

The elevated 10-year risk of cervical precancer and cancer in women with human papillomavirus (HPV) type 16 or 18 and the possible utility of type-specific HPV testing in clinical practice.

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Abstract

BACKGROUND:

Human papillomavirus (HPV) types 16 and 18 cause 60%-70% of cervical cancer worldwide, and other HPV types cause virtually all remaining cases. Pooled HPV testing for 13 oncogenic types, including HPV16 and 18, is currently used in clinical practice for triage of equivocal cytology and, in conjunction with Pap tests, is an option for general screening among women 30 years of age and older. It is not clear to what extent individual identification of HPV16 or HPV18 as an adjunct to pooled oncogenic HPV testing might effectively identify women at particularly high risk of cervical cancer or its immediate precursor, cervical intraepithelial neoplasia 3 (CIN3).

METHODS:

From April 1, 1989, to November 2, 1990, a total of 20 810 women in the Kaiser Permanente health plan in Portland, OR, enrolled in a cohort study of HPV and cervical neoplasia. Women were tested for 13 oncogenic HPV types by Hybrid Capture 2 (HC2), and those women with a positive HC2 test were tested for HPV16 and 18. Enrollment Pap smear interpretation and HPV test results were linked to histologically confirmed CIN3 and cervical cancer (\geq CIN3) occurring during 10 years of cytologic follow-up. We calculated cumulative incidence rates with 95% confidence intervals for each interval up to 122 months using Kaplan-Meier methods.

RESULTS:

The 10-year cumulative incidence rates of \geq CIN3 were 17.2% (95% confidence interval [CI] = 11.5% to 22.9%) among HPV16+ women and 13.6% (95% CI = 3.6% to 23.7%) among HPV18+ (HPV16-) women, but only 3.0% (95% CI = 1.9% to 4.2%) among HC2+ women negative for HPV16 or HPV18. The 10-year cumulative incidence among HC2- women was 0.8% (95% CI = 0.6% to 1.1%). A subanalysis among women 30 years of age and older with normal cytology at enrollment strengthened the observed risk differences.

CONCLUSIONS:

HPV screening that distinguishes HPV16 and HPV18 from other oncogenic HPV types may identify women at the greatest risk of \geq CIN3 and may permit less aggressive management of other women with oncogenic HPV infections.