ABSTRACT PRESENTATIONS FROM THE 26TH ANNUAL INTERNATIONAL INTERDISCIPLINARY CONFERENCE ON HYPERTENSION AND RELATED RISK FACTORS IN ETHNIC POPULATIONS
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001

HEALS: A FAITH-BASED HYPERTENSION CONTROL AND PREVENTION PROGRAM FOR AFRICAN AMERICAN CHURCHES. TRAINING OF CHURCH LEADERS AS PROGRAM INTERVENTIONISTS

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Background. A 12-session church-based HEALS program (Healthy Eating and Living Spiritually) was developed for a hypertension control and prevention program in African Americans (AAs). This study presents specifics of training lay health educators to effectively deliver HEALS to high-risk AAs.

Methods. A one-day workshop was conducted by the research experts in an AA church. Five church members were recruited to be program interventionists called Church Health Counselors (CHCs).

Results. Using principles of adult education, training protocol was developed with the intention of recognizing and supporting CHCs' skills. CHCs received training on delivering HEALS program. The process of training emphasized action methods including role playing and hands-on experience with diet portion measurements.

Conclusion. With adequate training, the community lay health educator can be an essential partner in a community-based hypertension control program. This may motivate program participants more and encourages the individual to make the behavior modifications on a permanent basis.

002

DESPITE A HIGH RATE OF LOW VITAMIN D IN PREGNANCY IN URBAN MILWAUKEE, VITAMIN D IS HIGHER IN AFRICAN AMERICANS WITH GESTATIONAL HYPERTENSION/PREECLAMPSIA THAN IN NORMAL PREGNANCY

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Background. Limited data on the role of vitamin D deficiency in the etiology of gestational hypertension and preeclampsia is available. The purpose of this study is to assess whether low 25-hydroxyvitamin D level is associated with gestational hypertension (GHTN) and preeclampsia (PE).

Methods. Institutional review board approval was obtained. One-hundred fifty subjects with GHTN or PE, in a 1-to-1 ratio with age- and race-matched control subjects were planned to enroll. Demographics, serum 25 OH D, and 1, 25 (OH)2 D were obtained within first day after delivery and results were analyzed.

Results. We present preliminary results of 39 controls and 39 cases. African Americans (AA) represented 67%, Caucasians 23%, and Hispanics 10%. There is a tendency of mean 25 OH D to be higher in cases (15.6 vs 19.16 ng/mL; $P=.07$). Overall, 70% of subjects were vitamin D (25 OH) deficient (<20 ng/mL), 17% insufficient (21–29 ng/mL) and 13% normal (≥ 30 ng/mL). Vitamin D deficiency was found in 32 (82%) of controls and 23 (59%) of cases. Ninety percent of AA were either vitamin D deficient (69.2%) or insufficient (21.2%) and AA controls had significantly lower 25 (OH) D than cases (13.6 versus 20.6 ng/mL, $P=.006$). Serum 1, 25 (OH)2 D levels were significantly higher (57.9 vs 45.9 pg/mL) in cases ($P=.04$).

Conclusion. Vitamin D deficiency/insufficiency was found in the majority of subjects. Serum hydroxyvitamin D was higher in AA with GHTN/PE versus healthy women. Further studies on vitamin D and pregnancy are needed.

003

FIXED-DOSE COMBINATION OF AZILSARTAN MEDOXOMIL PLUS CHLORTHALIDONE RESULTS IN SUBSTANTIAL BP REDUCTION IN HYPERTENSIVE BLACKS

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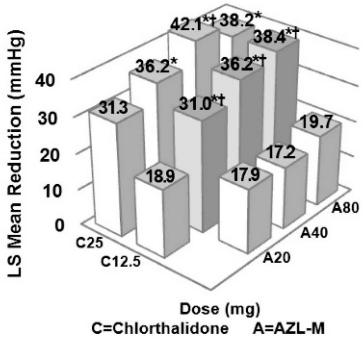
Objective. Fixed-dose combinations (FDCs) of the ARB azilsartan medoxomil (AZL-M) plus chlorthalidone (CLD) were compared with each monotherapy in a subgroup of Blacks with stage 2 hypertension in an 8-week, blinded, factorial study.

Methods. Patients with clinic systolic BP (SBP) ≥160 to ≤190 mm Hg were randomized to AZL-M 0, 20, 40, or 80 mg and/or CLD 0, 12.5, or 25 mg (no double-placebo arm). Randomization was stratified by race. The primary analysis compared pooled results from the highest two FDC doses (40/25 + 80/25 mg) vs the highest individual monotherapy doses using trough SBP by ambulatory BP monitoring (ABPM) (hours 22–24). Subgroup analysis in Blacks was a prespecified key secondary analysis.

Results. In Blacks (n=342/1714, 20%), baseline trough BP by ABPM was 150–160/89–98 mm Hg and clinic BP was 160–168/96–101 mm Hg. Reductions in trough BP by ABPM with AZL-M 80 mg (n=28), CLD 25mg (n=22), and the FDC (40/25 + 80/25mg; n=19 + 21) were −10/−6, 23/−12, and 28/−17 mm Hg, respectively (P<.001, FDC vs AZL-M 80 mg). For clinic BP (n=26–35/arm), most individual FDC doses were significantly more effective than both respective components (Figure). Serum creatinine elevations, typically reversible, were more common with AZL M/CLD; hypokalemia was less common with AZL-M/CLD than CLD alone. Compared with Whites, Blacks had AZL-M/CLD similar BP reduction, more creatinine elevations and less dizziness.

Conclusion. In Blacks, AZL-M/CLD lowered BP more than AZL-M or CLD alone. Changes in potassium and renal function reflected the effects of diuresis and renin-angiotensin blockade.

Change From Baseline in Clinic SBP at Week 8



*P<.05 in favor of FDC vs AZL-M component.
†P<.05 in favor of FDC vs CLD component.

004

DOES THE USE OF HOME REMEDIES CONTRIBUTE TO LOW MEDICATION ADHERENCE AMONG AFRICAN AMERICANS WITH HYPERTENSION?

YL CUFFEE

Annually, 125,000 deaths from cardiovascular disease are attributed to medication nonadherence. Patients taking antihypertensive medications often report side effects such as headaches, dizziness, and drowsiness, and turn to home remedies as a supplement or alternative to prescriptions. Few home remedies have been shown to have beneficial effects and using a combination of home remedies and prescriptions may lead to complications.

Data were obtained from the Alabama Collaboration for Cardiovascular Equality, 2007. The dependent variable was medication adherence (Morisky Adherence Scale). The independent variable was self-reported use of home remedies. Use of home remedies was a dichotomous (yes/no) variable. The covariates included self-reported trust (Hall Trust Scale), income, and education, and use of vinegar, garlic or mustard. Associations were quantified using logistic regression.

Our sample consisted of 229 males and 557 females, had an average age of 53.6 ± 9.7 years. Approximately 26.7% reported using home remedies; specifically, 19.5% reported using vinegar, 11.6% garlic, and 5.7% mustard. Adjusted analysis indicated home remedies (OR: .41, $P<.001$), trust (OR: 1.07, $P<.001$), and an income of $12,000–15,999 (OR: 3.07, $P=.015$) were associated with medication adherence.

Among our cohort of African Americans with hypertension receiving care at a clinic in Birmingham, Alabama, home remedies use and lower trust contributed to lower medication adherence. Little is known about home remedy use; however, understanding the use of home remedies is essential to adequately treat hypertension and an opportunity to educate patients about complications that may result from using home remedies.

005

ASSOCIATION OF STRESS AND OBESITY (BMI AND WC) AND THE MEDIATING EFFECT OF COPING AND SOCIAL SUPPORT IN AFRICAN AMERICANS: JACKSON HEART STUDY

BW CAMPBELL JENKINS

Obesity, which affects 72 million adults in the US and 1 billion worldwide, has a serious social and psychological impact on humanity.

Objective. To examine the association of global perceived stress (GPS) and obesity measured by body mass index (BMI), and waist circumference(WC), and the mediating effects of coping strategies (CS) and social support (SS) in African Americans (AAs).

Methods. The Jackson Heart Study, which examines the etiology, determinants and progression of cardiovascular disease in AAs, provided data for this study. GPS is an 8-item questionnaire that measures perceived stress. CS comprise two major subscales (emotional focus and problem focus), and four minor subscales (emotional focus, engagement and disengagement, problem focus, engagement and disengagement). The analytic sample of 3891, obtained after excluding records missing for BMI, WC, GPS, CS and SS data, had mean (SD) age of 54.2 (12.6) years and 63.6% were women. Sex-stratified multivariable adjusted regression models and Sobel mediation test were performed adjusting for age, physical activity, income, smoking, education, occupation, diet, and menopause and hormone replacement therapy (women only).

Results. Based on the fully adjusted models, stress was positively associated with WC ($P=.0255$), which was partially mediated by CS for men. For women, stress was positively associated with WC ($P=.0022$) and BMI ($P=.0208$), which were both partially mediated by CS.

Conclusion. Though SS does not mediate the association between stress and obesity, but various subscales of CS partially mediate the association between stress and WC for both sexes and BMI for women.

006

FOLK MEDICINE USE AMONG AFRICAN AMERICANS: THE JACKSON HEART STUDY

D SARPONG

According to an Academy of Sciences report, approximately 15 million adults are taking herbal medicine or high doses of vitamins in conjunction with prescription medication. Over 60% of the US population uses complementary and alternative medicines therapy.

Objectives. To determine the prevalence of folk medicine (FM) among African Americans (AAs), sociodemographic and clinical correlates, and the major health-related reasons for use of FM.

Methods. FM defined in the Jackson Heart Study (JHS) is participant's use of at least one of the following home remedies: vinegar, Epsom salt, lemon/lemon juice, garlic teas, roots of herbs in the last two weeks of their baseline clinic visit (September 2000–March 2004) for medical reasons only. Descriptive statistics and logistic regression models were performed.

Results. The prevalence of FM use in JHS was 58.3% with gender-differences (women: 60.2% vs men: 55.2%; $P=.0004$). Women (OR=1.23; 95%CI: 1.10, 1.38), non-current smokers (OR=1.28; 95% CI: 1.10, 1.51), persons with hypertension (OR=1.41; 95% CI: 1.26, 1.58) and type 2 diabetes (OR=1.22; 95% CI: 1.06, 1.79), on anti-hypertensive medication (OR=1.49; 95% CI: 1.23, 1.79), overweight (OR=1.27; 95% CI: 1.07, 1.51) and obese (OR=1.21; 95% CI: 1.21, 1.68) were more likely to use FM compared to their counterparts. Age (OR=1.14; 95% CI: 1.10, 1.20) and diastolic blood pressure were positively associated with FM use.

Conclusions. The prevalence of FM in JHS was higher than previously noted in the literature. Utility of FM was higher in women than men and was significantly associated with hypertension and diabetes, cardiovascular risk factors.

007

IS METHAMPHETAMINE USE/ABUSE AN EMERGING CARDIOVASCULAR DISEASE RISK FACTOR? - HYPOTHESIZED PATHWAYS

D SARPONG

According to the 2005 National Survey on Drug Use and Health, about 10.4 million Americans aged 12 years or older have used methamphetamine (meth) at least once in their lifetimes for non-medical reasons. Worldwide, there are more than 26 million regular users of meth compared to approximately 16 and 14 million heroin and cocaine users, respectively. Methamphetamine glycated proteins (AGEs) are associated with diabetes, vascular inflammation and deterioration, and formation of damaging deposits on arterial walls. Though consequences of meth use/abuse have been mostly associated with sexual transmitted infections (STIs) and not with cardiovascular disease (CVD), taking even small amounts of meth can result in increased: wakefulness, respiration, and blood pressure; rapid heart rate, irregular heartbeat and hyperthermia.

Objectives. The primary objective of this research was to assess whether or not meth use/abuse is a potential emerging risk factor for cardiovascular disease.

Methods. Systematic review of peer review health journals and reports was used to understand the epidemiology of meth use/abuse and its potential link with CVD or events.

Results. Four hypothesized pathways (HP) of meth use/abuse to cardiovascular disease or event were derived. The hypothesized pathways (number of intermediates) are: HP1: Meth to Arrhythmias (2); HP2: Meth to Heart Attacks (3); HP3: Meth to Intracranial Hemorrhage (3); and HP4: Meth to Vasculitis (3).

Conclusions. This research suggests that the medical consequences of methamphetamine use/abuse should not only focus on its relation to STIs and HIV/AIDS, but also on CVD. Methamphetamine abuse could potentially change the CVD risk profile.

008

OXIDATIVE STRESS PREDICTS BLOOD PRESSURE

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Oxidative DNA damage is associated to cardiovascular disease; however, its predictive value is not completely elucidated in human hypertension. We hypothesize that blood levels of 8-OHG will be associated to blood pressure levels and cardiac structure and geometry. There were 137 participants of multiethnic origin (mean age: 27.7 ± 3.0). Resting and ambulatory blood pressures were recorded. Cardiac mass and geometry were derived from ultrasound technique. Multiple regression was used to analyze the additional contribution of 8-OHG to models which included sex, race, their interaction and age as predictors of ambulatory and supine BP. Systolic blood pressure (SBP) was consistently higher in males than females ($P<.05$). Supine and night time SBP were greater in African Americans than European Americans. Males had higher values of 8-OHG than females ($P<.05$). 8-OHG added significantly to the base models for supine SBP (R2 increase >.04), 24h ambulatory SBP (R2 increase >.05) and night time SBP (R2 increase >.08) as well as relative wall thickness (R2 increase =.05) (all Ps<.05). These findings suggest that DNA damage as measured by 8-OHG is an independent predictor of increase blood pressure and cardiac remodeling.

009

ROLE OF RACE/ETHNIC ON THE RELATIONSHIP OF ARTERIAL STIFFNESS TO OXIDATIVE STRESS

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Background. Oxidative stress damage is a contributor to arteriosclerosis. However, the moderator effect of race/ethnicity on the relationships of arterial stiffness to 8 hydroxydeoxy guanosine (8-OHdG), a marker of DNA damage is not fully understood. We studied 137 subjects from multiethnic origin. There were 74 African Americans (AA, 35 males) and 63 European Americans (EA, 38 males) aged 19 to 36 years. Resting supine blood pressure was recorded. Arterial stiffness was evaluated using standard carotid-distal pulse wave velocity (PWV) protocol and 8-OHG was measured to assess DNA derived oxidative stress. Associations between PWV and 8-OHdG were computed within each race.

Results. AA compared to EA had higher BP ($P<.05$), lower 8-OHG ($P<.05$). PWV was associated to 8-OHdG in EA (r=.27, $P<.05$) not into AA (r=.04, ns).

Conclusion. These findings suggest race-dependent detrimental effect of DNA-derived oxidative stress on arterial stiffness.

010

CARDIOVASCULAR REACTIVITY IS PREDICTIVE OF DIASTOLIC FUNCTION TWO YEARS LATER

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Background. Cardiovascular reactivity is a predictor of resting blood pressure and diastolic function (DF). However, whether reactive DF is linked to future DF is unknown. We hypothesize that mental stress induced changes in DF will determine future DF.

Method. To address this issue, 10 healthy individuals, aged 30 to 50 years, were evaluated during 2 visits (two years apart) consisting of a resting and a videogame challenge stressor phases (40 minutes each). After a 3-day sodium controlled diet, hemodynamics, mitral inflow and mitral annular velocities were recorded every 20 minutes.

Results. Resting blood pressure (116/72 mm Hg vs 120/72 mm Hg, ns) and heart rate (70 beats/min vs 66 beat/min, ns) were unchanged between the two visits. E/A ratio at rest and during stress were unchanged. Resting and stress Mitral annulus velocities and estimated filling pressure (E/E′) were decreased at follow-up (FU) visit compared to the first visit (all *P*s<.01). Stress induced changes in E/A ratio was predictive of resting E/A ratio at FU. Specifically, 40% of individuals who exhibited greater drop in E/A during stress at first visit had decreased E/A ratio at rest during FU, 20% were unchanged. The remaining 40% had a slight E/A increase both during stress and resting FU.

Conclusion. These results indicate a mental stress-related decrease of myocardial function and a high predictive value of reactive E/A ratio for future heart relaxation and filling.

011

STRESS-INDUCED CHANGES IN DIASTOLIC FUNCTION IS PREDICTED BY BRAIN NATRIURETIC HORMONE

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Background. Mental stress induces diastolic function (DF) reduction. However, predictors of this blunted DF are not completely elucidated.

Method. 80 African American (AA) and 80 European American (EA) adults aged 30 to 60 years underwent 2 hour protocol of 40 minutes rest, video game stressor and recovery. DF indices were recorded every 20 minutes. Blood pressure (BP) and heart rate (HR) were obtained at 10 minutes. Samples for brain natriuretic peptide (BNP) were collected every 40 minutes. Separate regression analyses were conducted using the E/A ratio, E′, E/E′ during rest and during stress as dependent variables. The predictor variables were entered into the stepwise regression models in an hierarchical fashion. At the first level age, sex, race, height, BMI, BNP, and LVM were permitted to enter the models. The second level consisted of SBP, DBP and HR. The final level contained cross-product terms of race by SBP, DBP and HR. Below, the numbers in parentheses are the beta weights/standardized regression weights.

Results. The resting E/A ratio was predicted by a stepwise model of age (.31), BNP (.16), HR (−.40) and DBP (−.23) with an R2=.33. Stress E/A ratio regression had an R2=.22 and consisted of age (.24), BNP (.08), HR (−.38), and SBP (−.21). The regression model for E′ at rest consisted of BNP (.26), age (.22), LVM (−.15) and DBP (−.27) with an R2=.29. E′ during stress was predicted by age (−.18), LVM (−.18) and BNP (.35) with an R2=.18. Resting E/E′ was predicted by race (.17, AA>EA) and DBP (.24) with an R2=.10. During stress, the regression model for E/E′ consisted of BNP (−.36), height (−.26) and HR (−.21) with R2=.15. These findings indicate that BNP consistently predicts resting and stress induced reactive diastolic function.

012

EFFECTS OF AMLODIPINE (AML)/OLMESARTAN MEDOXOMIL (OM) ± HYDROCHLOROTHIAZIDE (HCTZ) IN PATIENTS WITH HYPERTENSION UNCONTROLLED ON PRIOR ANGIOTENSIN RECEPTOR BLOCKER (ARB) MONOTHERAPY

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A prospective, open-label dose-titration study with a 20-week active treatment period was conducted in patients uncontrolled on prior monotherapy (SBP ≥140mm Hg [≥ 130mm Hg with diabetes] and ≤180mm Hg and DBP ≤110mm Hg). Patients were switched without washout to AML/OM 5/20mg and uptitrated every 4 weeks to AML/OM 5/40mg, AML/OM 10/40mg (if seated [SeBP]>120/70mm Hg), AML/OM 10/40+HCTZ 12.5mg, and AML/OM 10/40+HCTZ 25mg(if SeBP >125/75mm Hg). The primary endpoint was the percentage of patients achieving cumulative SeSBP goal <140mm Hg (<130mm Hg with diabetes) by week 12. A prespecified subgroup analysis of patients previously treated with ARBs (valsartan, losartan, telmisartan) is presented.

In the total cohort (N=999), mean age (±SD) was 55.6±11.4 years, baseline SeBP was 153.7 ± 9.2/91.9 ± 8.6mm Hg, and 19.2% had type 2 diabetes. BP was significantly reduced from baseline (P<.0001) and most patients achieved BP goal. In the total cohort, treatment-emergent adverse events (TEAEs) occurred in 529/999 patients (53.0%), mostly mild-to-moderate in severity. No deaths or drug-related serious TEAEs were reported. AML/OM±HCTZ enabled most patients with previously uncontrolled hypertension on ARB monotherapy to safely achieve BP control.

013

THE EFFECTS OF AN AMLODIPINE (AML)/OLMESARTAN MEDOXOMIL (OM)-BASED TREATMENT ALGORITHM ON 24-HOUR BLOOD PRESSURE (BP) IN BLACK AND HISPANIC PATIENTS UNCONTROLLED ON PRIOR MONOTHERAPY

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Black (n=42) and Hispanic (n=33) patients with hypertension uncontrolled with prior monotherapy were switched, without washout, to AML/OM 5/20mg and uptitrated every 4 weeks to AML/OM 5/40mg, AML/OM 10/40mg (to achieve seated BP [SeBP] <120/70mm Hg), AML/OM 10/40+HCTZ 12.5 mg, and AML/OM 10/40+HCTZ 25mg (to achieve SeBP <125/75mm Hg). Baseline mean (±SD) 24-hour ambulatory BPs were 137.3 ± 12.7/84.0±10.6 and 135.5 ± 12.6/81.4 ± 8.6mm Hg in Black and Hispanic patients, respectively. The primary endpoint (percentage of patients achieving cumulative SeSBP goal <140mm Hg [<130mm Hg in patients with diabetes] by week 12) was achieved by 71.6% of Black and 72.0% of Hispanic patients. At weeks 12 and 20, significant changes from baseline in mean 24-hour ambulatory BP were observed and during daytime, nighttime, and last 2, 4, and 6 hours of the dosing interval. By weeks 12 and 20, a mean 24-hour ambulatory BP of <130/80mm Hg was achieved by 61.9% and 91.9% of Black patients, respectively and by 78.8%, and 66.7% of Hispanic patients, respectively. Treatment was well to lerated. An AML/OM±HCTZ-based treat-to-goal algorithm effectively and safely lowered ambulatory BP over the 24-hour dosing period in Black and Hispanic patients with hypertension previously uncontrolled on prior monotherapy.

014

THE EFFECTS OF AN AMLODIPINE (AML)/OLMESARTAN MEDOXOMIL (OM)-BASED TREATMENT ALGORITHM ON BLOOD PRESSURE (BP) CONTROL IN PATIENTS WITH METABOLIC SYNDROME: A SUBANALYSIS OF THE BP-CRUSH STUDY

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Patients with hypertension and metabolic syndrome (MetS) uncontrolled on prior monotherapy were switched, without washout, to AML/OM 5/20 mg and uptitrated every 4 weeks to AML/OM 5/40 mg, AML/OM 10/40 mg (to achieve seated BP [SeBP] <120/70 mm Hg), AML/OM 10/40+HCTZ 12.5 mg, AML/OM 10/40+HCTZ 25 mg (to achieve SeBP <125/75 mm Hg). Of 999 enrolled patients, 462 (46.2%) had MetS. Mean (±SD) baseline SeBP was 153.4±9.2/92.0±8.3 mm Hg, BMI was 32.9±6.5 kg/m^2, and 129/462 (27.9%) MetS patients had type 2 diabetes (T2DM). The primary endpoint (percentage of patients achieving cumulative SeSBP goal <140 mm Hg [<130 mm Hg in T2DM] by Week 12) was achieved by 74.8% of MetS patients. At Weeks 12 and 20, mean (±SEM) SeBP changes from baseline were 21.7±.7/ 11.8±.4 and −26.5±.8/−14.2±.5 mm Hg, respectively (P<.0001 vs baseline). A cumulative SeBP goal of <140/90 mm Hg (<130/80 mm Hg in T2DM) was achieved by 68.7% and 81.8% of patients by Weeks 12 and 20, respectively. In a prespecified subgroup analysis of MetS patients (n=128), changes from baseline in mean (±SE) 24-hour ambulatory BP at Weeks 12 and 20 were −13.5±l.l/−9.3±.7 and −18.2±1.2/−11.8±.8 mm Hg, respectively, enabling 72.8% and 86.7% of patients, respectively, to achieve a 24-hour ambulatory BP target of <130/80 mm Hg. Drug-related-TEAEs included dizziness (6.9%), peripheral edema (6.7%), fatigue (1.5%), and hypotension (1.3%). An AML/OM±HCTZ treatment algorithm allowed a majority of MetS patients with hypertension to safely achieve BP goal.

015

DIETARY HABITS, PHYSICAL ACTIVITY PATTERNS AND HEALTH BELIEFS OF AFRICAN CANADIANS IN THE GREATER TORONTO AREA

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It is well-documented that unhealthy diets and sedentary lifestyles are risk factors to several chronic diseases and conditions such as hypertension/stroke/heart disease, type 2 diabetes, end stage renal disease and some cancers. The purpose of this study was to determine food habits, physical activity patterns, and health beliefs of hypertension and heart disease among diverse African Canadians living in the Greater Toronto Area.

Method. A questionnaire with more than 100 food consumption/dietary patterns, physical activity and lifestyle questions was developed. It was pre-tested and validated at the University of Toronto and it had received continuing annual Research Ethics Board approval from the Hospital for Sick Children in Toronto. A total of 1047 self-identified African Canadians, aged 14 to 74 years, from diverse, multilingual Black groups were surveyed. Data were analyzed with MS Excel and SAS statistical software.

Results. Results indicate that 31% of the respondents were male and 69% female. Ages ranged from 14–74 years with 32% aged 14–19 years. More than 80% of the respondents were not meeting current daily recommendations for fruit and vegetables; 46% had one serving of vegetables and 31% had one serving of fruits daily. Fifty five percent of the respondents consumed dairy products while 4% used non-dairy, calcium-enriched beverages. Approximately 20% male and 12% female consumed fish at least two times per week. It is interesting to note that 12% male and more than 20% female were involved in weight loss activities within the last six months.

Conclusion. Results of the study will be used to improve nutrition, physical activity, heart health education and type 2 diabetes prevention programs at cultural centers, churches and children and youth programs in the African Canadian community. Demographics, socioeconomic data, dietary behaviors, physical activity patterns and participant's beliefs of hypertension and heart disease will be presented.

016

GENETIC ANCESTRY AS A PREDICTOR VARIABLE IN AN ASSOCIATION STUDY OF BLOOD PRESSURE

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Introduction. Hypertension is a leading risk factor for cardiovascular disease and stroke and its prevalence is characterized by significant racial disparity. Racial disparities in diseases that develop over an individual's lifespan lead to disparities in life expectancy, thus it is important to identify the factors that drive heath disparities. Genetic ancestry (GA) has been included in recent disease association studies to represent a presumed racial contribution to health disparities. In our study, we investigate the association of African GA and blood pressure variation under two sets of conditions: 1) different racial composition of study sample and 2) continuous vs. categorical characterization of the GA variable.

Methods. The relationship between African GA and systolic blood pressure (SBP) was measured in a series of multiple linear regression models designed to compare 1) pooled sample vs population subsets divided according to self-identified racial or ethnic designations and 2) GA as a continuous or categorical variable.

Results. The continuous GA variable was significantly associated with SBP in all individuals,non-Hispanic Whites and All Whites, but not in African Americans or Hispanic Whites. One out of two categorical GA variables was significantly associated with SBP.

Discussion. Our results suggest that the association between genetic estimates of ancestry and health outcomes may differ depending on the racial or ethnic composition of the sample and characterization of the ancestry variable. Therefore, caution is advised when interpreting results of disease association studies that incorporate GA as a predictor of disease, particularly when one is investigating racial disparities in disease.

017

VITAMIN D SUPPLEMENTATION AND RISK OF HYPERCALCEMIA IN HYPERTENSIVE BLACKS TAKING HYDROCHLOROTHIAZIDE

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Hydrocholothiazide (HCTZ) is an effective calcium-saving antihypertensive medication commonly prescribed to Blacks. When combined with vitamin D supplementation, use of HCTZ may result in increased potential for hypercalcemia. The study objective was to determine if vitamin D supplementation among hypertensive Blacks using HCTZ results in an increased rate of hypercalcemia. The design and setting were a randomized clinical trial of vitamin D supplementation with periodic serum calcium testing in a community-based cohort of Blacks aged 30–80 years in Boston, MA, between December 2007–October 2010.

328 subjects were randomized to three months of daily supplementation at four treatment levels of vitamin D (placebo, 1000, 2000, and 4000 IU). This report concerns a convenience subser of 128 HCTZ and non-HCTZ subjects who underwent serum calcium testing to monitor potential calcium toxicity, defined as elevated serum calcium >10.5 mg/dL at 4–6 weeks or 12 weeks post onset of vitamin D supplementation in HCTZ and non-HCTZ subjects.

For 95% of the subjects taking HCTZ, calcium levels were maintained within the normal range, with four subjects of 83 experiencing modest elevated calcium (all .7 mg/dL or less beyond the upper limit of the normal range). None of the 44 non-HCTZ subjects experienced elevated calcium levels during the supplementation period. After three months of supplementation, there was no statistical difference between HCTZ and non-HCTZ groups ($P = .01$). These findings suggest that, in this population, subjects using HCTZ can be safely supplemented with up to 4000 IU of vitamin D without significant increased risk for hypercalcemia.

018

HEALTHCARE UTILIZATION AND COST DIFFERENCES IN AFRICAN AMERICANS AND NON-AFRICAN AMERICANS WITH HYPERTENSION

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Objective: Access to health care is the most important factor contributing to disparities in health and health care. In this study, we determined whether health care resources utilization and related cost differ between African Americans (AA) and non AA with hypertension assuming equal access to care.

Methods: Seven hundred ten (178 AA and 532 non AA) young and employed hypertensive patients were studied. Patients were matched in a 1:3 ratio (AA to non AA) by age, Charlson score, level of hypertension and blood pressure control. Included in the study were patients with hypertension diagnosis ICD-9 Code 401, who had documented elevated blood pressure (BP). Demographic and outcome variables were collected.

Results: A large proportion of AA used calcium channel blockers (CCB), 35.4% vs 23.7% (P=.003) and thiazide diuretic, 50.6% versus 39.8% (P=.014). The mean number of 30-day fills for ACE-inhibitor was higher in non AA (3.62 versus 2.77 in AA) (P=.031), and the mean for CCB tended to be higher in AA. Medication possession ratio was higher in non AA for ACE-Inhibitors, mean .3 versus .23 in AA (P=.03) and CCB in AA, .2 versus .15 (P=.05). Utilization of emergency department (ER) was higher in AA, mean .25 versus .16 in non AA (P=.041) for non cardiovascular (CV) causes. Overall cost was higher in AA $16,458.85 vs $11,284.3 ($P$=.03).

Conclusion: Although there were no significant differences in BP control between races assuming equal access, health care resources utilization and related cost were higher in AA due to increased ER use.

019

GENETIC VARIATION IN APOL1 AND AGE AT HEMODIALYSIS INITIATION IN AFRICAN AMERICANS

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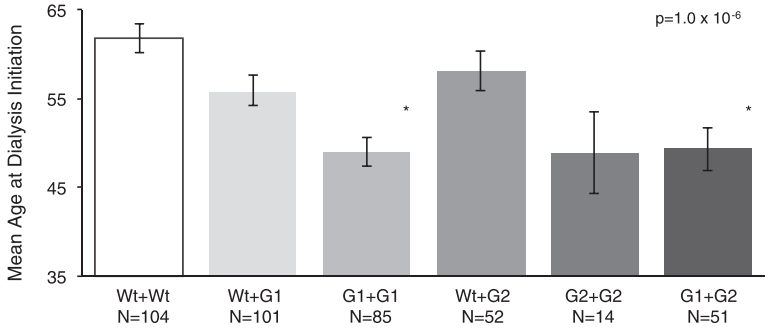
African Americans have a markedly higher incidence of end-stage renal disease (ESRD) compared to other racial groups. Two coding sequence risk alleles in the APOL1 gene, found only in individuals of recent African ancestry, have been identified as risk alleles for renal disease in African Americans. We tested whether these risk alleles were also linked to age of initiation of chronic hemodialysis.

We performed a cross-sectional study of 407 non-diabetic African Americans with ESRD who participated in Accelerated Mortality on Renal Replacement (ArMORR), a prospective cohort study of incident chronic hemodialysis subjects from across the United States. We examined age of initiation of chronic hemodialysis according to APOL1 risk alleles (G1 and G2). Analysis of variance was used to compare mean age at dialysis initiation, and multivariate linear regression modeling was used to adjust for potential confounders.

African American subjects carrying two copies of the G1 risk allele initiated chronic hemodialysis at a mean age of 49.0 $\pm$14.9 years, earlier than subjects with one copy of the G1 allele (55.9 $\pm$ 16.7 years: P=.014) or those without any risk allele (61.8 $\pm$ 17.1 years; $P=6.2\times10^{-7}$). The G1 relationships remained statistically significant in multivariate analysis adjusting for sociodemographic and other potential confounders. G2 risk allele was not linked to age of chronic hemodialysis initiation; however, limited sample size in this analysis precluded definitive conclusions.

In conclusion, genetic variations in the APOL1 gene identify African Americans that initiate chronic hemodialysis at an earlier age. Early interventions to prevent progression of kidney disease may benefit this high-risk population.



020

THE USE OF AMBULATORY BLOOD PRESSURE MONITORING TO ASSESS THE CARDIOVASCULAR RISK OF WHITE COAT SYNDROME AND AVOID OVER TREATMENT RISK

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White coat syndrome has been found among 20% of our practice's hypertenive population. Since we do not routinely make this distinction and lump all hypertensive for treatment, should we perform 24hr. ambulatory blood pressure monitoring (ABPM) prior to initiating therapy? In analysis of the Ohasama study, it revealed an increase incidence of strokes with increasing duration of observation for dippers with antihypertensive medication, but not in non-dippers with antihypertensive medication. The purpose of this study is to identify hypertensive patients with white coat syndrome and at a low cardiovascular risk to prevent over treatment of hypertension through the use of 24hr. ABPM.

Methodology: Patients were selected randomly from 24hr. ABPM tests over the past year in my practice. Patients were placed into four categories similarly studied: Dippers, Non-Dippers, White Coat Syndrome and Nocturnal Hypertensive. An association was determined between each category and each patient's prior cardiovascular history and AHA criteria for metabolic syndrome.

Results: The results revealed the following for each category: 1) Dippers - 16% demonstrated cardiovascular illness; 38.7% with metabolic syndrome 2) Non-Dipper - 38% demonstrated cardiovascular disease; 50% with metabolic syndrome 3) White Coat Syndrome - 13.6% demonstrated cardiovascular disease; 41% with metabolic syndrome 4) Night-Time Hypertensive - 40% demonstrated cardiovascular disease; 40% with metabolic syndrome

Conclusion: Approximately 20% of the study population had white coat syndrome (WCS). Patients with white coat syndrome had the lowest percentage of cardiovascular disease. From a clinical perspective, these patients should be more carefully selected for treatment to avoid over-treatment risk to the patients.

021

ROLE OF DEPRESSION IN STROKE: AN ANALYSIS OF STROKE-RELATED HOSPITALIZATION COST OF 1 7,010 TENNESSEE PATIENTS IN 2008 BY RACE & SEX

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Objective: Depression is frequently observed in stroke patients, however its effect on stroke hospitalization costs is unknown. Similarly, race and sex differences in stroke-related depression is unclear. This analysis delineates the prevalence of depression among stroke patients and its effect on hospitalization cost.

Methods: Data on depression, healthcare cost, and severity of stroke-related co-morbidities were extracted on adults (aged 20+ with stroke as principal diagnosis; 61% females; 18% Blacks). Race and sex differences, and hospitalization costs were evaluated for stroke patients with (S+D, n=3,965) and without depression (S-D, n=1 3,045).

Results: In 2008, 4.3% of all adult patients had stroke; more Blacks than Whites (4.5% vs. 4.2%, $P<.001$), and men than women had stroke (5.1% vs. 3.7%, $P<.001$). Stroke co-morbidities were more prevalent among Blacks than Whites. Nearly one-quarter of stroke patients (23.3%) had depression; more women than men and more Whites than Blacks had depression. Per patient stroke cost was $59,258. However, S+D patients had higher healthcare costs compared to S-D patients ($77,864 vs. $53,603, $P<.001$), representing a $24,261 (45.3%) increase in treatment cost due to depression. In S+D patients, Black men had higher cost compared to White men ($97,195 vs. $88,115, $P<.001$) and Black women compared to White women ($95,269 vs. $68,184, $P<.001$).

Conclusion: Depression in stroke patients is associated with increased hospitalization costs. Also, stroke-related depression is more prevalent among women, thus suggesting a target population for aggressive treatment and cost containment. Lower prevalence of depression in men and Blacks may represent underascertainment in these groups.