



CLINICO-EPIDEMIOLOGICAL STUDY ON SCALP DERMATOSES: INSIGHTS FROM A TERTIARY CARE CENTRE

Dermatology

Dr. Nuthalapati. Sowmya	3 rd year post graduate, Department of DVL, Alluri Sitaramaraju Academy of Medical Sciences Malkapuram, Eluru, west godavari district, Andhra Pradesh-534005 India.
Dr. T. Nirupama BhagyaLakshmi	Professor and HOD, Department of DVL, Alluri Sitaramaraju Academy of Medical Sciences Malkapuram, Eluru, west godavari district, Andhra Pradesh-534005 India.
Dr. D. Praveen Kumar Raju	Associate professor, Department of DVL, Alluri Sitaramaraju Academy of Medical Sciences Malkapuram, Eluru, west godavari district, Andhra Pradesh-534005, India.
Dr. K. Hari Krishna Babu	Professor, Department of DVL, Alluri Sitaramaraju Academy of Medical Sciences Malkapuram, Eluru, west godavari district, Andhra Pradesh-534005, India.

ABSTRACT

Background- The scalp is distinct among human skin areas due to its high follicular density and elevated sebum production. While this offers thermal insulation, it also fosters an environment prone to superficial fungal infections, parasitic infestations & inflammatory conditions. Many scalp conditions share similar clinical manifestations of scaling, inflammation, hair loss, and pruritus, hence differential diagnosis is critically important. Given the limited research on scalp dermatoses in literature, a clinical study focused on these conditions can reveal prevalent clinical and epidemiological patterns within our population. **Aim:** To observe the clinical & epidemiological perspectives of scalp dermatoses at a tertiary care hospital. **Methods-** This is a cross-sectional observational study conducted over 12 months from April 2023 to March 2024. A total of 100 patients with scalp lesions who came to DVL outpatient department at ASRAM were included in the study. A detailed clinical history and thorough examination was done. **Results-** 16 different scalp dermatoses were observed in this study. They are more prevalent among age group 20-40, with a male-to-female ratio of 1.38:1. The most prevalent conditions were psoriasis (20%), alopecia areata (15%) and androgenic alopecia (15%). Itching is the most common presenting feature in 73% of patients, followed by hairloss n=66; 66%), scaling(n=40; 40%) and redness (n=20; 20%). **Conclusions-** This study offers significant insights into the prevalence, demographics, and clinical features of various scalp dermatoses. These findings highlight the necessity for targeted diagnostic and therapeutic strategies due to the diverse causes of scalp dermatoses. Enhancing clinician awareness and understanding of scalp dermatoses can improve patient outcomes and management strategies, as these conditions significantly affect patients quality of life and social well-being.

KEYWORDS

INTRODUCTION-

The scalp is distinctive due to its high follicular density and sebum production, creating a warm, moist environment that can lead to conditions like dandruff, infections, and infestations. Common scalp disorders often present with overlapping symptoms such as itching, scaling, inflammation, and hair loss, complicating diagnosis and treatment. Conditions like psoriasis, seborrheic dermatitis, alopecia areata prevalent among adults and atopic dermatitis, seborrheic dermatitis, tinea capitis, and psoriasis are particularly prevalent in children.

Moreover, the visibility of the scalp and hair can affect self-esteem and social interactions, making scalp health critical for psychological well-being. This study aims to provide clinical and epidemiological insights on scalp dermatoses in our population at a tertiary care centre.

AIM:

To observe the clinical & epidemiological perspectives of scalp dermatoses at a tertiary care hospital.

Methods-

This is a cross-sectional observational study over 1 year, from April 2023 to March 2024. Patients presenting to the outpatient dermatology department at ASRAM medical college, Eluru were evaluated for inclusion. Those with scalp lesions were enrolled, resulting in a study population of 100 participants. Each patient's detailed history along with clinical and scalp examination was performed, and a clinical diagnosis was made. When necessary, further investigations were done to confirm the diagnosis. Statistical analyses were performed using SPSS version 23. Count data was expressed in the form of proportions.

RESULTS:

The study included a total of 100 patients with scalp dermatoses. The age of our patients ranged from 10-65 years. The most commonly affected age group was 21-30 years (n=30; 30%) followed by 31-40 years age group (n=22, 22%).

As the age advances, a decreasing trend in the incidence of scalp dermatoses was noted.(figure1)

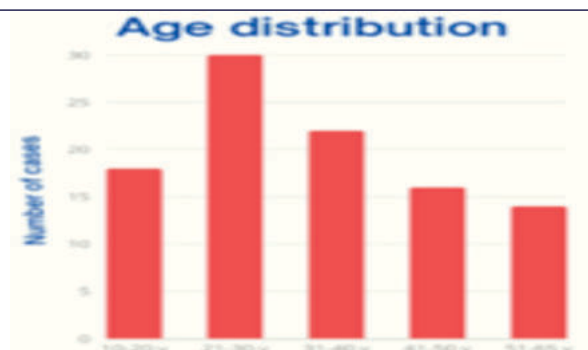


Figure 1. Age Distribution

Among them, 58 (58%) were male and 42 (42%) were female. Scalp dermatoses were more prevalent in males, with a male-to-female ratio of 1.38.(figure 2)

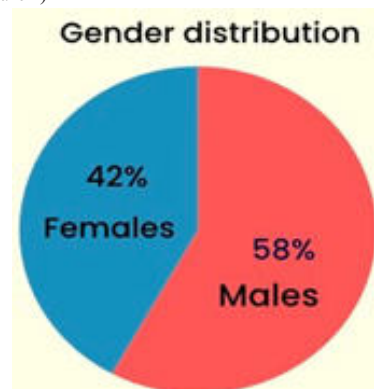


Figure 2. Gender Distribution

Most patients had multiple symptoms. Itching (n=73; 73%) was the most common presenting symptom followed by hairloss (n=66; 66%), scaling(n=40; 40%) and redness (n=20; 20%).(figure 3)

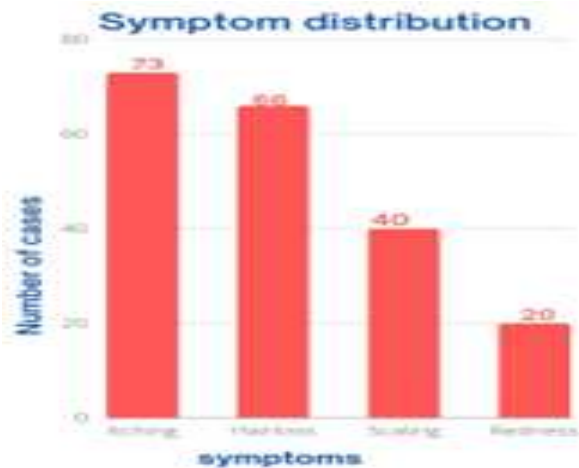


Figure 3. Symptoms distribution

Scalp psoriasis 20% , followed by Alopecia areata 15%, Androgenic alopecia 15%, Seborrheic dermatitis 10%, Telogen effluvium 9%, Pediculosis capitis with secondary infection 6% were common among the study population(Table 1).

Among the 100 cases, n:66, 66%patients had lesions which were exclusive to scalp. Of the 34 patients who had lesions in areas other than the scalp, the scalp was the initial site of presentation in 20 patients, accounting for 58.82% of the cases.

The statistical values of some of the common scalp disorders have been presented below.

Scalp psoriasis,(figure4) including chronic plaque psoriasis with scalp manifestations, psoriatic erythroderma with scalp lesions, were observed in 20 patients, accounting for 20% of cases. The condition was most prevalent in the 30-40 age group, affecting 12 patients (60%). Among the 12 patients with generalized psoriatic plaque lesions, the scalp was the initial site of manifestation for 6 patients (50%)(Table 2). The predominant symptoms at presentation were itching and scaling, reported in 18 patients (90%).

Alopecia areata (figure5) was identified in 15 patients, accounting for 15% of all the cases. (Table 3) Alopecia subtotalis was seen in 5(33.3%) patients, Alopecia universalis was observed in 1 (6.6%) patient. The majority of individuals with alopecia areata were in the 10-20 age group (11patients, or 73.3%), with male to female ratio 1.4. Hair loss was the presenting complaint in all the patients. The condition most frequently affected the parietal (6 patients, or 40%) and occipital (5 patients, or 33.3%) regions of the scalp.

Patterned hair loss was observed in 15 patients, 15% with the majority (8 patients) being in the 20-30 age group. The male-to-female ratio was 2:1. The most commonly affected site was the frontal region (12 patients, or 80%), followed by the parietal region (7 patients, or 46.6%).

Seborrheic dermatitis was noted in 10(10%) patients.The most common age group was 20-30 years (n=6, 66.6%) with male predominance (n=6); male-female ratio was 2:1. The predominant symptoms were itching (n=7; 77%), and scales (n= 8; 88%), redness n=2; 22%, Lesions were scalp exclusive in 5 (55.5%) cases.

Telogen effluvium was observed in 9 patients, constituting 9% of the study population, with no gender differences noted. The most affected age group was 21-30 years, comprising 7 patients (77.7%). These patients presented with diffuse thinning of the scalp hair and severe hair loss.

Pediculosis capitis was observed in 6 patients (6%). All of them were female, with the most affected age group being 10-20 years, which constituted 6 patients (83.3%). Patients presented with severe scalp itching, hair loss, and occipital lymphadenopathy.

Additionally, the following scalp dermatoses were observed during our study, listed in order of decreasing incidence:(Table 1)

(figure8)Linear Morphea: n=5, Acne keloidslis nuchae: n=4, (figure6)Discoid lupus erythematosus: n=4, scalp contact dermatitis: n=3, (figure7) Nevus sebaceus: n =3, Scalp folliculitis: n=2, Tinea capitis: n=1, Pseudopalade of brocq: n=1, Tricotollomania: n=1, Pemphigus vulgaris n=1.

Tables:
Clinical Types Of Scalp Dermatoses (Table 1)

Scalp dermatoses	Number	percentage
1.Scalp Psoriasis	20	20
2.Alopecia Areata	15	15
3. Androgenic alopecia	15	15
4. Seborrheic dermatitis	10	10
5.Telogen effluvium	9	9
6. pediculosis capitis with secondary infection	6	6
7. Linear Morphea	5	5
8. Acne keloidalis nuchae	4	4
9. Discoid lupus erythematosus	4	4
10. Allergic contact dermatitis	3	3
11. Nevus sebaceous	3	3
12. Scalp folliculitis	2	2
13. pemphigus vulgaris	1	1
14. Pseudopalade of brocq	1	1
15. Trichotillomania	1	1
16. Tinea capitis	1	1

Clinical Subtypes Of Psoriasis (Table 2)

Subtype	Male	Female	Percentage Total-20
Chronic plaque psoriasis	9	3	12 (60%)
Scalp psoriasis	4	2	6 (30%)
Erythroderma	1	1	2 (10%)

Clinical Subtypes Of Alopecia Areata(Table 3)

subtype	male	female	percentage Total-15
patchy type	7	2	9 (60%)
A.subtotalis	4	1	5 (33.3%)
A.universalis	1	-	1 (6.6%)

Figures:



Scalp Psoriasis(Figure 4)



Alopecia Areata (Figure5)



Discoid Lupus Erythematosus (Figure 6)



Nevus Sebaceus (Figure 7)



Linear Morphea (Figure 8).

DISCUSSION:

Scalp dermatoses are frequently encountered in general practice and can cause significant emotional distress in adult patients because of the associated social stigma. These conditions can manifest as primary disorders of the scalp, as part of broader inflammatory skin diseases, or in relation to systemic illnesses. Many common scalp conditions exhibit overlapping symptoms and clinical features, which can complicate diagnosis and may signal more serious underlying health issues. Therefore, an accurate diagnosis is crucial for establishing effective treatment.

Age Distribution

The most affected age group was 21-30 years (30%), followed by 31-40 years (22%). This aligns with prior studies, such as Al-Ashmawy et al. (2020), indicating that hormonal changes and lifestyle factors may contribute to higher prevalence among younger adults. We observed a decrease in incidence with age, consistent with literature suggesting that scalp conditions become less common as individuals age. Ramesh A et al. also identified the 21-30 age group as significantly affected, while both studies reported similar gender distributions and comparable prevalent conditions.

Gender Distribution

We found a male predominance, with a male-to-female ratio of 1.38.

This supports findings from Duvet et al. (2018) that conditions like alopecia areata and seborrheic dermatitis are more prevalent in males, likely due to genetic and hormonal factors.

Clinical Presentation

Itching (73%) and hair loss (66%) were the most common symptoms, corroborating Kaur et al. (2021). The high prevalence of itching reflects inflammatory processes in conditions like psoriasis and seborrheic dermatitis. This is consistent with the findings from Pillai et al., where similar symptoms were reported.^{2,5}

Prevalence of Specific Conditions

The most common conditions were scalp psoriasis (20%), alopecia areata (15%), and androgenic alopecia (15%), consistent with Gupta et al. (2019). Scalp psoriasis was most prevalent in the 30-40 age group, suggesting more severe cases. Our observation that 50% of patients with generalized plaque lesions initially presented with scalp involvement highlights the critical nature of early diagnosis and intervention in preventing disease progression. Alopecia areata was more common in younger males (ratio 1.4), as noted by Bae et al. (2020).

The 10% prevalence of seborrheic dermatitis is supported by previous studies emphasizing its higher occurrence in younger adults, likely due to lifestyle factors such as diet and stress. The observation of telogen effluvium in 9% of cases, often triggered by stressors such as illness, hormonal changes, or nutritional deficiencies, adds to our understanding of scalp conditions. Furthermore, the exclusive presence of pediculosis capitis in females highlights the importance of considering social and environmental factors in the epidemiology of scalp conditions, particularly given the predominance of cases in the 10-20 age group. This reflects established trends related to school-aged children, emphasizing the need for awareness and educational interventions targeting head lice prevention in school health programs.

Lesion Distribution And Co-occurrence

Sixty-six percent of patients had lesions exclusive to the scalp, emphasizing the localized nature of these conditions. Additionally, 58.82% of patients with extra-scalp lesions had scalp involvement first, underscoring the need for thorough scalp examinations in patients presenting with skin lesions elsewhere.

Comparison With Other Studies

We compared our findings with those of Pillai et al. In our study, the most common age group was 21-30 years (30%), followed by 31-40 years (22%), which differs from Pillai et al.'s results. However, the predominant gender was consistent in both studies. Our study identified psoriasis (20%) as the most common scalp dermatosis, followed by alopecia areata (15%) and androgenic alopecia (15%), which does not match earlier findings.

CONCLUSION:

In summary, our study contributes to the literature on scalp dermatoses by highlighting key trends in prevalence, symptoms, and demographics, particularly regarding age and gender. While most of our findings are consistent with previous research, they emphasize the need for targeted interventions and awareness programs to improve management strategies and patient outcomes. Understanding the interplay of age, gender, and lifestyle factors is essential for addressing challenges faced by individuals with scalp dermatoses.

REFERENCES:

1. Ramesh A, Sampath V, Shabari A, Mukesh MJ. An overview of scalp dermatoses in a tertiary care institute. *Int J Res Dermatol* 2020;6:304-12.
2. Das SK, Das S. Dermatoses of scalp and hair disorder: an observational study in a hilly state of North-East India. *Int J Res Dermatol* 2021;7:720-3.
3. Suchankova D. Diseases affecting the scalp. *Cas Lek Cesk*. 2017;156(3):137-40.
4. Dogra S, Yadav S. Psoriasis in India: Prevalence and pattern. *Indian J Dermatol Venereol Leprol* 2010;76:595-601.
5. Pillai J, Okade R. A clinical spectrum of scalp dermatoses in adults presenting to a tertiary referral care centre. *Int J Biol Med Res*. 2014;5(4):4434-9.
6. Frez MLF, Asawanonda P, Gunasekara C, Koh C, Loo S, Oon HH, et al. Recommendations for a patient-centered approach to the assessment and treatment of scalp psoriasis: a consensus statement from the Asia Scalp Psoriasis Study Group. *J Dermatol Treat*. 2014;25(1):38-45.
7. Fricke VAC, Miteva M. Epidemiology and burden of alopecia areata: a systematic review. *Clin Cosmet Investig Dermatol*. 2015;8:397-40 Rhodes T, Girman CJ, Savin RC, Kaufman KD, Guo S, Lilly FR, et al. Prevalence of male pattern hair loss in 18-49 years old men. *Dermatol Surg off Publ Am Soc Dermatol Surg Al*. 1998;24(12):1330-2.
8. Madke B, Khopkar U. Pediculosis capitis: an update. *Indian J Dermatol Venereol Leprol*. 2012;78(4):429-38.
9. Borda LJ, Wikramanayake TC. Seborrheic Dermatitis and Dandruff: A Comprehensive Review. *J Clin Investig Dermatol*. 2015;3(2).
10. Wilson CL, Burge SM, Dean D, Dawber RP. Scarring alopecia in discoid lupus erythematosus. *Br J Dermatol*. 1992;126(4):307-14.