Transcript Details

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A Cohort Study of Cervical Screening Using Partial HPV Typing and Cytology Triage

Persistent infection with one or more of up to a dozen high-risk types of Human papillomavirus/HPV types is believed to be “the necessary cause” of virtually all cases of cervical cancer and precancer. Precancer, diagnosed histologically as CIN3/AIS, is the optimal target of cervical screening, since it can be diagnosed and treated to prevent subsequent cancer morbidity and mortality.

Complicating this issue is that while high-risk HPV infections are quite commonly acquired, the carcinogenic potential varies by HPV type. Moreover, even the highest-risk types of HPV are usually controlled immunologically or otherwise spontaneously “clear” within 1 to 2 years. To avoid possibly harmful overtreatment of many women needing no intervention, Schiffman and colleagues conducted a cohort study and were able to stratify risk profiles generated by HPV typing and cytology into four “action bands,” each with their own subsequent screening recommendations. Their findings are the focus of this Audio Abstract.

Schiffman and colleagues prospectively evaluated combinations of partial HPV typing using the Onclarity HPV Assay from BD and cytology triage to assess whether clinical management could be simplified based on grouping combinations yielding similar 3-year or 18-month CIN3 risks. Approximately 9,000 archived specimens taken during the 2007 to 2011 enrollment into the NCI-Kaiser Permanente Northern California HPV Persistence and Progression cohort were typed.

Based on 3-year CIN3 risks, results from the Onclarity HPV Assay could be combined into five groups: 1) HPV16; 2) HPV18/45; 3) HPV31/33/58/52; 4) HPV51/35/39/68/56/66/68; or 5) HPV negative. Cytology results fell into three risk groups; 1) “high-grade”; 2) ASC-US/LSIL; or 3) NILM. For the 15 HPV group-cytology combinations that existed once data were collected, 3-year CIN3 risks ranged from 60.6% down to 0.06%.

Using established benchmark risk/management thresholds as a guide, Schiffman and colleagues compared risks in this same population. By benchmarking to 3-year risk thresholds further supplemented by 18-month estimates, the widely varying risk strata were condensed into four action bands: 1) very high risk of CIN3 mandating consideration of cone biopsy if colposcopy did not find precancer; 2) moderate risk justifying colposcopy; 3) low risk managed by intensified follow-up to permit HPV “clearance”; and 4) very low risk permitting routine screening.

The authors concluded that it is possible to combine HPV partial typing in primary screening and reflex cytology to stratify risk of CIN3. Further, that the resultant detailed risk strata can be condensed into just a few actionable bands, thus satisfying the criterion of “equal management of equal risk.” The overall findings from this publication support primary HPV testing with management of HPV-positive women through use of partial HPV typing and cytology as triage. The approach also appears to add precision management and simplicity to clinical practice when following HPV screening guidelines.