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The Study of Relationship Between Epstein - Barr virus and Breast Cancer in Isfahan Province

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Abstract

Introduction: Breast cancer is one of the most common malignancies in women. Although the etiology of breast carcinoma is not completely understood, exposure to Epstein-Barr virus (EBV) is suggested as a risk factor for breast cancer. Studies have reported since 1995 that EBV is involved in the development of breast cancer. The aim of this study was to assess the presence of EBV in patients with breast cancer in Isfahan province.

Methods: This study was performed using 40 paraffin-embedded tumor tissues and 40 tumor-free breast tissues from women with breast cancer in Isfahan province. After extraction of the DNA using salting-out method and the amplification of housekeeping gene beta- actin, all samples were examined for EBV DNA using PCR (polymerase chain reaction) method. Data were analyzed with chi-square test using SPSS 16software.

Results: EBV was detected by PCR in 20 out of 40 (50%) cases of breast cancer samples and 5 out of 40 (12.5%) control samples. The chi-square statistics for the analysis of EBV infection in tumor and normal samples was 0.000 indicating a significant relationship between breast cancer and EBV infection in Isfahan province.

Conclusion: The presence of EBV gene in a significant subset of women with breast cancer in Isfahan province shows EBVcan be one of the reasons for breast cancer, but more studies are needed to demonstrate the relationship between the virus and breast cancer.

Keywords: Breast Cancer, Epstein- Barr virus, PCR, Isfahan province