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Severe Pancytopenia and Urticaria Vasculitis Induced by Secukinumab in Psoriatic Arthritis: A Case Report

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ABSTRACT: Psoriatic arthritis (PA) is a chronic autoimmune inflammatory disease characterized by persistent joint inflammation and severe erythemo-squamous plaques on the skin. In recent decades, biological agents such as IL-17 drugs have been applied in the treatment of PA with very good results. The treatment has its adverse effects, but severe pancytopenia is extremely rare. We report a case of a patient who was treated with secukinumab for 3 years and in the background of this treatment unlocked urticaria vasculitis and severe pancytopenia. In relation to psoriatic arthritis, there is almost complete clearing of the skin, but the joint pains are remitting in nature.

KEYWORDS: psoriasis, psoriatic arthritis, IL-17 biological agents, adverse drug reactions, sekukinumab.

INTRODUCTION

Psoriasis is a chronic, recurrent, systemic, immune-mediated inflammatory disease with a genetic predisposition. It mainly affects the skin, nails, and joints and presented with scaly plaques (1). There are different phenotypes and degrees of severity. Psoriatic arthritis is a complicated form of psoriatic disease in which joint involvement with pain, deformity and subsequent disability of the patient is observed. In recent years, the pathophysiological mechanisms underlying the disease have been revealed. In parallel, new therapeutic regimens have been proposed, including the use of biologists as interleukin IL-23, tumour necrotic factor α, and IL-17. Secukinumab, is a human IgG monoclonal antibody which antagonizes interleukin 17A (IL-17A) (2). In Bulgaria It was approved to treat moderate-to-severe plaque psoriasis and PA. Its good effects have been demonstrated in a number of studies, and practice shows a significant improvement in both the PASI index and the quality of life of patients who receive this treatment. Minor adverse reactions or single episodes of more serious ones have been described in the literature (3). To date, there are only 35 (0.02%) reported cases of pancytopenia (4). Single cases of drug-induced urticaria are also found in the literature.

CASE PRESENTATION

We present a case of a 52-year-old man with complaints of general fatigue, drowsiness, itching and rashes on the skin, unresponsive to treatment. The patient has been diagnosed with psoriatic PA, for which since 2019 he has been treated with secukinumab in dose mode 300 mg monthly, subcutaneously. On the background of this treatment, the skin symptoms, corresponding to the main disease - plaque psoriasis, have significantly improved. Four months ago, pruritus and rapidly transient lesions, changing their location on the limbs and trunk, appeared. The itching is almost constant and strong, which greatly disturbs the patient's sleep and comfort. The patient denied taking any medications, except for the monthly application of secukinumab.

The dermatological examination revealed extensive postlesional dyspigmentation on the upper side of the trunk, poikilodermic changes in the area of the back and upper limbs (Pic.1). Over this background, raised erythematous macules with rounded shape and size reaching up to 10 cm in diameter were seen (Pic.2). No enlarged lymph nodes were palpable.

Pic. 1 Extensive pos tlesional dyspigmentation on the upper side of the trunk, poikilodermic changes in the area of the back and upper limbs.

Pic.2 Raised erythematous macules with a rounded shape and a size reaching up to 10 cm in diameter were seen on the trunk and chests.

Routine and extended diagnostic procedures were performed to search the causes of the urticarial rash. (Tab. 1).

Thyroid hormones and autoantibodies	negative
ANA	negative
Helicobacter pylori	negative
AST	normal
Hepatitis serology	normal
Stools for parasites and fungi	negative
Urine analysis	normal
ENT and dental examination	negative
Histamine low diet for 3 weeks	Without improvement in status

Searching for chronic inflammatory conditions (other than PA)	negative

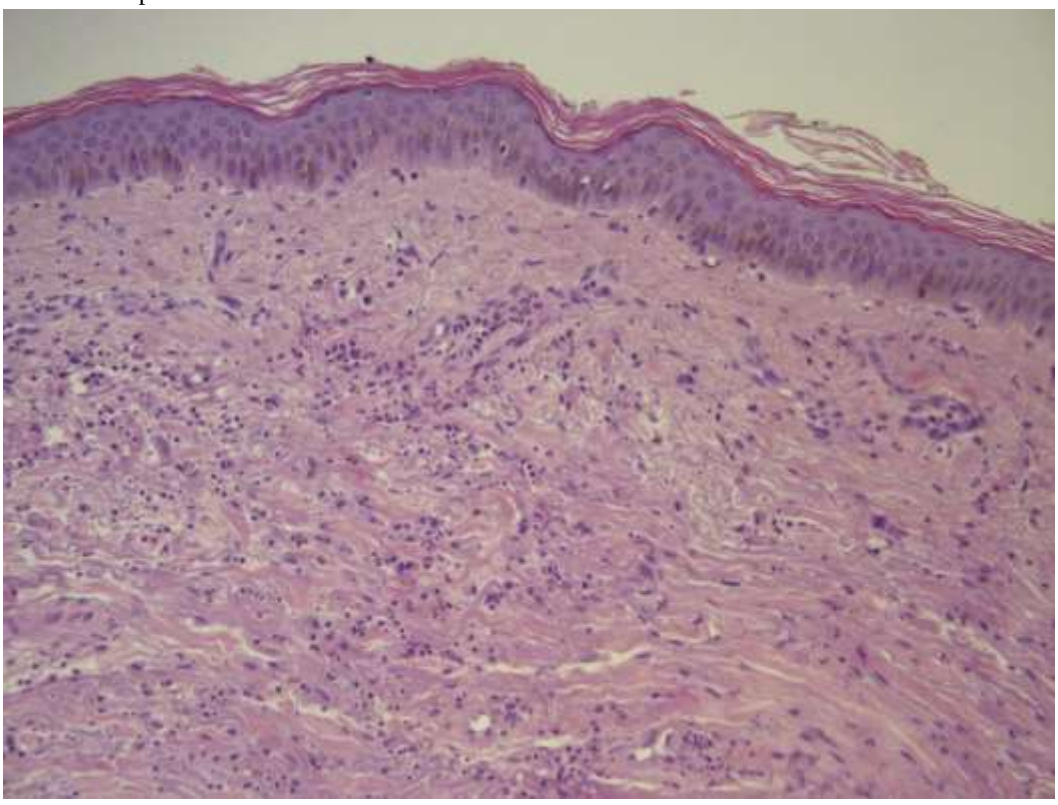
Table 1. Routine and extended diagnostic procedures.

In the course of clarifying the diagnosis, the following values in complete blood count and differential blood count were established (Tab. 2).

	Leucocytes	Neutrophils	Lymphocytes	Eosinophils	Erythrocytes	Hemoglobin	Thrombocytes
Reference limits	4-10 10*9/L	50-70%	20-40%	2-4%	4,5-6,5%	130-180 g/L	140-444 10*9/L
Date							
19.8.2022	5,28	85,2	10,4	0,2	4,24	129	120
9.3.2023	3,29	76,6	17	0	3,05	93	29
26.4.2023	3,35	65,4	24,1	1,4	2,67	83	25
20.05.2023	2,89	49,7	29,8	0	2,48	77	29
8.6.2023	3,01	62,1	29,9	2,7	2,82	84	35
02.07.2023	3,88	60,1	25,3	1,2	3,2	93	138

Table 2. Complete blood count and differential blood count tracking.

The diagnosis urticaria vasculitis was confirmed histologically after lesional skin biopsy (Pic.3). Histological examination of the skin in the affected areas reveals superficial changes represented by slight edema, fragmentation of elastic fibers, in some places dilated vessels with juicy endothelium, without fibrinoid changes, moderately pronounced perivascular infiltrate of lymphocytes, eosinophils and neutrophils; neutrophils and eosinophils and in the interstitium of the dermis, adnexa - no changes. The morphological picture corresponds to urticaria.



Pic.3 Histological change in the affected areas.

DISCUSSION

Secukinumab is widely used to treat plaque psoriasis and psoriatic arthritis. Studies and practice show its good effectiveness and a good spectrum of safety. In the characteristics of the medication, are cited mild side reactions and single cases of more serious ones. In 2022 Duran and co-authors published data on 7 cases (7,9%) of vasculitis in patients treated with secukinumab, which places it in 4th position among biologic as a cause of vasculitis (5). Sangmin Choi and co-authors reported a case of eczematous vesicular eruption and exacerbation of chronic spontaneous urticaria associated with Secukinumab which resolved after switching to another

biological therapy (6). In 2020, data on the efficacy and safety spectrum of secukinumab were published. The authors report a rapid and lasting effect on psoriatic disease, with few side effects. Among the patients included in the observation, they reported 1 case of urticaria and do not report any changes in the blood account (7). In our patient, based on the exclusion of another possible cause of urticaria, we assume that it is an episodic side reaction to the biological molecule, with manifestation 3 years after the start of the administration. Regarding pancytopenia provoked by the use of secukinumab, the literature is even more scarce (8,11) To date, there are only 35 (0.02%) reported cases of pancytopenia (4). Pravit Asawanonda and co-authors in retrospective study analyzed data of 163 patients treated with secukinumab from 2017 to 2021 and pointed out just 1 (0.6%) case of pancytopenia as a side effect (9). In another study comparing several biologic molecules in terms of efficacy, the authors reported that treatment was discontinued due to side effects in 7.9% of the 128 psoriatic patients enrolled, 2 of which were neutropenia and pancytopenia with secukinumab (10). In our patient, pancytopenia resolved slowly after stopping secukinumab and switching to another biologic

.

CONCLUSION

In conclusion, we present a case of a patient diagnosed with psoriatic arthritis who showed a good and durable response to treatment with secukinumab. After a 3-year course of therapy, he had to change the biological molecule due to the development of two rare side reactions, urticaria-vasculitis and pancytopenia.

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