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Atypical Squamous Cells, Cannot Exclude High-Grade Squamous Intraepithelial Lesion (ASC-H): HPV Testing and Histologic Results

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Background:

Current guidelines recommend colposcopy rather than high-risk human papillomavirus (HPV) testing for evaluation of abnormal cervical cytology interpreted ASC-H based on data from the Atypical squamous cells of undetermined significance/Low-grade squamous intraepithelial lesion (ASCUS/LSIL) Triage Study (ALTS) indicating ASC-H has a significantly higher frequency of high-risk HPV positivity and underlying high-grade squamous intraepithelial lesions (HSIL) compared with ASC-US. The cytologic interpretations in ALTS were expert consensus diagnoses rather than routine single-pathologist readings.

Methods :

We report a comparative analysis of Hybrid Capture 2 high-risk HPV positivity and frequency of histologically diagnosed HSIL for ASC-H and ASC-US to assess the utility of HPV testing for colposcopy triage of ASC-H in routine practice.

Results:

64 of 96 (67%) ASC-H cases were HPV-positive compared with 484 of 1079 (45%) ASC-US cases. Of 43 HPV-positive ASC-H cases with follow-up 18 (41.8%) had HSIL. Of 21 HPV-negative ASC-H cases with follow-up 1 (4.8%) had HSIL. Of 227 HPV-positive ASC-US cases with follow-up 24 (10.6%) had HSIL. Of 79 HPV-negative ASC-US cases with follow-up 5 (6.3%) had HSIL. The frequency of HPV-positivity of ASC-H (67%) was intermediate between that obtained in ALTS (86%) and that of ASC-US in both this study (45%) and ALTS (51%). Underlying HSIL was detected in a similar percentage of HPV-positive ASC-H cases as in ALTS (41-42%). The differences in frequencies of detection of HSIL among HPV-positive ASC-H cases (41.8%) versus HPV-positive ASC-US cases (10.6%) and among HPV-positive ASC-H cases (41.8%) versus HPV-negative ASC-H cases (4.8%) were statistically significant ($p < 0.0001$, $p = 0.0028$). The risk of HSIL was similarly low for both HPV-negative ASC-H and HPV-negative ASC-US cases (4-6%).

Conclusions :

The intermediate frequency of HPV positivity for these routinely diagnosed ASC-H cases, significant risk of HSIL in HPV-positive ASC-H cases, and similarly low risk of HSIL in HPV-negative ASC-H and HPV-negative ASC-US cases indicate that HPV testing for triage of ASC-H in routine practice has the potential to reduce the number of women with ASC-H referred for colposcopy without increased risk of failure to detect HSIL among HPV-negative women, similar to its triage role for ASC-US cases. The HPV-negative cases with biopsy confirmed HSIL warrant investigation to determine whether the discrepancy is due to technical failure or the presence of an HPV type not covered by the assay.