



## Q/ Childhood alopecia areata: What treatment works best?

### EVIDENCE-BASED ANSWER

**A** | **IT'S UNCLEAR**; there are no validated effective treatments for alopecia areata (AA). Topical immunotherapy (squaric acid dibutylester [SADBE] and diphenylcyclopropenone [DPCP]) induces the most significant short-term hair regrowth in children with severe AA (strength of recommendation [SOR]: C, 4 small individual cohort studies and 1 moderately sized retrospective case review).

Intralesional steroids can induce hair regrowth greater than 50% in children with limited AA (SOR: C, 1 retrospective cohort study).

Other commonly used treatments—topical and oral corticosteroids, topical cyclosporine, photodynamic therapy, and topical minoxidil—have no benefit over placebo (SOR: A, 14 randomized controlled trials [RCTs] and 3 within-patient studies).

### Evidence summary

AA is a common inflammatory condition that causes hair loss and subsequent social consequences. Spontaneous remission occurs in 34% to 50% of patients within 1 year.<sup>1</sup> Many trials of commonly used AA treatments have identified no significant patient benefits. A 2008 Cochrane review that examined 17 studies (14 RCTs and 3 within-patient studies) of AA interventions in 540 participants found no clinically significant hair regrowth (>50%) when patients were treated with topical corticosteroids, cyclosporine, minoxidil, photodynamic therapy, or oral corticosteroids.<sup>2</sup>

Documenting patient outcomes is problematic because of spontaneous resolution and frequent relapses.<sup>2</sup> Moreover, few quality-controlled trials have studied children, and no long-term, randomized outcome trials of AA treatments exist.

### Intralesional steroids and SADBE show results

In a moderately sized retrospective cohort study in Singapore (392 patients <16 years), 57% of patients experienced more than 50% improvement after 12 weeks of intralesional

steroids for limited AA, and 75% showed similar improvement after 24 weeks. Of 43 children treated with anthralin, only 10 with limited AA showed more than 50% clinical improvement within 6 months.<sup>3</sup> Fifty-four patients with extensive AA received SADBE; 74% experienced greater than 50% hair regrowth at 6 months.<sup>3</sup>

### SADBE effects aren't long-lived

A 1996 individual cohort study of 33 children (6-14 years of age) with extensive AA who were treated with SADBE once a week for a year showed a complete regrowth rate of 30.3%. Only 9% of the children maintained total or partial regrowth during long-term follow-up (mean 6 years), however.<sup>4</sup>

In another individual cohort study, 28 pediatric patients with extensive AA had mixed results with 2% SADBE used once a week for a year.<sup>5</sup> Nine patients (32.1%) showed total or acceptable hair growth; 6 (21.4%) had diffuse regrowth but thinner than normal hair. Eighty-seven percent of patients relapsed within 6 months of discontinuing therapy.<sup>5</sup>

### Studies of DPCP are too small

A 1996 small individual cohort investigation recorded a 40% response rate (90%-100% re-

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**Topical immunotherapy with SADBE or DPCP induces the most significant short-term hair regrowth in children with severe alopecia areata.**

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growth) to DPCP in 10 pediatric patients with extensive AA who were treated for an average of 8.6 months. The same study found cosmetically acceptable growth in 27% of patients (4 of 15 patients 4-15 years of age) treated for an average of 9.6 months.<sup>6</sup>

A small individual study of DPCP reported complete regrowth in 4 of 12 (33%) children with extensive AA; growth persisted at 6 months in 3 of the 4 responders.<sup>7</sup> Another cohort study reported a 50% response rate (>80% regrowth) using DPCP in 10 patients (11-14 years of age) with extensive disease.<sup>8</sup>

### Use SADBE and DPCP with caution

SADBE and DPCP are unlicensed treatments that can cause occipital and cervical lymphadenopathy, severe dermatitis (minimized by careful titration), urticaria, and hypo- or hyperpigmentation disorders (especially in racially pigmented patients). These agents shouldn't be used during pregnancy and should be applied using gloves and aprons to avoid allergic contact dermatitis.

In light of these cautions, and handling and

storage limitations, SADBE and DPCP should be reserved for patients with extensive disease (after obtaining signed informed consent). Patients should avoid ultraviolet light for 24 to 48 hours after application to avoid degradation of the medication.

### Recommendations

The National Alopecia Areata Foundation and the American Academy of Dermatology recommend corticosteroids, topical minoxidil, and anthralin to treat AA.<sup>9,10</sup>

The British Association of Dermatologists' guidelines for managing AA advise using intralesional corticosteroids for limited AA and contact immunotherapy for more extensive disease.<sup>1</sup> They also note that intralesional corticosteroids are poorly tolerated and clinicians are reluctant to use contact immunotherapy in children. **JFP**

### ACKNOWLEDGMENTS

The opinions and assertions contained herein are the private views of the author and are not to be construed as official, or as reflecting the views of the United States Air Force Medical Service or the US Air Force at large.

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Intralesional  
steroids can  
result in hair  
regrowth >50%  
in children  
with limited  
alopecia areata.

### References

1. MacDonald Hull SP, Wood ML, Hutchinson PE, et al. Guidelines for the management of alopecia areata. *Br J Dermatol*. 2003;149:692-699.
2. Delamere FM, Sladden MJ, Dobbins HM, et al. Interventions for alopecia areata. *Cochrane Database Syst Rev*. 2008;(2): CD004413.
3. Tan E, Tay YK, Giam YC. A clinical study of childhood alopecia areata in Singapore. *Pediatr Dermatol*. 2002;19:298-301.
4. Tosti A, Guidetti MS, Bardazzi F, et al. Long-term results of topical immunotherapy in children with alopecia totalis or alopecia universalis. *J Am Acad Dermatol*. 1996;35:199-201.
5. Orecchia G, Malagoli P, Santagostino L. Treatment of severe alopecia areata with squaric acid dibutylester in pediatric patients. *Pediatr Dermatol*. 1994;11:65-68.
6. Schuttelaar ML, Hamstra JJ, Plinck EP, et al. Alopecia areata in children: treatment with diphenylprone. *Br J Dermatol*. 1996;135:581-585.
7. Hull SM, Pepall L, Cunliffe WJ. Alopecia areata in children: response to treatment with diphenylprone. *Br J Dermatol*. 1991;125:164-168.
8. Sotiriadis D, Patsatsi A, Lazaridou E, et al. Topical immunotherapy with diphenylcyclopropenone in the treatment of chronic extensive alopecia areata. *Clin Exp Dermatol*. 2007;32:48-51.
9. National Alopecia Areata Foundation. Treatment recommendations. Available at: [www.naaf.org/site/PageServer?pagename=about\\_alopecia\\_treatment.html](http://www.naaf.org/site/PageServer?pagename=about_alopecia_treatment.html). Accessed December 17, 2010.
10. American Academy of Dermatology. Alopecia areata. Available at: [http://www.aad.org/public/publications/pamphlets/common\\_alopecia.html](http://www.aad.org/public/publications/pamphlets/common_alopecia.html). Accessed December 17, 2010.

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