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Association of Epstein-Barr virus and Hodgkin's disease

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Abstract:

We have analyzed paraffin sections from 55 patients with histologically confirmed Hodgkin's disease (HD) for the presence of Epstein-Barr virus (EBV) markers using in situ hybridization to detect the EBV-encoded RNAs (EBERs) and immunohistochemistry to identify latent membrane protein-1 (LMP1) expression. Tissue specimens from 55 cases of Hodgkin's disease included 22-mixed cellularity (MC), 27 nodular sclerosis (NC), one lymphocyte depleted (LD) and 5 lymphocyte predominance (LP). All of the confirmed EBV associated cases were examined and subtyped of the presence of Epstein-Barr virus (EBV) DNA by polymerase chain reaction. In situ hybridization revealed exclusive localization of virus in the tumor cells and FBV markers were present in 30 HD cases (55%) and were mainly confined to the mixed cellularity (MC) and nodular sclerosis (NC) subtypes. 1-MH immunohistochemistry has similar results as in situ hybridization. EBV positivity with regards of HD subtypes were 64% (14/22) mixed cellularity (MC), 44% (12/27) nodular sclerosis (NS), 0% (0/1) lymphocyte depleted (LD) and 80% (4/5) lymphocyte predominance (LP). Epstein-Barr virus-specific DNA sequences were detected by PCR in DNA extracts from paraffin-embedded tissues of all LMP1 positive cases. Twenty-eight cases were type 1 EBV and 2 cases type 2 EBV. There was difference between EBV-positive and EBV-negative HD patients with regard to age. Analysis of age group 1-14 years, 15-49 years and over 49 years, revealed 73% (16/22), 35% (10/29), 100% (4/4) EBV positivity, respectively. These findings compared to the EBV association pattern with HD in developed and developing countries suggest an overall intermediate pattern of EBV association with HD and high incidence of EBV children and elderly HD cases.

Keywords:

Epstein-Barr virus ، Hodgkin's disease ، Latent membrane protein 1 ، In situ hybridization

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