1. **Prevalence, incidence and distribution of human papillomavirus types in female sex workers in Kenya**

**Global Integrative Oncology: Use in Cancer Prevention**

**Background**: Nearly 100% of invasive cervical cancers (ICC) are caused by high-risk (oncogenic) human papillomavirus (HPV). Female sex workers (FSW) are a high-risk population for HPV infections. Relatively few studies address type-specific prevalence and incidence of HPV among FSW in sub-Saharan Africa.

**Aim**: To characterize baseline prevalence, incidence, and genotype distribution of HPV infections in FSW in Nairobi, Kenya. We also aimed to compare the burden of HPV and HPV-associated cervical disease between HIV-seropositive and HIV-seronegative women.

**Methodology**: FSW (n=348) attending the Korogocho clinic participated from August 2009 to March 2011. HPV DNA was detected using the SPF-10 PCR assay. Baseline prevalence of HPV infection and cervical dysplasia were calculated, stratified by HIV serostatus. Incidence rates (IR) of infection were calculated among 160 HPV-negative participants with complete 12-month follow-up.

**Results**: Baseline HPV prevalence was 23.6% for any HPV and 20.4% for high-risk HPV types. The most prevalent type was HPV52 (10.1%). A quarter (24%) of participants were HIV-positive. HPV prevalence was higher in HIV-positive (32.1%) than HIV-negative (20.8%) participants. During follow-up (median 368 days, range 327-501), HPV IR was 31.4 (95%CI: 23.8-41.5) for any HPV and 24.2 (95%CI: 17.9-32.8) for high-risk types; HPV52 had the highest IR (6.0; 95%CI: 6.5-10.3). The prevalence of advanced lesions (HSIL/SCC) was 4.3%, with higher prevalence in HIV-positive (13.1%) than HIV-negative participants (1.5%, p < 0.01). CIN2+ prevalence was 5.5% (16.7% in HIV-positive vs. 1.9% in HIV-negative, p<0.01)

Analysis: Of the 160 HPV-negative women with complete follow-up, 31.3% developed incident infections over follow-up and most of these infections were high-risk types, with high rates of non16/18 exposures.

**Conclusions**:The higher prevalence and incidence of HPV and associated cervical disease observed in HIV-positive women highlights the need to prioritize prevention strategies, including vaccination, screening, and treatment of precancerous lesions to reduce ICC morbidity and mortality.