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Expressional Proteins of p53 and p16 Genes in Human Papillomavirus16/18 - Associated Sinonasal and Nasopharyngeal Lesions: An ImmunohistochemicalStudy

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Abstract:Background: High-risk HPV may play significant roles in cell malignancy through disregulation of cell cycle proteins expression via activity of two viral oncoproteins E6, E7.
Objectives: The present study was designed to determine the rates of p16 and p53 expression in relation to high- risk (HPV16/18) genotypes infections in of sinonasal and nasopharyngeal lesions.
Methods: This retrospective study included total 125 formalin -fixed paraffin-embedded tissue blocks including 35 nasal polyps(NP), 35 sinonasalpapillomas(SNP), 29 nasopharyngeal carcinomas (NPC),6 sinonasal carcinomas(SNC) and 20 nasal apparently healthy tissues. After histopathological confirmation, a Chromogenic In Situ Hybridization technique (CISH) was done for HPV16/18 DNA localization and for P16 and p53 expression immunohistochemistry technique (IHC) were performed.
Results: The percentages of DNA detection of HPV16/18 genotypes in carcinoma group and sinonasal papilloma were 31.4 % and 25.7%, respectively, while in nasal polyps was detected in 11.4 % .these results have revealed non-significantdifferences ($P>0.05$). P53-IHC positivity in carcinoma group and sinonasalpapillomas was noticed in 68.6 % and 34.3%, respectively, in nasal polyps was 28.6% which showed highly significant differences at ($P<0.01$). P16-IHC positivity in carcinoma group and sinonasalpapillomas was 51.4 % and 60.0% respectively, whereas in nasal polyps was 37.1% and the statistical analysis shows significant differences among them at ($P<0.05$). Positive correlation between HPV16/18 and p16 among carcinoma group and nasal polyps group.
Conclusions: the present results indicate a possible association between infection with high oncogenic HPV types and carcinomas group as well as sinonasal papilloma group pathogenesis and tumorgenesis. The P53, as well as p16 expression, were increased significantly in sinonasaland nasopharyngeal carcinomas presenting for their addition impact in sinonasal and nasopharyngealpathogenesis and carcinogenesis.The p16 is a good marker for detection oncogenic HPV in sinonasal and nasopharyngeal carcinoma group.
Key word: High- riskHPV-16/18, P53, P16, Sinonasal and Nasopharyngeal lesions.

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