

Abstract

Despite many studies on Human Immunodeficiency Virus (HIV) and pregnancy, there is still insufficient information regarding the effect of HIV on progesterone in advancing pregnancy. In a prospective cohort study, 44 antiretroviral therapy naïve adult asymptomatic HIV-infected pregnant women and 44 healthy HIVnon-infected pregnant women matched by age, parity, CD4 count and gestational time were recruited in western Kenya to test for the trends of progesterone hormone levels in advancing pregnancy of HIV-infected and non-infected women. Blood sample from all study participants was collected, and progesterone hormone levels determined using Enzyme Linked Immunosorbent Assay method at first (baseline), second and third trimesters. The changes of progesterone were assessed using repeated measures regression models and presented alongside the graphical exploratory graph. Significance levels were tested at $P \leq 0.05$. The progesterone hormone levels of the HIV-negative, 26.7 ng/ml. (95% CI: 15.5-35.9) were significantly ($P=0.033$) higher than those of the HIV-positive, 21.7 ng/ml (95% CI: 915.8-29.9) participants at baseline. In addition, the difference of progesterone hormone levels between HIV-positive and HIV-negative participants continued to increase significantly from first (difference of -4.3(95% CI: -8.2, -0.5) ng/ml, $P=0.028$), second (difference of -6.6(95% CI: -10.3, -3.0) ng/ml $P=0.001$) and third (difference of -11.6 (95% CI: -17.2, -6.1) ng/ml, $P=0.0001$) trimesters. Present study findings suggest that HIV infection may lead to lower progesterone hormone levels in all trimesters of HIV infected pregnant women compared to HIV-non-infected pregnant women. The study recommend more research should be encouraged to give a clear understanding of the effect of HIV on the hormonal balances among the pregnant women for any possible effects on the outcome of pregnancy and development of strategies to manage pregnancy in HIV infection.