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DERMATOLOGIC THERAPY WILEY

LETTER

Disseminated tinea corporis under baricitinib therapy for atopic dermatitis

Dear Editor,

A 36-year-old patient presented in the outpatient clinic of our Dermatology Department with itchy, round lesions on his entire body, which had progressively spread within the past 3 weeks, few days after initiating a therapy with baricitinib. The patient worked in an office environment, had no domestic animals or contact to animals in general, did not take part in training in a public gym and did not work in a garden. He recalled having had candida intertrigo in the interdigital space of the foot, yet he never suffered from tinea pedis.

However, he suffered from a severe atopic eczema for over 15 years, which was not sufficiently controlled by means of topical therapy. Thus, in June 2021 his dermatologist initiated an oral therapy with baricitinib 4 mg daily with quick improvement of the eczema.

On physical examination, he displayed numerous disseminated annular red, scaly plaques, with elevated borders of different dimensions and tendency to central healing (Figure 1), including also the dorsal and plantar surface of both feet. The oral mucosa, glans penis, and nails were not affected.

Laboratory findings showed normal values for electrolytes, creatinine, glomerular filtration rate, aspartate transaminase, alanine transaminase, bilirubin, alpha-amylase, lipase, lactate dehydrogenase, creatine kinase, C-reactive protein, prothrombin time, and international normalised ratio. Capillary zone electrophoresis showed no alterations of blood proteins.

The absolute blood count showed neutrophilia 6.87 g/L (reference range or RR 1.78–6.23 g/L), lymphocytopenia 0.49 g/L (RR 1.05–3.24 g/L), slightly reduced monocytes 0.25 g/L (RR 0.26–0.87 g/L), reduced eosinophils (<0.01 g/L; RR 0.03–0.44) and normal basophils count (0.01 g/L; RR 0.01–0.08 g/L).

Flow cytometry analysis of blood cells showed severely reduced lymphocytes (474/µl; RR 1050–3240/µl) with strongly reduced T-helper cells (194/µl; RR 380–1300/µl) and slightly reduced cytotoxic $CD8^+$ T-cells (128/µl; RR 160–810/µl). NK-cells were also moderately reduced with 34/µl (RR 50–510/µl).

HIV serology was negative. Hepatitis B and C serology showed no acute or chronic infections, and only HBs-antibody was elevated (89.2 IU/L; RR < 10) post vaccination.

Immunoglobulin E were elevated (1090 U/ml; RR < 100 U/ml by electrochemiluminescence immunoassay.

Virology diagnostics for measles, rubeola, parvovirus-19, herpes simplex virus, varicella-zoster virus, cytomegalovirus as well as borrelia serology showed no signs of acute infection.

Histology of an annular lesion of the left arm showed epidermal hyperplasia with orthokeratosis and focal parakeratosis, associated with lymphocytic infiltration and isolated neutrophils in the dermis as well as hyphae (Figure 2).

Polymerase chain reaction testing identified *Trichophyton rubrum* on the trunk and on the arms. This result was confirmed in direct mycological examination and culture.

The systemic therapy with baricitinib was stopped. An oral therapy with terbinafine was initiated alongside topical treatment with ciclopirox cream and ciclopirox shampoo.

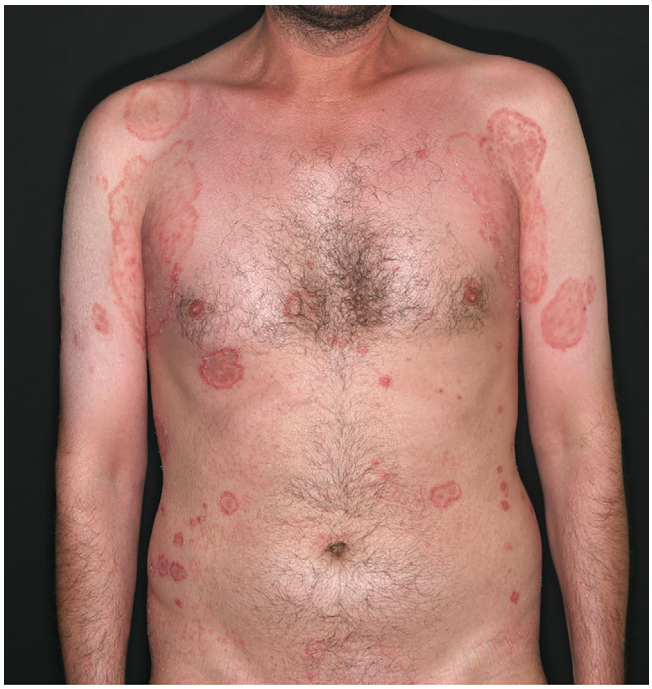

FIGURE 1 Multiple pruritic, annular plaques, characteristic of tinea corporis, in our patient

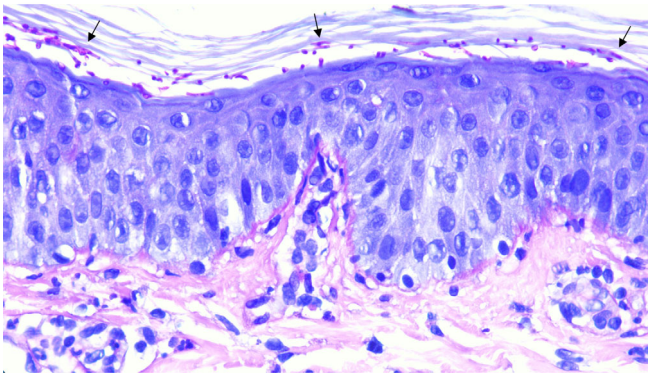

FIGURE 2 Histology of an annular lesion of the left arm. Orthokeratosis and focal parakeratosis in the epidermis is associated with lymphocytic infiltration and isolated neutrophils in the dermis. Hyphae can be observed (arrows)

Baricitinib is a first-generation inhibitor of JAK1 and JAK2[1] used in a dose of 4 mg in combination with topical corticosteroids to treat moderate to severe atopic dermatitis.[2]

In previous studies, baricitinib therapy has been shown to be rarely associated with infections, such as herpes simplex,[3] herpes zoster, upper respiratory tract infections, tuberculosis, as well as hematologic anomalies including anemia and neutropenia.[4] Data on hepatitis and HIV are still limited.[5] To date no cases of disseminated tinea corporis have been described. Only Harigai et al. described localized tinea pedis associated with baricitinib.[6]

In conclusion, we report a case of disseminated tinea corporis of a patient with lymphocytopenia under treatment for 3 weeks with baricitinib. This case report provides important information for the treatment of atopic eczema with the newly introduced Janus kinase inhibitors.

ACKNOWLEDGMENTS

The patient in this manuscript has given written informed consent to publication of their case details.

CONFLICT OF INTEREST

All authors declare no conflict of interests.

AUTHOR CONTRIBUTIONS

Zeno Fiocco: Acquisition of data; writing and editing. **Katrin Kerl:** Acquisition of data. **Lars Einar French:** Editing. **Markus Reinholz:** Editing. **Cecilia Dietrich:** Writing and editing.

DATA AVAILABILITY STATEMENT

Data availability statement does not apply to our letter (case report).

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