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High HPV load and sexually transmitted infections increase the risk of abnormal cervical cytology in HIVinfected women in India

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Sexually transmitted infection (STI) is a major public health problem in human immunodeficiency virus (HIV)-infected individuals. This study evaluated the effect of STIs, such as herpes simplex virus type-2 (HSV-2) and *Chlamydia trachomatis* (CT) on human papillomavirus (HPV) copy number and associated cervical cytological abnormalities in context of HIV infection. Cervical cells from 74 HIVseropositive and 50 seronegative women were examined for HPV, HSV-2 and CT DNA by PCR. HIVinfected women had higher HSV-2 (P =0.002) and HPV infection (P=0.001) in cervix. HPV 16 was detected as the most predominant genotype. Combination of HIV and other STIs (HSV-2 and CT) was associated with higher HPV prevalence in cervix (P <0.01). Cervical HPV viral load (VL) was increased in HIVinfected subjects co-infected with STIs compared to those with only HPV infection (P=0.008). Women with abnormal cervical cytology had higher HPV copy number/cell compared to those with normal cytology (P <0.001). In conclusion, STIs may not have direct effect on cervical cytological abnormalities, they increase HPV VL that in turn worsen cervical cytological complications in HIVinfected women. Therefore, screening of STIs in HIVinfected high-risk Indian women may be important to evaluate HPV burden and abnormal cervical dysplasia.

Keywords: Cervix, *Chlamydia trachomatis* (CT), Herpes simplex virus type-2 (HSV-2), HSV, Human immunodeficiency virus (HIV), Human papillomavirus (HPV), STI, Viral load