Research Abstracts
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001
Reactive Oxygen Species, Oxidative Stress, HIV-1 Infection and Cardiovascular Diseases: Diagnosis and Treatment with Immunorex™
D MAVOUNGOU; Brice Ongali; Gontran Maka; Marie-Yvone Akoume Ndong

Immunorex™ is a new drug which has demonstrated its capacity to affect the size of HIV-1 reservoir; to treat and prevent opportunistic cardiovascular diseases (CVD) induced by both HIV-1 infection and HAART.

Reactive oxygen species (ROS) and oxidative stress have been implicated in both HIV-1 infection and (CVD) including hypertension and diabetes; a major source of ROS is a non phagocytic NADPH oxidase as well as the nitric oxide synthase (NOS). Activation of NADPH oxidase and protein kinase C accompanied with calcium (Ca) mobilization can as a co-factor increase phospholipase A2 activity for HIV-1 entry in the host cell. Intracellular Ca is also the co-factor of Na/KATPase pump involving in blood pressure regulation. G6PD generate NADPH a co-factor for nitric oxide (NO) synthesis. Prevalence of hypertension and diabetes is high in G6PD deficiency and or in reduced G6PD activity. To target the non phagocytic NADPH oxidase may result in decrease of ROS to increase NO availability and antioxidants for the non mobilization of the intracellular Ca preventing PLA2 and Na/K ATPase pump activation resulting in the stop of HIV-1 entry in host cell and in the normalization of blood pressure in HIV-1 infected patients having abnormal glucose and lipids levels which returned to the normal range, as done by Immunorex™ when administrated to HIV-1 patients with or without metabolic disorders induced HAART Therapy (JAA / vol 1, issue 2, 2009).

Taken together, HIV-1 infection should be investigated in cardiovascular diseases patients and vice-versa for diagnosis and treatment, in that way, Immunorex™ remained relevant for preventing and treating both HIV-1 infection and related cardiovascular diseases by acting on ROS and on oxidative stress.

002
Prevalence of Cardiovascular Risk Factors Among Black Sub-Groups in Miami-Dade
JASMINE REID, MPH; Tori Gabriel; Maria Canossa-Terris; Connie Ingram; Mary Comerford; Paul Kurlansky

OBJECTIVES: The Black population is the nation’s second largest minority (13%). It represents an ethnic group with diverse ancestry that may vary genetically, culturally and socially, yet little is known about the differences in the prevalence of cardiovascular risk factors among these Black subgroups. We therefore studied the cardiovascular risk profiles within a diverse sample of Miami Black subpopulations responsive to public health outreach.

METHODS: Community health screening identified 3,000 Black participants, who were categorized into 4 subgroups: Haitian (H) 966, African American (AA) 1208, Hispanic (HB) 249 and Caribbean (C) 570. Cardiovascular risk data included Body Mass Index, Blood pressure, non-fasting total cholesterol, HDL, non-fasting glucose and calculated Framingham risk score.

RESULTS: Differences amongst subgroups were noted in multiple parameters of cardiovascular risk: age (p<0.001), health insurance status (p<0.001), family history (p<0.001), smoking (p<0.001), body mass index (p<0.001), HDL (p<0.001), and blood pressure (p=0.001). Mean Framingham risk score was highest in HB and lowest in AA (p=0.031)

CONCLUSIONS: Our study shows marked differences in cardiovascular risk factors amongst these Black subpopulations. These findings may have important public health implications, and include a heretofore understudied Haitian population. Further studies are needed to elucidate the causes of these differences, and to improve efforts to address cardiovascular disease in a multiethnic setting.

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INTRODUCTION: Uncontrolled hypertension among adults is associated with increased incidence of heart attack, stroke and mortality. Studies of prevalence and control of hypertension among non-Mexican Hispanics have been limited.

METHODS: The sample consists of diverse population of 5081 non-Mexican Hispanics who underwent free cardiovascular screening at Florida Heart Research Institute. Of these 65% were female; 23.1% were age 18–39, 67.2% were 40–64, and 9.6% were ≥ 65. Most (92.0%) had no insurance. JNC7 guidelines were used to identify hypertension and hypertension control. Standard epidemiological techniques were employed to estimate prevalence.

RESULTS: The prevalence of hypertension was 25.1%. Among the 1277 hypertensives, 73.6% were uncontrolled (46.0% males, 54.0% females). Only 7.7% of the uncontrolled were insured compared to 14.2% of the controlled (p<0.001). Among the uncontrolled, 30.9% were unaware of their hypertension, 32.1% were aware but took no antihypertensive medications, and 37.0% were aware and took antihypertensive medications.

CONCLUSIONS: Miami Hispanics with hypertension display a very low rate of control. This problem appears to be amplified by a lack of insurance and the access to care that insurance provides. Nearly two thirds of this largely uninsured Hispanic population were either unaware of their hypertension, or aware but not receiving any treatment. Other issues, such as linguistic and cultural barriers, education, poor patient compliance with medications, and unhealthy lifestyles may contribute to this lack of control and require further study.

INTRODUCTION: Despite improvements in the treatment of hypertension, blood pressure control remains far from adequate. Hispanics comprise the nation’s largest minority group, with increasingly recognized differences amongst various subgroups. However, previous studies of the prevalence and control of hypertension in Hispanics have focused primarily on Mexican-Americans. We therefore studied the hypertension control in a diverse population of non-Mexican Hispanics in Miami.

METHODS: The sample consists of 5081 non-Mexican Hispanics participating in cardiovascular screening. Hypertension and hypertension control were defined using JNC7 guidelines. Age, marital and insurance status, family, exercise and smoking history, BMI, fasting glucose and lipid profile, and hsCRP were collected. Logistic regression was used to determine independent factors associated with control.

RESULTS: Prevalence of hypertension was 25.1% (1277/5081); males 28.5% (529/1854), females 23.1% (748/3227). Prevalence of treatment was 50.9% (651/1277); males 44.2% (234/529), females 55.7% (417/748). Among those treated prevalence of control was 46.5% (303/651); males 37.6% (88/234), females 51.5% (215/417).

Among women, age <65 (p < .001) and positive health insurance status (p=0.008) were independent predictors of hypertension control, whereas in men only a positive family history of heart disease was predictive of control (p=0.009).

CONCLUSIONS: Hypertension is prevalent in this Miami Hispanic population and its control is far from optimal. Both the prevalence and predictors of control seem to differ between men and women, and do not seem to be closely correlated with other cardiovascular risk factors. Future study of the determinants of control will need to address gender difference in this population.
HEALS: A FAITH-BASED HYPERTENSION CONTROL AND PREVENTION PROGRAM FOR AFRICAN AMERICAN CHURCHES
SUNITA DODANI; Irmatine Bealyer; Ryan Butterfield; Collisa Mahin; Sahel Arora

BACKGROUND & OBJECTIVES: Hypertension (HTN), also called high blood pressure (BP) disproportionately affects African Americans (AAs). Lifestyle programs like Dietary Approach to Stop Hypertension” (DASH) diet has been shown to lower systolic BP by 6–14 mmHg, however DASH effectiveness in the real-world settings is yet to be determined. In addition, the PREMIER trial including DASH diets was less effective in AAs in significantly lowering BP. We present the results of a faith–based socio-culturally tailored, multi-level, HTN control intervention- called Healthy Eating And Living Spiritually (HEALS) conducted at a AA church.

METHODS: After completing several program activities, 12- month HEALS program was modified from DASH and PREMIER programs and implemented at the Central Metropolitan church located in the urban core of Jacksonville, Florida. Selection criteria were; (a) church member between 25–75 years; (b) self-described AA; and (c) either newly diagnosed HTN (by JNC VII criteria) or known hypertensive. Program was delivered by the expert-led trained lay-church members.

RESULTS: 37 participants were enrolled with mean age of 54 yrs ± 13.7. The mean baseline systolic BP is 137.22 ± 13.763 with a mean diastolic BP of 83.88 ± 9.006. At the end of eleven sessions of HEALS, a significant reduction was seen in both systolic (123.59 ± 11.353-p, 0.001) and diastolic BP (76.76 ± 6.760-p=0.006) from the baseline. The study is still ongoing.

CONCLUSION: HEALS faith-based culturally tailored hypertension control program for AA communities is feasible and successfully be implemented in ethnic minorities to reduce cardiovascular health disparities.

AN EXAMINATION OF ACCULTURATION AND RISK FACTORS FOR HEART DISEASE AMONG JAMAICAN IMMIGRANTS
CAROLR OLADELE; Elizabeth Barnett Pathak; David Himmelgreen; Getachew Dagne; Wendy Nembhard; Jimin Yang; Thomas Mason

OBJECTIVES: Little is known about the association between acculturation and risk factors for chronic illness among Black Caribbean immigrants. This purpose of this study was to: 1) estimate the prevalence of the risk factors for heart disease, and 2) examine the association between acculturation and risk factors.

METHODS: A 2-stage cluster sample design was used to identify Jamaicans 25–64 years in two Florida counties. Ninety-one participants were interviewed and asked questions regarding lifestyle habits, acculturation, and risk factors including obesity and hypertension. Acculturation was measured using questions adapted from the Multigroup Ethnic Identity Measure and General Ethnicity Questionnaire. Body mass index (BMI) was used to measure obesity and hypertension was determined by self report using questions adapted from the Behavioral Risk Factor Surveillance System (BRFSS). Generalized estimating equation modeling was used to examine associations.

RESULTS: The prevalence of obesity and hypertension among the study sample was 31.9% and 34.1% respectively. Findings showed that Jamaicans who were more acculturated were more likely to be hypertensive (β=0.05, p<.05) after adjustment for confounders. Acculturation did not have a statistically significant association with obesity; however, age (β=0.05, p<.05) and sex (β= −0.83, p<.05) were statistically significant. Other statistically significant predictors of hypertension included age (β=0.15, p<.05), education (β=1.72, p<.05), and BMI (β=0.19, p<.05).

CONCLUSIONS: Prevalence estimates for hypertension were consistent with other studies showing high disease burden among Jamaicans. Findings for acculturation suggest potential benefits from maintaining native Jamaican culture. Future studies should build upon these findings to explore aspects of acculturation that impact disease risk.
OBJECTIVES: We hypothesize that pulse pressure is a better predictor of cardiovascular risk than systolic blood pressure (BP), or any other BP parameter. The relationships of the different BP parameters to Framingham risk scores (FRS) and metabolic syndrome components were examined.

METHODS: Baseline data was obtained on 138 African Americans (52% female), aged 64.8 +/- 6.7 years, enrolled in a hypertension risk factor study. 117 (83.6%) of these subjects were hypertensive. FRS and metabolic syndrome were defined using the National Cholesterol Education Panel criteria. Scatter plots were used to depict bivariate relationships and multiple regression analyses were done to evaluate relations between BP parameters and cardiovascular risk factors.

RESULTS: Systolic BP had a strong linear relationship with FRS, more so in women than in men (r^2 = 0.43 and 0.27 respectively); however, pulse pressure demonstrated stronger correlation with FRS (r^2 = 0.61 and 0.34 respectively). Diastolic BP had negligible correlation with FRS (r^2 = 0.025 in women, r^2 = 0.006 in men); mean BP showed similar results (r^2 = 0.086 and 0.085 respectively). Pulse pressure and systolic BP increased with every additional metabolic risk factor (p<0.000, p<0.005 respectively). Diastolic BP and mean BP showed insignificant relationship to metabolic risk factors (p = 0.259, 0.188 respectively). Independent predictors of pulse pressure were age and diabetes mellitus; waist circumference predicted systolic BP.

CONCLUSION: Pulse pressure may be a more powerful predictor of cardiovascular risk than any other blood pressure component. More research is needed to establish pulse pressure as a therapeutic factor in reducing cardiovascular risk.

PURPOSE: This study examined distribution in prescribed antihypertensive medication use and the prevalence of hypertension and resistant hypertension among aged African Americans.

METHODS: This study recruited 400 elderly African Americans (over 65 years old, taking at least two medications) in South Los Angeles. Information about drug names and doses were transcribed from the labels.

RESULTS: 15% of elderly (n=60) did NOT report having hypertension while 340 (85%) reported being diagnosed with HTN. Among 340 Hypertensive, medication usage included: None (0 Meds): 7.1% (n=24); 1–2 Medications – 31.1% (n=106). Among the elderly with hypertension, 104 elderly (30.7%) were Resistant Hypertensive (RHTN) as they were taking 3 or more classes of anti-hypertension agents to lower their blood pressure (DIuretics; ACE/ARBs, Calcium channel Blockers, Beta Blockers). The most common medications were Amlodipine Besylate (39.6%), Lisinopril (25.5%), Hydrochlorothiazide (21.1%), Atenolol (17.3%), Furosemide (16.1%) and the most common class of hypertension medication was Calcium Channel Blockers/ Dihydropyridines (49.0%), Thiazide & Related Diuretics (45.2%), (Beta-Blockers (43.7%), ACE Inhibitors (42.5%), Angiotensin II Receptor Blocker & Renin Inhibitor (22.9%), Adrenergic Antagonists & Related Drugs (14.7%), Vasodilators (7.3%). There were some significant difference between males and females in taking medication; for instance Angiotensin II Receptor Blocker & Renin Inhibitor and Adrenergic Antagonists & Related Drugs has been taken more significantly by males Vs. Vasodilators (by females).

CONCLUSION: 340 (85%) of patients reported being diagnosed with HTN which nearly one-third of the hypertensive suffered from resistant hypertension. These usage patterns have trended toward greater usage of Calcium Channel Blockers and Thiazide & Related Diuretics.
ISHIB DIABETES AND OBESITY CONSORTIUM (DOC) PATIENT-CENTERED DIABETES CARE MODEL IN AFRICAN AMERICANS
TRUDY GAILLARD; Kwame Osei

BACKGROUND: African Americans (AA) have higher prevalent rates and poorer outcomes associated with type 2 diabetes (T2DM) when compared to whites. In addition, hypertension and obesity contribute to the disproportionate burden of CVD morbidity and mortality. Effective education and lifestyle behavioral changes are essential to enhance the quality of healthcare and is reported to improve clinical outcomes. Therefore, a 6 month intensive educational and behavioral/lifestyle community-based intervention for poorly controlled T2DM (A1C >7.0%) was performed. The goal of the ISHIB Diabetes and Obesity Consortium (DOC)- Patient-Centered Diabetes Care Model (PC-DCM) in African Americans is to evaluate the effectiveness of a 6 month PC-DCM intervention in reducing A1C, blood pressure, lipids and body weight.

SUBJECTS MATERIALS AND METHODS: Thirty one AA subjects with uncontrolled T2DM were recruited from the community (M=5, F=26), mean aged 56.6±9.5 years. All subjects had baseline height weight, blood pressure, random glucose (RG), A1C, lipids and lipoproteins performed using point-of-care-testing.

RESULTS: We found that subjects who participated in our PC-DCM had significant reductions in A1c (D 20.68), random glucose (D 54.88), total cholesterol (D 8.16) and triglyceride (D 34.74) levels. However, participants had increased in both systolic and diastolic blood pressure (D 8.55 and D 5.57, respectively) and weight (D 5.66).

CONCLUSION: The results of our PC-DCM program demonstrated a reduction in A1C, random glucose, and lipids and lipoproteins. There was an unexpected increase in weight and blood pressure. We suggest that continued education with additional emphasis on blood pressure and weight management is warranted in this hard to manage population.

WHEELS-I COMPUTER-MEDIATED PROGRAM FOR DASH DIET ADHERENCE IMPROVED BP AT 1 YEAR IN AFRICAN AMERICAN WOMEN
MARGARET SCISNEY-MATLOCK; Susan Steigerwalt; Susan Pressler; Kenneth Jamerson; Nicole Ritter

BODY: DASH Diet (DD) is widely recommended as an effective therapeutic lifestyle eating plan for adults with hypertension (HTN), particularly for those with uncontrolled blood pressure (BP). However, DD is difficult to systematically implement and track in clinical practice, and research has not addressed the impact of computer-mediated approaches with DD on BP with African American women (AAW) in treatment for HTN, a population with the greatest risk for cardiovascular disease due to high BP.

OBJECTIVE: To determine whether there was SBP improvement for AAW 1 year post-initiation of the WHEELS-I Program. WHEELS-I is a computer-mediated theoretically-derived cognitive behavioral intervention (CBI) incorporating 28 morning and 56 evening email messages linked to four web-based rapid response surveys to promote DD self regulatory behaviors.

METHODS: This is a sub-study of WHEELS-I, a two-group experimental design randomized clinical trial that recruited a sample of 80 women (60% AAW, ages 35–80) in treatment for HTN via mailed invitation (MI) from a health insurer, or from face to face invitation at two primary clinic settings (POC). Data were analyzed for repeated clinic SBP measures by 4 groups: EG-POC, n=21, CG-POC, n=27, EG-MI, n=22 and CG-MI, n=8. The electronic medical record was used to determine mean SBP 1 year post study (n=21).

RESULTS: Significant mean SBP differences were revealed at 1 and 3 months by groups [figure.1]. The most interesting finding was a sustained reductions in SBP (~6mmHg) at 12 months post study for the AAW in EG-POC (n=14) who were recruited by a nurse practitioner. In addition, if SBP >140 mmHg at baseline, SBP reduction was ~14mmHg.

CONCLUSION: This computer-mediated approach designed to promote self regulatory behaviors to improved BP with DD is feasible for AAW. The influence of the nurse practitioner at POC enhanced the effectiveness of this CBI. The limitation of this small sample suggest that a fully powered study is the next step for translation WHEELS-I Program in clinical practice.
## ABSTRACT AUTHOR INDEX

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