Case Report

Single-Agent Lenalidomide Is Effective in the Treatment of a Heavily Pretreated and Refractory Angioimmunoblastic T-Cell Lymphoma Patient

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Clinical Practice Points

- Angioimmunoblastic T-cell lymphoma (AITL) relapsing or showing refractoriness after conventional chemotherapy or autologous transplantation displays a poor prognosis.
- Allogeneic stem cell transplantation allows long-term disease control in more than half of the reported cases, although disease relapse is rather frequent if patients undergo transplantation when they are not in complete response.
- Trying to induce a complete remission in patients with disease progression or refractoriness before any transplant procedure is a mandatory issue.
- Peculiarly, the prominent vascular proliferation seen in AITL may suggest an attractive rationale for the use of antiangiogenic drugs in the context of patients who are responding poorly to conventional or high-dose therapies and who may require an allotransplant procedure.

Clinical Lymphoma, Myeloma & Leukemia, Vol. ■, No. ■, ■-■
Keywords: Angioimmunoblastic T-cell lymphoma, Complete response, Lenalidomide, Splenomegaly, Vascular-endothelial growth factor

Introduction

A 60-year-old woman came to our institution at the beginning of September 2010 with a 2-month history of fever, abdominal discomfort, and a moderate Coombs-positive hemolytic anemia. A computed tomography (CT) scan showed enlarged mesenterial lymph nodes. Oral steroid therapy was administered, which resulted in a complete recovery of hemoglobin levels and the disappearance of any lymphadenopathy. Once the steroid dosage was tapered, small bilateral neck lymph nodes reappeared: a surgical biopsy was deemed mandatory, and an angioimmunoblastic T-cell lymphoma (AITL) was documented on histologic examination. Disease staging was completed with a bone marrow trephine biopsy, which documented a disease infiltration, and a CT and an ^{18}F-fluorodeoxyglucose positron emission tomography (FDG-PET) scan, both negative for any thoracic or abdominal adenopathic lesion. An AITL of stage IV B with bone marrow involvement was therefore diagnosed (Fig. 1A, 1B). Because all the lymphoma-related symptoms had recovered after the previously performed steroid therapy and no substantial alteration in blood count was documented, the patient was initially addressed to a wait-and-see policy.

In March 2011, new enlarged palpable lymph nodes were discovered on physical examination at the scheduled follow-up visit. A subsequent CT and PET scan showed multiple laterocervical, supraclavicular, axillary, inguinal, and internal iliac nodes on both sides, along with retroperitoneal and mesenterial involvement and pulmonary and splenic infiltrates.

Because of the diffuse progression of the initial disease, the patient was at this point considered eligible for chemotherapy: she underwent 4 cycles of CHOP (cyclophosphamide, doxorubicin, vincristine, and prednisone), obtaining a PET scan that was completely negative after 3 cycles. In July 2011, immediately after the fourth cycle had been delivered, fever reappeared, and laboratory tests detected a lactate dehydrogenase elevation. The clinical picture was interpreted as indicative of disease relapse: a repeated bone marrow biopsy confirmed an infiltration by AITL (Fig. 1C), and the CT scan showed small but diffuse enlarged lymph nodes on both sides of the diaphragm.

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Submitted: Nov 18, 2013; Revised: Jan 28, 2014; Accepted: Jan 28, 2014

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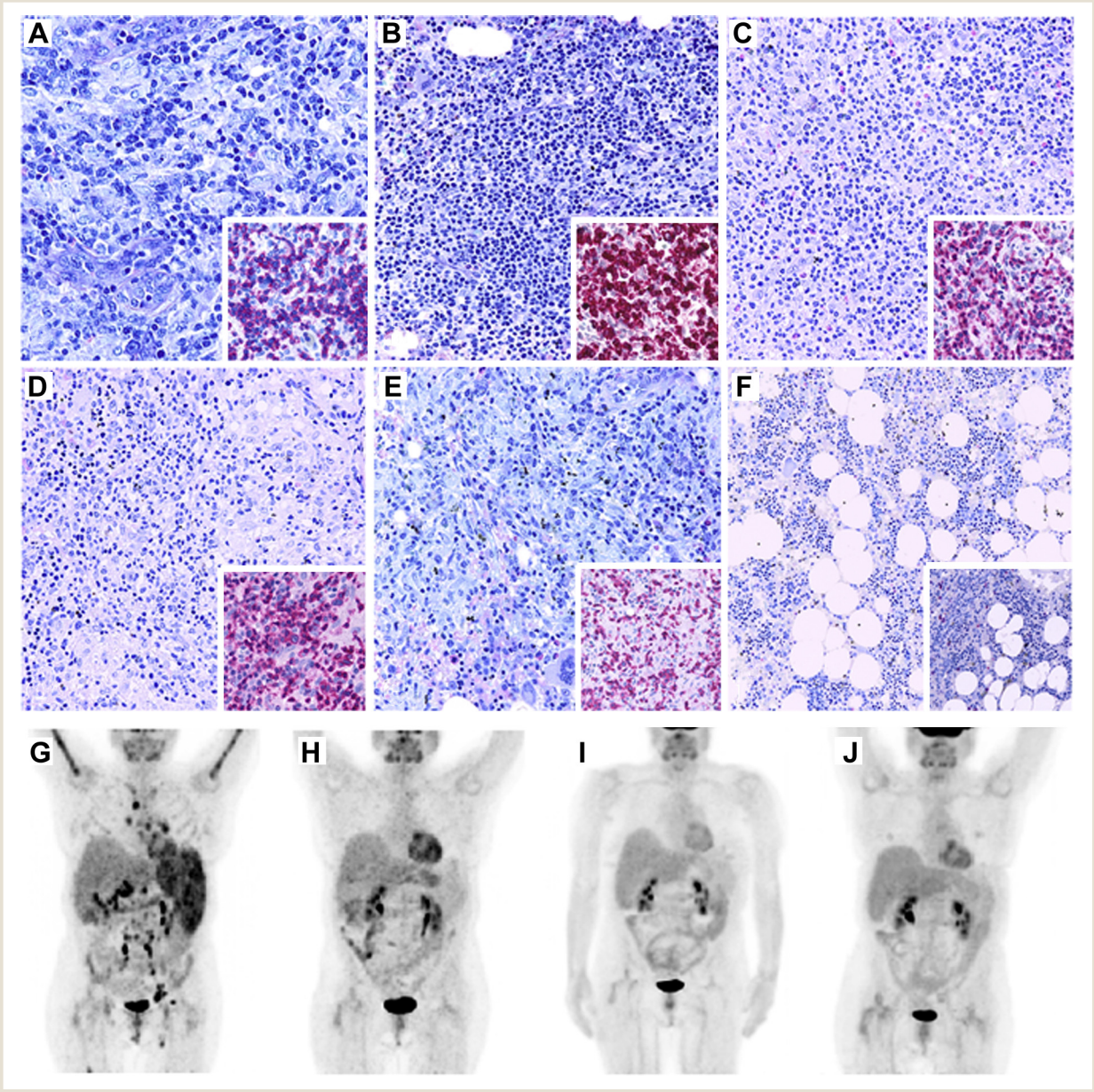
2152-2650/$ - see frontmatter
http://dx.doi.org/10.1016/j.clml.2014.01.011

Figure 1 Histologic Picture of the (A) Excised Lymph Node Showing a Polymorphic Infiltrate Consisting of Small- to Medium-sized Lymphocytes (Giemsa Stained) Expressing CD3 (Inset). Bone Marrow Involvement by Lymphoma Documented Morphologically (Giemsa Stain) and by Immunohistochemistry (Reaction With anti-CD3 Antibody in the Insets): (B) at Diagnosis; (C) at the Time of the First Relapse; and (D) Before and (E) After to Carmustine, Etoposide, Cytarabine, and Melphalan—Conditioned Autologous Stem Cell Transplantation. A Bone Marrow Biopsy was Performed After Administration of the Fourth Cycle of Lenalidomide: Morphologically (Giemsa), There is no Evidence of Lymphoma Infiltration, and Immunohistochemical Investigation (Inset) Reveals Only Scattered $CD3^{+}$ Small Lymphocytes (F). Positron Emission Scans Performed at 4 Different Time Points: (G) After Autologous Stem Cell Transplantation, Showing Subdiaphragmatic Disease Progression; Disease Remission After the Fourth Cycle of Lenalidomide (H); and Continuous Complete Response While the Patient was on Lenalidomide (I,J)



In a context of an extremely rapid disease relapse, the patient was addressed to a chemotherapy-primed stem cell harvesting and a subsequent autologous stem cell transplantation (ASCT).

The pretransplant PET scan was positive at axillary, mediastinal, right paratracheal, hylar mesenterial, lumboaortic, internal iliac, and inguinal nodes, and the bone marrow biopsy evidenced a 10%–15% disease infiltration (Fig. 1D). In January 2012, a BEAM (carmustine, etoposide, cytarabine, and melphalan)–conditioned ASCT was done. Severe thrombocytopenia persisted after transplantation and required platelet transfusion almost once every other week. The research for a marrow-unrelated donor was started,