CONJUNCTIVE USE OF THE CERVATEC p16 ELISA SIGNIFICANTLY INCREASES THE SENSITIVITY FOR DET TION OF CIN2+ OVER CONVENTIONAL PAP CYTOLOG ALONE – RESULTS FROM A PROSPECTIVE SCREENING TRIAL

K. Ulrich Petry[1], Petra Klement[2], Ruediger Ridder[2,3]
[1]*Department of Gynecology and Obstetrics, Klinikum Wolfsburg, Wolfsburg, Germany*
[2]*mtm laboratories, Heidelberg, Germany*
[3]*mtm laboratories, Cervatec Study Group, Germany*

Background: Over-expression of p16 protein has been shown to represent a useful biomarker for high-risk HPV-related dysplastic and malignant lesions of the cervix uteri, both in the evaluation of immunochemically stained cervical histology and cytology.

Objectives: The purpose of this study was to assess the potential of an ELISA-based p16 immunoassay applied on lysed cervical specimens to increase the sensitivity for the detection of high-grade CIN (CIN2+) in a screened population when used in conjunction with conventional Pap cytology testing.

Materials and Methods: A total of 7,667 women aged 18 to 35 undergoing routine Pap cytology screening were enrolled into the study. After sample taking for conventional Pap testing, an additional cervical sample was collected. Aliquots of the lysed samples were subjected to p16 ELISA testing using a recently established Sandwich ELISA (Cervatec). All women either showing any Pap abnormality (PapIIw+) or tested positive with the Cervatec ELISA were referred to colposcopy/biopsy. Histology results served as clinical endpoint for the study. HPV tests were performed on all positive p16 ELISA results, all Pap abnormalities, and a control group.

Results: Positive p16 ELISA results identified 56 out of 62 cases (90%) of biopsy-confirmed CIN2+ lesions in this study, compared to 24 out of 62 cases (39%) for a Pap cytology result of PapIIw or higher. Specificity of ELISA testing alone was 92,3%. Reflex testing for HPV out of the Cervatec Sampling Vial revealed a positivity rate for HR-HPV of 43% within the group of p16 ELISA positive results. As all p16 ELISA positive results with underlying CIN2+ were HR-HPV positive as well, the specificity of a combined approach of HPV reflex testing after positive p16 ELISA results would be increased to 97.1%, while maintaining the 90% sensitivity level.

Conclusions: The sensitivity of the Cervatec p16 ELISA with Pap cytology for the identification of high-grade cervical neoplasia has been found 2.5 fold higher than Pap cytology alone. Therefore, Cervatec p16 ELISA may be a valuable screening adjunct to conventional Pap testing in women aged 35 and younger.