Dermatology Practical & Conceptual

Abscopal Effect After Localized Radiotherapy in a Patient With Sezary Syndrome Under Treatment with Mogamulizumab

Vieri Grandi[1], Isabella Ciardetti[1], Andrea Gemignani[1], Eleonora Gherardi[1], Tommaso Grassi[2], Nicola Pimpinelli[1]

1 Department of Health Sciences, Section of Dermatology, University of Florence, P. Palagi Hospital, Florence, Italy
2 Public Health, Hygiene and Preventive Medicine Unit, P. Palagi Hospital, Florence, Italy

Citation: Grandi V, Ciardetti I, Gemignani A, Gherardi E, Grassi T, Pimpinelli N. Abscopal Effect After Localized Radiotherapy in a Patient with Sezary Syndrome Under Treatment with Mogamulizumab. *Dermatol Pract Concept.* 2023;13(4):e2023227. DOI: https://doi.org/10.5826/dpc.1304a227

Accepted: April 5, 2023; **Published:** October 2023

Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

Corresponding Author: Grandi Vieri, Department of Health Sciences, Section of Dermatology, University of Florence, P. Palagi Hospital, Viale Michelangelo 41, 50141, Florence, Italy. Email: Vieri.grandi@unifi.it

Case Presentation

A 50-year-old lady with Sezary Syndrome (stage IVA1), diagnosed 2 years before, had been treated previously with extracorporeal photophoresis + Interferon-alfa, methotrexate, and gemcitabine. After 12 months, we introduced mogamulizumab i.v. After 6 cycles, she achieved a partial response in the skin, with only a large thick plaque residual on the back (modified Severity Assessment Tool, mSWAT = 8), and a complete response in the blood. After two months, her disease progressed with bulky nodal involvement in the right cervical basin (IVA2), treated with palliative surgery. Subsequently, she developed a rapidly growing tender mass on the occiput. We decided to treat it with electron radiotherapy (15 Gy in 5 fractions), obtaining rapid local control. After a few weeks from the scalp irradiation, the large plaque on the back disappeared, leaving a hyperpigmented area.

Teaching Point

The abscopal effect refers to an uncommon activation of the immune system secondary to radiotherapy that may lead to clinical responses in areas far from the irradiation site [1]. Mogamulizumab is a defucosylated, humanized IgG1 kappa immunoglobulin selective against CC Receptor type 4 (CCR4). It binds directly to CCR4 expressed on tumor cells, yet it is also known to exert indirect immune-mediated antitumor effects via inhibition of CCR4 on Tregs [2]. Rapid lysis of tumor cells induced by radiotherapy, alongside the positive immune activation induced by mogamulizumab, might explain the impressive response obtained in a large, refractory skin plaque in our patient. We believe that mogamulizumab combined with radiotherapy is an interesting approach in patients with cutaneous T-cell lymphoma, yet further studies are needed in order to better explain the reported abscopal effect.

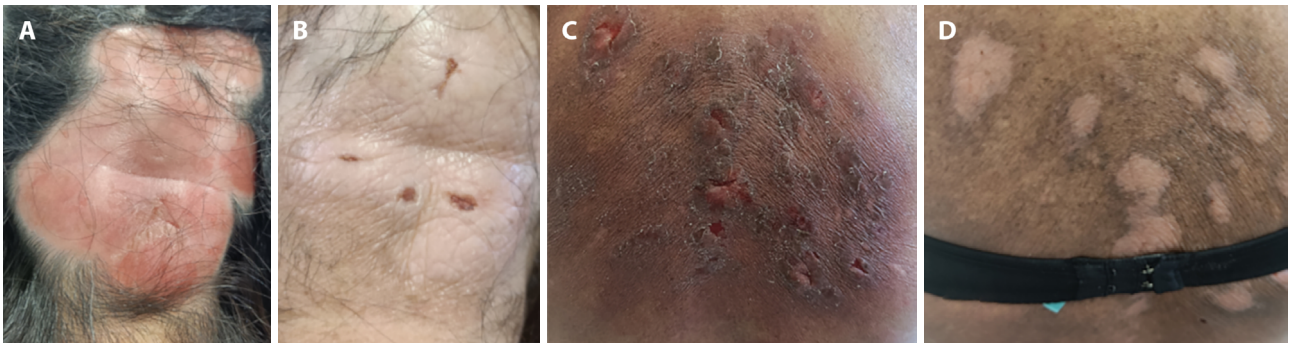

Figure 1. Clinical photos of a 50-year-old lady affected by Sezary Syndrome with mogamulizumab-refractory skin lesions. A) Rapidly growing, painful tumor mass on the scalp. B) Same lesion, 45 days after electron-beam radiotherapy (15 Gy in 5 fractions). C) Large infiltrated, pruritic plaque on the back. D) Asymptomatic, post-inflammatory hyper- and hypopigmented macules as result of the complete spontaneous resolution of the lesion

References

1. Yilmaz MT, Elmali A, Yazici G. Abscopal Effect, From Myth to Reality: From Radiation Oncologists' Perspective. *Cureus* 2019;**11**:e3860.
2. Kim YH, Bagot M, Pinter-Brown L, *et al.* Mogamulizumab versus vorinostat in previously treated cutaneous T-cell lymphoma (MAVORIC): an international, open-label, randomised, controlled phase 3 trial. *Lancet Oncol* 2018;**19**:1192–204.Image Letter