

Meva Beganovic

L2

LSU Health Sciences Center, New Orleans, LA

Mentor: Stefany D. Primeaux, PhD

Louisiana State University Health Sciences Center, Department of Physiology

“The Effects of Alcohol Consumption on Metabolic Factors in the ALIVE-Ex Study Participants”

Alcohol consumption among people living with HIV (PLWH) is common and increases the risk for metabolic disorders such as insulin resistance and diabetes. Adiponectin is an adipokine, produced in adipocytes, that protects against insulin resistance by increasing insulin sensitivity and thus may play a preventative role against the development of metabolic disease.

Previous studies have demonstrated an inconsistency regarding the impact of alcohol consumption on adiponectin levels. In a cross-sectional analysis of participants enrolled in the ALIVE-Ex Study, we did not find a significant relationship between at-risk alcohol use, as measured by Alcohol Use Disorders Identification Test (AUDIT) score, in PLWH and fasting adiponectin levels. Therefore, the current study investigated whether sex, BMI, type of alcohol consumed, and volume of alcohol consumed mediated fasting adiponectin levels in these participants.

Following informed consent, participants were asked to fast overnight, were screened and enrolled in the ALIVE-Ex Study if they met the following requirements: ≥ 18 years old, positive for HIV, fasting blood glucose 95-124mg/dL, and no diabetes diagnosis. Following the screening, blood samples were collected and metabolic factors assessed (n=105). Participants' alcohol consumption was determined using an AUDIT questionnaire and Timeline Followback (TLFB) calendar. An AUDIT score of < 5 was categorized as low-risk alcohol use and ≥ 5 as at-risk alcohol use. Using the TLFB data, females who consumed > 425.81 g and males who consumed > 851.62 g of alcohol, were categorized as heavy alcohol consumers. Using TLFB data, participants were grouped according to their alcoholic beverage preferences as beer, liquor/maltliquor, or non-drinkers based on which beverage type constituted $> 50\%$ of their alcohol consumption over the previous 30 days. Non-drinkers had not consumed any alcohol in the last 30 days.

As predicted, fasting adiponectin levels were positively correlated with age, negatively correlated with BMI, and were higher in female PLWH compared to male PLWH. Females with at-risk alcohol use (AUDIT ≥ 5) had higher adiponectin levels and lower BMIs as compared to females with low-risk alcohol use. This pattern was not observed in males. Adiponectin levels were impacted by alcoholic beverage preference; female PLWH who preferred beer had higher fasting adiponectin, lower fasting glucose, and lower BMI as compared to females that did not drink alcohol. These data suggest that sex, alcohol beverage preferences and consumption patterns affect fasting adiponectin levels and may contribute to altered glucose regulation in PLWH with at-risk alcohol use. Future studies will explore the effects of other alcohol types on metabolic factors in male and female PLWH. Supported by UH3AA026198