BRIEF ARTICLE

Successful Treatment of Perioral Dermatitis with Upadacitinib

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ABSTRACT

Perioral dermatitis is a benign, chronic inflammatory skin condition characterized by small papules, pustules, and erythematous scaly patches around the perioral region. Treatment is not reliably effective, and the condition can be prolonged. We herein report a case of the successful treatment of perioral dermatitis using upadacitinib. A 45-year-old female with a history of rosacea, presented to the clinic with a 2-3-year history of severely pruritic erythematous papules around the chin and mouth, consistent with perioral dermatitis. Our study demonstrates that Janus kinase inhibitors are a promising therapeutic modality for this condition.

INTRODUCTION

Perioral dermatitis (POD) is a benign, chronic inflammatory skin condition characterized by small papules, pustules, and erythematous scaly patches around the perioral region.[1] Progression of this condition may lead to involvement of the perinasal and periocular regions. The etiology of POD is not well understood, but it is most commonly associated with the use of topical corticosteroids.[1] The most common treatments for POD include topical therapies such as clindamycin, metronidazole, erythromycin, and topical calcineurin inhibitors.[1] Oral antibiotics such as doxycycline and minocycline are also used for patients unresponsive to topical therapies alone.[1] However, treatment is not reliably effective and the condition can be prolonged. In recent years, Janus kinase (JAK) inhibitors have been utilized to successfully treat a variety of conditions including vitiligo and atopic dermatitis.[2] We herein report a case of the successful treatment of POD using upadacitinib.

CASE REPORT

A 45-year-old female with a history of rosacea presented to the clinic with a 2-3-year history of severely pruritic erythematous papules around the chin and mouth, consistent with POD. The patient had been using brimonidine 0.33% gel for rosacea, clobetasol 0.05% ointment, and prednisone 10 mg. At the time of clinical presentation, the patient was diagnosed with POD as a result of corticosteroid use and was subsequently started on sarecycline 150 mg daily for 6 months. Oral and topical corticosteroids, prednisone, and clobetasol were discontinued. Nine days after initiating the new treatment regimen, she returned with new erythematous patches progressing to oozing and crusting around her eyes and nose (**Figure 1A**). The patient was then advised to continue with sarecycline 150 mg

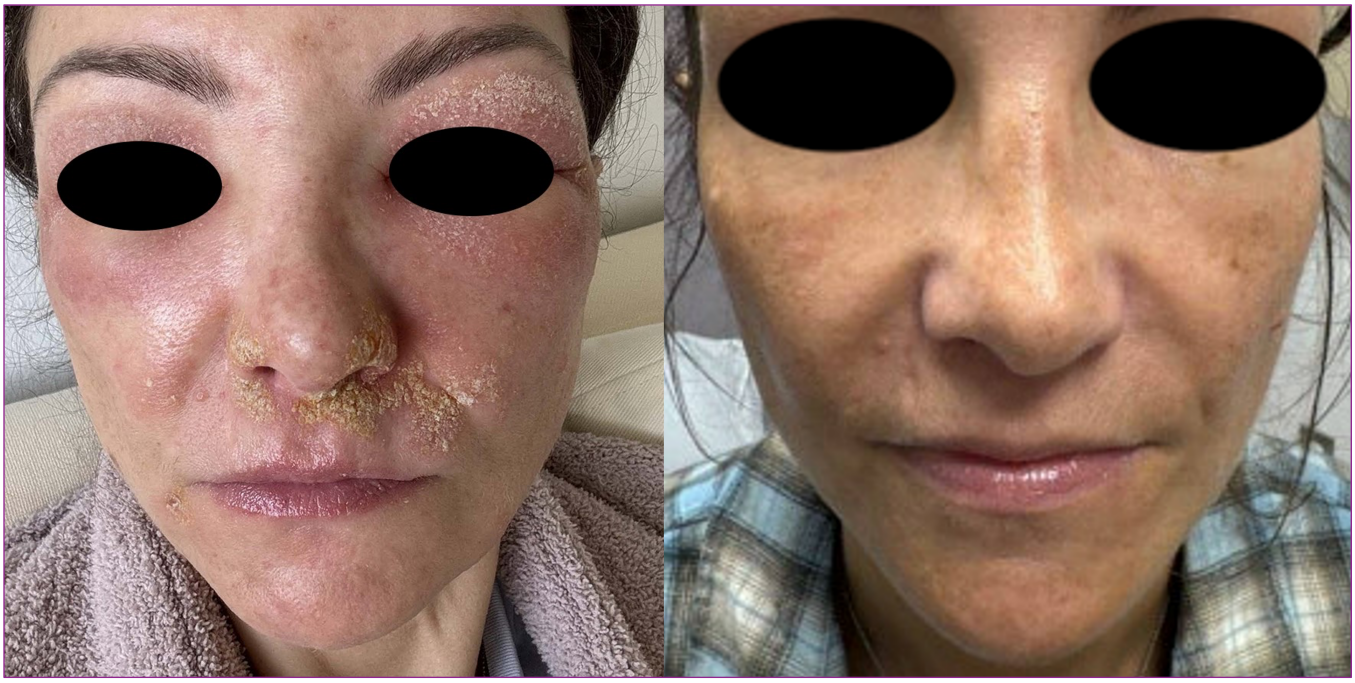

Figure 1. (A) The patient's treatment response to 150 mg of sarecycline and withdrawal of prednisone before the administration of upadacitinib. (B) The patient's marked treatment response to 150 mg of sarecycline and 30 mg of upadacitinib.

daily and was started on tacrolimus ointment and upadacitinib 15 mg daily. Three weeks later, the patient reported improvement of POD and was advised to continue the upadacitinib. However, she experienced a flare of POD around the eyes and nose, leading us to increase her upadacitinib dose to 30 mg daily. One month later, the patient returned with significant improvement of her POD (**Figure 1B**).

DISCUSSION

Our patient had typical POD with inadequate response to conventional treatment options. Starting and discontinuing corticosteroid treatment in patients with POD can cause recurrent and worsening eruptions, as seen in our patient. It may also lead to the development of granulomatous perioral dermatitis, a variant of POD.[1,3] In addition to conventional treatments, existing literature has demonstrated the successful treatment of POD with sarecycline and abrocitinib.[5,6] Given the marked severity of the patient's POD, we elected to utilize sarecycline, tacrolimus, and upadacitinib. Upadacitinib functions by inhibiting cytokine signaling along the JAK-STAT pathway which is integral to the pathogenesis of many inflammatory diseases.[4] It primarily targets downstream cytokines dependent on JAK1 for activation, including IL-6 and IL-7.[4] In addition IL-2, IL-4, IL-9, IL-15, IL-11, interferon α/β, interferon γ, IL-10 and other cytokines are affected by JAK1 inhibition. Our patient demonstrated noticeable improvement within the first two months of treatment with upadacitinib 15 mg and marked resolution after increasing the upadacitinib dosage to 30 mg. Abrocitinib, another JAK inhibitor, has also been shown to be effective in treating POD.[5] Both upadacitinib and abrocitinib target and inhibit the JAK1 pathway, highlighting a similar mechanism of action between the two medications.[7] The significant improvement of

our patient's POD to JAK inhibitor use suggests that these drugs may be promising therapeutic modalities for POD, particularly for patients who have not responded to conventional therapy. Future studies should evaluate the efficacy of various JAK inhibitors in treating POD to identify those associated with the highest rates of treatment response.

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