

# an papillomavirus in women with invasive cervical carcinoma by HIV status in Kenya and South Africa

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## Abstract:

Data on the prevalence of human papillomavirus (HPV) types in cervical carcinoma in women with HIV are scarce but are essential to elucidate the influence of immunity on the carcinogenicity of different HPV types, and the potential impact of prophylactic HPV vaccines in populations with high HIV prevalence. We conducted a multicentre case-case study in Kenya and South Africa. During 2007-2009, frozen tissue biopsies from women with cervical carcinoma were tested for HPV DNA using GP5+/6+-PCR assay. One hundred and six HIV-positive (mean age 40.8 years) and 129 HIV-negative women (mean age 45.7) with squamous cell carcinoma were included. Among HIV-positive women, the mean CD4 count was 334 cells/ L and 48.1% were on combined antiretroviral therapy. HIV-positive women had many more multiple HPV infections (21.6% of HPV-positive carcinomas) compared with HIV-negative women (3.3%) ( $p < 0.001$ ) and the proportion of multiple infections was inversely related to CD4 level. An excess of HPV18 of borderline statistical significance was found in HIV-positive compared with HIV-negative cases (Prevalence ratio (PR) = 1.9, 95% confidence interval (CI): 1.0-3.7, adjusted for study centre, age and multiplicity of infection). HPV16 and/or 18 prevalence combined, however, was similar in HIV-positive (66.7%) and HIV-negative cases (69.1%) (PR = 1.0, 95% CI: 0.9-1.2). No significant difference was found for other HPV types. Our data suggest that current prophylactic HPV vaccines against HPV16 and 18 may prevent similar proportions of cervical SCC in HIV-positive as in HIV-negative women provided that vaccine-related protection is sustained after HIV infection.