3/–14.6 | 75.0 | 60.7 |
| OLM/HCTZ/AML 20–40/12.5–25/5–10 mg/day | –29.0/–16.1 | 85.7 | 78.6 |

*Last observation carried forward (N=32, efficacy cohort).

†Cumulative (percent of 28 patients, evaluable cohort).

05-050

EFFICACY OF OLMESARTAN MEDOXOMIL (OLM) AND OLM/HYDROCHLOROTHIAZIDE (HCTZ) IN ACHIEVING BLOOD PRESSURE (BP) GOALS IN BLACK PATIENTS WITH STAGE 2 SYSTOLIC HYPERTENSION

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Objective. We investigated the efficacy of an open-label titration regimen using OLM and OLM/HCTZ in 26 Black patients with stage 2 systolic hypertension.

Methods. After a placebo run-in, patients with seated systolic blood pressure (SBP) 160–199 mm Hg and seated diastolic BP (DBP) <110 mm Hg (mean 171/99 mm Hg) were treated according to the following algorithm in three-week steps: OLM 20 mg/day, OLM 40 mg/day, OLM 40/HCTZ 12.5 mg/day, OLM 40/HCTZ 25 mg/day. Patients exited the study if BP was normalized (<120/80 mm Hg). The primary endpoint was change from baseline in trough SBP after 12 weeks.

Results. OLM and OLM/HCTZ significantly reduced SBP and DBP at all timepoints (Table). At week 12, the highest approved dosages reduced SBP by 32 mm Hg, allowing 58% of patients to achieve goal BP (<140/90 mm Hg).

Conclusion. OLM monotherapy reduced SBP in Black patients with systolic hypertension. Adding HCTZ further reduced SBP, allowing a substantial proportion of patients to achieve BP goal.

| Week | 3 | 6 | 9 | 12 |
|-------------------------|------------------|------------------|----------------------------|--------------------------|
| | OLM 20 mg/day | OLM 40 mg/day | OLM/HCTZ 40/12.5 mg/day | OLM/HCTZ 40/25 mg/day |
| N | 26 | 26 | 26 | 25 |
| Mean ΔSBP (mm Hg)* | -9.0† | -9.0‡ | -29.4§ | -32.0§ |
| Mean ΔDBP (mm Hg)* | -3.5‡ | -4.3‡ | -13.0§ | -13.4§ |
| BP <140/90 mm Hg (%) | 7.7 | 19.2 | 53.8 | 57.7 |

*LOCF (last observation carried forward).

† $P < .01$, ‡ $P < .05$, § $P < .001$ vs. baseline.

Cumulative (percent of 26 patients).

05-051

SEX DETERMINES DIASTOLIC FUNCTION IN YOUTH

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Background. Sex differences exist in the incidence and prognosis of congestive heart failure (CHF), with women having a higher incidence and worse prognosis than men. The reason for these differences is not clearly understood. The aim of this study was to evaluate in youth the influence of sex on diastolic function (DF), which has been recognized to have abnormalities early in the course of CHF.

Method. Participants were 121 normotensive individuals (68 boys, 53 girls) aged 15–18 years. Demographics, hemodynamics, and Doppler-derived indices of DF were collected. Dependent measures of DF were the ratio of peak velocities of early (E) to late (A) filling, and the isovolumetric relaxation time (IVRT).

Results. Girls compared to boys had higher relative wall thickness (RWT) (%) (36.58 ± 1 vs. 34.60 ± 1 , $P < .02$), higher A (cm/sec) (48.40 ± 1.16 vs. 42.36 ± 1.26 , $P < .001$), lower E/A ratio (1.96 ± 6 vs. 2.38 ± 08 , $P < .01$), similar deceleration time (181.30 ± 86 vs. 170.30 ± 4.27 , ns) but shorter IVRT (msec) (51.80 ± 11.14 vs. 59.00 ± 1.87 , $P < .01$). Hierarchical stepwise regression analysis predicting E/A ratio found sex (male > female) to be the best predictor ($R^2 = .09$) followed by HR (R^2 increase = .07, total $R^2 = .15$, $P < .01$) and by RWT (R^2 increase = .05, total $R^2 = .21$, $P < .015$). For IVRT prediction, sex (male > female) was the best predictor ($R^2 = .11$) followed by total peripheral resistance (R^2 increase = .06, total $R^2 = .17$, $P < .017$).

Conclusion. Our data indicate that sex differences in diastolic function exist already in youth. Girls show higher RWT and lower E/A ratio but shorter IVRT. The reasons for this uncoupling of the filling and relaxation processes are unknown and require further attention.

05-052

DO HEMODYNAMIC RESPONSES TO MENTAL STRESS DIFFER BY ETHNICITY AND SEX?

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Background. It has been suggested that ethnic and sex differences in response to mental stress may further explain cardiovascular disease morbidity and mortality. Although we have previously reported ethnicity and sex differences in systolic blood pressure (SBP) response to mental stress, the following evaluation was conducted to further characterize the effect of competitive stress on sympathetic activation by examining changes in both SBP and heart rate (HR).

Methods. Participants (see Table) were 190 African-American (AA) and European-American (EA) youth aged 16–18 years who were normotensive and underwent a stress protocol after being brought to similar levels of sodium balance ($4,000 \pm 200$ mg/day). The protocol consisted of a two-hour baseline period, followed by a one-hour period of playing a competitive video game. SBP and HR were obtained at 15-minute intervals and averaged for analysis. Difference scores between the baseline and stress period were analyzed.

Results. For delta SBP, there was a large main effect of sex ($F(1183) = 20.3$, $P = .0001$). Females had much lower delta SBP than males (especially EA females). EA had slightly lower delta SBP than AA. For delta HR there was a slight sex main effect ($F(1179) = 3.99$, $P = .047$). Females had higher delta HR than males. EA and AA males had similar delta HR.

| Race | AA | | EA | |
|------------------------|---------|---------|---------|---------|
| | Males | Females | Males | Females |
| Sex (%) | | | | |
| n (%) | 41 (22) | 44 (23) | 53 (28) | 52 (27) |
| Δ SBP (mm Hg) | 9.44 | 6.73 | 9.90 | 2.43 |
| Δ HR (beat/min) | 5.77 | 10.35 | 7.41 | 8.15 |

Conclusion. The results indicate that males and females react similarly to stress as indicated by HR, but females have less of an accompanying increase in SBP (especially EA females). Further study is needed, but this may suggest protective cardiovascular mechanisms in females.

05-053

ASSESSMENT OF HYPERTENSION CARE AND CONTROL AMONG BLACK SOUTH AFRICANS: LESSONS LEARNED

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Background. A cross-sectional study was conducted to identify determinants and sequelae of hypertension (HTN) among Black South Africans with HTN, 220 women and 183 men, aged 35 to 65 years, attending public and private primary healthcare services in three Cape Peninsula townships. Challenges to study implementation were encountered. The purpose of this paper is to identify the structure, provider, and patient barriers to study implementation and to discuss approaches applied to ameliorate barriers.

Methods. Through iterative evaluation, study team members met to discuss, address, and document identified barriers to study implementation.

Results. Structure barriers included lack of database to provide a study sampling frame. Poor chart management systems necessitated extensive hand searches. Limited facility resources required transport of research equipment among sites. Providers reported previous negative experience with research and concerns that this study would potentially deplete limited resources. Therefore, we consulted with providers prior to and during the study and provided feedback of patient results. Culturally sensitive instruments were used and a food parcel served as an incentive for patient participation. Extended duration of clinic visits, wait times, and fear that blood sampling would reveal HIV status negatively influenced participation. Private patients required focused recruitment efforts because they were reluctant to participate. Consequently, random sampling was impossible, and convenience sampling methods were adopted.

Conclusion. Flexible and effective approaches can overcome significant barriers to study implementation. These lessons can be applied to facilitate clinical care and research to improve HTN care and health outcomes in this high-risk population.

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05-054

SATISFACTION WITH HYPERTENSION CARE AND HYPERTENSION CONTROL AMONG PERI-URBAN BLACK SOUTH AFRICANS ATTENDING PRIMARY HEALTHCARE FACILITIES IN CAPE TOWN

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Background. Hypertension (HTN) control rates are poor among Black South Africans. HTN control is impacted by psychological and behavioral barriers to care, including patient satisfaction. This paper reports relationships among satisfaction with care, HTN control, and care setting among hypertensive Black South Africans.

Methods. In a cross-sectional study, we examined determinants and sequelae of HTN among hypertensive Black South Africans, 220 women and 183 men, aged 35 to 65 years, attending public (n=323) and private (n=80) primary healthcare facilities in three townships. A satisfaction with nurse and physician care instrument assessed satisfaction with personal treatment, health care, information, response to questions, and emotional support provided.

Results. Mean age was 52.4 years, 81% had ≤ 10 years of education, and unemployment was reported by 40% of the sample. Satisfaction with nurse care did not differ significantly between care settings or by HTN control status. However, satisfaction with physician care, mean (SD), was higher in private (20.5 [3.66]) compared to public (16.6 [4.90]) care settings. Care setting ($\beta = -3.87$) was a significant predictor of satisfaction with physician care. HTN control (BP < 140/90 mm Hg) rates were higher in private (51.3%) compared to public settings (35.6%). Satisfaction with physician care was higher among patients with controlled HTN (18.0 [4.52]) compared to uncontrolled HTN (16.9 [5.14]), $P = 0.04$.

Conclusion. Satisfaction with physician care and HTN control rates were higher among private sites. Moreover, higher satisfaction was reported by those with controlled HTN. Further understanding of factors influencing patient satisfaction is essential to improving HTN care and outcomes.

05-055

AFRICAN GENETIC ADMIXTURE IS NEGATIVELY ASSOCIATED WITH VISCERAL ADIPOSE TISSUE IN BLACK AND WHITE WOMEN

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Greater visceral adipose tissue (VAT) has been associated with increased insulin resistance and hyperlipidemia, resulting in increased risk for diabetes and cardiovascular disease. Scientific literature has reported differences in VAT among individuals of different ethnic/racial groups, particularly between European Americans (EA) and African Americans (AA).

The extent to which racial/ethnic differences in VAT represent genetic and/or environmental influences remains unclear. The genetic admixture approach has been used to declassify racial categorization by allowing the investigation of genetic influences on racial/ethnic differences. This approach identifies ancestry informative markers (AIMs) in admixed individuals who descend from the intermixing of parental ancestral populations.

This investigation tested whether levels of VAT were associated with degrees of African genetic admixture estimated via AIMs in a sample of 114 premenopausal women of African-American and European-American descent. Approximately 35 AIMs were used to calculate estimates of genetic admixture on each individual. VAT was measured by computer tomography (CT) scans and adjusted for DXA-measured body composition and socioeconomic status.

Greater VAT was associated with lesser African genetic admixture ($P=.0102$). These findings suggest an effect of African genetic ancestry on levels of VAT in women and provide support for the exploration of genetics factors in the understanding of racial/ethnic disparities in obesity and its comorbidities.

05-056

RACIAL DIFFERENCES IN N-TERMINAL PROBRAIN-TYPE NATRIURETIC PEPTIDE LEVELS IN HYPERTENSIVE PATIENTS

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The response of plasma N-terminal probrain-type natriuretic peptide (NT-proBNP) in hypertensive patients without left ventricular hypertrophy (LVH) based on race has not been well characterized.

Objectives. To investigate racial differences in plasma NT-proBNP levels in subjects with normal LV systolic function.

Methods. Plasma NT-proBNP levels were measured in 625 subjects grouped according to JNC VII criteria: 1) normotensive (BP \leq 120/80 mm Hg, n=100), prehypertensive (BP 120–139/80–89, n=291), and hypertensive (BP \geq 140/90, or on antihypertensive medication, n=234). Exclusion criteria included CAD, LVEF $<$ 55%, lung disease, diabetes, and renal insufficiency (GFR \leq 60 mL/min/1.73m²).

Results. In normotensive and prehypertensive subjects, African Americans (AAs) exhibited significantly lower NT-proBNP and log NT-proBNP levels compared to Caucasians, whereas there was no racial difference in NT-proBNP or log NT-proBNP in hypertensive subjects (Figure). Within racial groups, NT-proBNP and log NT-proBNP levels were significantly higher in AAs with hypertension compared to normotensives and prehypertensives, whereas there was no significant difference across the groups in Caucasians. There was no significant difference in blood pressure between racial groups, but there was a difference in LV end-diastolic dimension. Multivariate analysis showed that race and blood pressure status were independent predictors for log NT-proBNP levels, after adjusting for age, gender, GFR, LV size and function.

Conclusions. Although NT-proBNP levels were significantly lower in normotensive and prehypertensive AAs compared to hypertensive AAs and comparably-grouped Caucasians, levels were similar in both the hypertensive groups. The clinical implication of this finding is uncertain, but could be related to abnormal ventricular remodeling in the AA subjects.

05-057

MISSED APPOINTMENTS: INSURANCE STATUS AS PREDICTOR IN AN URBAN, HYPERTENSIVE COHORT

P DEWS.

Objective. To evaluate how insurance category is associated with failure to attend scheduled appointments.

Methods. Retrospective cohort study (using administrative data) of 6719 hypertensive patients attending seven internal medicine ambulatory practice sites in an urban academic health center during 2003.

Results. Patients were 65% female, and 95% were aged ≥ 25 years. Self reported (41%) race/ethnicity was 84% Black/African American and 13% White. The distribution of primary insurance types for appointments was Medicare 56%, Medicaid or county 27%, commercial 16%, and 1% were self-paying. Of 41,141 appointments scheduled, 25,377 (62%) were kept, 15,764 (38%) were missed (no-show or cancelled). Variables modeled in a logistic regression included days to appointment, insurance status, new vs. return visit, and presence of comorbidities. All variables were significant at $P \leq .01$, but, "days to appointment" was a much stronger predictor than insurance status. The point on the ROC curve providing the best prediction of failure to attend was incorrect 38% of the time. Classification and regression tree analysis showed similar results.

Conclusion. Even for patients with a serious medical condition (hypertension), appointment failure predictions based on reportedly significant factors (insurance status) are unacceptably inaccurate. Medicaid enrollees are increasingly described in practice management literature as having high appointment no-show rates. These reports have produced appointment scheduling recommendations that can adversely affect access for Medicaid and other medically under-served populations. "Failure to attend" predictions using administrative data probably cannot be generalized across patient populations.

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05-058

DOES MICROALBUMINURIA PREDICT THE DEVELOPMENT OF CLINICAL KIDNEY DISEASE IN HYPERTENSIVE AFRICAN AMERICANS? RESULTS OF 10-YEAR FOLLOW-UP

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Objectives. This prospective, cohort trial was designed to determine the prevalence of microalbuminuria (MA) and its predictive value for the development of chronic kidney disease (CKD) in hypertensive African Americans (AA).

Methods. We studied 158 hypertensive AA (52M, 106F, age 59.3 ± 11.1 years). Subjects with DM, $Scr > 1.4$ mg/dL, or dipstick proteinuria $\geq 1+$ were excluded. Twenty-four-hour urine albumin excretion (UAE) by RIA was determined at baseline and every three months for three years. At the end of the study, there was no difference in CKD (chronic kidney disease) in the MA compared to the non-MA group. However, CKD was more common in subjects who developed MA during follow-up ($P = .09$). These results suggested that serial UAE may be a reliable screening tool for CKD in this high risk population and that longer follow-up might be helpful. We present 10-year follow-up.

Results. Baseline 24-hour UAE was 20.5 ± 35.5 mg/g Cr (range 0.54–297 mg/g Cr); 30 subjects (17%) had $UAE \geq 30$ mg/g Cr. When subjects with elevated UAE (MA) were compared to subject with normal UAE (non-MA), the MA group was older (65.1 vs. 57.9 years, $P < .05$); there was no difference in duration of hypertension, SBP, DBP, BMI, SCr, or CrCl. After 10 years, 25 subjects (16%) had died, 3 (2%) had CVA, and 37 (23%) had CKD (increase in $SCr \geq 0.5$ mg/dL, $n = 13$, and/or urine protein > 300 mg/24 hours, $n = 25$). Progression to CKD was significantly more common in the MA group (40% vs. 20%, $P = .02$). Death (23.3% vs. 12.5%, $P = .15$) and combined adverse outcome (53.5% vs. 38.4%, $P = .15$) were also more common in the MA group, although this did not reach statistical significance.

Conclusions. In this cohort of hypertensive AAs, MA was predictive of CKD. CKD is epidemic in the United States and is especially a problem in AAs. The finding that microalbuminuria can identify subjects at risk of CKD may have great clinical significance.

05-059

INCREASED CARDIOVASCULAR AND STROKE RISKS FOR AFRICAN-AMERICAN AND CAUCASIAN MEN AND WOMEN WITH ELEVATED BLOOD PRESSURE AND CHOLESTEROL LEVELS

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The risks of cardiovascular disease and stroke increase with blood pressure levels for all segments of the population. Additional disease risks are observed with comorbid conditions and risk factors. Elevated cholesterol levels in conjunction with elevated blood pressure levels have been shown to significantly increase risks in some populations. However these increased and additive risks are less evident for African-American men and women. The Black Pooling Project consist of 26,913 individuals from several long-term follow-up cohort studies including 12,366 White women (WW), 9888 White men (WM), 2725 Black women (BW), and 1934 Black men (BM). Coronary heart disease mortality rates were determined for each of the four race-sex groups with the systolic blood pressure (SBP) categories <120 mm Hg, 120–139 mm Hg, 140–159 mm Hg, and \geq 160 mm Hg. Total cholesterol (TC) was categorized as <160 mg/dL, 160–200 mg/dL, 200–240 mg/dL and >240 mg/dL. Black men and women had the higher values of SBP and TC. In the highest category of SBP and TC combined, the percents are as follows: WW 7.6%, WM 5.0%, BW 13.9%, BM 8.5%. Low disease risks were identified with the lowest categories of SBP and TC for all four race-sex groups: WW 4/10,000 person-years, WM 19/10,000, BW 16/10,000 and BM 43/10,000. Greatest disease risk was identified with the highest categories of SBP and TC: WW 170/10,000 person-years, WM 254/10,000, BW 159/10,000, and BM 179/10,000. These results identify the need for aggressive risk factor treatment for all individuals. The additive risks of multiple risk factors are identified for all four race-sex groups.

05-060

ACCESS TO CARE: SEVERE, UNCONTROLLED HYPERTENSION IN URBAN AFRICAN AMERICANS AND THEIR HYPERTENSIVE SIBLINGS

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Introduction. Our objective was to characterize access to care among urban African Americans admitted with severe, uncontrolled hypertension as compared with their hypertensive siblings.

Methods. We prospectively identified urban African Americans admitted to a tertiary care, inner-city hospital (1999–2004) whose admission blood pressure (BP) was >180/110 mm Hg (cases), excluding patients with a secondary cause of hypertension. We also recruited their hypertensive siblings (controls). We reviewed medical records and interviewed patients about their hypertension and access to care.

Results. Forty-one cases were matched to 50 controls. Cases and controls were similar in age (mean for cases 53 vs. 50 for controls), gender (53% of cases female vs. 60% of controls), and reported length of hypertension (15 years for cases vs. 12 for controls). Cases were significantly less likely to be able to report their usual blood pressure than controls (42% vs. 62%), more likely to add salt to their food (51% vs. 30%), and more likely to be using cocaine (24% vs. 10%) (all $P < .05$). Cases were significantly less likely to have insurance than controls (57% vs. 82%), less likely to have a primary care physician (65% vs. 80%), and more likely to report difficulty paying for medications (59% vs. 36%) (all $P < .05$).

Conclusion. Urban African Americans admitted with severe, uncontrolled hypertension differed from their hypertensive siblings both in hypertension-related health behaviors and in their access to medical care. In order to improve outcomes for this population, management of acute hypertensive episodes should also address these long-term issues of hypertension control.

05-062

AWARENESS AND INTENTIONS REGARDING OBESITY-RELATED HEALTH BEHAVIORS IN UNCONTROLLED HYPERTENSIVE AFRICAN AMERICANS

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Objectives. Weight loss is critical in the effective management of overweight/obese hypertensive African Americans. Because knowledge and attitudes may affect adherence with recommended therapy, we assessed patients' awareness and intentions regarding weight-loss issues and dietary salt intake in a cohort of hypertensive African Americans.

Methods. A survey was administered to African-American patients with uncontrolled (SBP>140 and/or DBP>90 mm Hg) hypertension followed at five healthcare centers in New York City. The survey included questions on patients' knowledge of healthy lifestyle activities (including dietary salt reduction, increased exercise, and weight reduction) and intentions to improve these activities.

Results. Of 236 subjects, 25% were overweight (body mass index [BMI] 25–29) and 60% were obese (BMI≥30). Patients had greater awareness of recommendations regarding salt than either weight reduction or exercise. While 97% of the obese and 95% of the overweight patients reported being told by a doctor to reduce salt, only 87% of the obese and 53% of the overweight patients reported being told to control their weight. More overweight/obese patients reported an intention to reduce salt (obese 96%, overweight 92%) than reported taking steps to control weight (obese 82%, overweight 65%, $P<.001$) or to increase exercise (obese 58%, overweight 50%, $P<.001$).

Conclusion. The message to reduce dietary salt is reaching overweight African-American persons with uncontrolled hypertension, but the message about controlling weight and increasing exercise is, in comparison, communicated less effectively and acted upon less frequently. In light of the global epidemic of obesity, a vigorous patient and clinician education campaign about this preventable healthcare crisis is clearly warranted.

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05-063

COMPLICATIONS IN AFRICAN-AMERICAN GULLAHS OF SOUTH CAROLINA WITH HYPERTENSION AND DIABETES

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Background. Hypertension (HTN) is an extremely common comorbidity of diabetes mellitus (DM), affecting 20%–60% of people with diabetes. HTN is also a major risk factor for cardiovascular events. A disproportionate number of African Americans (AA) suffer from both diabetes and hypertension. We hypothesized that complications from diabetes would be more common in those with both diagnoses.

Purpose. The purpose of this secondary analysis was to describe the incidence of HTN and the rate of diabetic complications among AA participants enrolled in the Project Sugar research study.

Methods. Data obtained from 1322 AA research participants were examined in this secondary analysis.

Results. The sample was predominately female (77%), uninsured (69%), and mean age 53±15.1. Some (34.6 %) worked, but 24.8 % were disabled. All participants had diabetes, and most (73%) had HTN defined as >120/80 mm Hg, appropriate for the diabetes population; 41.4% had a BP >140/90 mm Hg. Many (48.2%) had experienced significant diabetic complications, including amputation, surgery, and kidney failure. Those with BP >140/90 mm Hg were significantly more likely to have diabetic complications ($\chi^2=9.6$, $P=.001$). The hypothesis was supported.

Conclusion. Control of HTN is essential if we are to decrease the rate of diabetic complications in the vulnerable AA Gullah population.

05-064

ALTERNATIVES TO THE RACIAL MODEL IN HYPERTENSION RESEARCH: USE OF EL AND PSNA IN HETEROGENEOUS POPULATIONS

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Population substructuring continues to confound traditional race-based studies in hypertension research and render most gene-association studies irreproducible. More nuanced population models are required that identify the historical, geographical, cultural/behavioral, and genetic stratification that exists in heterogeneous macro-ethnic (racial) groups.

We present ethnogenetic layering (EL) as an alternative to the race-model in hypertension studies. This computer-assisted geographical technique employs GIS (geographical information systems) to produce layered raster and vector maps detailing local patterns of microethnic residence, toxin levels, disease incidence, dietary diversity, and other pertinent variables. This provides a more detailed profile of local groups and their potential hypertension susceptibilities. We have developed detailed EL maps for three historically important US regions: the Chesapeake Bay, the Carolina Coast, and the Mississippi Delta.

Once EL is used to identify microethnic variability by region, phenotype segregation network analysis (PSNA) is used to resort microethnic groups on the basis of their presentation of hypertension-related phenotypes. Computational biology is used to statistically evaluate 100 hypertension-related phenotypic variables and identify linked phenotypes in specific microethnic groups. We have developed a prototype hypertension-specific PSNA application protocol for the microethnic groups of the three regions studied.

05-065

DETERMINANTS OF QUALITY OF CHRONIC DISEASE MANAGEMENT AMONG COMMUNITY HEALTH CENTERS IN THE UNITED STATESLS HICKS^{1,2,3}; JA O'Malley¹; BE Landon^{1,4}; TA Lieu⁵; T Keegan¹; NK Cook⁶; BJ McNeil^{1,7}; E Guadagnoli¹.

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Background. Community health centers (CHCs) are responsible for providing care for many of the >40 million uninsured Americans; however, determinants of quality of care delivered in CHCs have not been examined.

Methods. We examined medical records of patients with diabetes or hypertension receiving care from January 1, 1999, to July 31, 2001, in 64 federally funded CHCs from throughout the United States and surveyed administrators at the CHCs about their center's organizational characteristics. For each condition, we created a single score representing the percentage of applicable quality indicators met for each patient. Scores were averaged within a center to create center-level scores by condition.

Results. Uninsured patients received significantly poorer diabetes and hypertension care (28.0% for diabetes and 47.4% for hypertension) compared to those with insurance (34.6% for diabetes and 51.4% for hypertension) ($P < .05$). Black and Hispanic patients received poorer diabetes care (29.9% for Blacks and 29.7% for Hispanics) than Whites (37.4%) ($P < .001$). Centers that were <30 years old had better diabetes quality (36.6%) than centers that had been in existence for 30 or more years (29.8%) ($P < .05$). After multivariable adjustment, uninsured patients continued to receive poorer diabetes care than the insured.

Conclusions. We found poor quality of care for diabetes and hypertension in a nationally representative sample of CHCs and that quality varied by patients' characteristics and by CHCs' organizational structure. Policymakers should carefully consider which center characteristics are most important in determining high quality care, and efforts within CHCs should be made to further improve quality of care for uninsured patients.

05-066

SURVIVAL OF PATIENTS WITH ISCHEMIC VERSUS NONISCHEMIC CARDIOMYOPATHY IN THE CARIBBEAN

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We compared the five-year mortality of patients with ischemic (IC) versus nonischemic cardiomyopathy (NIC) presenting to the Eric Williams Medical Sciences Complex (EWMSC), Trinidad.

The clinical and echocardiographic data of 64 consecutive adults with left ventricular ejection fraction (LVEF) <40% presenting to the EWMSC between January 1992 and December 1994 were retrospectively obtained from the charts. Patients or relatives were contacted five years after initial presentation to determine mortality.

IC (47%) was less common than (NIC) (53%). The mean age was 60 ± 12 years. Sixty-eight percent of patients were male. Ethnic background was 47% African descent and 41% East-Indian descent. The prevalence of diabetes mellitus and hypertension was 40% and 45%, respectively. The mean LVEF was $28\% \pm 9\%$ with no difference between both groups. Most (98.5%) patients were symptomatic at presentation: NHYA classes IV (6%), III (68%), and II (24.5%). ACE inhibitors were prescribed in 81%, diuretics in 80%, digoxin in 59%, warfarin in 17%, beta-blockers in 8%, and amiodarone in 8%. Five year follow-up was completed in 84% of patients. Mortality was 53% at five years. Left ventricular internal diameter in systole was the only independent predictor of mortality. For the first two years after initial presentation, survival of patients with IC appeared better than that of those with NIC. During the last three years this trend was reversed.

In conclusion, five-year mortality was high in these heart failure patients from the Caribbean. IC patients appeared to do better initially, although five-year mortality was no different in both groups.

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05-067

MALE GENDER IS NEGATIVE PREDICTOR OF RENAL SURVIVAL IN AFRICAN AMERICANS WITH DIABETIC NEPHROPATHY

ED CROOK.

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Objective. Diabetic nephropathy is the number one cause of end-stage renal disease (ESRD) in African Americans and is more common in females. We examined the effects of gender on renal survival in African Americans with diabetic nephropathy and moderate-to-severe renal disease.

Methods. The charts of 157 African Americans with diabetic nephropathy seen in our nephrology clinic in 2001 and 2002 were reviewed. Data on demographics, blood pressure (BP), medications, and renal risk factors were extracted. Effects of gender and other factors on renal survival were determined by Cox proportional hazards analysis with ESRD as the endpoint.

Results. There were 53 males and 104 females. Thirty-nine (19 male) reached ESRD during the ~2-year follow-up. Males had higher diastolic BP at presentation (86.2 vs. 80.5 mm Hg, $P=.012$) and during follow-up (84.3 vs. 79.8 mm Hg, $P=.008$). Estimated GFR (eGFR), age, and duration of diabetes were not different. Adjusting for eGFR and age, males had twice the risk for ESRD (HR 2.19, 95% CI 1.14–4.19, $P=.018$). Other factors predictive of renal survival were initial DBP, follow-up SBP and DBP, and presence of hepatitis C. Male gender remained a significant predictor of worse renal survival with inclusion of SBP or hepatitis C, but not DBP, in the model.

Conclusions. In African Americans, diabetic nephropathy is more common in females, but males have worse renal survival. This effect of male gender is independent of SBP but not DBP.

05-068

COMPARISON OF THE CHANGING CLINICAL PRESENTATIONS OF AORTIC DISSECTION OVER THE PAST TWO DECADES

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Aim. Historically patients with aortic dissection presented to medicine services with severe chest pain and high early mortality. Changes in recognition of risk factors and treatment of hypertension may or may not have changed the presentation and mortality in aortic dissection. We undertook this study to determine whether aggressive treatment of risk factors would affect the presentation and mortality of patients with aortic dissection.

Methods. A retrospective review of the medical records of patients with diagnosed aortic dissection between 1984 and 2004 was performed. Clinical, laboratory, and radiologic data of all patients were reviewed and analyzed by decade of presentation. History of hypertension and control of hypertension was self-reported.

Results. Thirty seven patients were identified with aortic dissection; 17 patients presented within the first decade, period 1, between 1984 and 1994, and twenty between 1994 and 2004, period 2. Patient characteristics are shown in the Table.

| Period | 1 (1984–1994) | 2 (1994–2004) | Statistical Significance |
|----------------------|---------------|---------------|--------------------------|
| Age range (mean) | 23–73 (50) | 26–86 (61) | <i>P</i> =ns |
| Males | n=15 | n=14 | <i>P</i> =ns |
| Diabetes | n=17 | n=3 | <i>P</i> =.02 |
| Hypertensive | n=18 | n=15 | <i>P</i> =ns |
| Smokers | n=17 | n=19 | <i>P</i> =ns |
| Overweight/obese | 12 | 8 | <i>P</i> =.01 |
| African American | n=17 | n=19 | <i>P</i> =ns |
| On β -blockers | n=2 | n=7 | <i>P</i> =.05 |
| Time to diagnosis | 24 hours | 48 hours | |
| Deceased | n=4 | n=4 | <i>P</i> =ns |
| Classical chest pain | n=16 | n=12 | <i>P</i> =.02 |

Within the earlier decade 1984–1994, 94% (16), presented with classical pain, 94% (16) had uncontrolled hypertension, 71% (12) had previous stage 4 hypertension, 12% (2) were on β -blockers; time to diagnosis averaged <24 hours; 24% (4) died. Within the latter decade 1994–2004, 50% (10) presented with classic chest pain and 50% (10) with uncontrolled hypertension; 25% (5) had previous stage 4 hypertension; 35% (7) were on β -blockers; time to diagnosis averaged 48 hours; 20% (4) died.

Conclusions. Interestingly the time to diagnosis increased over the latter decade by 24 hours and overall mortality did not change. Based on our findings of an increased number of patients presenting with atypical symptoms during the latter period, with more frequently controlled hypertension at lower stages, who had delayed diagnosis, interestingly the time to diagnosis increased over the latter decade by 24 hours and overall mortality did not change. We conclude that there may be need for heightened suspicion of the presence of aortic dissection in hypertensive patients who present with nonspecific symptoms.

05-069

AFRICAN AMERICAN HEALTH COALITION, INC.

C McKeever.

Objectives. Wellness Within Reach (WWR) collaborates with community centers and churches to offer African Americans in Portland access to no-cost, culturally appropriate physical activity classes. WWR aims to saturate our target N/NE area with a diversity of free physical activity opportunities. The goals are to increase the number of people leading active lifestyles and improve the community norm towards physical activity.

Method. Certified instructors conduct exercise classes at community venues. To evaluate the program, a brief questionnaire is administered to participants attending exercise classes. Quarterly questionnaires assess frequency of attendance and attitudes about exercise and fitness goals.

Results. To date >1600 individuals have participated in the WWR classes. Participants in a recent sample (N=172) reported overweight/obesity (33.3%), high cholesterol (19%), and high blood pressure (22.4%). Participants report exercising more now than in the six months prior. Participants of WWR are exercising an average of 3 times per week, and there has been a steady increase in attendance as the classes are advertised and referred by word of mouth. The classes are centered around the culture of this specific community and have become a family gathering space to lead active lives, as the program as a whole has become a “movement.”

Conclusion. Community members are bringing their friends and family members and trying new classes otherwise not available or affordable for them. Participants in WWR programs are exercising more as a result of increased support and access to exercise classes.

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05-070

EFFICACY AND SAFETY OF FIXED-DOSE COMBINATIONS OF IRBESARTAN/HCTZ: A SUBGROUP ANALYSIS OF AFRICAN AMERICAN PATIENTS WITH UNCONTROLLED SBP ON MONOTHERAPY IN THE IRBESARTAN/HYDROCHLOROTHIAZIDE BLOOD PRESSURE REDUCTIONS IN DIVERSE PATIENT POPULATIONS (INCLUSIVE) TRIAL

E SAUNDERS and the INCLUSIVE Investigators.

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Objectives. This subgroup analysis of the INCLUSIVE trial evaluated the efficacy and safety of irbesartan/hydrochlorothiazide (HCTZ) in African American patients with uncontrolled systolic blood pressure (SBP: 140-179 mmHg; 130-179 mmHg for patients with type 2 diabetes mellitus) following at least 4 weeks of antihypertensive monotherapy.

Methods. Treatment was consecutive with placebo (4-5 weeks), HCTZ 12.5 mg (2 weeks), irbesartan/HCTZ 150/12.5 mg (8 weeks), and irbesartan/HCTZ 300/25 mg (8 weeks). Endpoints included mean changes in SBP and diastolic BP (DBP) from baseline to the end of irbesartan/HCTZ 300/25 mg treatment (Week 18), SBP and DBP goal attainment rates at Week 18, and safety parameters.

Results. Of the 844 patients completing the placebo period, 191 (23%) self-identified as African American (mean age 53.5 years, 60% women, and 25% had type 2 diabetes mellitus). Efficacy results for the intent-to-treat African American population (n=157; see table) were similar to those for the overall INCLUSIVE study population. Treatments were well tolerated.

| | Baseline* | Week 18* | Change from baseline to Week 18* | Goal attainment rate (95% confidence interval) |
|-----|--------------|--------------|----------------------------------|--|
| SBP | 155.9 ± 10.3 | 135.2 ± 15.5 | -20.7 ± 16.5† | 72% (0.65, 0.79) |
| DBP | 93.6 ± 8.9 | 84.2 ± 11.0 | -9.4 ± 10.2† | 78% (0.71, 0.84) |

*Mean mmHg ± SD; †P<0.001; SBP goal, <140 mmHg or <130 mmHg for patients with diabetes mellitus; DBP goal, <90 mmHg or <80 mmHg for patients with diabetes mellitus.

Conclusion. In the majority of African American patients with uncontrolled SBP on monotherapy, SBP goal attainment can be met using fixed-dose combinations of irbesartan

