

LETTERS TO THE EDITOR

Response of chronic refractory psoriasis vulgaris with urticaria to combined secukinumab and omalizumab: A case report and review of the literature

Dear Editor,

A 58-year-old woman presented in 2013 with a 30-year history of psoriasis vulgaris. She had a medical history of mild degree of bronchial asthma (not on any medications) and anxiety disorder for which she was on a course of 30mg/day mirtazapine. Clinically, the patient had a well-defined, erythematous scaly plaques affecting the scalp, trunk, and extremities (Psoriasis Area and Severity Index (PASI): 16.8). The rest of the examination was regular except for a mild degree of arthralgia affecting small joints of both hands. She had received 15mg/week of methotrexate and 25mg/day of acitretin, intermittently over months, with an unsatisfactory response. In 2014, while she was on acitretin, multiple disseminated urticarial wheals were noted but no angioedema (Urticaria Activity Score (UAS7): 35). Urticaria was controlled on antihistaminics; however, no complete remission could be achieved. In October 2020, omalizumab (300mg/28days) was started as a second-line due to the poor response to higher doses of antihistaminics. In November 2020, she was switched from methotrexate to secukinumab (300mg at 0, 1, 2, 3, and 4 weeks, followed by a monthly maintenance dose every 4 weeks) due to a lack of psoriasis improvement by cyclosporin and adalimumab. The patient was kept on omalizumab for 18 months and secukinumab for 20 months. Urticaria went into remission (UAS7:0) while psoriasis achieved nearly complete clearance of lesions (PASI:1) without reporting any side effects (Figure 1).

Omalizumab (OMZ) is a recombinant humanized monoclonal anti-IgE antibody approved for managing chronic asthma and chronic spontaneous urticaria (CSU) refractory to high doses of H1-antihistamines. Additionally, OMZ has anti-inflammatory effects beyond anti-IgE activity.¹ The treatment of CSU with OMZ results in a normalized IL-31 serum level—a cytokine involved in

the initiation of chronic skin inflammation—in both CSU and psoriasis patients.² Binding of high-affinity IgE to the FcεRI receptor of mast cells (MCs) would lead to degranulation and immediate release of the preformed chemical mediators, such as tryptase, and tumor necrosis factor (TNF) from the granules.¹ Paolino et al.³ recently reported a possible correlation between serum tryptase, as an inflammatory biomarker, and psoriasis. That supports the role of “activated” MCs in the pathogenesis of psoriasis. Interestingly, increased IgE might be an early parameter of poor/unsatisfactory response of psoriasis patients to biologics.⁴ Fougereousse et al.⁵ noted that combination of biologics with OMZ in 10 patients with different inflammatory conditions, 7 of them had psoriasis, was well tolerated, and not associated with adverse events, such as infections, or hospital admission for any reason. Concomitant use of guselkumab and OMZ for psoriasis and CSU showed no clinically significant side effects during an extended treatment course of 21 months.⁶ OMZ combined with biologics may achieve a better outcome in psoriasis than biologics.^{6–8} Since all published articles were limited to case reports, the relation between psoriasis and urticaria remains uncertain (Table 1). Based on a single case of psoriasis remission on CSU exacerbation, Magen and Chikovani thought CSU would be found at a lower frequency in patients with psoriasis and vice versa, if more evidence exist.⁹ However, we think the association of both disorders might be under-reported. Patients with treatment-refractory psoriasis may have, for instance, hyper-IL-23 that would induce concomitant urticarial manifestation.⁸ Therefore, combined therapy would mutually restore the cytokine imbalance of the two conditions.^{7,8} Safety profile of the drug as a potential therapy for psoriasis in-combination with other anti-psoriatic lines, namely biologics, may warrant further studies, particularly for psoriasis with pruritic symptoms.

2013

- Patient presentation.
- Alternating courses of *methotrexate and acitretin*.
- Unsatisfactory response.



2014

- While On acitretin.
- Urticaria without angioedema* developed.
- Controlled on *antihistaminics*.
- No complete remission.



October, 2020

- *Omalizumab* (300 mg/28 days) was started.



November, 2020

- Secukinumab* (300 mg at 0, 1, 2, 3, and 4 weeks, then a monthly dose every 4 weeks) was added.



March-June, 2022

- Remission of both urticaria and psoriasis*.

FIGURE 1 Flowchart summarized our case's clinical-therapeutic scenario.**TABLE 1** Chronic spontaneous urticaria and psoriasis treated with biologics combined with omalizumab

Reference	Age	Sex	Clinical findings	Past treatment	Biologic combination	Duration of therapy	Time to resolution	Outcome
Benko et al. ⁶ 2022	57 Y	M	-Diffuse urticarial wheals UAS7:31, -Generalized plaque psoriasis(PASI:32)	-Acitretin -Methotrexate -Adalimuma- -Etanercept -Infliximab -Secukinumab -Ustekinumab -Levocetiriz-	-Guselkumab -Omalizumab	21 months	4 weeks	UAS7:0 PASI: $\leq$ 1
Bakay et al. ⁷ 2022	56 Y	F	-Diffuse urticarial wheals, -Generalized plaques psoriasis	-NBUVB -Cyclosporine -Methotrexate -Adalimumab	-Secukinumab -Omalizumab	6 months	4 weeks	No Available data
Diluvioet al. ⁸ 2022	35 Y	F	-Diffuse urticarial wheals(UAS7:40) -Generalized plaque psoriasis(PASI:25)	-Corticosteroid -NBUVB -Cyclosporine -Methotrexate -Apremilast	Tildrakizumab- Omalizumab-	6 months	12 weeks	UAS7:0 PASI: 7
Our case	58 Y	F	-Diffuse urticarial wheals (UAS7:35) -Generalized psoriasis plaques (PASI:16.8)	-Cyclosporin -Methotrexate -Adalimumab -Acitretin	-Secukinumab Omalizumab-	6 months	4 weeks	UAS7:0 PASI:1

Abbreviations: A, age; F, female; G, gender; M, male; NBUVB, Narrow-band ultraviolet B; PASI, Psoriasis Area and Severity Index; UAS, Urticaria Activity Score; Y, year.

AUTHOR CONTRIBUTIONS

Selami Aykut Temiz, Munise Daye, and Sibel Yavuz managed and followed up the case. Uwe Wollina, Torrllo Lotti, and Recep Dursun shared in literature review. Uwe Wollina reviewed the initial draft. Ayman Abdelmaksoud reviewed the literature, wrote the initial draft, and submitted the final draft. All the authors approved the final draft for submission.

ETHICAL APPROVAL

An informed consent has been obtained from the patient. The patient agreed for publishing her data in an international journal.

KEYWORDS

chronic spontaneous urticaria, omalizumab, psoriasis, secukinumab

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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[Correction added on 3 January 2023, after first online publication:
The sixth author's name has been corrected in this version.]

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