Human Papillomaviral Load Changes in Low-Grade Squamous Intraepithelial Lesions of the Uterine Cervix

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Abstract

To better predict risk of progression of low-grade squamous intraepithelial lesions (LSILs) of the uterine cervix in women with human papillomavirus (HPV) infections, 294 baseline cervical specimens from women with LSILs were evaluated. Specimens were tested for HPV DNA using hybrid capture 2 (HC2) and PCR-reverse line blotting. 65 LSILs with HPV DNA types 16, 18, 52, or 58 were examined for physical status, E2/E6 ratio and viral load at two time points, along with patient age. Women with LSILs whose viral loads increased between baseline and 6 month follow-up had a 45% risk of developing HSIL (OR=7.6, 95% CI=1.9-29.4, P<0.01), as evaluated by real-time PCR and a 44% risk (OR=6.1, 95% CI=1.6-22.7, P<0.01), as evaluated by HC2. The two viral load measures correlated well (Person's coefficient, r=0.687, P<0.001). Such evaluations of viral load changes (increased or not increased) through repeat HPV DNA testing could predict progression of disease in LSIL cases of HPV types 16, 18, 52, and 58, which correlates to clinical implications.