Impressive Clinical Outcome in a Patient with Cutaneous T-Cell Lymphoma treated with Brentuximab and Chemotherapy

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INTRODUCTION:

Cutaneous T-cell lymphomas (CTCL) represent the second most common group of extranodal non-Hodgkin lymphomas, with Primary cutaneous lymphomas accounting for the majority of cases [1]. CD30, a transmembrane cytokine receptor, can be variably expressed in CTCL including Mycosis fungoides, as well as in classic Hodgkin lymphoma and certain B-cell lymphomas [2]. It has emerged as a significant therapeutic target, particularly with the advent of Brentuximab vedotin (Bv), a CD30 directed antibody-drug conjugate [3]. Herein, we report a case of ALK-negative cutaneous T-cell lymphoma successfully treated with a targeted therapy and chemotherapy regimen, resulting in a complete clinical remission.

PATIENT:

A 43-year-old male, active smoker with a history of schizophrenia and psoriasis since the age of 20, presented with a non-healing wound in the right popliteal fossa, extensive erythroderma involving 98% of the body surface, confluent psoriatic plaques with thick white scales, complete scalp involvement, and psoriatic nail dystrophy. Physical examination revealed tumor-like nodular lesions with drainage in the right subpopliteal region of 4 × 3 cm (Figure 1). Histopathological examination of a subpopliteal biopsy demonstrated a diffuse T-cell proliferation of large atypical cells CD4+, CD8-, CD30+ and ALK-, suggestive of a primary cutaneous anaplastic large-cell lymphoma (pcALCL). Bone marrow biopsy was negative for lymphoma infiltration. Blood tests revealed anemia 10,3 g/dl, leukocytosis 16;93 g/l, thrombocytosis 565 G/l, hypoalbuminemia 24g/l, and elevated C-reactive protein 59.

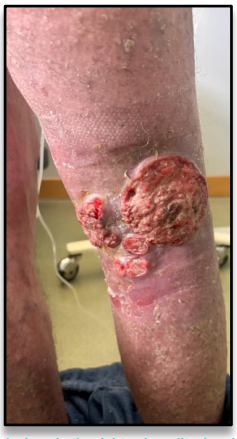

FIGURE 1: Nodular lesions in the right subpopliteal region before Bv- CHP

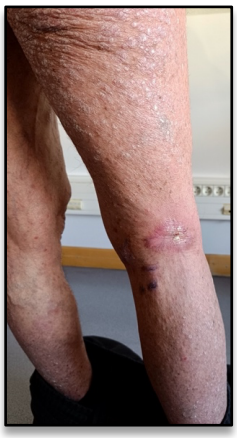

FIGURE 2: Clinical improvement with complete healing after six cycles of Bv-CHP

The diagnosis was discussed at a multidisciplinary lymphoma meeting, and the patient was started on Brentuximab vedotin 1,8mg/kg combined with cyclophosphamide 750mg/m2, doxorubicin 50mg/m2, and corticosteroids 100mg (Bv-CHP). After six cycles, the patient exhibited marked clinical improvement with complete healing of cutaneous lesions (Figure 2).

Discussion

Primary cutaneous CD30-positive lymphoproliferative disorders (CD30+ LPD) constitute the second most common subgroup of cutaneous T-cell lymphomas. Within this group, primary cutaneous anaplastic large-cell lymphoma typically manifests as a solitary or clustered, rapidly enlarging, and often ulcerated tumor. Histologically, these lesions exhibit strong expression of CD30, a member of the tumor necrosis factor receptor family [1]. The biopsies confirmed that the neoplastic process was localized to the subpopliteal region. Brentuximab vedotin, an antibody-drug conjugate targeting CD30, represents a novel and effective therapeutic strategy in CD30+ T-cell lymphomas [3]. The efficacy of Bv has been well demonstrated in clinical trials. In the ALCANZA study, patients receiving Bv showed significantly higher objective response rates compared to those receiving physician's choice chemotherapy [4,5]. Reflecting this evidence, the National Comprehensive Cancer Network (NCCN) guidelines now recommend Bv in combination with CHP as a preferred first-line treatment for CD30+ lymphomas, including ALCL [6]. Our patient achieved complete clinical remission after six cycles of Bv-CHP, consistent with the favorable outcomes reported in the literature. In terms of safety, Bv demonstrates a generally acceptable toxicity profile. Peripheral neuropathy is the most common adverse event, and most cases are partially or fully reversible [2,5]. The patient experienced peripheral neuropathy limited to numbness in the hands, without requiring dose modification or treatment interruption.

Conclusion

The advent of targeted therapies has significantly transformed the therapeutic landscape of cutaneous T- cell lymphomas, particularly CD30-positive subtypes such as primary cutaneous anaplastic large-cell lymphoma. Brentuximab vedotin, with its selective mechanism of action and demonstrated clinical efficacy, has become a key therapeutic agent across multiple treatment settings. This case reinforces its role not only in achieving complete clinical remission but also in maintaining a favorable safety profile, supporting its continued integration into standard care protocols. Equally important is the emphasis on accurate diagnosis through close collaboration between clinicians and pathologists, ensuring appropriate therapeutic decisions based on both histological and clinical findings.

References

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