

Molecular Study of P53- and Rb-Tumor Suppressor Genes in Human Papilloma Virus-Infected Breast Cancers

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Abstract : The study was aimed to define the percentage of detection of high-oncogenic risk types of HPV and their genotyping in archival tissue specimens that ranged from apparently healthy tissue to invasive breast cancer by using one of the recent versions of In Situ Hybridization(ISH) 0.2. To find out rational significance of such genotypes as well as over expressed products of mutants P53 and RB genes on the severity of underlying breast cancers. The DNA of HPV was detected in 46.5 % of tissues from breast cancers while HPV DNA in the tissues from benign breast tumours was detected in 12.5%. No HPV positive-ISH reaction was detected in healthy breast tissues of the control group. HPV DNA of genotypes (16, 18, 31 and 33) was detected in malignant group in frequency of 25.6%, 27.1%, 30.2% and 12.4%, respectively. Over expression of p53 was detected by IHC in 51.2% breast cancer cases and in 50% benign breast tumour group, while none of control group showed P53- over expression. Retinoblastoma protein was detected by IHC test in 49.7% of malignant breast tumours, 54.2% of benign breast tumours but no signal was reported in the tissues of control group. The significance prevalence of expression of mutated p53 & Rb genes as well as detection of high-oncogenic HPV genotypes in patients with breast cancer supports the hypothesis of an etiologic role for the virus in breast cancer development.

Keywords : human papilloma virus, P53, RB, breast cancer

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