Title: Effective treatment of folliculitis decalvans with ciclosporin: a case series

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Effective treatment of folliculitis decalvans with ciclosporin: a case series

Folliculitis decalvans is a neutrophilic, cicatricial alopecia that preferentially affects the scalp vertex and occiput. Therapy aims to arrest inflammation and prevent hairloss. Response to antibiotic and anti-inflammatory treatments is unpredictable, resulting in a sometimes chronic, recalcitrant course.¹ We report three patients with refractory folliculitis decalvans responding to ciclosporin. In the absence of a validated outcome measure for folliculitis decalvans, we considered photographic and symptomatic improvement; maintenance of the same therapeutic dose; and ability to taper therapy in assessing treatment response.

Case 1:

A 60-year-old Caucasian male had a 5-year history of treatment-resistant folliculitis decalvans affecting the vertex (Table 1). Ciclosporin 25mg twice daily (0.81mg/kg) was added to finasteride, oral minoxidil, minocycline and topical clindamycin. After 2 months, symptoms started improving, at 9 months good disease control was achieved without adverse effects. Ciclosporin was slowly withdrawn after a total of 19 months of therapy, with relapse noted 5 months after discontinuation.

Case 2:

A 63-year-old Caucasian female had a 4-year history of persistent folliculitis decalvans affecting the mid- and frontal-scalp. Previous treatments (listed in Table 1) were only partially effective. Ciclosporin 25mg twice daily (0.83 mg/kg) was initiated alongside low dose isotretinoin (10mg

daily), topical clindamycin and oral prednisolone (tapered and stopped after 4 weeks). A significant reduction in inflammation, pustules and symptoms was achieved after 1 month and complete resolution was seen following 12 months of combination treatment. Worsening renal impairment, however, necessitated ciclosporin discontinuation with subsequent relapse 4 months later.

Case 3:

A 30-year-old African male with a 9-year history of severe folliculitis decalvans was commenced on ciclosporin 50mg twice daily (1.5mg/kg) after failing to respond to antibiotics and isotretinoin (Table 1). Ciclosporin was increased to 125mg (1.85mg/kg) and then 150mg daily (2.25mg/kg) at 2 and 4 months respectively. Concomitant therapy included oral minoxidil and antiseptic shampoo. Treatment was well tolerated and a marked improvement was noted clinically and symptomatically at 6 month review (Figure 1). Though relapse occurred following treatment discontinuation by the patient, reintroduction of ciclosporin at 50mg twice daily promptly re-established control.

Ciclosporin, a calcineurin inhibitor, is used to prevent organ transplant rejection and prescribed for a range of inflammatory disorders including psoriasis, atopic dermatitis and rheumatoid arthritis.² Though there are reports of single cases,³ to our knowledge, this is the first case series reporting folliculitis decalvans response to systemic ciclosporin. Limited evidence also exists for the effectiveness of ciclosporin in other cicatricial alopecias, including lichen planopilaris and discoid lupus erythematosus.¹

Ciclosporin inhibits the transcription factor NF-AT, preventing production of cytokines with key roles in cutaneous inflammation such as Interleukin-(IL)-2, IL-4, Interferon (IFN)- γ and Tumor necrosis factor (TNF)- α .⁴ IFN- γ is diffusely distributed in the dermis and follicular epithelium of folliculitis decalvans, albeit, to a lesser extent than in lichen planopilaris and alopecia areata.⁴ Additionally, inhibition of IL-2 by ciclosporin reduces activation and proliferation of T-lymphocytes. In folliculitis decalvans, the activation of resident skin T-lymphocytes by microbial antigens and/or superantigens prompting release of several proinflammatory and profibrotic factors is postulated central to disease pathogenesis.⁴ Consequently, it is plausible that ciclosporin can disrupt the pro-inflammatory and T-cell-activating cascades associated with folliculitis decalvans pathogenesis, preventing further hair follicle destruction.

The therapeutic cyclosporin dose for folliculitis decalvans has not yet been systematically evaluated. The patients in this series responded to doses lower than the standard dosing used in other skin and systemic disorders (3.5-5mg/kg/day). Initial treatment response by our first

patient at a low dose prompted treatment initiation at lower doses for subsequent patients in this series. Other immunosuppressive treatment approaches could also be considered for patients with refractory folliculitis decalvans, as demonstrated by our recent case series using tofacitinib.⁵

Our study is limited by small sample size and use of concomitant medication. Further studies are required to further evaluate the safety and effectiveness of ciclosporin in folliculitis decalvans as well as standardise a therapeutic dose. Our findings suggest ciclosporin may be a treatment option for folliculitis decalvans, particularly when activity persists despite antibacterial treatment or conventional immunosuppression.

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Patient	Disease duration, y	Previous treatments	Daily CSA Dose	CSA Duration, months	Concurrent treatment*	Adverse events
1	5	Minocycline, bactrim, rifampicin, fucidin, finasteride, OM, anti-septic shampoo, topical clindamycin, intralesional steroids.	50mg	19	Finasteride, OM, minocycline, topical clindamycin, antiseptic shampoo, intermittent intralesional steroids.	Nil
2	4	Plaquenil, isotretinoin, doxycycline, rifampicin, fucidin, cephalexin, erythromycin, topical clindamycin, antiseptic shampoo, topical corticosteroids, intralesional steroids.	50mg	28	Isotretinoin (19 months), oral prednisolone (1 month), topical corticosteroids, intralesional corticosteroids, topical clindamycin, bactrim	Elevated creatinine (1.4xULN), reduced GFR
3	9	Isotretinoin, topical clindamycin. Oral antibiotics (name unknown)	100mg (2 months) 125mg (2 months) 150mg (2 months)	6	OM, antiseptic shampoo	Nil

Table 1: Clinical, demographic and treatment details of three patients with folliculitis decalvans responsive to ciclosporin (CSA)

Abbreviations: CSA, ciclosporin; GFR, Glomerular Filtration Rate; OM, oral minoxidil; ULN, Upper Limit of normal; y, years

* Concurrent therapies were continued throughout whole ciclosporin treatment duration unless otherwise specified and do not represent novel treatments but rather a continuation from pre-ciclosporin.

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Figure 1: Ciclosporin treatment response in a 30-year-old male with recalcitrant folliculitis decalvans (Case 3).

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