Table XXX. Recommendations for pediatric psoriasis and anthralin therapy

Recommendation No.	Recommendation	Strength of recommendation
15.1	Long-term use (12 weeks or longer) of topical anthralin is recommended for the treatment of mild to moderate psoriasis. Short-contact anthralin protocols are recommended to limit adverse effects.	B

Table XXXI. Level of evidence for pediatric psoriasis and anthralin therapy

Recommendation	Recommendation No.	Level of evidence	Studies
Topical anthralin use in pediatric psoriasis	15.1	II	69,76,77,79

A separate retrospective review[77] of 58 children with psoriasis who applied 0.1% to 2% dithranol (anthralin) cream daily for 30 minutes reported that 81% of patients experienced complete resolution of skin erythema within 2 months of treatment initiation. The median duration of effect was 4 months. The medication was well tolerated, with only 1 patient discontinuing the treatment because of irritation. Oostveen et al[78] performed a prospective observational study of anthralin use in 34 pediatric patients with psoriasis ages 3 through 17 years who failed to improve with topical corticosteroids and calcipotriene. Mean duration of treatment was 11 weeks. Patients saw an average CDLQI improvement of 5.1 points and a mean PASI reduction of 69%. The medication was well tolerated by all patients, with no adverse events reported.

Anthralin has many adverse effects, including burning, stinging, pruritus, and perilesional erythema. Staining often results upon application and removal, affecting the skin, clothing, and tub/shower. As such, anthralin application is usually limited by poor tolerability and cosmetic concerns and is rarely used on the face and intertriginous areas. Because there are more cosmetically elegant treatments, anthralin is typically an alternative treatment for localized areas of psoriasis.

The strength of recommendations and levels of evidence for pediatric psoriasis and anthralin therapy are summarized in Tables XXX and XXXI.[69,76,77,79]

Topical coal tar

Topical coal tar is used in the treatment of psoriasis, atopic dermatitis, and seborrheic dermatitis as an antiproliferative and anti-inflammatory agent. Its exact mechanism of action is unclear, although it has been identified as an aryl hydrocarbon receptor agonist. Coal tar is available in both over-the-counter and prescription-strength formulations. Its modalities of use are numerous, including shampoo (for scalp involvement), bath (soaking affected areas), and combined with topical corticosteroids as combination treatment. Although it can be used as monotherapy, tar is commonly used in combination with phototherapy (Goeckerman treatment) to treat psoriasis.[80,81] There is no current literature studying coal tar in pediatric psoriasis as monotherapy.

A retrospective review[80] of 54 children ages 1 through 16 years with plaque or guttate psoriasis treated with a combination of coal tar and phototherapy in a day care treatment center for an average of 12 days showed that lesions cleared in 64% of patients. Of these patients 83% had persistent clearance at the 4-month follow-up mark and only 43% maintained persistent clearance at the 12-month follow-up mark. A 21-year retrospective review by Kortuem et al[81] of 65 pediatric patients ages 3 months to 18 years with recalcitrant psoriasis who had combination tar and phototherapy found significant improvement in all patients treated, with 85% experiencing a prolonged remission (average, 2.6 years).

Known adverse effects of coal tar application include folliculitis, irritation, contact dermatitis, and photosensitivity/phototoxicity. Application and removal may also stain the skin, clothing, and tub/shower. The use of coal tar and phototherapy in combination, although effective for treating psoriasis, has a theoretical increased risk of carcinogenicity with prolonged use. Studies have shown that urinary excretion of coal tar metabolites and chromosomal aberrations of lymphocytes occur in children with psoriasis treated with combination coal tar and phototherapy.[82,83] If coal tar/phototherapy combination therapy is an effective treatment for a particular patient with pediatric psoriasis, this risk may be decreased by alternating this treatment method with other modalities and should be considered on an individual basis.

The strength of recommendations and levels of evidence for pediatric psoriasis and topical coal tar are summarized in Tables XXXII and XXXIII.[80-85]