DNA Testing for HPV Yields Faster Results Than Cytology

BY JONATHAN GARDNER
London Bureau

NA testing for high-risk human papillomavirus is more sensitive than cytologic testing alone and leads to earlier detection of high-grade lesions, which could mean fewer lifetime screenings for women, according to a Dutch randomized control trial.

The population-based trial comprised 45,000 women aged 29-56 years taking part in the Netherlands’ regular nationwide HPV-screening program. After cervical specimens were taken, the women were randomly assigned to either an intervention or a control group. Those in the intervention group were advised based on both cytologic testing and HPV results for the highest-risk varieties of HPV. For the control group, advice was based on cytologic testing with a blinded DNA test. Of those, 18,403 completed the required follow-up of 6.5 years.

Combining baseline and follow-up data, the researchers found similar detection rates for cervical intraepithelial neoplasia grade 3 or worse (CIN3+) in the two groups. However, significantly more CIN3+ lesions were detected in the intervention group compared with the control group at baseline (68 of 8,575 vs. 40 of 8,580, respectively) and significantly fewer at the subsequent round of testing in the intervention and control groups (24 of 8,413 vs. 54 of 8,456), according to the study (Lancet 2007 Oct. 4 [Epub doi:10.1016/S0140-6736(07)61450-0]).

Researchers concluded that introducing HPV DNA testing could improve quality and efficiency in the health care system. “Our results show that implementation of HPV DNA testing in cervical screening leads to earlier detection of clinically relevant cervical lesions,” according to the researchers, led by Dr. Nicole W.J. Bultmann of the pathology department at Vrije Universiteit Medisch Centrum in Amsterdam. “On the basis of these data, we suggest that the current screening interval of 3 years could be extended by at least 1 year. The extension will be advantageous to women because of a reduction in the lifetime number of screening tests and referrals.”

“Long screening intervals will be an advantage not only in terms of cost but also of burden for women, and should improve participation in screening within the interval (nonparticipation is still the most important reason for later development of cervical cancer in most developed countries),” wrote Dr. Guglielmo Ronco and Dr. Nereo Segnan of the Centro Prevenzione Oncologica in Turin, Italy, in an accompanying editorial.

“Women with abnormal cytology but negative for HPV DNA had a negligible risk of CIN3+ lesions, which supports, in agreement with previous results, a screening policy based on stand-alone HPV DNA testing, with cytological tests only for triage of positive cases,” they wrote (Lancet 2007 Oct. 4 [Epub doi:10.1016/S0140-6736(07)61480-9]).

Researchers also found a higher rate of referrals in the intervention group, compared with the control group at baseline (2.3% vs. 1.3%) and a lower rate at follow-up (1.3% vs. 1.9%). The CIN3+ rate was similar at baseline (33% vs. 32%) but was lower in the intervention group than in the control group at follow-up (25% vs. 40%), they reported.

For women with an initial negative test, those in the intervention group were at a lower risk of CIN3+ than were those in the control group with a positive test at follow-up (0.1% vs. 0.8% adjusted risk), the study found.

The adjusted risk of CIN3+ at follow-up for women with a negative HPV DNA test at baseline was 6.2%, according to the study.

Two of the researchers disclosed ties to GlaxoSmithKline, which manufactures an HPV vaccine, and one of the researchers disclosed ties to Digene Corp., which manufactures an HPV-screening test. Dr. Ronco disclosed receiving payment from Gene Probe Inc., which is developing an HPV RNA test.

Note: Based on data from the Nationwide Inpatient Sample.
Source: Healthcare Cost and Utilization Project