

Detection of HIV DNA in cervical and vaginal secretions

Abstract:

OBJECTIVE: Factors that influence heterosexual transmission of the human immunodeficiency virus (HIV), including sexually transmitted diseases, contraceptive practices, sexual practices, HIV-related immunosuppression, and presence of cervical ectopy and the penile foreskin, have been identified through cross-sectional and prospective cohort epidemiological studies. To more directly characterize factors that influence infectivity, we conducted a study of HIV shedding from the genital tract in women. **DESIGN:** Ninety-seven HIV-seropositive women attending a sexually transmitted disease clinic in Nairobi, Kenya, completed a questionnaire and underwent a physical examination and an evaluation for sexually transmitted diseases. Cervical and vaginal secretions were obtained for HIV DNA detection using polymerase chain reaction amplification. **RESULTS:** Human immunodeficiency virus DNA was detected by polymerase chain reaction in 28 (33%) of 84 cervical samples and 13 (17%) of 77 vaginal samples. The prevalence of HIV was higher in specimens from the endocervix than from the vaginal wall ($P = .002$), and there was no correlation between presence of virus at the two sites. After adjusting for age, cervical HIV shedding was independently associated with oral contraceptive pill use (odds ratio [OR], 11.6; 95% confidence interval [CI], 1.7 to 77.6), cervical mucopus (OR, 6.2; 95% CI, 0.9 to 41.4; $P = .05$), cervical ectopy (OR, 5.0; 95% CI, 1.5 to 16.9), and pregnancy (OR, 4.5; 95% CI, 1.2 to 16.3). **CONCLUSIONS:** Human immunodeficiency virus was detected in one third of cervical samples and one sixth of vaginal samples. The presence of HIV DNA in cervical secretions was significantly associated with oral contraceptive pill use, cervical ectopy, and pregnancy. There was a marginally significant association with cervical mucopus. The identification of factors that increase the infectivity of women suggests potential strategies for reducing heterosexual transmission of HIV