A Case of EBV-associated T/B Cell Lymphoproliferative Disease Successfully Treated with R-CVP

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ABSTRACT

Epstein–Barr virus (EBV) associated lymphoproliferative diseases (LPDs) cover a wide range of lymphocytes disorders spanning B, T, and NK cells. The classification of Epstein–Barr virus (EBV) associated lymphoproliferative disease (LPD) is evolving. We report a 63-year-old male patient with EBV-associated T/B cell LPD diagnosed by pathological biopsy of lymph nodes, which is a new type of EBV-associated LPD has not been reported previously. Because of its rarity, standard treatment has not been established. This patient showed rapid remission of the disease after combination chemotherapy with rituximab, which provided an evidence supporting the use of rituximab and chemotherapy combination in EBV-associated T/B cell LPD treatment.

Keywords: Epstein–Barr virus, lymphoproliferative disease, rituximab

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INTRODUCTION

Epstein–Barr virus(EBV) associated lymphoproliferative diseases (LPDs) cover a wide range of lymphocytes disorders spanning B, T, and NK cells, which has been classified in the 4th World Health Organization (WHO) classification of tumors of hematopoietic and lymphoid tissues. The classification of EBV-LPD is evolving, including Burkitt lymphoma, age-related EBV+B-cell LPD, extranodal NK/T-cell lymphoma of nasal type (ENKL), aggressive NK-cell leukemia(ANKL), classic Hodgkin lymphoma, immunodeficiency-associated lymphoproliferative disorders, EBV associated T- and NK-cell LPD (T/NK-LPD), systemic EBV+T-cell LPD of childhood and hydroavacciniforme–like lymphoma (1-3).

However, to our best knowledge, EBV-associated T/B cell lymphoproliferative disease has not been reported previously. Here, we report a rare case of EBV-associated T/B cell LPD successfully treated with R-CVP (rituximab, cyclophosphamide, vindesine and prednisone).

CASE REPORT

A 63-year-old Chinese man was admitted to the hospital because of a cough and lymphadenectasis of neck in December 2013. Ultrasound revealed a 4.2×2.1×2.6cmenlarged lymph node in his right neck. Contrast-enhanced computed tomography revealed enlarged lymph nodes in the para-aortic, mediastinal, and abdominal areas. The Epstein-Barr virus DNA load in the peripheral blood mononuclear cells (PBMC) was 1260000/106PBMC. Biopsy of the enlarged lymph node in his right neck was made. Immunohistochemistry demonstrated that the cells were positive for Epstein-Barr virus–encoded small RNA (EBER)

in situ hybridization, CD3, CD8, CXCL13, Bcl2，partially positive for CD20，CD4，PD1. Thus, the histopathologic diagnosis of EBV-associated T/B cell LPD was made. The patient received four cycles of rituximab, cyclophosphamide, vincristine and prednisone (CVP) chemotherapy and achieved CR. Then we consolidated 2cycles of R-CVP after CR and terminated the therapy. The patient was still alive with disease free until this paper was published.

DISCUSSION

To our knowledge, this is the first report of a patient with EBV-associated T/B cell LPD in long-term CR following R-CVP therapy, with no use of high-dose chemoradiotherapy in combination with hematologic stem-cell transplantation.

Therapeutic approaches on EBV-associated LPD include high-dose immunoglobulin, IL-2, antiviral agents, IFN-αorIFN-γ, corticosteroids, rituximab, hematopoieticstem-cell transplantation and EBV specific T cells4.But these therapies generally have not been successful and relapses were common. Here we report a rare case with EBV-associated T/B cell LPD, which is a new type of EBV-associated LPD has not been reported previously.Because of its rarity, standard treatment has not been established.

Rituximab is a chimeric mouse/human monoclonal antibody that specifically targets the CD20 antigen on the surface of normal and malignant human B cells, which has been widely used in B cell lymphomas5,6.Rituximab in combination with CHOP (cyclophosphamide, doxorubicin, vincristine and prednisone) has already improved survival

in elderly patients with aggressive non-Hodgkin's lymphoma7. In terms of its safety and efficacy, our case provided an evidence supporting the use of rituximab and chemotherapy combination in EBV-associated T/B cell LPD treatment.

ACKNOWLEDGMENTS

This work was supported by a grant from the National Natural Science Foundation of China (Grant No.81072241).

AUTHORS' NOTE

The authors confirm that there are no conflicts of interest.

REFERENCES

1. Ok CY, Papathomas TG, Medeiros LJ, Young KH. EBV-positive diffuse large B-cell lymphoma of the elderly. Blood 2013; 122:328-40.

2. Song SY, Kim WS, Ko YH, Kim K, Lee MH, Park K. Aggressive natural killer cell leukemia: clinical features and treatment outcome. Haematologica 2002; 87:1343-5.

3. Jaffe ES. The 2008 WHO classification of lymphomas: implications for clinical practice and translational research. Hematology / the Education Program of the American Society of Hematology American Society of Hematology Education Program 2009:523-31.

4. Savoldo B, Huls MH, Liu Z, et al. Autologous Epstein-Barr virus (EBV)-specific cytotoxic T cells for the treatment of persistent active EBV infection. Blood 2002; 100:4059-66.

5. Coiffier B. Rituximab therapy in malignant lymphoma. Oncogene 2007; 26:3603-13.

6. Hudson E, Westmoreland D, Gorman C, Poynton CH, Lester JF, Maughan TS. Severe prolonged immunosuppression following fludarabine and rituximab combination therapy. Chemotherapy 2008; 54:242-4.

7. Coiffier B. Rituximab in combination with CHOP improves survival in elderly patients with aggressive non-Hodgkin's lymphoma. Seminars in oncology 2002; 29:18-22.