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Correlation of hTERT expression with cervical cytological abnormalities and human papillomavirus infection**Vjosa A. Zejnullahu**

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Telomerase Reverse Transcriptase (TERT) is the main catalytic sub-unit of telomerase, a reverse transcriptase enzyme. Telomerase expression is regulated at many levels, with numerous studies suggesting that up-regulation of human TERT gene (hTERT) at transcriptional level results in immortal cell phenotype associated with cancer. The aim of this study is to determine the correlation between hTERT expression and different cervical precursor lesions, as well as with cervical cancer in patients with confirmed Human papillomavirus (HPV) infection.

The study included molecular analyzes on cervical samples from 214 women and matched Papanicolaou (Pap) test results. HPV detection and genotyping was performed by polymerase chain reaction (PCR) and genotyping. Quantitative real-time PCR (qRT-PCR) was performed using TaqMan probes and were calculated relative to the reference gene.

Results showed significantly increased hTERT mRNA expression levels in high-grade and low-grade lesions compared to normal control samples ($p < 0.01$) associated with 6.31 fold higher risk for developing ASC-US and 9.20 for LSIL. Strong correlation between HPV infection and hTERT expression in the high-grade lesions and cervical cancer was also observed. hTERT relative expression values showed 98% specificity and 100 % sensitivity as indicator of cervical lesions particularly for the ACS-H, HSIL and cervical cancer.

In conclusion, hTERT expression correlates with the cytological grade of the cervical lesions and HPV infection and has a potential to be used as a diagnostic and prognostic marker

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