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Tofacitinib Use in the Treatment of Plantar Erosive Lichen Planus

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Lichen planus (LP) is an inflammatory disease of unknown origin affecting the skin and mucous membranes. Although the involvement of the palms or soles is considered uncommon, some series have reported palmoplantar involvement in up to 26% of patients with LP.[1]

Several morphological patterns of palmoplantar LP have been described, including the ulcerative or erosive pattern,[1,2] which usually presents with chronic erosion of the soles, with intense and disabling pain.[2] A wide range of treatment approaches have been attempted, although none of them has been consistently associated with remission of lesions.[2]

We report the case of a 51-year-old woman with no relevant medical history presented to the dermatology clinic in 2014 with painful ulcerative lesions on both soles. A plantar skin biopsy was consistent with lichen planus. Treatment with topical corticosteroids and topical calcineurin inhibitors was ineffective. Oral prednisone 45 mg/day for 6 weeks was associated with slight improvement, predominantly on the left sole, with severe relapse when dose reduction was attempted. To avoid long-term use of systemic corticosteroids, further treatments were tried including methotrexate for 2 years, cyclosporine (12 months), acitretin (18 months) and mycophenolate (3 months), with the persistence of ulceration on the right sole [Figure 1a]. Photodynamic therapy was not tolerated due to severe pain and a new course of systemic corticosteroids led to no further improvement. Tofacitinib 5 mg twice daily was then started (and a gradual reduction of corticosteroid doses initiated) with immediate improvement of pain. Complete epithelisation was achieved after 3 weeks of treatment. Tofacitinib dose was then reduced to 5 mg daily, and corticosteroid treatment was stopped. After three additional weeks of tofacitinib monotherapy, purplish plaques on both soles persisted with no signs of erosion [Figure 1b], and tofacitinib dosage was further reduced to 5 mg every 2 days. As an adverse event, the patient developed an asymptomatic erythematous macular rash on the face and neck following sun exposure, which resolved spontaneously in few days.

The pathogenesis of LP is not completely understood, but it could initiate with the presentation of an exogenous or self-altered antigen, triggering an immune response mediated by T cells, mainly Th1 and Th17, leading to the release of cytokines such as IFN-γ. INF-γ signals through the JAK1/JAK2 and STAT1/STAT2 transduction pathway, increasing keratinocyte sensitivity to cell-mediated cytotoxicity.[3,4] Thus, targeting JAK signalling could protect keratinocytes from cytotoxic responses.[4]

Tofacitinib is an oral, potent JAK1/3 inhibitor that blocks signalling for diverse cytokines involved in lymphocyte activation, proliferation and function, including INF-γ, interleukin 2, 4, 6, 7, 9, 15 and 21.[5] Tofacitinib has been successfully used in a few cases of refractory oral erosive LP.[6] However, no cases of plantar erosive LP treated with tofacitinib or other JAK inhibitors have been reported. No serious adverse events occurred in our patient, but the safety of tofacitinib should be evaluated by long-term observation.

We conclude that tofacitinib can be a therapeutic option for patients with severe erosive plantar LP in which other treatments have failed or to avoid long-term use of oral corticosteroids.

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Conflicts of interest

There are no conflicts of interest.

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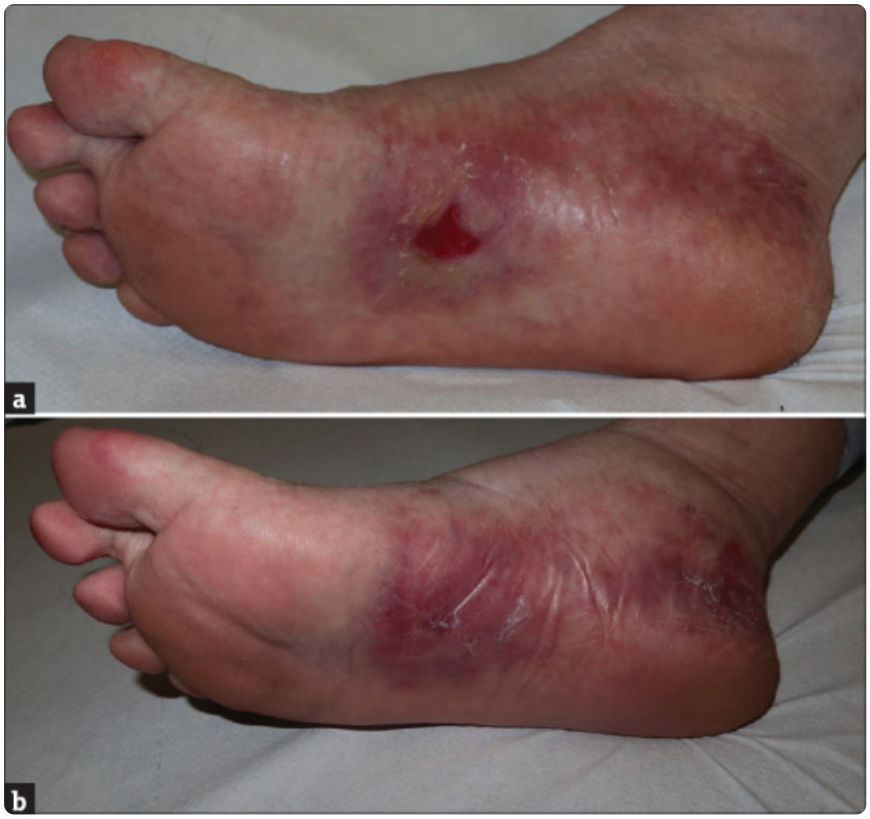
Figures and Tables

Figure 1



Plantar erosive lichen planus prior to (a) and 6 weeks after (b) tofacitinib treatment