doi:10.36849/JDD.6981e

A Case Series on the Use of Brentuximab Vedotin for the Treatment of Mycosis Fungoides

Katherine A. Kelly BS,[a] Leah Edenfield PharmD,[b] Mary Beth Seegars MD,[b] Rakhee Vaidya MBBS,[b] Steven R. Feldman MD, PhD,[a,c,d,e] Lindsay C. Strowd MD[a]

[a]Center for Dermatology Research, Department of Dermatology, Wake Forest School of Medicine, Winston-Salem, NC
[b]Department of Internal Medicine, Section on Hematology/Oncology, Wake Forest School of Medicine, Winston-Salem, NC
[c]Department of Pathology, Wake Forest School of Medicine, Winston-Salem, NC
[d]Department of Social Sciences & Health Policy, Wake Forest School of Medicine, Winston- Salem, NC
[e]Department of Dermatology, University of Southern Denmark, Odense, Denmark

ABSTRACT

Background: Brentuximab vedotin (BV) is an anti-CD30 monoclonal antibody that appears to be more effective against CD30-expressing cutaneous T-cell lymphoma (CTCL) compared to current standard-of-care treatments.
Objective: To determine the real-world efficacy and adverse effects of BV use in patients with mycosis fungoides (MF) who were treated with BV at Atrium Health Wake Forest Baptist Medical Center.
Methods: Study staff performed a retrospective chart review of patients diagnosed with MF who were prescribed BV at Atrium Health Wake Forest Baptist Comprehensive Cancer Center
Results: Regardless of their response to BV, all patients in our cohort had higher CD30 positivity on subsequent biopsies compared to their initial skin biopsy.
Conclusions: Improved understanding of appropriate CD30 testing and evaluation will allow for quicker invention of patients with BV responsive CTCL.

J Drugs Dermatol. 2023;22(12):e33-e34. doi:10.36849/JDD.6981e

INTRODUCTION

Brentuximab vedotin (BV) is an anti-CD30 monoclonal antibody conjugated with monomethyl auristatin E by a protease-cleavable linker.[1] CD30 has a variable association with other cutaneous T-cell malignancies including mycosis fungoides (MF) and sezary syndrome (SS), making it a potential target for therapy.[2] In this study we performed a retrospective chart review of patients with MF who were treated with BV at Atrium Health Wake Forest Baptist Medical Center to determine real-world efficacy and safety of BV use in this patient population.

TABLE 1.

Patient Demographics and Results of Brentuximab Vedotin (BV) Treatment

Patient ID	BV1	BV2	BV3	BV4	BV5	BV6	BV7	BV8
Age	53	71	73	80	30	65	66	71
Ethnicity	Non Hispanic	Non Hispanic	Non Hispanic	Non Hispanic	Non Hispanic	Non Hispanic	Non Hispanic	Non Hispanic
Race	Caucasian	Caucasian	Caucasian	Caucasian	African American	African American	Caucasian	Caucasian
Sex	Female	Male	Male	Female	Female	Female	Male	Male
CD30 positivity on initial skin biopsy	CD30 negative	Clusters of CD30 positive cells	CD30 negative	CD30 negative	CD30 not performed	Rare CD30 positivity	CD30 positive in 5-10% of cells	CD30 not performed
CD30 positivity on subsequent skin biopsies	CD30 positive in 10% of cells	CD30 positive in 70% of cells	CD30 positive in 10-20% of cells	CD30 shows scattered positivity in cells	CD30 positive in 15% of cells	CD30 positive in greater than 90% of cells	CD30 positive in 15-20% of cells	CD30 positive
Response to BV treatment	PR	PR, then progression	Progression	CR	PR	CR	Progression	CR

Key: BV: Brentuximab Vedotin, CR: complete response, PR: partial response

MATERIALS AND METHODS

Study staff performed a retrospective chart review from the medical records of patients diagnosed with MF who were prescribed BV at Atrium Health Wake Forest Baptist Comprehensive Cancer Center.

RESULTS

Of the eight patients identified as receiving at least one dose of BV, 37.5% of patients had an initial skin biopsy that showed CD30 positivity defined as having at least 5% of T cells expressing CD30, 37.5% of patients had initial CD30 negative biopsy but had subsequent skin biopsies that exhibited CD30 positivity, and 25% of patients never had CD30 checked on their biopsy (Table 1).

DISCUSSION

BV appears to be more effective against CD30-expressing CTCL compared to current standard-of-care regimens.[3] Inconsistencies in CD30 detection methods can limit utilization of targeted therapies like BV for CTCL.[3] In our study, objective positive response was observed irrespective of CD30 expression on initial biopsy reports. All patients in our cohort had higher CD30 positivity on subsequent biopsies compared to their initial skin biopsy regardless of BV response (Table 1). One explanation for this finding may be due to a lack of sensitivity to the assay used to detect cell-surface CD30 expression.[4] Improved understanding of appropriate CD30 testing and evaluation will allow more patients with BV responsive CTCL to be identified and treated.[3]

DISCLOSURES

Steven Feldman has received research, speaking and/or consulting support from a variety of companies including Galderma, GSK/Stiefel, Almirall, Leo Pharma, Boehringer Ingelheim, Mylan, Celgene, Pfizer, Valeant, Abbvie, Samsung, Janssen, Lilly, Menlo, Merck, Novartis, Regeneron, Sanofi, Novan, Qurient, National Biological Corporation, Caremark, Advance Medical, Sun Pharma, Suncare Research, Informa, UpToDate and National Psoriasis Foundation. He is founder and majority owner of www.DrScore.com and founder and part owner of Causa Research, a company dedicated to enhancing patients' adherence to treatment. Lindsay Strowd has received research funding, grants, or honoraria from Sanofi, Regeneron, Pfizer, Galderma, Lilly, Novartis and Arcutis. Katherine Kelly, Mary Beth Seegars, Rakhee Vaidya, and Leah Edenfield have no conflicts of interest to disclose.

REFERENCES

1. Kamijo H, Miyagaki T. Mycosis Fungoides and Sézary Syndrome: Updates and Review of Current Therapy. *Current Treatment Options in Oncology.* 2021;22(2). doi:10.1007/s11864-020-00809-w
2. Prince HM, Kim YH, Horwitz S, et al. Brentuximab vedotin or physician's choice in CD30-positive cutaneous T-cell lymphoma (ALCANZA): an international, open-label, randomised, phase 3, multicentre trial. *The Lancet.* 2017;390(10094). doi:10.1016/S0140-6736(17)31266-7
3. Karube K, Kakimoto Y, Tonozuka Y, et al. The expression of CD30 and its clinico-pathologic significance in peripheral T-cell lymphomas. *Expert Review of Hematology.* 2021;14(8). doi:10.1080/17474086.2021.1955344
4. Kim YH, Prince HM, Whittaker S, et al. Response to brentuximab vedotin versus physician's choice by CD30 expression and large cell transformation status in patients with mycosis fungoides: An ALCANZA sub-analysis. *European Journal of Cancer.* 2021;148. doi:10.1016/j.ejca.2021.01.054

AUTHOR CORRESPONDENCE

Katherine Kelly BS
E-mail:..... katkelly@wakehealth.edu