

REVIEW ARTICLE

Long-term management of scalp psoriasis: perspectives from the international psoriasis council

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The scalp is a well-known predilection site for psoriasis. Epidemiological data on the various manifestations of scalp psoriasis as well as on its therapeutic management are sparse. The understanding of the natural course of scalp psoriasis is relevant for its therapeutic management. In over 25% of patients, scalp psoriasis is the first signal of the psoriatic condition. Nevertheless, few of the therapies currently used for the treatment of scalp psoriasis have been evaluated for efficacy in the setting of well-designed, well-controlled clinical studies. The lack of comparative data impedes the interpretation of the results from studies of scalp psoriasis. Long-term studies of the efficacy and safety of scalp treatments are lacking. Moreover, clinical studies generally do not incorporate quality of life impact or mechanisms to enhance adherence thus hindering the optimal management of the patient over the long-term. Consequently, this report will evaluate the available data and the associated factors to be considered in the development of a treatment paradigm for the long-term management of the scalp psoriasis patient.

Key words: quality of life, adherence, topical, systemic

The natural course of scalp psoriasis

A significant number of psoriasis patients present with scalp involvement *ab initio*, even in infancy where “cradle cap” may indeed be a marker for the later development of psoriasis. In one clinical and epidemiological observational study of 1220 patients with psoriasis, the scalp was described as the first site of onset in 25% of patients (1). In a review of the clinical locations of psoriasis involvement, 80% of patients had scalp psoriasis (2). Scalp psoriasis, like psoriasis on the trunk and limbs has many phenotypical variants (3). It is frequently asymmetric due to the inevitable Koebnerization of one localized region due to scratching, picking, scrubbing, harsh shampooing, etc., a clinical manifestation seen in a majority of patients (Figure 1A). Disease severity on the scalp can be highly variable ranging from mild scaling and erythema with minimal induration to more inflammatory crusted plaque-type forms (Figure 1B) and even Tinea amiantacea with severe crusting enveloping the proximal hair shafts (Figure 1C). In addition, the areas adjacent to the scalp

(forehead, temples, ears and nape of neck) are also frequently involved either by direct extension from the scalp or independently (Figure 1D).

The dynamics of scalp psoriasis mirror chronic plaque psoriasis at other sites with respect to duration of the disease and exacerbations or remissions. A questionnaire study on scalp psoriasis was performed in the Netherlands and included a total of 1023 patient evaluations (4). A relatively high occurrence of facial psoriasis (25%) and nail psoriasis (40%) was recorded. In 57% of the patients, psoriasis was psychologically and socially distressing, at least occasionally. Itch and scaling proved to be the leading symptoms, in terms of frequency of occurrence as well as in terms of distress. Therefore, these parameters should be regarded as primary efficacy criteria in the treatment of scalp psoriasis. On average, patients were seen by the dermatologist five times a year. The majority of prescriptions (76%) were provided by the dermatologist. The application of topical corticosteroids was the most frequent treatment modality. Tar shampoos were used by 51% of the patients, although the clinical efficacy of such a shampoo has never been demonstrated in a controlled study. A remarkable observation was the lack of instruction on the duration of treatment and the frequency of applications. In fact, 72% of the patients used topical treatments, including topical corticosteroids, for more than 8 weeks, and 42% of the patients used an intermittent schedule of a few applications per week.

Long-term efficacy and safety of treatments for scalp psoriasis

In general practice, when psoriasis is limited to the scalp, topical therapy is utilized as the treatment of choice. With severe recalcitrant involvement, either localized or involving the total scalp, intralesional steroid injections, phototherapy (including laser devices) and even systemic therapy are utilized, the latter in response to significant impairment of patient's quality of life. While many therapeutic approaches for scalp psoriasis have been investigated in the past, the level of evidence supporting their efficacy and safety do not meet the standards of modern evidence-based medicine. Further, few of the therapies currently used for the treatment of scalp psoriasis have been evaluated for efficacy in the setting of well-designed, well-controlled clinical studies. The lack of comparative studies makes comparison of the results of



Figure 1. Manifestations of scalp psoriasis. (A) Asymmetry of scalp psoriasis. (B) Inflammatory scalp psoriasis. (C) Tinea amiantacea. (D) Areas adjacent to the scalp.

studies in scalp psoriasis exceedingly difficult. Most importantly, the long-term evaluation of the efficacy and safety of scalp treatments are almost lacking.

Topical preparations are the mainstay of treatment for scalp psoriasis, with the vehicle as well as the active ingredient relevant to the treatment efficacy, tolerability and compliance. The vehicles used include shampoo, lotion, gel, emulsion, cream, ointment or oil. Active ingredients include keratolytics, tars, dithranol, corticosteroids and vitamin D analogs. For scalp psoriasis only long-term data (i.e. above 6 months in controlled clinical trials) on the use of corticosteroids and vitamin D analogs are available. When potent corticosteroids are used for maintenance therapy in the scalp, skin atrophy, perioral dermatitis, rosacea and increased ocular pressure represent treatment concerns.

In terms of the treatment period, one study of clobetasol propionate shampoo 0.05% demonstrated efficacy over a period of 6 months (5). In this double-blind, randomized, placebo-controlled study patients with moderate to severe scalp psoriasis first received once-daily clobetasol shampoo treatment for up to 4 weeks. Responders were subsequently randomized to receive the clobetasol shampoo or vehicle twice-weekly maintenance regimen for up to 6 months. When relapse occurred, patients resumed once-daily clobetasol shampoo treatment; when symptoms diminished, they readopted the twice-weekly maintenance treatment. At all visits significantly more patients treated with clobetasol shampoo did not relapse compared with the patients treated with vehicle. After 6 months, 31% of patients in the clobetasol shampoo group were still relapse free compared with 8% of patients in the placebo group. There was no greater incidence of skin atrophy, teleangiectasia or hypothalamic pituitary adrenal (HPA) axis suppression in the clobetasol shampoo group compared with the placebo group (5). From this study, it appears that a super-potent topical corticosteroid has a high efficacy to safety ratio when used as needed for up to 6 months for scalp psoriasis.

In contrast to corticosteroids, vitamin D analogs are considered suitable for long-term use, although they can cause skin irritation. The vitamin D analogs calcipotriol and tacalcitol are both used to treat scalp psoriasis. But, long-term results are limited to calcipotriol. After 52 weeks of treatment with calcipotriol solution for the scalp and calcipotriol cream for the body, the proportion of patients assessing their psoriasis severity as moderate decreased from 72% at baseline to 21% (6).

Corticosteroids are often combined with other topical agents, including vitamin D analogs, in an effort to exploit the complementary effects of the two agents. Such combinations might result in a fast onset of action and a high level of efficacy. Compared with corticosteroid use alone, safety may also be improved when agents are combined, if this results in reduced corticosteroid exposure. The combined use of corticosteroid and vitamin D analog therapies for treating scalp requires patients to make two applications per day with different medications. Recently, a lipophilic gel containing betamethasone dipropionate plus calcipotriol was developed for once-daily application. In short-term studies, this two-compound gel is superior to monotherapy with betamethasone propionate or calcipotriol (7–9). The long-term efficacy and safety of the two-compound gel was subsequently assessed in a 52-week, double-blind study of patients with moderate to severe scalp psoriasis (10). Patients were randomized to receive once-daily treatment for up to 52 weeks with either the two-compound gel or calcipotriol in the same vehicle. Patients whose scalp psoriasis cleared at any time during the study stopped treatment. These patients could restart study treatment at any time during the 52-week treatment period, if required. Disease was satisfactorily controlled in 92% of visits in the two-compound group compared with 80% in the calcipotriol group. The incidence of skin irritation on the scalp was significantly lower in the two-compound group than in the calcipotriol group. Incidence of side effects possibly associated with long-term

corticosteroid use was equally low in the two-compound group and the calcipotriol group (10). In conclusion, treatment of scalp psoriasis with the gel containing betamethasone propionate plus calcipotriol used once daily as needed is efficacious and safe for at least 52 weeks.

In cases where scalp psoriasis is severe and does not respond to topical treatments, systemic therapy should be considered either as monotherapy or in combination with topical agents. But in this regard the use of systemic therapies lacks robust evidence-based data (11,12). Despite the deficiency of formal studies, it is generally agreed that improvement of scalp psoriasis occurs in conjunction with overall improvement of psoriasis on the trunk and extremities.

Impact of scalp psoriasis on patient's quality of life

The majority of psoriasis patients believe the disease has a negative effect on their quality of life with physical, psychological and social functioning frequently impaired (13). Invariably, this feature of the disease is not included in the development of treatment paradigms which tend to focus on the benefit to risk profile of the treatments rather than the impact on the patient (11,12). The quality-of-life issues are significant and need to be actively assessed at the initial visit and throughout the course of treatment for the regimen to be effective in the long-term. Assessing the true burden of scalp psoriasis on the quality of life of patients is a challenge in day-to-day clinical practice. Scalp psoriasis contributes significantly with continual shedding onto clothes impacting participation at social or work activities. The persistent issues relate to appropriate dress, social and personal interactions as well as work-related activities and symptomatology, including sleep disturbances. Seldom does one see a patient with mild to moderate scalp psoriasis who does not complain of a modicum of itch, stinging or burning. Thus, active measures are necessary to actively treat the scalp psoriasis, and to alleviate the inevitable scratching and picking ('itch-scratch-itch' cycle), that is typical of scalp psoriasis. But, the available assessment tools do not adequately focus on scalp or otherwise tend to have a relative overweighting on the physical side of disease versus the psychological (14). The psoriasis scalp index (Scalpdx) is an instrument designed specifically for quality-of-life issues related to scalp dermatoses and can be utilized longitudinally to measure the impact of scalp psoriasis (15). The measurement tool divides quality-of-life issues into three constructs: symptoms, functioning and emotion through a 23-item questionnaire scored on a 0–100 scale (Table I). Scalpdx provides a useful tool in the clinic to evaluate and monitor the impact on quality of life of scalp psoriasis, in a sustained way throughout the treatment regimen.

How to optimize patient adherence?

There is a paucity of literature about non-adherence in dermatology in general and scalp psoriasis in particular (16). Estimates of adherence to treatment regimens in patients with psoriasis overall vary from 27 to 97% (17). Much of the data that do exist about treatment adherence are based on patient self-reported data or on patient surveys (18,19). More accurate information can be obtained from prescription databases. In a study of prescription redemptions in an electronic register, 30.7% of 322 patients studied did not even collect their prescription medications (20). Perhaps the most accurate measure of patient adherence involves the use of electronic cap monitors that record how often the cap on a tube of medication is removed (21). In such a study of 30 psoriasis patients, adherence to a topical therapy regimen declined from 84.6 to 51% over the course of the 8-week study

Table I. Scalpdx.

My scalp hurts
My scalp condition makes me feel depressed
My scalp itches
I am ashamed of my scalp condition
I am embarrassed by my scalp condition
I am frustrated by my scalp condition
I am humiliated by my scalp condition
My scalp condition bleeds
I am annoyed by my scalp condition
I am bothered by the appearance of my scalp condition
My scalp condition makes me feel self-conscious
I am bothered that my scalp condition is incurable
My scalp condition affects how I wear my hair (hairstyle, hats)
I am bothered by people's questions about my scalp condition
My scalp condition affects the color of clothes I wear
I am bothered by the persistence/recurrence of my scalp condition
I feel stressed about my scalp condition
Caring for my scalp condition is inconvenient for me
I feel that my knowledge about caring for my scalp condition is adequate
The cost of caring for my scalp condition bothers me
My scalp condition makes my daily life difficult
My scalp condition makes me feel different from others
My scalp condition makes it hard to go to the hairdresser/barber

(22). A number of factors that contribute to adherence, or lack thereof, have been identified. These include efficacy of the drug being used, patient perception of safety of the drug, ease and convenience of application, physician–patient relationship and frequency of administration (23,24). In a study of adherence self-reported by patients, those satisfied with their therapy displayed statistically significantly greater adherence than those of unsatisfied patients. Ease and convenience of application plays an important role in adherence and thus, the quality of the vehicle plays a major role. Greasy ointments are difficult to apply and even harder to wash out of the scalp and lead to frustration and non-adherence to treatment regimens (25,26). Messy preparations like coal tar not only affect the appearance of the patient, but also stain clothing, sheets and other household items (27). Treatment failures are often a result of failure to apply the medication rather than failure of the medication itself. It has even been suggested that the phenomenon of tachyphylaxis occurs because patients stop applying their topical medications. Adherence rates have also been shown to improve around the time of office visits (21).

With a view to managing patients' scalp psoriasis in the long-term many of the factors that contribute to non-adherence can be solved. Over the last decade, novel vehicles and combinations of agents have been developed to improve adherence. Clobetasol propionate 0.05% exists in multiple formulations: solutions, gel, spray, foam, lotion and shampoo that are more acceptable to the patient for use in the scalp (28). The combination of betamethasone dipropionate with calcipotriol exists in a novel formulation for the scalp that allows once-daily application (29). A good physician–patient relationship is another factor that contributes to patient adherence (23,25). Nurses can play an important role in educating patients about the importance of adherence and in providing good instructions on how to apply medications, how much to apply and for how long they should be used. This is particularly important with vehicles such as foams which patients may not know how to use. To investigate the impact of nurses in adherence to treatment, 42 patients were interviewed. Several contributing factors were identified: nurses' knowledge,

consultation style and continuity of care (30). Furthermore, an educational nurse intervention has recently been studied to provide a positive benefit to the treatment of psoriasis patients in a randomized controlled trial (31).

The comprehensiveness of the instruction is also important. In a recent study of 767 topical prescriptions, various factors were evaluated including the presence of the appropriate formulation, frequency of administration, duration of treatment, body area to be treated and amount of product to be used. Only 35.7% of the prescriptions analyzed included at least four out of five of the above parameters. Electronic prescriptions which automatically prompt physicians to enter instructions were more likely to include four of five of the above parameters with an odds ratio of 3.04; 95% confidence interval (CI) (2.2;4.21) (32).

A treatment paradigm for the long-term management of scalp psoriasis

The management of scalp psoriasis is an evolving discipline that requires superior therapeutics as well as new insights to better meet the needs of the patient who clearly need to be involved in the progression, customization and evolution of their own treatment regimens. A key component of any successful strategy is enhanced information. Thus, to conduct a broad physician survey specifically on scalp psoriasis will be useful to identify physician perceptions of treatment barriers (patients, physicians and health-care system-related) and will deliver guidance on how to improve patient management across the domains of impairment of patients quality of life, the performance of available therapies (including systemic agents) and patient adherence.

In the treatment of scalp psoriasis, the approach must be a holistic one that incorporates dimensions focused not only on the effectiveness of the therapy but also the impact of the disease or the treatment on the patient's quality of life, and active mechanisms to support adherence. Indeed, there are effective therapies available if used correctly and with the right evaluation and support. But the selection of such therapeutic regimens is dependent on identifying the unmet needs of the patient relative to the impact of scalp psoriasis on their daily lives. This information must constitute the basis of an individualized support program to identify the most appropriate therapy as well as to establish mechanisms to monitor the effectiveness of the regimen through time to ensure that it is meeting the needs of the patient for long-term use.

The active management of the scalp psoriasis patient is critical to the overall well-being of the patient in the long-term. While once-daily application and cosmetically elegant vehicles can improve patient adherence to a specific therapeutic regimen, no one treatment is perfect for any patient and thus algorithms focused only on the most effective treatments are destined to fail. The patient's psychological state, the impact of the disease and the treatment on the patient quality of life must be evaluated in an optimal and active management paradigm. For this purpose, more pervasive use of the Scalpdex instrument in the clinic is recommended (Table I) (13). To support adherence into the long-term, an effective medication is merely the basis for a trained healthcare professional to provide good instruction on how to apply the medication, allay fears about side effects and provide sustained moral support and guidance.

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