

Loss of ZNF516 protein expression is related with HR-HPV infection and cervical preneoplastic lesions

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Purpose: Cervical cancer is an important health issue among women worldwide. Cervical smear and human papillomavirus detection are the most used screening methods to detect preneoplastic and neoplastic lesions. However, as neither can predict cervical development, new markers are needed for this disease. ZNF516, a potential tumor suppressor gene, has been found altered in cervical cancer. The objective of this study was to determine ZNF516 immunohistochemistry frequency in cervical biopsies and its association with clinicopathological parameters, to evaluate its potential as marker in cervical lesions. **Methods:** A retrospective series of 452 formalin-fixed, paraffin-embedded (FFPE) cervical biopsies, obtained between 2002 and 2007, were selected for immunohistochemistry of ZNF516, p16 and Ki-67 markers. Human papillomavirus genotyping was performed on 272 of these samples through reverse line blot assay. **Results:** An inverse relation between ZNF516 expression and cervical lesions grade ($P < 0.001$) was observed, given this protein was found mainly expressed in normal tissues, while was decreased in cervical lesions. As expected, the proliferation markers p16 and Ki-67 were found highly expressed in cervical cancer compared to normal tissues, and inversely correlated to ZNF516 expression ($P < 0.01$). High

oncogenic risk-Human papillomavirus presence also was related to the lack of ZNF516 expression in cervical lesions ($P < 0.05$), and the detection of these two parameters showed a high sensitivity (70.9%) for preneoplastic lesions detection. Conclusions: The loss of ZNF516 expression was found in cervical lesions, and its detection potentially could be used as a complementary marker of early diagnosis in cervical lesions. © 2018, Springer-Verlag GmbH Germany, part of Springer Nature.

Cervical cancer

Human papillomavirus

Immunohistochemistry

Ki-67

p16

ZNF516

biological marker

Ki 67 antigen

protein p16

unclassified drug

zinc finger protein

ZNF516 protein

DNA binding protein

tumor marker

ZNF516 protein, human

adolescent

adult

aged

Article

assay

cancer risk

clinical feature

clinical outcome

controlled study

disease association

early diagnosis

female

genotype

histopathology

human

human tissue

immunohistochemistry

major clinical study

papillomavirus infection

protein expression

retrospective study

reverse line blot assay

squamous intraepithelial lesion of the cervix

uterine cervix biopsy

uterine cervix carcinoma

uterine cervix carcinoma in situ

chemistry

complication

middle aged

papillomavirus infection

precancer

uterine cervix tumor

very elderly

virology

young adult

Adolescent

Adult

Aged

Aged, 80 and over

Biomarkers, Tumor

DNA-Binding Proteins

Female

Humans

Middle Aged

Papillomavirus Infections

Precancerous Conditions

Retrospective Studies

Uterine Cervical Neoplasms

Young Adult