

Seroprevalence, predictors and estimated incidence of maternal and neonatal Herpes Simplex Virus type 2 infection in semi-urban women in Kilifi, Kenya

Abstract:

Herpes Simplex Virus type 2 (HSV-2) has public health importance as a leading cause of genital ulcers, a co-factor in HIV-1 acquisition and transmission and as a cause of neonatal herpes infections. Little is known of its epidemiology and burden in Coastal Kenya. We screened plasma samples for HSV-2 infection from 826 women aged 15-34 years who participated in an HIV-1 survey in Kilifi in 2004. The sample comprised 563 women selected randomly from a demographic surveillance system (DSS) and 263 women who presented for voluntary counseling and testing (VCT). Predictors for HSV-2 seropositivity were determined using multivariate logistic regression. The incidence of HSV-2 infection and risk of neonatal herpes were estimated by a simple catalytic model fitted to age-seroprevalence data. HSV-2 prevalence was 32% in the DSS recruits vs. 44% in the VCT recruits ($P < 0.001$), while, HIV-1 prevalence was 8% in the DSS recruits vs. 12% in the VCT recruits ($P = 0.12$). Independent risk factors for HSV-2 infection in all women were: older age (30-34 years; odds ratio (OR) 10.5, 95% confidence interval (CI): 5.2 - 21.0), recruitment from VCT (OR 1.5, 95% CI: 1.1 - 2.1), history of genital ulcers (OR 1.7, 95% CI: 1.2 - 2.3) and HIV infection (OR 2.7, 95% CI: 1.6-4.6). Education beyond primary (OR 0.7, 95% CI: 0.5 - 0.9) was inversely associated with HSV-2 infection. In the DSS sample, HSV-2 incidence was estimated at 4 cases (95% CI: 3.3 - 4.4) per 100 women per year, 17 cases (95% CI: 16-18) per 1,000 pregnancies per year and 33 neonatal cases (95% CI: 31-36) per 100,000 births per year. HSV-2 transmission is rapid following the onset of sexual activity and likely to result in a significant burden of genital ulcer disease. Nevertheless, the burden of neonatal HSV-2 can be predicted to be low. Educating young women about HSV-2 infection may help in reducing its burden in this semi-urban population