

Acute sexually transmitted infections increase human immunodeficiency virus type 1 plasma viremia, increase plasma type 2 cytokines, and decrease CD4 cell counts

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Date: 2000

Abstract:

In Kenya, the median incubation time to AIDS in seroconverting sex workers is 4 years; this incubation time is specific to female sex workers. We studied the influence of acute sexually transmitted infections (STIs) on several immunologic parameters in 32 human immunodeficiency virus type 1 (HIV-1)-positive and 10 HIV-1-negative women sex workers who were followed for 1-5 months. Plasma cytokines, soluble cytokine receptors, CD4 and CD8 T cell counts, and HIV-1 plasma viremia were quantitated before, during, and after episodes of STI. Increases in interleukin (IL)-4, IL-6, IL-10, soluble tumor necrosis factor (TNF)- α , and viremia and a decline in CD4+ T cell counts occurred during gonococcal cervicitis and returned to baseline after treatment. Increases in viremia correlated with increased IL-4 and decreased IL-6 concentrations. Similar changes were seen among women with acute pelvic inflammatory disease. Acute bacterial STI resulted in increased HIV-1 viremia. This may be mediated through increased inflammatory cytokines or through modulation of immune responses that control HIV-1 viremia.