Frontal fibrosing alopecia: regrowth following cessation of sunscreen on the forehead

Short running title:

FFA: regrowth and sunscreen

William C Cranwell, Rodney Sinclair

Full name of author: Dr William C Cranwell (corresponding author)

Institutional affiliations:

1. Sinclair Dermatology, Victoria, Australia
2. The Royal Melbourne Hospital, Melbourne, Victoria, Australia
3. The Alfred Hospital, Melbourne, Victoria, Australia
4. Skin and Cancer Foundation Inc, Victoria, Australia

Postal address: 2 Wellington Parade, East Melbourne, Victoria 3002, Australia

Email address: william.cranwell@mh.org.au

Telephone number: +613 9654 2426

Full name of author: Professor Rodney Sinclair

Institutional affiliations:

- 1 Department of Medicine, University of Melbourne, Victoria, Australia
- 2 Epworth Dermatology, Victoria, Australia
- 3 Sinclair Dermatology, Victoria, Australia

Postal address: 2 Wellington Parade, East Melbourne, Victoria 3002, Australia

Email address: Rodney.Sinclair@sinclairdermatology.com.au

Telephone number: +613 9654 2426

Acknowledgements: nil

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as [doi: 10.1111/AJD.12833](#)

This article is protected by copyright. All rights reserved

Keywords:

Frontal fibrosing alopecia

Cicatricial alopecia

Sunscreen

Word count: 500

Author Manuscript

Article type : Case Letter

Frontal fibrosing alopecia: regrowth following cessation of sunscreen on the forehead

Frontal fibrosing alopecia (FFA) is a progressive cicatricial alopecia that most commonly affects postmenopausal women. The prevalence of FFA has increased ten-fold over the past decade.¹ The pathophysiology remains uncertain, although a key element appears to be destruction of the epithelial hair follicle stem cells located in the bulge region of the hair follicle.² Hormonal, genetic, autoimmune, inflammatory and environmental factors are thought to contribute the pathophysiology. Daily facial sunscreen use has been suggested as an important contributor to the pathophysiology of FFA.^{3,4,5}

We report a 54-year-old peri-menopausal woman referred by a dermatologist with a clinical diagnosis of FFA to our specialist hair clinic. She presented with a one-year history of frontotemporal and eyebrow hair loss. Current medications included hydroxychloroquine 200mg daily and clobetasole dipropionate 0.05% ointment daily. Previous medications included dutasteride and novasone 0.1% cream.

Examination revealed erythema and perifollicular hyperkeratosis, anterior hairline skin atrophy, and prominent vessels (Figure 1a). Treatment for associated female pattern hair loss was commenced with spironolactone 100mg daily and minoxidil 1mg daily. For her FFA, she continued hydroxychloroquine and dutasteride. Triamcinolone 5mg per mL was injected across the anterior hair line.

Intralesional triamcinolone injections were repeated six-weekly for ten months. Mid-frontal density increased (improvement of associated female pattern hair loss), but there was increasing anterior hair-line recession due to progressing FFA. After 12 months, ciclosporin 25mg daily was initiated, and hydroxychloroquine was ceased. Dutasteride, minoxidil and spironolactone were continued. Ciclosporin

was well tolerated, however there was only mild improvement and ciclosporin was ceased after ten months (Figure 1b).

At this time the first reports implicating regular sunscreen use in FFA pathogenesis were published. The patient was advised to cease sunscreen use on the forehead. Within six months, there was noticeable hair regrowth along the anterior hairline. Skin atrophy reduced due to cessation of intralesional and topical steroid use, and the forehead veins were less prominent (Figure 2a). Ciclosporin and hydroxychloroquine were ceased, and hair regrowth was sustained after 12 months (Figure 2b). Frontotemporal trichoscopy showed normal number of hairs and average hair shaft thickness. The patient continues to attend for review every six-months and to date there has been no evidence of reactivation of her FFA (Figure 2c).

How sunscreen contributes to the pathophysiology of FFA is unknown. One hypothesis is that sunscreen enters the follicular infundibulum and elicits immune reaction.⁴ Low sebum production in postmenopausal women might reduce removal of exogenous substances from the infundibulum, increasing the risk of inflammation. We hypothesise that increased ultraviolet exposure to the affected areas may have an anti-inflammatory or immunomodulatory effect and contribute to halting progression and potential regrowth. However, the evidence implicating sunscreen and leave-on skin care products must be interpreted cautiously. Prospective trials and extended patch testing are needed.

The treatment of FFA remains uncertain, with no published randomised controlled trials to guide therapy. The goal of treatment is to halt progression of FFA. Further complicating evidence-based treatments is the absence of standardised outcome measures, and the common use of combination therapy. This case suggests avoidance of sunscreen use on the forehead may improve FFA.

We now recommend patients with FFA avoid sunscreen products on the forehead and use a cap or hat for sun protection.

References

1. MacDonald A, Clark C, Holmes S. Frontal fibrosing alopecia: a review of 60 cases. *Journal of the American Academy of Dermatology*. 2012 Nov 30;67(5):955-61.
2. Lyakhovitsky A, Barzilai A, Amichai B. Frontal fibrosing alopecia update. *World J Dermatol*. Feb 2, 2015; 4(1): 33-43

3. Aldoori N, Dobson K, Holden CR, McDonagh AJ, Harries M, Messenger AG. Frontal fibrosing alopecia: possible association with leave-on facial skin care products and sunscreens: a questionnaire study. *Br J Dermatol*. 2016;175(4):762-767.
4. Debroy Kidambi A, Dobson K, Holmes S, Carauna D, Del Marmol V, Vujovic A, Kaur MR, Takwale A, Farrant P, Champagne C, Harries M. Frontal fibrosing alopecia in men: an association with facial moisturizers and sunscreens. *British Journal of Dermatology*. 2017 Jul 1;177(1):260-1.
5. Granwell WC, Sinclair R. The role of sunscreen and facial skin care products in frontal fibrosing alopecia. In: *Proceedings of the 10th World Congress for Hair Research*; 2017 Oct 31 – Nov 3; Kyoto, Japan. Abstract PS1-1

Figure Legends:

Figure 1:

- a) Initial presentation: frontotemporal alopecia, mild erythema and perifollicular hyperkeratosis, anterior hairline skin atrophy, and prominent vessels
- b) 18 months (six months post commencing ciclosporin): mild regrowth in anterior hairline, with small areas of regrowth

Figure 2:

- a) 24 months: Increased frontotemporal hair density following cessation of sunscreen on the forehead. Reduced erythema, perifollicular hyperkeratosis, skin atrophy and prominent vessels.
- b) 30 months: Sustained hair regrowth despite ceasing systemic and topical therapy for FFA.
- c) 36 months: Sustained hair regrowth 12 months after ceasing systemic and topical therapy for FFA.

ajd_12833_f1.jpg

ajd_12833_f2.jpg

Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:

Cranwell, WC;Sinclair, R

Title:

Frontal fibrosing alopecia: Regrowth following cessation of sunscreen on the forehead

Date:

2019-02-01

Citation:

Cranwell, W. C. & Sinclair, R. (2019). Frontal fibrosing alopecia: Regrowth following cessation of sunscreen on the forehead. AUSTRALASIAN JOURNAL OF DERMATOLOGY, 60 (1), pp.60-61. <https://doi.org/10.1111/ajd.12833>.

Persistent Link:

<http://hdl.handle.net/11343/284997>