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A new prognostic biomarker for cervical cancer

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Background: Cervical cancer is a major public health problem in Morocco. The cervical cancer has a long precancerous period that provides an opportunity for the screening and treatment. Improving screening tests is a priority goal for the early diagnosis of cervical cancer. This study was conducted to evaluate the combination of p16 (INK4a) protein expression, human papillomavirus (HPV) typing, and histopathology for the identification of cervical lesions with high risk to progress to cervical cancer among Moroccan women.

Material & Methods: A total of 96 cervical biopsies were included in this study. Signal amplification in situ hybridization with biotinylated probes was used to detect HPV. Immunohistochemistry was used to evaluate the expression of p16 (INK4a) protein.

Results: HPV DNA was detected in 74.0% of the biopsies (71/96). Of the seventy-one positive HPV cases, we detected 67.6% (48/71) of high risk (HR)-HPV (HPV 16 and 18), 24% of low risk-HPV (HPV 6 and 11), 1.4% intermediate risk-HPV (HPV 31, 33, and 35), and 7% coinfections (HPV 6/11 and 16/18). Overexpression of p16 (INK4a) protein was observed in 72.9% (70/96) of the biopsies. In addition, p16 (INK4a) protein detection was closely correlated with recovery of HR HPV. The p16 (INK4a) expression level was correlated with HR-HPV status.

Conclusions: Our findings highlighted a strong link between HR-HPV and HSIL and/or invasive cancers. Moreover, we found that p16INK4a protein is a promising marker for the early diagnosis of precancerous and cancerous lesions of the cervix. The results provide an improved screening approach for the diagnosis of the risk of lesions progressing to cervical cancer.