

Vitamin D₃ metabolites and analogues in the treatment of scalp psoriasis

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Abstract

A clinical comparison of three vitamin D₃ analogues and metabolites in the topical treatment of scalp psoriasis is reported and the characteristics of the three agents are discussed. Three groups of patients suffering from chronic plaque psoriasis of the scalp were treated with calcitriol ointment 3 µg/g twice daily, tacalcitol ointment 4 µg/g once daily or calcipotriol ointment 50 µg/g twice daily. Total clearance was achieved in 45.0%, 35.2% and 17.6% of the patients, respectively, and significant improvement was achieved in 35.0%, 29.4% and 35.3%, respectively, with no severe side-effects other than local irritation. We regard this group of anti psoriatic agents as useful for the treatment of lesions localized on the scalp because of their efficacy (comparable with topical corticosteroids), safety (lack of atrophogenic action) and tolerability (ease of application, especially tacalcitol). The additional advantage is their dose-dependent influence on hair follicle and fibre growth by binding vitamin D receptors localized in the hair follicle structure.

Keywords: Calcitriol; Tacalcitol; Calcipotriol; Scalp psoriasis; Hair follicle

Psoriasis of the scalp. Diagnosis and management.

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Psoriasis of the scalp is a frequently occurring condition affecting approximately 2% of the Western population. The sharply demarcated erythematous lesions with silver-white scaling characterize scalp psoriasis. Quality of life can be seriously reduced by this condition and therefore long term treatment is needed in most patients. Coal tar shampoos, containing 2 to 10% coal tar solution, are effective in scalp psoriasis. However, no double-blind studies are available to support such an assumption. Salicylic acid 5 to 10% has a pronounced keratolytic effect. Salicylic acid should be formulated in an ointment, which can be washed off easily. Crude coal tar is the most effective tar available for the treatment of psoriasis. An important feature of coal tar is its potent efficacy against pruritis. At the scalp, the application of crude coal tar is difficult. Therefore coal tar solution is the most frequently applied tar preparation in scalp psoriasis.

Dithranol 0.1 to 3% is manufactured in various formulations. Treatment is initiated at a low concentration and the concentration is increased stepwise until a slight irritation, the feeling of warmth, is reached. In the treatment of scalp psoriasis, cream formulations are used. Imidazole anti fungals have been used with success in scalp psoriasis.

Overgrowth of the scalp with pityrosporon is a well-known feature of scalp psoriasis and seborrheic dermatitis. In case of resistance to other topical treatments use of a topical or systemic imidazole derivative might be helpful. So far, topical corticosteroids are the most frequently used treatments for psoriasis of the scalp. Corticosteroids inhibit epidermal proliferation, inhibit inflammation and modulate immune functions. Topical corticosteroids are fast acting: within 3 to 4 weeks maximal efficacy is reached. No data are available to support the efficacy and safety of topical corticosteroids during long term use. However, from epidemiologic surveys we know that these treatments are used by the majority of patients for more than 8 weeks. Since 1992 vitamin D3 formulations have been developed for the treatment of psoriasis. Calcipotriol is available in most countries. Tacalcitol is available in Japan and several other countries. Vitamin D3 analogues inhibit epidermal proliferation, enhance cornification and inhibit inflammation. Therefore, vitamin D3 analogues have a substantial antipsoriatic effect. Systemic treatments such as methotrexate, cyclosporine and acitretin are indicated in patients with recalcitrant disease. Management of scalp psoriasis requires long term strategies in order to reach an optimal improvement of the condition, while avoiding the adverse effects associated with the long term use of treatments.