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NEWS, VIEWS, AND REVIEWS

A Review of Management Strategies for Erosive Pustular Dermatosis of the Scalp

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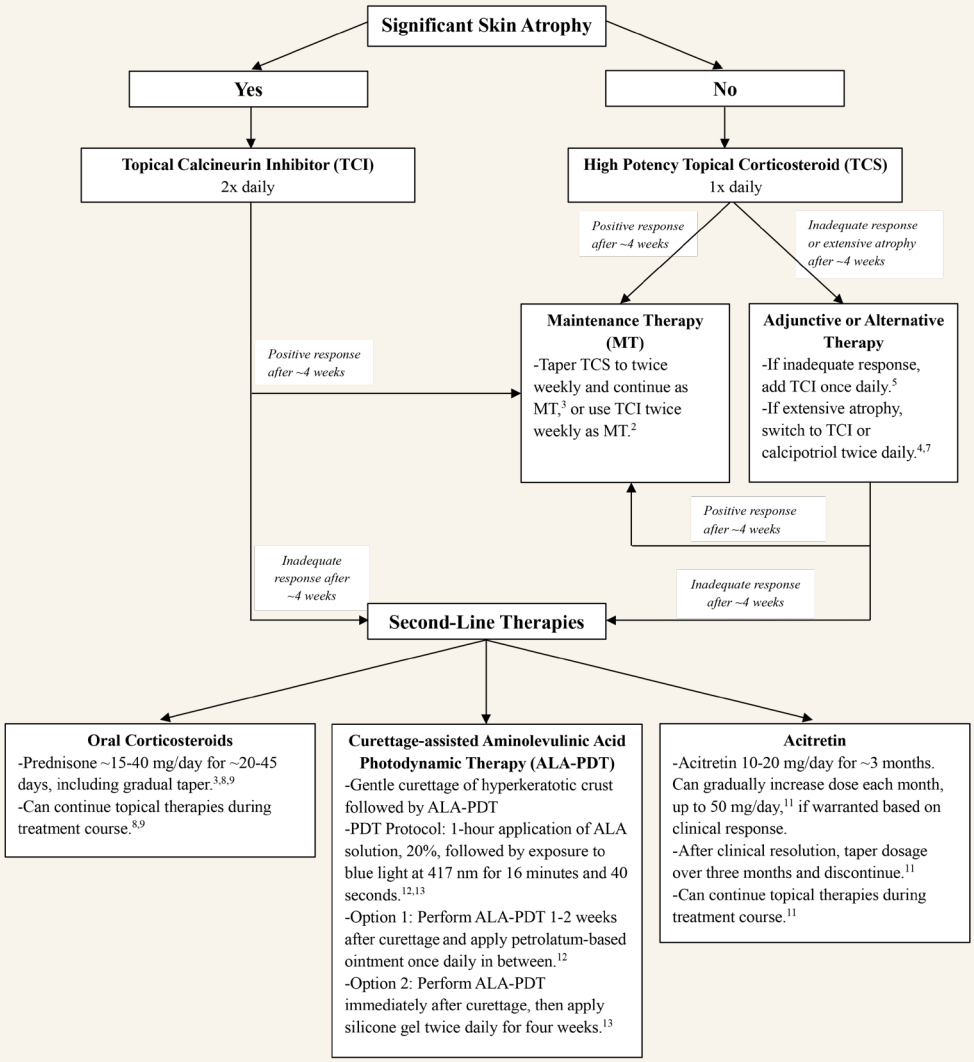
INTRODUCTION

Erosive pustular dermatosis of the scalp (EPDS) is a rare chronic inflammatory condition manifesting as sterile pustules, hyperkeratotic plaques, and crusted erosions on the scalp that typically cause scarring alopecia.[1] EPDS primarily affects older individuals with sun-damaged skin, and local trauma is a common inciting factor; however, the exact pathophysiology remains unknown.[1,2] Currently, no treatment guidelines exist for EPDS. This review explores common management strategies and proposes an updated EPDS treatment algorithm (Figure 1).

Topical Corticosteroids

Topical corticosteroids (TCSs) are the most common EPDS treatment, and clobetasol is most frequently utilized. In the largest EPDS case series, among 30 patients using clobetasol propionate 0.05% ointment (CPO) nightly, 27 experienced significant improvement within 4 weeks.[3] Treatment was reduced to twice weekly for 3 months before cessation; however, all patients experienced post-cessation relapses, requiring retreatment followed by twice-weekly clobetasol maintenance therapy (MT). With MT, most patients showed good disease control at 3-year follow-up.[3] In another 17-patient case

Figure 1. EPDS treatment algorithm.



series, CPO demonstrated similar results, and retreated patients were transitioned to tacrolimus MT.[2] Notably, TCSs exacerbate skin atrophy, sometimes necessitating alternative therapies.

Topical Calcineurin Inhibitors

Topical calcineurin inhibitors (TCIs) are an appealing treatment for EPDS given their relative safety. Tacrolimus 0.1% ointment twice daily use has been reported after TCSs fail or worsen atrophy.[1,4] Based on published case reports, a rapid onset of action was noted, with complete lesion resolution reported in as little as 2 weeks.[4] Both resolution of atrophy and hair regrowth were further appreciated in some of these cases.[1,4,5] Finally, tacrolimus has demonstrated a low post-withdrawal or post-tapering recurrence rate, ~16%, compared with TCSs.[5]

Other Topical Therapies

In a 4-patient case series, dapsone 5% gel applied twice daily for 4 months led to complete resolution in all patients with no recurrence over 7-24 months of follow-up.[6] In 1 patient with considerable atrophy, calcipotriol 0.005% cream completely resolved lesions after 2 months of twice-daily treatment; there was no recurrence at 1-year follow-up.[7]

Oral Corticosteroids

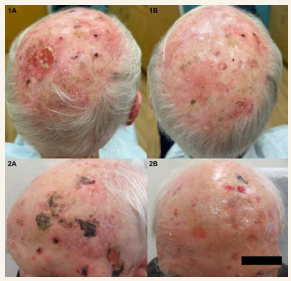
Oral corticosteroids (OCSs), typically prednisone and methylprednisolone, comprise the most common systemic therapy for EPDS. Successful daily dosing of prednisone ranges between 16-40 mg daily for approximately 20-45 days, often including a gradual taper.[3,8,9] In 1 case, however, tapering led to disease recurrence, necessitating concurrent tacrolimus to taper successfully.[8] After 1 course of OCSs, 2 patients were relapse-free for 21-27 months.[9] Currently, there is only 1 published case in which prednisone monotherapy did not improve EPDS.[2] While monotherapy is effective, OCSs are often concurrently prescribed with TCSs or TCIs.[5,8,9]

Oral Retinoids

Two patients on isotretinoin 0.3-0.75 mg/kg/day achieved complete resolution within 1-3 months, with no relapses over 6-12 months of follow-up; there are, however, a few EPDS cases where isotretinoin was ineffective.[1,5,10] Acitretin has also demonstrated efficacy. In 1 case a patient treated with acitretin 50 mg/day and twice-daily tacrolimus experienced complete resolution in 3 months; acitretin was decreased to 25 mg/day and tapered over 3 months, with no recurrence after 6 months.[11] Herein 2 EPDS cases in > 80-year-old males with recurrent crusted papules, erosions, and hyperkeratotic plaques on the scalp who shared similar histories of prior surgical interventions for squamous cell carcinomas on the scalp and inadequate response to TCSs are presented (Figure 2). One patient underwent a biopsy which ruled out other pathologies. Both were treated with acitretin 17.5-25 mg daily and experienced rapid improvement within 1-2 months.

Other oral therapies with limited success in EPDS include dapsone, tetracyclines, nimesulide, zinc sulfate, cyclosporine, and tofacitinib.[5]

Figure 2. Top: An 83-year-old male before (1A) and after 4 weeks of treatment with acitretin 17.5 mg/day (1B). Bottom: An 81-year-old male before (2A) and after 7 weeks of treatment with acitretin 25 mg/day (2B).



Photodynamic Therapy (PDT)

In an 8-patient case series, patients underwent curettage of hyperkeratotic lesions, applied daily petrolatum ointment for 1-2 weeks, and then completed aminolevulinic acid (ALA)-PDT. After 6 weeks, 6 patients experienced resolution, while 2 underwent another round of PDT for residual lesions.[12] Over up to 9 months of follow-up, only 1 had partial recurrence, necessitating retreatment. Another 5-patient case series with a modified protocol where ALA-PDT was performed immediately after curettage and a silicone gel was applied post-PDT twice daily for 4 weeks demonstrated similar results.[13] ALA-PDT has incited EPDS in 1 case with an incubation period double the length of the above studies.[14]

CONCLUSION

TCSs, TCIs, OCSs, and ALA-PDT have the most reported cases with successful outcomes. TCSs are often employed first, though trialing tacrolimus beforehand may be beneficial in those with significant baseline atrophy. ALA-PDT and OCSs should be considered when topicals are inadequate. Finally, although oral retinoids are not backed by substantial evidence, these authors' experience specifically with acitretin further supports its use as a second-line therapy in EPDS management.

DISCLOSURE

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REFERENCES

1. Cenkowski MJ, Silver S. Topical tacrolimus in the treatment of erosive pustular dermatosis of the scalp. *J Cutan Med Surg.* 2007;11(6):222-225.
2. Starace M, Loi C, Bruni F, et al. Erosive pustular dermatosis of the scalp: Clinical, trichoscopic, and histopathologic features of 20 cases. *J Am Acad Dermatol.* 2017;76(6):1109-1114.e2.
3. Tomasini C, Michelerio A. Erosive pustular dermatosis of the scalp: A neutrophilic folliculitis within the spectrum of neutrophilic dermatoses: A clinicopathologic study of 30 cases. *J Am Acad Dermatol.* 2019;81(2):527-533.
4. Tardio NB, Daly TJ. Erosive pustular dermatosis and associated alopecia successfully treated with topical tacrolimus. *J Am Acad Dermatol.* 2011;65(3):e93-e94. d
5. Lee KH, Carley SK, Kraus CN, et al. Treatment of erosive pustular dermatosis: a systematic review of the literature. *Int J Dermatol.* 2020;59(7):770-786.
6. Broussard KC, Berger TG, Rosenblum M, et al. Erosive pustular dermatosis of the scalp: a review with a focus on dapsone therapy. *J Am Acad Dermatol.* 2012;66(4):680-686.
7. Boffa MJ. Erosive pustular dermatosis of the scalp successfully treated with calcipotriol cream. *Br J Dermatol.* 2003;148(3):593-595.
8. Zahdi MR, Seidel GB, Soares VC, et al. Erosive pustular dermatosis of the scalp successfully treated with oral prednisone and topical tacrolimus. *An Bras Dermatol.* 2013;88(5):796-798.
9. Allevato M, Clerc C, del Sel JM, Donatti L, et al. Erosive pustular dermatosis of the scalp. *Int J Dermatol.* 2009;48(11):1213-1216.
10. Petersen BO, Bygum A. Erosive pustular dermatosis of the scalp: a case treated successfully with isotretinoin. *Acta Derm Venereol.* 2008;88(3):300-301.
11. Darwich E, Mun~oz-Santos C, Mascaro JM. Erosive pustular dermatosis of the scalp responding to acitretin. *Arch Dermatol.* 2011; 147: 252.
12. Yang CS, Kuhn H, Cohen LM, Kroumpouzos G. Aminolevulinic acid photodynamic therapy in the treatment of erosive pustular dermatosis of the scalp: a case series. *JAMA Dermatol.* 2016;152(6):694-697.
13. Cunha PR, Tsoukas MM, Kroumpouzos G. Erosive pustular dermatosis of the scalp treated with aminolevulinic acid photodynamic therapy and postprocedure silicone gel. *Dermatol Surg.* 2019;45(5):740-743.
14. Madray VM, Kent SM, Davis LS. Aminolevulinic acid photodynamic therapy-induced erosive pustular dermatosis of the scalp. *Dermatol Surg.* 2021;47(8):1140-1142.

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