

# Brentuximab for Refractory Hodgkin's Lymphoma: A Case Report

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**Abstract** Hodgkin's lymphoma (HL) continues to be an intriguing, and fascinating lymphoma [1]. HL is expected to cure the majority of patients. Brentuximab vedotin is a CD30 antibody. We survey efficacy of brentuximab in patient with HL who was resistant to treatment. A 43 year old male referred with cough and right supraclavicular lymphadenopathy. His disease was HL, nodular sclerosis type (stage IIB and grade II) with megakaryocytosis in bone marrow aspiration (BMB). He was treated with 6 cycles of induction chemotherapy including adriamycin, bleomycin, vinblastine and dacarbazine (ABVD) and achieved a complete remission by imaging assessment. Then he received ifosfamide, carboplatin, etoposide (ICE) plus brentuximab vedotin (1.8 mg/kg every 3 weeks) regimen for 6 courses. At the end of this time he been eligible for autologous bone marrow transplantation (BMT). Bone marrow was done and after 13 days with good engraftment the patient discharge hospital. Therapists should be try with a specific target when they need a new and potent treatment like BMT for an active disease. Brentuximab vedotin is a new drug in policy of recurrence that it used for a few of cases in Iran.

**Keywords:** ABVD, BMT, brentuximab, Hodgkin's Lymphoma

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## 1. Introduction

Originally described by Thomas Hodgkin in 1832, and described as "morbid experiences of the absorbent glands and spleen", Hodgkin's lymphoma (HL) continues to be an intriguing, and fascinating lymphoma [1]. HL is expected to cure the majority of patients. Patients with advanced stage disease have 5-year overall survival more than 80% [2]. Treatment of relapsed and primary refractory patients still remains a challenge. Median survival of patients relapsing after second-line, high-dose therapy and autologous stem cell transplantation is less than 3 years [3]. However, the antibody-drug conjugate brentuximab vedotin has shown promising efficacy in these patients [4]. We survey efficacy of brentuximab in patient with HL who was resistant to treatment.

## 2. Case Presentation

A 43 year old male referred with cough and right supraclavicular lymphadenopathy. His disease was HL, nodular sclerosis type (stage IIB and grade II) with megakaryocytosis in bone marrow aspiration (BMB). He was treated with 6 cycles of induction chemotherapy including adriamycin, bleomycin, vinblastine and dacarbazine (ABVD) and achieved a complete remission by imaging assessment. Positron emission tomography

(PET) scan showed hyper metabolic anterior mediastina right parasternal mass with anterior chest and parahilar extension and adjacent pericardial and pleural thickening (hyper metabolic small mediastinal lymph node). Hyper metabolic focus in intercostal space). He underwent 36 Gy/18F radiation therapy for 21 sessions involved fields. He followed up for about 12 months. After that he suffered from lung and pericardial perfusion that in PET scan analysis confirmed active disease that in lung lesion core biopsy established with recurrent disease. Then he received ifosfamide, carboplatin, etoposide (ICE) plus brentuximab vedotin (1.8 mg/kg every 3 weeks) regimen for 6 courses. At the end of this time he been eligible for autologous bone marrow transplantation (BMT). Bone marrow was done and after 13 days with good engraftment the patient discharge hospital.

## 3. Discussion

HL is a highly curable hematologic malignancy treated with the combination chemotherapy with or without RT. ABVD is the preferred first-line combination chemotherapy for HL. Following treatment with 6–8 cycles of ABVD, >70% of patients are considered to be cured. However, conventional dose chemotherapy is not sufficient to cure refractory or early relapsing cases [5] like this study and also the patient received ICE. Brentuximab vedotin is a CD30 antibody conjugated to CD30 and gets internalized by attaching to monomethyl auristatin E causing microtubule

disruption that results in cell cycle arrest at M phase [6]. BMT use for patient with early relapse young case of HL but it is critical in the compilation of treatment versa we used Brentuximab vedotin there. Adverse effects including peripheral neuropathy, elevated aminotransferases, hair loss, and dry cough appeared but could be controlled with symptomatic treatments. Serious adverse effects, such as lung damage and leukoencephalopathy [4].

#### 4. Conclusion

Therapists should be try with a specific target when they need a new and potent treatment like BMT for an active disease. Brentuximab vendotin is a new drug in policy of recurrence that it used for a few of cases in Iran.

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