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Regrowth of Eyebrows in a Previous Steroid Non-Responder With Alopecia Universalis After Ritlecitinib Treatment

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Dear Editor,

This report highlights that intralesional corticosteroids may serve as adjunctive therapy in alopecia areata patients who were initially steroid non-responders after a period of treatment with Janus kinase inhibitors such as ritlecitinib. While the patient described in this case did not experience eyebrow regrowth while receiving ritlecitinib alone, adjunctive intralesional triamcinolone led to sustained eyebrow hair regrowth in this previous steroid non-responder.

A male patient in his early twenties with treatment-resistant alopecia universalis since age 2 years initially presented to the dermatology clinic in 2019. The patient was enrolled in a clinical trial in which he received ritlecitinib since 2019. At the time of enrollment, his Severity of Alopecia Tool (SALT) score was 100%. Prior to this, the patient had been a non-responder to intralesional corticosteroid injections, clobetasol cream, topical 5% minoxidil, and hydrocortisone 2.5% cream, with minimal response to bimatoprost 0.03% solution to the eyelashes. After initiating ritlecitinib, the patient experienced full scalp hair regrowth at the 24-week primary endpoint of the clinical trial. In early 2024, the patient's SALT score is 0%.

Despite full regrowth of scalp hair while on ritlecitinib 50mg daily, the patient's eyelashes and eyebrows remained without hair (Figure 1). In early 2024, 3 mg/cc triamcinolone acetonide injections were initiated in the eyebrows, as intralesional corticosteroids are the preferred treatment for eyebrow loss in alopecia areata patients. Despite the patient's previous history as a non-responder to intralesional corticosteroid injections, impressive and sustained regrowth of the patient's eyebrows was noted following a series of eleven intralesional triamcinolone treatments (Figure 2). This report highlights the first documented case of a patient who, initially refractory to intralesional corticosteroid injections, became responsive after beginning oral ritlecitinib.

Alopecia areata/universalis represents non-scarring forms of hair loss driven by the dysregulation of various T cell-mediated pathways. The formation of autoantigens in the hair follicle leads to overactivation of proinflammatory cytokines, which subsequently bind the hair follicle. This binding activates immune-mediated pathways and leads to the production of perforins and granzymes via the JAK-STAT pathway. Eventually, patients experience perforin and granzyme-induced apoptosis of the hair follicle.[1] Alopecia areata/universalis is thought to have a genetic predisposition. This patient did not have a family history of hair loss of any type, however. There is no known long-term, absolute cure for alopecia areata, but corticosteroids, squaric acid, minoxidil, calcipotriol, and tacrolimus have been utilized to treat this autoimmune condition.[1,2] An emerging realm of treatment for alopecia areata includes Janus kinase

FIGURE 1. Lack of eyebrow regrowth in this patient with alopecia areata, despite full regrowth of scalp hair after receiving ritlecitinib (this clinical photograph is from prior to the initiation of intralesional triamcinolone).

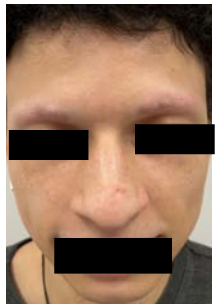
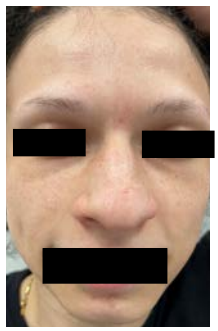


FIGURE 2. Eyebrow hair regrowth demonstrated in this alopecia areata patient taking ritlecitinib following a series of eleven 3mg/mL intralesional triamcinolone injections at one-month intervals.



(JAK) inhibitors. In a Phase 2b/3 randomized, double-blind, placebo-controlled clinical trial, ritlecitinib, a JAK3/TEC family kinase inhibitor, significantly reduced hair loss in adults with at least 50% SALT scores with alopecia areata by the primary endpoint at week 24.[3] 25-50% of the adolescents randomized in the ritlecitinib Phase 2b/3 trial had a SALT score ≤20 by week 48.[4] In 2023, ritlecitinib 50 mg was approved by the Food and Drug Administration in the United States for the treatment of severe alopecia areata in patients 12 years of age and above.

In addition to its effectiveness in treating alopecia universalis in this patient, ritlecitinib may have also influenced the patient's underlying response to intralesional corticosteroids. There is a possibility that ritlecitinib modulated the immunologic pathways involved in the patient's steroid response, facilitating the regrowth of the patient's eyebrow hair, which had previously been recalcitrant to therapy. Improvements in the alopecia areata lesional phenotype due to JAK inhibition were reported in a biopsy sub-study during the ritlecitinib trials.[5] The potential interactions between ritlecitinib and various immunologic pathways warrant further investigation, as these may have broader implications in the treatment of refractory alopecia areata/universalis.

DISCLOSURES

Dr Hebert has the following COI: Research grants paid to the medical school: Pfizer; Honoraria for speaking and advisory work: Pfizer. Dr Jafari has the following COI: researcher for Pfizer. Dr. Thomas has the following COI: Honoraria for consulting: Regeneron. Ms. McGee has no conflicts of interest to disclose.

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