Case report

Isolated skin relapse of Philadelphia chromosome-positive acute lymphoblastic leukemia after allogeneic stem cell transplant

Masumi Ueda a,b, Carlos Silva a,b, Linda Baer a,b, Paolo F. Caimi a,b, Kevin Cooper a,b, Kord Honda a,b, Marcos de Lima a,b,∗

a University Hospitals Seidman Cancer Center, Cleveland, United States
b Case Western Reserve University, Cleveland, United States

A R T I C L E   I N F O

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Introduction

Leukemia cutis is a rare entity diagnosed in only 1–3% of T-and B-cell acute lymphoblastic leukemia (ALL).1,2 Aleukemic leukemia cutis (ALC) is an even rarer diagnosis, occurring without leukemic cells in the blood or marrow, often preceding systemic disease.2,3 The Philadelphia chromosome (Ph) is one of the most common chromosomal abnormalities in adult B-ALL patients and is associated with poor prognosis. Although the use of tyrosine kinase inhibitors (TKIs) targeting the oncprotein breakpoint cluster region-Abelson murine leukemia 1 (BCR-ABL1) has dramatically improved outcomes, allogeneic hematopoietic stem cell transplant (HSCT) is still recommended for all eligible patients, with relapse after HSCT remaining a major cause of treatment failure.4 Herein we report a case of isolated skin relapse of Ph-positive pre-B cell ALL after allogeneic HSCT.

Case report

A 26-year-old man received a matched related donor peripheral blood HSCT for Ph-positive pre-B cell ALL in first remission. Prior to HSCT he had achieved complete molecular remission after two cycles of imatinib and the regimen rituximab with hyperfractionated cyclophosphamide, vincristine, doxorubicin, and dexamethasone alternating with methotrexate and cytarabine (R-HyperCVAD). Remission was consolidated with an allogeneic transplant from his human leukocyte antigen (HLA)-matched sibling using cyclophosphamide and 12-Gy total body irradiation conditioning. Graft-versus-host disease (GvHD) prophylaxis consisted of tacrolimus and methotrexate. His post-HSCT course was complicated by chronic GvHD involving the lungs, liver, skin and lacrimal glands; he was treated with extracorporeal photopheresis, tacrolimus and prednisone. An isolated 2-cm
Figure 1 – Isolated, 2.5 cm × 1 cm raised skin lesion on the scalp vertex.

Figure 2 – (A) Hematoxylin and eosin stain of skin lesion (400× magnification). (B) CD19 immunohistochemistry stain of skin lesion (400× magnification).

A MEDLINE/PubMed search with the terms “aleukemic leukemia cutis” AND “lymphoblastic leukemia” yielded eight results.

Discussion and conclusion

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Of these, only one case described ALC relapse of B-ALL after allogeneic transplantation. Remarkably, our patient has no detectable systemic disease despite the availability of sensitive molecular tests. In addition, the translocation (9;22) and the BCR-ABL1 gene were detected only in the skin, allowing targeted treatment of the relapse. Long-term prognosis of ALC recurrence after allogeneic HSCT and the potential benefit of tyrosine-kinase inhibitor therapy in addition to the graft-versus-leukemia effects are unknown.

**Ethical statement**

This protocol was approved by the Institutional Review Board of University Hospitals Cleveland Medical Center, and the subject gave written informed consent.

**Conflicts of interest**

The authors declare no conflicts of interest.

**REFERENCES**