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Treatment of longstanding alopecia areata universalis of the eyebrows/facial hair with oral and topical tofacitinib



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# Treatment of longstanding alopecia areata universalis of the eyebrows/facial hair with oral and topical tofacitinib

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To the Editor:

Alopecia universalis (AU) is considered to be a severe form of alopecia areata (AA). There are no evidence-based treatments for AU but a range of options are offered including topical and intralesional corticosteroids as well as different immunosuppressants; nonetheless efficacy is limited [1]. The most promising therapies include topical immunotherapy such as diphenylcyclopropenone and squaric acid dibutylester, photodynamic therapy, corticosteroids, and cyclosporine/corticosteroid combination [2]. Alopecia universalis tends to relapse more frequently and no treatment has been completely effective [3].

Targeting the JAK pathway in alopecia areata has shown to reverse alopecia areata in animals and humans [1]. Tofacitinib is approved for the treatment of rheumatoid arthritis and has been shown to be effective in treating psoriasis and atopic dermatitis. [1]. Several studies have demonstrated clinical efficacy of oral tofacitinib in patients with AU with minimal or no adverse events [3-5]. Topical tofacitinib has shown some efficacy in alopecia areata, but not to the extent of its oral counterpart [6].

Interestingly, the duration of hair loss, more specifically, the time since the hair follicles last grew hair has been documented as a predictor of tofacitinib efficacy in AU. It has been proposed that after 10 years of complete scalp hair loss, response to treatment decreases significantly [4,7]. Some case reports have suggested otherwise with patients responding well regardless of duration of disease [3,5].

Our patient is a 38-year-old man who had a 10-year history of alopecia universalis causing whole-body

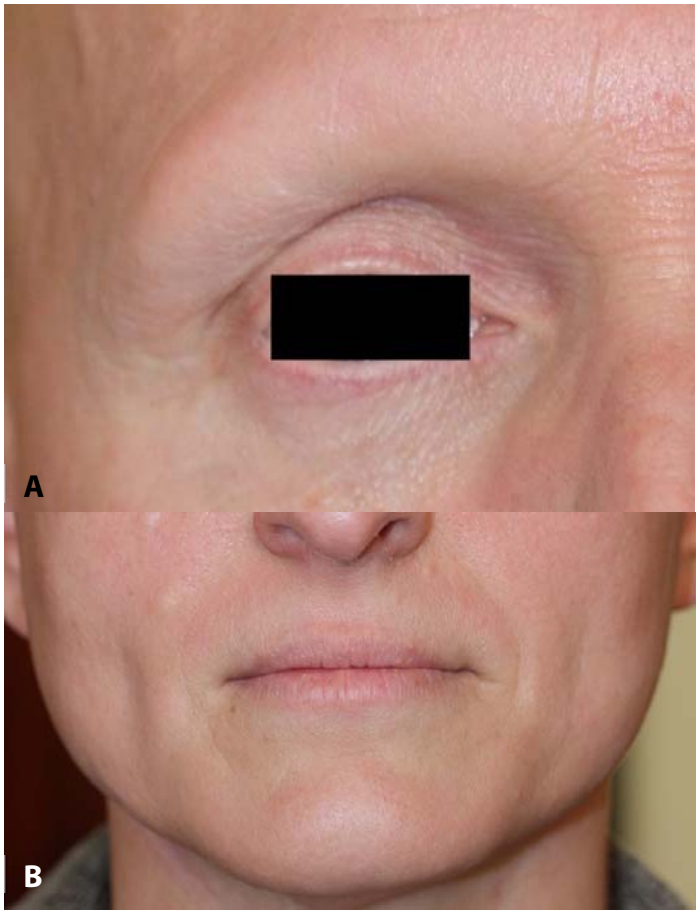


**Figure 1**. *Hair loss of **A)** eyebrows, and **B)** of facial hair.*

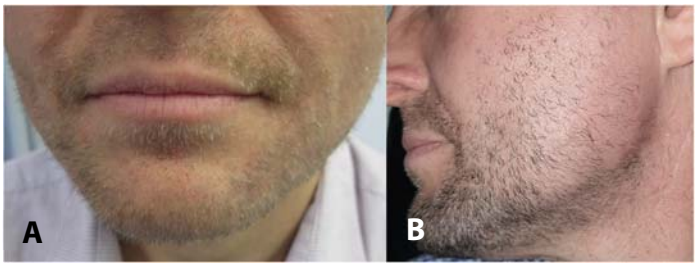


**Figure 2**. *Facial hair regrowth on **A)** upper lip and chin, and **B)** cheek.*

hair loss. He also had associated generalized eczema for 15 years. At time of onset of his alopecia, he commenced a regime of pulsed oral corticosteroids and cyclosporine. Hair growth ensued with this treatment and the eczema also improved. Unfortunately, he relapsed once treatment ceased. He eventually went on to take 10mg of oral prednisone daily which controlled the eczema but made no difference in his alopecia.

When he was first seen by us, he had no eyebrow hair and no eye lashes (**Figure 1A**). He had facial hair loss (**Figure 1B**), as well as total scalp and body hair loss. We also noted the presence of moderate generalized eczema. Given his persistent history of AU he began a trial of tofacitinib under a compassionate prescription use (Pfizer). He commenced 5mg of oral tofacitinib twice daily with improvement observed around four months after initiation of therapy. The patient was subsequently given a topical compound of tofacitinib 2% in white soft paraffin to be applied to the eyebrows, which he used for two years and then ceased. He has continued to use oral tofacitinib for four years and has had partial hair regrowth of the facial hair (**Figure 2**) and eyebrows (**Figure 3**). He had subtle hair regrowth on his scalp (**Figure 4**) with overall great improvement in his quality of life and no reported side effects to date.

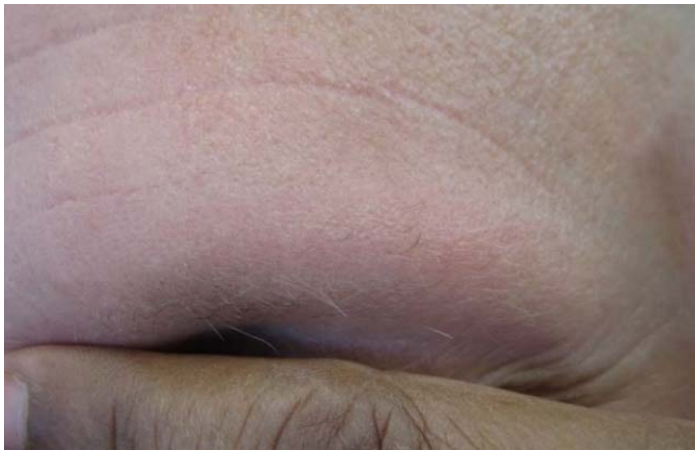

**Figure 3**. *Eyebrow hair regrowth.*

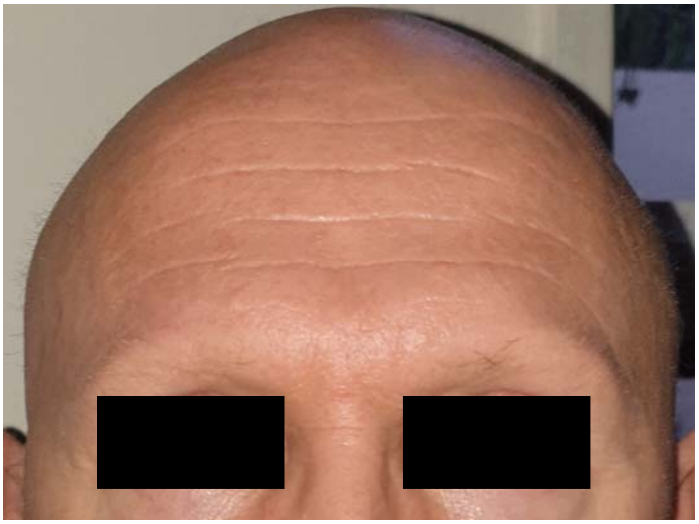

**Figure 4**. *Scalp hair regrowth.*

Improvement of coexisting medical conditions such as plaque psoriasis and vitiligo have been reported in patients with alopecia areata treated with tofacitinib [7], with a case of concurrent AU and atopic dermatitis being successfully treated with the JAK inhibitor by Morris et al. [8]. Our case aids in supporting the use of oral tofacitinib to treat two different inflammatory dermatoses that are present at the same time, regardless of their time of onset. It also reiterates the importance of maintenance therapy, previously suggested by Liu et al. [5], to achieve continued remission of the disease.

## Potential conflicts of interest

The authors declare no conflicts of interest.

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