

## **ABSTRACT**

### **BACKGROUND:**

In HIV-1-infected women, CD4 count declines occur during pregnancy, which has been attributed to hemodilution. However, for women who have not initiated antiretroviral therapy, it is unclear if CD4 declines are sustained beyond pregnancy and accompanied by increased viral levels, which could indicate an effect of pregnancy on accelerating HIV-1 disease progression.

### **METHODS:**

In a prospective study among 2269 HIV-1-infected antiretroviral therapy-naive women from 7 African countries, we examined the effect of pregnancy on HIV-1 disease progression. We used linear mixed models to compare CD4 counts and plasma HIV-1 RNA concentrations between pregnant, postpartum, and nonpregnant periods.

### **RESULTS:**

Women contributed 3270 person-years of follow-up, during which time 476 women became pregnant. In adjusted analysis, CD4 counts were an average of 56 (95% confidence interval: 39 to 73) cells/mm lower during pregnant compared with nonpregnant periods and 70 (95% confidence interval: 53 to 88) cells/mm lower during pregnant compared with postpartum periods; these results were consistent when restricted to the subgroup of women who became pregnant. Plasma HIV-1 RNA concentrations were not different between pregnant and nonpregnant periods ( $P = 0.9$ ) or pregnant and postpartum periods ( $P = 0.3$ ). Neither CD4 counts nor plasma HIV-1 RNA levels were significantly different in postpartum compared with nonpregnant periods.

### **CONCLUSIONS:**

CD4 count declines among HIV-1-infected women during pregnancy are temporary and not sustained in postpartum periods. Pregnancy does not have a short-term impact on plasma HIV-1 RNA concentrations.