P937

Abstract (poster session)

Comparison of the INNO-LiPA Genotyping Extra and the Hybrid Capture 2 assays for detection of carcinogenic human papillomavirus genotypes

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Objectives: The objective of this analysis was to compare the performance characteristics of two human papillomavirus (HPV) DNA detection assays, the Hybrid Capture 2 assay (HC2) and the INNO-LiPA Genotyping Extra assay (LiPA), for the detection of carcinogenic HPVs. Methods: Cervical specimens collected from a total of 1,184 consecutive women, attending our Unit for HPV testing and genotyping for opportunistic screening and investigation of HPV-related lesions, were analyzed by both HC2 and LiPA tests. Results: Among the 1,184 paired analyses, 559 (47.2%) specimens were negative by both tests, 418 (35.3%) were positive by HC2, while 638 (53.9%) were positive by LiPA, including 371 (31.3%) which were positive for carcinogenic HPV types (i.e., IARC groups 1 and 2A). Seventy nine specimens (6.7%) were HC2-positive but carcinogenic HPV type-negative by use of the SPF10-LiPA system. Similarly, 45 (3.8%) were carcinogenic HPV type-positive by use of the SPF10-LiPA system but HC2-negative. Agreement between the two assays for carcinogenic HPV type detection was 89.7%. HC2 identified as positive between 83% (HPV51) and 100% (HPV45, HPV56, and HPV59) of specimens with carcinogenic HPV types detected by LiPA. Ninety-two and ninety percent of the samples identified as HPV16- and HPV18-positive, respectively, by SPF10-LiPA were called positive by HC2. Among patients infected with a single HPV type detected by LiPA, HC2 positivity for carcinogenic HPV types ranged from 61.9% (HPV51) to 100% (HPV33, 35, 39, 45, 59), from 0% for HPV73 to 44% and 50% for the possibly carcinogenic IARC 2B HPV66 and HPV53, respectively, while non-carcinogenic HPVs were negative at HC2 assay, with the exception of same single HPV6 and HPV74 infections testing HC2 positive in 14.3% and 5.6% of cases, respectively. When carcinogenic HPV type detection by HC2 and the SPF10 system was stratified by cytology diagnosis, both HPV assays performed similarly for all cytology interpretations, except for women with low-grade squamous intraepithelial lesions. Discordant results were mainly due to infection with HC2 cross-reactive types HPV53 and HPV66. Conclusion: A very good agreement was observed between HC2 and INNO-LiPA Genotyping Extra assays for carcinogenic HPV type detection. In addition, HC2 probes showed cross-reactivity with the possible carcinogenic HPV53 and HPV66.