
P-15; QUANTIFICATION OF INTRACELLULAR HPV E6/E7 mRNA EXPRESSION INCREASES THE POSITIVE PREDICTIVE VALUE OF CERVICAL CANCER SCREENING

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Background: Current methods for HPV screening rely on the detection of L1 DNA from high risk genotypes (HR HPV). These assays have very high negative predictive values (~99%) and as such have been used to triage women to longer screening intervals. The literature has shown that the positive predictive value for pre-cancerous and cancerous lesions is less than 50% for HPV DNA screening.

Objectives: The purpose of this study was to combine HPV DNA screening with HPV E6, E7 mRNA detection in an effort to improve the overall performance of cervical cancer screening while potentially reducing the number of women requiring colposcopy.

Materials and Methods: Liquid based cervical cytology specimens collected in either PreservCyt or SurePath were submitted for routine cytology, HPV HRDNA detection by Hybrid Capture 2 and HPV E6, E7 mRNA quantification in cells. Results from these three analyses were compared to biopsy in 40 cases.

Results: The positive predictive value of HPV E6, E7 mRNA quantification in cells was 86% which was greater than HPV DNA alone. The specificity was 96% based on 142 samples with normal cytology. There was a statistically significant difference in the percent of ectocervical cells expressing E6, E7 mRNA in women with CIN2, CIN3, or cancer (mean 14.7%) compared to women with normal cytology (mean 1.4%) with a $p < 0.001$.