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Original Research Article

A prospective study on the etiopathogenesis, clinical types and causes for recalcitrant nature of scalp psoriasis

Shrinidhi Ramalingam, Rajkumar Kannan*, Muthusubramanian Chandrasekar

Department of Dermatology, Chengalpattu Medical College and Hospital, Chengalpattu, Tamil Nadu, India

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***Correspondence:**
Dr. Rajkumar Kannan,
E-mail: rajderm0002@gmail.com

ABSTRACT

Background: Psoriasis, a common chronic disfiguring inflammatory and proliferative papulosquamous disorder of the skin in which both genetic and environmental influences have a critical role. Scalp becomes the most common site of involvement, both at the time of onset of the disease and also throughout the course of the disease. This prospective study is designed to have a thorough insight into the etiological factors, clinical types and to unearth the factors behind the recalcitrant nature of scalp psoriasis.
Methods: A prospective study, conducted in the Department of Dermatology, Chengalpattu Medical College, Tamilnadu. 50 patients of scalp psoriasis enrolled between April 2017 and March 2018 were included in the study.
Results: It was found in our study that lesions of scalp psoriasis took longer time (on an average 6-8 weeks more) to resolve than lesions of psoriasis elsewhere in the body following treatment with systemic drugs like methotrexate and topical agents like 0.1% betamethasone + salicylic acid ointment and liquid paraffin. Out of 50 patients, 30 were female (60%) and 20 were male (40%). Following were the clinical types of scalp psoriasis encountered in our study. Chronic plaque psoriasis- 25 (50%), sebopsoriasis- 13 (26%), erythrodermic scalp psoriasis- 8 (16%), pityriasis amiantaceae- 4 (8%), pustular psoriasis of scalp- 0.
Conclusions: The density of scalp hair leading to reduced absorption of topical treatment and the social reasons affecting the quality of life of patients are crucial factors that determine treatment outcome. All these inconveniences result in non compliance of treatment. Hairy scalp, rich vascular supply, patient's non-compliance, adverse effects of topical agents-all throw a challenge to the treating dermatologist where it poses recalcitrant nature to treatment.

Keywords: Psoriatic corona, Sebopsoriasis, Pityriasis amiantacea, Spondyloarthropathy

INTRODUCTION

Psoriasis is a group of chronic inflammatory and proliferative conditions of the skin, associated with systemic manifestations in many organ systems. The most characteristic lesions consist of erythematous, scaly, sharply demarcated, indurated plaques, present particularly over the extensor surfaces and scalp. The extent and severity varies enormously over time and between individuals. Morphological variants are common. Both genetic and environmental influences have a critical role in the aetiology and pathogenesis.[1]

The scalp is one of the most common sites of involvement in psoriasis, it remains a challenging aspect in the management of psoriasis.[2] The practical difficulties in treating this type of psoriasis is in part due to the inaccessibility of the scalp and the social reasons

affecting the quality of life of patients. Existing scalp psoriasis treatments are inconvenient for patients. Inconvenience results in non-compliance.[3,4] Systemic therapies such as ciclosporin, methotrexate, retinoids, newer biological agents may be useful in patients with widespread disease with scalp involvement. Based on current evidence the effective way of treating scalp psoriasis mild, moderate, or severe is topical corticosteroid.[5,6]

METHODS

A prospective study was conducted in the Department of Dermatology, Chengalpattu Medical College, Tamilnadu from March 2017 to April 2018. A total number of 50 patients between the age group of 20 years and 60 years were included in the study after taking informed consent and application of inclusion and exclusion criteria.

Inclusion criteria

- Patients willing to give informed consent.
- Patients not on treatment with any other drugs.
- Patients willing to stick on to the study protocol.
- Patients between the age group 20 and 60 years.

Exclusion criteria

- Patients not willing to give consent.
- Patients who are already on treatment.
- Pregnant and lactating women.
- Age less than 20 years and above 60 years.

All the patients included in the study were subjected to a detailed clinical examination, as to assess the extent of involvement of psoriasis, type of psoriasis and the presence of any complication like erythroderma, psoriatic arthritis. PASI scoring was calculated wherever applicable.

Routine investigations like complete blood count, ESR, liver function and renal function tests, urine routine and X-ray chest were done. Ultrasound abdomen was done for relevant patients. Patients were started on treatment and were requested to follow up at the right interval as per study protocol.

RESULTS

Out of 50 patients, 30 were female (60%) and 20 were male (40%). Among the female patients, 10 patients (33%) had exclusive scalp psoriasis (6 patients had sebopsoriasis, 4 had pityriasis amiantaceae), 20 patients (67%) have scalp lesions along with psoriasis lesions elsewhere (15 patients had classic plaque type psoriasis, 5 patients had erythroderma). Among the male patients, 7 patients (35%) had scalp psoriasis as an isolated phenomena (all had sebopsoriatic type), the remaining 13 (65%) had scalp and cutaneous lesions (10 patients had classic plaque type and 3 had erythroderma) (Figure 1).

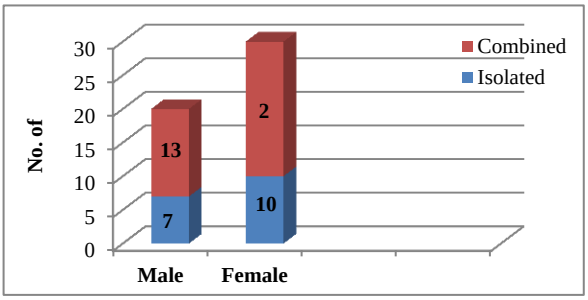

Figure 1: Gender wise distribution of isolated and combined scalp psoriasis.

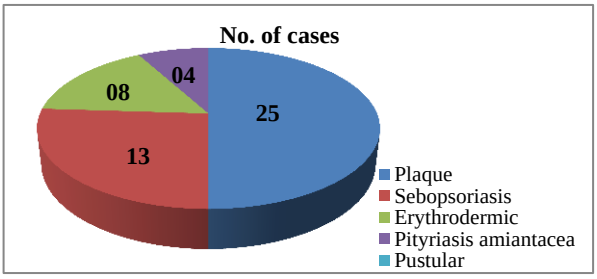

Figure 2: Clinical patterns of scalp psoriasis.

Figure 3: Psoriatic dactylitis and arthopathy in a patient of scalp psoriasis.

Figure 4 (A and B): Chronic plaque type scalp psoriasis with psoriatic corona.

Following were the clinical types of scalp psoriasis encountered in our study. Chronic plaque psoriasis- 25

(50%), sebopsoriasis- 13 (26%), erythrodermic scalp psoriasis- 8 (16%), pityriasis amiantaceae- 4 (8%), pustular psoriasis of scalp- 0 (Figure 2).

It had been observed in our study that scalp psoriasis irrespective of the fact that, whether it occurs as prima facie or as a part of psoriasis vulgaris is recalcitrant to treatment. In cases of psoriasis vulgaris, it was found that on treatment with topical 0.1% betamethasone + salicylic acid ointment, emollients like liquid paraffin and systemic methotrexate in the dosage of 10-15 mg/week, administered as per the body weight, after 12 weeks, lesions of psoriasis cleared in all the areas except scalp. There was a significant drop in the PASI scoring in majority of patients (80%) by more than 50%. Scalp lesions showed significant reduction in the erythema and turnover of scales at the end of 12 weeks, but still warranted continuation of topical therapy, up to 16-20 weeks.

At the end of 24 weeks, with the above dosage of methotrexate and topicals all the cutaneous lesions of psoriasis cleared and scalp lesions resembling seborrhoeic dermatitis were present. Patients were kept on regular follow up once in two weeks, and methotrexate was slowly tapered and completely stopped after maintaining the patients on tab. methotrexate 5 mg/week for 6 weeks.

Patients were symptom free and lesion free for a period of 6-8 weeks (remission period), and reported at the OPD any time after 8 weeks with relapse of psoriatic lesions initially over the scalp.

In isolated cases of scalp psoriasis, it was found majority of patients (80%) took an average of 8-10 weeks for significant reduction of scales all through scalp, with the usage of topical 0.1% betamethasone + salicylic acid ointment, emollients like liquid paraffin and coal tar based shampoos.

Figure 5: Chronic plaque type scalp psoriasis.

Figure 6: Resolving plaque type scalp psoriasis.

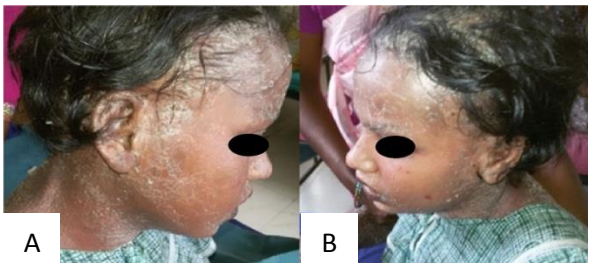

Figure 7 (A and B): Erythrodermic scalp psoriasis.

Figure 8: Pityriasis amiantacea mimicking tinea capitis.

Figure 9: Asbestos like scales of pityriasis amiantacea.

DISCUSSION

Psoriasis has long been linked with metabolic and cardiovascular disorders.[6] The differences in scalp psoriasis were not significant. PASI scores were equal with respect to scalp psoriasis. This can be due to differences in hair styling and care, women shielding their scalp from beneficial effect of sunlight on psoriasis, Koebner reaction induced scalp psoriasis in women that it falls into similar range as men.

Psoriasis being an epidermal proliferation disease triggers hair growth in the scalp. Recent evidence suggest increased level of nuclear beta-catenin in suprabasal psoriatic epidermis which is known to induce anagen phase of hair cycle, thus psoriatic plaques are associated with increased density of hair growth.[8]

Psoriasis is linked to several comorbidities like metabolic disorders, cardiovascular disorders, depression and psoriatic arthritis, and thus it was found out in our study that all the predisposing factors and comorbidities pertaining to etiopathogenesis of psoriasis vulgaris, is applicable in the etiopathogenesis of scalp psoriasis too. Scalp psoriasis is associated with 3.89 fold increased psoriatic arthritis risk. The hypothesis is that large number of microbes at these sites triggers an immune reaction leading to psoriatic arthritis.

Spondyloarthropathy a subtype of psoriatic arthritis has been found to be affecting more patients with scalp psoriasis than those without scalp involvement (Figure 3).[9,10]

The classification of patients as those with exclusive scalp psoriasis and those with scalp psoriasis as a part of psoriasis vulgaris can be justified by the following observation: in exclusive scalp psoriasis the lesions start at one single point of scalp, the lesions resemble seborrheic dermatitis, slowly evolves into sebopsoriasis, later multiple foci of similar lesions develop paving way to a full blown scalp psoriasis, then lesions spill over apart from scalp into rest of the body parts viz trunk and extremities thus evolving into psoriasis.[11,12]

Morphological types of scalp psoriasis encountered in our study

Classic plaque type/psoriatic corona

Scaling and erythema typically transgress the frontal hair line, feature that helps in differentiating scalp psoriasis from seborrheic dermatitis, in which the scaly patch is limited to the hair bearing area (Figures 4-6)**.** The nature of scales is greasy in seborrheic dermatitis but silvery white in classic plaque type psoriasis. Like Psoriasis elsewhere, Auspitz sign is positive in scalp psoriasis. Non cicatricial alopecia due to plaque type psoriasis of the scalp has been reported in very severe cases of scalp psoriasis.

Sebopsoriasis/sebderm like scalp psoriasis

Lesions involving the scalp, eyebrows, and the region of the ears are of then of seborrheic dermatitis type. Dermascopy is a useful tool with which scalp psoriasis and seborrheic dermatitis of scalp can easily be differentiated. Dermascopic features of scalp psoriasis include red dots and globules, twisted red loops and glomerular vessels. In contrast, seborrheic dermatitis of the scalp shows arborizing vessels and atypical red vessels with the absence of red dots and globules. Investigation of vascular patterns can be valuable for the clinical diagnosis and differentiation of scalp psoriasis and seborrhoeic dermatitis.[13]

In 2 of our female patients sebopsoriasis was followed by the appearance of scaly plaques over the umbilicus over a period of 6 months (flexural psoriasis) thereby evolving slowly into psoriasis vulgaris.

Erythrodermic scalp psoriasis

Scaling and erythema are more pronounced and erythrodermic variant of scalp psoriasis may be associated with significant hair loss. Scalp psoriasis per se without erythroderma can lead to hair loss with vigorous topical treatment (Figure 7).[14]

Pustular psoriasis of scalp

Both follicular and perifollcular pustules are seen over the scalp. In at least 1/3rd of infantile cases a history of an eruption diagnosed as seborrheic dermatitis may be encountered.[15,16]

Scalp psoriasis mimicking lichen simplex chronicus

Common in the nape of neck. Any chronic dermatoses like lichenoid polymorphous light eruption, lesions of discoid lupus erythematosus can mimic scalp psoriasis and hence has to be considered in the differential diagnosis.

Pityriasis amiantacea

A morphological entity consisting of plaques of asbestos like scaling, firmly adherent to the scalp and associated hair, has been termed pityriasis amiantacea.[17] Only 10% of patients develops psoriasis (Figure 8 and 9).

Causes for recalcitrant nature of scalp psoriasis

- Presence of hair-early lesions are not made out by the patient.
- Impediment for application and absorption of topical agents.
- UV rays blocked from reaching the skin.
- Non-compliance of the patient because of mental fatigue that there is no response to treatment.

Present study clearly shows scalp as the duo of portal of entry and exit of psoriasis vulgaris in at least 30-40% of patients who are genetically predisposed. Scalp is richly vascular. The increased vascularity along with profound vasodilator changes of the dermal papillary capillaries could allow the inflammatory mediator cytokines to have exaggerated impact on keratinocyte proliferation.

Patients conveniently assume it for seborrhoeic dermatitis and delay the early consultation with a dermatologist.

CONCLUSION

Counselling plays a crucial role in treatment of scalp psoriasis as the last anatomical site to respond is scalp. Unless this point is stressed specifically, patients become anxious about the scalp status, which, associated with the hair loss becomes a stressful factor that (mental stress) once again becomes a predisposing factor for recurrence of psoriasis vulgaris.

Majority of the patients have the habit of applying hair dyes which could worsen the status of scalp psoriasis by causing allergic contact dermatitis.

Special modalities of treatment like phototherapy cannot be used effectively. Even commonly used first line topical medications viz steroid lotions can lead to skin atrophy of face. Hence it becomes crucial to the treating dermatologist to ensure maximum therapeutic safe window to the patient of scalp psoriasis. We need to undertake more detailed research in scalp psoriasis for an adequate long tenure to compare the results of this study with previous studies what little are available.

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