

Serum adiponectin in HIV-1 and hepatitis C virus mono- and co-infected Kenyan injection drug users

Abstract

Adiponectin is an important marker of anthropometric profiles of adipose tissue. However, association of adiponectin and adiposity in HIV mono- and co-infected and hepatitis (HCV) injection drug users (IDUs) has not been elucidated. Therefore, the relationship of total adiponectin levels with anthropometric indices of adiposity was examined in HIV mono-infected (anti-retroviral treatment, ART-naive, $n=16$ and -experienced, $n=34$); HCV mono-infected, $n=36$; HIV and HCV co-infected (ART-naive, $n=5$ and -experienced, $n=13$); uninfected, $n=19$ IDUs; and healthy controls, $n=16$ from coastal Kenya. Anthropometric indices of adiposity were recorded and total circulating adiponectin levels were measured in serum samples using enzyme-linked immunosorbent assay. Adiponectin levels differed significantly amongst the study groups ($P<0.0001$). *Post-hoc* analyses revealed decreased levels in HIV mono-infected ART-naive IDUs in comparison to uninfected IDUs ($P<0.05$) and healthy controls ($P<0.05$). However, adiponectin levels were elevated in HCV mono-infected IDUs relative to HIV mono-infected ART-naive ($P<0.001$) and -experienced ($P<0.001$) as well as HIV and HCV co-infected ART-naive ($P<0.05$) IDUs. Furthermore, adiponectin correlated with weight ($\rho=0.687$; $P=0.003$) and BMI ($\rho=0.598$; $P=0.014$) in HIV mono-infected ART-naive IDUs; waist circumference ($\rho=-0.626$; $P<0.0001$), hip ($\rho=-0.561$; $P=0.001$) circumference, and bust-to-waist ratio ($\rho=0.561$; $P=0.001$) in HIV mono-infected ART-experienced IDUs; waist girth ($\rho=0.375$; $P=0.024$) in HCV mono-infected IDUs; and waist-to-hip ratio ($\rho=-0.872$; $P=0.048$) in HIV and HCV co-infected ART-naive IDUs. Altogether, these results suggest suppression of adiponectin production in treatment-naive HIV mono-infected IDUs and that circulating adiponectin is a useful surrogate marker of altered adiposity in treatment-naive and -experienced HIV and HCV mono- and co-infected IDUs.

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