**BACKGROUND**

Metabolic perturbations related to obesity in HIV-exposed uninfected (HEU) children may differ from that in the general obese pediatric population due to in utero antiretroviral (ARV) exposure.

**OBJECTIVES**

To assess whether obese HEU youth are at increased risk for cardiometabolic risk factors such as hypertension (HTN), dyslipidemia, and insulin resistance compared to a matched obese U.S. population.

**METHODS**

**STUDY POPULATION:** HEU children enrolled in the Surveillance Monitoring of ART (SMARTT) sub-study of the Pediatric HIV/AIDS Cohort Study (PHACS) constituted the study population, while children who participated in the 2005, 2007, 2009 or 2011 National Health and Nutrition Examination Survey (NHANES) study constituted the comparison population. Because NHANES obtains metabolic measures only within certain age groups, 3 analytic samples were created: 1) TC and HDL (>4 yr), 2) systolic and diastolic BP (>4 yr), and 3) LTL, TO, and HOMA (>12 yr). For each group, up to 3 HEU children were matched to each SMARTT participant by age, sex, and race.

**EXCLUSION CRITERIA:** See Figure for Population Derivation

**PRIMARY OUTCOMES:** Binary outcomes included: Systolic and diastolic blood pressure (BP) z score >0.67 for age, sex, and height, Total cholesterol (TC) ≥200 mg/dL, High-density lipoprotein-C (HDL) <35 mg/dL, Low-density lipoprotein-C (LDL) >130 mg/dL, Triglycerides (TG) ≥150 mg/dL, Height-for-age z score (>3 SD units below mean), Age ≥12 and has TG, LDL, and HOMA insulin resistance (IR) (PR=0.69, 95%CI: 0.55, 0.88) and lower rates of systolic and diastolic HTN (PR=3.34, 95% Confidence Interval (CI): 2.48, 4.50; PR=2.04, 95%CI: 1.18, 3.52 respectively) but lower rates of hypothyroidism (PR=0.68, 95%CI: 0.55, 0.88) and hypercholesterolemia and IR, compared to a matched obese U.S. population.

**RESULTS**

Overall characteristics of participants were similar between groups in all analytic subgroups, but SMARTT participants were more likely to report an annual household income <$20,000 in all samples (p<0.01 for all samples). (Table 2)

- Among SMARTT participants, >86% in all samples had BMI >95th percentile
- Age ≥6 and have both TC and HDL: (n = 1793)
- Age ≥8 and has Blood Pressure: (n = 1731)
- Age ≥12 and has TG, LDL, and HOMA IR: (n = 445)
- Age ≥12 and has TG, LDL, and HOMA IR within 6 months of BMI data: (n = 83)
- Age ≥12 and has TG, LDL, and HOMA IR and missing BMI: (n = 134)
- Had no race data: (n = 8)
- Were HIV infected: (n = 0)
- Were ever pregnant: (n = 0)

**CONCLUSIONS**

- Obese HEU youth appear to be at higher risk for HTN, but lower risk for hypercholesterolemia and IR, compared to a matched obese U.S. population.
- Further studies are warranted to understand the causes and long-term implications of these findings.

All models adjusted for age, body mass index z score, sex, and black race. BP=Blood Pressure, OP=Odds Ratio, CI=Confidence Interval, ICAHN=Icahn School of Medicine at Mount Sinai, New York, NY, Department of Medicine, Department of Obstetrics, Gynecology and Reproductive Sciences, Tisch Institute of Global Public Health, New York University School of Medicine, New York, NY, University of California, Los Angeles, CA, The Children’s Hospital of Los Angeles, CA, The Children’s Hospital of Philadelphia, Philadelphia, PA, University of California, Los Angeles, CA, John Hopkins University School of Public Health, Baltimore, MD, Children’s Hospital of Philadelphia, Philadelphia, PA, University of Miami, Miami, FL, Department of Pediatrics, Department of Medicine, Department of Obstetrics, Gynecology and Reproductive Sciences, Tisch Institute of Global Public Health, New York University School of Medicine, New York, NY, University of California, Los Angeles, CA, The Children’s Hospital of Los Angeles, CA, The Children’s Hospital of Philadelphia, Philadelphia, PA, University of Miami, Miami, FL, Department of Pediatrics.