

Immunohistochemical Expression of Epstein Barr Virus Antigen Latent Membrane Protein-1 and Bcl-2 in Classical Hodgkin Lymphoma

Subh S Al-Mudallal¹ MSc FICMS, Ghasaq M Al-Sinjery² MBChB MSc

¹Dept. of Pathology & Forensic Medicine, College of Medicine, Al-Nahrain University, ²Thi-Qar health office, Thi-Qar, Iraq.

Abstract

- Background** Different genetic and environmental factors appear to be involved in the pathogenesis of classical Hodgkin's lymphoma (HL) and among them is Epstein Barr virus.
- Objective** To evaluate the immunohistochemical expression of the Latent Membrane Protein-1 of Epstein-Barr virus and Bcl-2 in Classical Hodgkin Lymphoma and to correlates this expression with some clinicopathological parameters and finally to find if there is any relation between LMP-1 and Bcl-2 in classical Hodgkin's lymphoma.
- Method** Retrospective study of fifty paraffin-embedded blocks of lymph nodes biopsies from patients diagnosed as Classical Hodgkin's Lymphoma. Three representative sections were prepared for each case. The first stained with H&E and the other two sections stained immunohistochemically for LMP-1 and Bcl-2 .
- Results** Immunohistochemical expression of LMP-1 and Bcl-2 was detected in 90% and 66% of Hodgkin's lymphoma cases and in 60% and 80% of control subjects, respectively. The patients (9/50) who were less than 16 years were positive for LMP-1 antigen. 21/45 (46.6%) of positive cases for LMP-1 & 14/33 (42%) of positive cases for Bcl-2 were of mixed cellularity subtype. Intensity of LMP-1 but not Bcl-2 expression was significantly high in mixed cellularity compared to other subtypes. No statistically significant relation between LMP-1 and Bcl-2 expression in HRS cells of Hodgkin's lymphoma cases.
- Conclusion** The high prevalence and high expression of LMP-1 confirms the association of the virus with HL. Although Bcl-2 is highly expressed in HL, the two markers were not related to each other.
- Keywords** Classical Hodgkin's Lymphoma, Epstein Barr virus, Immunohistochemistry, Epstein Barr virus latent membrane protein-1, Bcl-2.

Introduction

Hodgkin's lymphoma (HL) is a lymphoproliferative malignancy of B-cell origin ⁽¹⁾ According to the WHO classification, Hodgkin's lymphoma (HL) is divided into a classical variant and a nodular lymphocyte predominant variant which are characterized by the presence of Hodgkin's and Reed-Sternberg (H-RS) cells or lymphocytic and histiocytic (L&H) cells, respectively ⁽²⁾.

According to National Cancer institute in 2008, the worldwide incidence rate of HL is 3.1 per 100 000 population/year. Its incidence varies from 3.5 per 100,000 population/year ⁽³⁾ in Europe, 3.5 per 100,000 population/year in united state ⁽⁴⁾, >5.5 per 100,000/year in Yemen and Lebanon, to <1 per 100,000 population/year ⁽⁵⁾ in Bangladesh, Japan and China. In Iraq, the incidence of HL from