B1-3: MARKERS OF CARDIOVASCULAR RISK IN AFRICAN-AMERICAN ADOLESCENTS

Author List:
Presenting Author: Belinda Fleming
Additional Author: Elizabeth D. Lee, Patricia Cowan

Presenting Author: Belinda Fleming
Address: 877 Madison Avenue
Memphis, Tennessee 38163
United States
Ph: 901-448-6128
Fax: 901-448-4121
Email: bfleming@utmem.edu
Institution: University of Tennessee Health Science Center

Additional Author: Elizabeth D. Lee
Address: 217 Billy Davis Drive
Searcy, Arkansas 72143
United States
Ph: 501-281-2124
Fax: 501-305-8902
Email: elee10@utmem.edu
Institution: University of Tennessee Health Science Center

Additional Author: Patricia Cowan
Address: 877 Madison Avenue
Memphis, Tennessee 38163
United States
Ph: 901-448-6128
Fax: 901-448-4121
Email: pcowan@utmem.edu
Institution: University of Tennessee Health Science Center

Presentation Preference: Student poster submission

Abstract Categories:
Research Interest Groups (RIGs): Minority Health
Thematic Areas: Child & Adolescent Health

Abstract:
Introduction: Few studies have evaluated endothelial dysfunction and thrombotic markers associated with increased cardiovascular risk in overweight adolescents, and values of these
newer markers have yet to be established in normal weight children. The aims of this study are to (1) compare endothelial dysfunction and thrombotic markers, and blood pressure, in overweight and normal weight African-Americans (AA) 11 to 18 years of age, and (2) examine relationship to body mass index (BMI).

Method(s): Anthropometric measures were taken on a convenience sample of 208 AA adolescents using a stadiometer and a calibrated digital scale with ±0.02 kg accuracy. BMI was calculated kg/cm² with <85th % normal and > 85th as overweight. Two resting BPs 5 minutes apart were compared to tables specific for age, gender, and height to classify BP by percentile as normal (<90%), prehypertensive (>90% or BP>120/80), or hypertensive (>95th %). Serum samples for sICAM-1, e-selectin, and PAI-1 were analyzed using multiplex bead technology. Data from overweight AA were obtained from a larger study database, while normal weight AA adolescents were recruited from urban and rural health screenings. Differences in markers and hypertension status will be compared between the two independent groups with t-tests and χ² as appropriate with a priori α=0.05.

Results: Expected differences of normal weight AA adolescents (n=85; 46% female, mean age 14.4±2.3 years, BMI=20.8±3.0) compared to overweight AA adolescents (n=123; 56% female, mean age 14.8 ±2.1 years, BMI =36.1±8.1) included lower systolic BP (-13.6 mm Hg) and diastolic BP (-3.87 mm Hg) and higher adiponectin (172.33 ng/ml) levels. Higher ICAM-1 (3.4 ng/ml), e-selectin (0.92 ng/ml), and PAI-1 (1080.88 pg/ml) levels were detected with normal weight.

Discussion & Conclusions: BMI and BP screening may remain cost effective quality indicators of cardiac risk in AA adolescents, and lower adiponectin levels may be an important marker of increased inflammatory and metabolic risk. Comparative studies of relationships provide supportive data for screening cardiac risk and lay groundwork for future studies but do not support causal inference by design.

Abstract History:
This abstract has not been presented or accepted for presentation in whole or in part at the SNRS or other scientific meeting.

Financial Disclosure:
No, I (or a member of my immediate family) have not received something of value* from or own stock (or stock options) in a commercial company or institution related directly or indirectly to the subject of my presentation.

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Submitted by:
elee10@utmem.edu