

Prevalence of Diffuse Hair Loss in Females Attending the Dermatology OPD at Tertiary Care Center in Western India: Etiology and Epidemiology

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Abstract

Introduction: In our society scalp hairs are associated with attractiveness and physical wellbeing, lack of hairs can have negative psychological consequences, especially in women. Here is a study of 300 female patients having nonscarring diffuse hair loss attending the outpatient department of Dermatology at a tertiary care centre in western India.

Methodology: A cross sectional study was done at the dermatology OPD at tertiary care centre from the female patients attending the OPD for the duration of 2 years. Female patients older than 15 years, complaining diffuse hair fall or visible hair loss were included in the study.

Results: Total 300 patients were included in the study. Most of the cases (64%) were observed in between 20–40-year of age. Maximum, around half (54%) number of patients were having female pattern hair loss. Chronic diffuse telogen hair loss (CDTHL) and acute telogen effluvium comprise another 30% of patients. Male pattern hair loss (MPHL), alopecia areata (AA), chronic telogen effluvium, anagen effluvium (AE), trichotillomania and seborrheic dermatitis together comprised of another 16% cases.

Conclusion: Being a benign complain, such cases are often overlooked in government hospitals. Some simple measures and a proper counselling will reduce the psychological burden of the condition. Furthermore, various systemic conditions can be identified with appropriate history taking and with the help of noninvasive methods like trichoscopy.

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Introduction

In our society, a head full of hair is a key component of an ideal body image and that's why hair loss can drastically reduce body image satisfaction.[1] Diffuse hair loss is one of the commonly encountered symptoms by a dermatologist, typically in females of post pubertal age group. The concern is much more severe in women compared to men.

Overlapping clinical features of different aetiologies make the diagnosis and treatment challenging. Telogen effluvium (TE) is the most common cause followed by female pattern hair loss (FPHL).[2] Multiple micronutrients as well as hormones are necessary for the growth of hair and the nail. Deficiency of required substance can lead to

hair fall. Hairs are also commonly affected by various chronically used medication e.g., drugs used for autoimmune diseases (i.e., cyclophosphamide, methotrexate, azathioprine, mycophenolate mofetil, gold). Drug induced hair loss is usually diffuse, non-scarring, and limited to the scalp. Apart from these benign conditions, association of hair loss can also be seen in certain debilitating disease. Diffuse, non-scarring hair loss can be the presenting manifestation of SLE.[3] In one study the most frequently reported manifestation of SLE was found to be diffuse alopecia which was recorded significantly more often in patients with chronic cutaneous LE and acute cutaneous LE than in patients with subacute LE.[4]

Trichoscopy is one type of scalp surface microscopy; non-invasive, simple and less time consuming and high yield diagnostic as well as monitoring technique. Though the cost of the machine would rather make its use difficult. Here, all the patients were subjected to trichoscopy irrespective of the condition. We have assessed the clinical and etiological profile of all the patients fulfilling inclusion criteria to evaluate the pattern of hair loss, various etiological factors along with the epidemiology of the condition at the tertiary care center in western India.

Methodology

A cross sectional study was conducted on the outpatient basis at the department of Dermatology in a tertiary care centre in western India. Three hundred female patients older than 15 years, with active complains of hair loss or having clinically evident alopecia at the time of presentation were included in the study. Male patients, patients with patchy hair loss, cases of cicatricial alopecia and patients younger than 15 years were excluded from the study. Study was done after the

approval from the institutional review board. Informed written consents were obtained from each patient. Demographic profile, clinical findings, laboratory investigations and treatment history were recorded. The patients were evaluated by detailed history and clinical examination as per the proforma. General examination of all patients for any associated disorders related to hair loss; e.g., hirsutism, acne, seborrhoea in hyperandrogenism. Patients were clinically examined for the evidence of alopecia and any other scalp disease. Sinclair scale was used to grade female pattern hair loss. All the patients were subjected to trichoscopy. Heine Dermoscope (with 20 x magnification) was used. Using the digital camera trichoscopic images were taken at 20X magnification at the mid-scalp and at the intersection between nose line and ear implantation line. Hemogram and serum ferritin of all the patients were done [Hemoglobin (Hb) <12 gm/dL considered anemic, serum ferritin <70 ng/ml was considered low]. Thyroid function test were advised in all the patients of AA, known case of hypo or hyperthyroidism and patients who had history of thyroid disorders [Free T3 = 1.71-3.71 pg /ml, free T4 = 0.70-1.48 ng/dl and Thyroid stimulation hormone (TSH) up to 5 micro-IU/ml were regarded within normal limit]. Patients who had clinical evidence of hyperandrogenism were tested for free testosterone, Dehydroepiandrosterono sulfatas (DHEA-S), Follicle-stimulating hormone (FSH), Luteinizing hormone (LH) and ultrasonography (USG) of abdomen & pelvis to rule out Polycystic ovary syndrome (PCOS). Renal function tests (RFT), Liver function tests (LFT), Antinuclear antibody (ANA) testing were done as and when required. In some required cases trichogram and scalp biopsy were also performed after an informed consent.

Trichogram	The hairs obtained after the hair pull test were subjected for microscopic examination. The proximal portions of the hair follicles were aligned on a glass slide and fixed with DPX medium under coverslip. The proximal ends of the hairs were then evaluated under light microscope for intact shaft and bulb, or hair breakage and assessment of telogen vs anagen hair was made as per the morphology.
Scalp biopsy:	With complete aseptic precautions and after giving local anaesthesia using lignocaine with 1:100,000 adrenaline single 4 mm punch biopsy was taken from the affected area in the direction of the hair follicle. The depth was upto the level of subcutis. The tissue sample obtained was subjected to histopathological analysis for horizontal and vertical sectioning. The biopsy site was sutured, and the patient was prescribed topical antibiotic as well as oral antibiotics for 7 days. Scalp biopsy was mainly performed in times of diagnostic dilemmas, i.e. In differentiating Early FPHL from CTE, in diagnosing diffuse AA, etc.

Result and Analysis

300 adult female patients were included in the study. Maximum 64% (n=) cases were observed in between 20–40-year of age followed by 15% (n=) in their fifth decade. (Table 1). The average age of presentation was found to be 32.92 years. Almost 65%(n=) of the patients belonged to the low socio-economic class (figure). FPHL was found to be the commonest disease affecting more than half of the patients (n=162) (Table). CDTHL and acute TE, both of varying etiologies, were found to comprise 30% (n=) of patients, when put together. Other disorders like MPHL, AA (incognita, subtotalis, totalis), chronic TE, anagen effluvium, trichotillomania and seborrheic dermatitis together comprised of another 17%. On Sinclair grading maximum FPHL patients belonged to grade 2 [21.67% (n=65)], followed by grade 3 [16% (n=48)] and grade 1 [12% (n=37)] respectively. Grade 4 and 5 together in combination comprised 4 % (n=12) of all the FPHL cases. It was revealed after investigation that out of 76 cases of CDTHL, 46% (n=) were due to iron deficiency, one fourth of patients had thyroid abnormality, 11% (n=9) of patients had primary chronic telogen effluvium while around 8% (n=6) patients suffered from autoimmune connective tissue diseases (4 -

SLE and 2 - MCTD) Chronic illnesses and chronic infections (HIV, tuberculosis) also played a role in around 5% (n=4) and 4% (n=3) patients, respectively. 38% (n=8) cases had history of an acute illness in past. Out of 8 patients who had history of preceding illness, three had typhoid fever, two had history of dengue, two had malaria fever and one had undiagnosed febrile illness. Four patients were diagnosed as cases of telogen gravidarum, presented with complaint of hair loss after an average of 2.5 months after delivery. Three patients had history of drug intake from which two patients had history of isotretinoin and one was on anti-thyroid medication. Four patients have had history of surgery in recent past. Isolated FPHL was present only in 19.13% (n=31) patients.

On examination, about 30.67% (n=92) patients presented with widened central parting, followed by one fourth of patients had discernible diffuse thinning alone. 11% (n=33) patients had both, diffuse thinning as well as widened central parting. About one fourth (n=75) of patients did not have either of these findings. CDTHL, Acute telogen effluvium and seborrheic dermatitis were seen in most commonly in the age group 21-30 years, followed by age group 31-40 years. Trichotillomania was common in younger

patients (15-20 years). 57% (n=92) patients presented with widened central parting, followed by 21% (n=33) also had associated with diffuse thinning. There were 37 patients who failed to show any visible pattern, but were diagnosed as FPHL Sinclair grade 1, with the help of trichoscopy. Most cases of TE presented with discernible diffuse thinning. Patients of diffuse trichotillomania had bizarre patterns, and AA incognita cases presented with diffuse thinning. Overall, if we see according to the duration of symptoms; 18% (n=55) patients presented in first 6 months, 47% (n=142) of the patients presented between 6-12 months, 29% (n=86) patients visited within 1-5 years and remaining 6% (n=17) patient were presented after 5 years of initiation of symptoms. Acute telogen effluvium as well as anagen effluvium was found to present exclusively in first 6 months of initiation. 52% (n=85) patients of FPHL presented between 6-12 months of duration, while 12% (n=19) patients presented within first 6 months. These patients mainly belong to Sinclair grade 1 & 2. 29% (n=46) patients of FPHL presented between 1-5 years. Remaining 7% (n=12) patients who were presented after 5 years were chiefly belonging to Sinclair grade 4 & 5. CDTHL mainly presented between 6-12 months, closely followed by 1-5 years.

All the patients were subjected to trichoscopy. Almost all the patients of androgenic alopecia showed hair diameter diversity; considering < 4:1 Terminal hair: Vellus hair ratio diagnostic of FPHL and >8:1 ratio diagnostic of TE. The remaining 4% patients were diagnosed as early FPHL with the help of biopsy. 63% (n=102) Patients showed peri-pilar halo. It was mainly present in patients with Sinclair grade 1 and grade 2, in which it was brown and white respectively. Other feature observed was single terminal hair or hair follicular unit and focal atrichia were observed in 6.17% (n=10) patients, who

chiefly belonged to higher grades. White dots were seen in 35% (n=57) patients. In AA, most common trichoscopic finding was exclamation mark hair (77.8 %) followed by yellow dots (55.56%), black dots and cadaverized hair (44.44%). Hair length variability and scaling were present in all the patients of trichotillomania. Other findings observed were curled hair, yellow dots and follicular haemorrhages. Scaling was the most common finding observed in 71% of all the patients. In most of the cases it was dry and perifollicular. While in patients of seborrheic dermatitis it was greasy yellow. White dots were seen in FPHL, TE and AE. Yellow dots were observed in AA & trichotillomania.

79.63% (n=129) patients have had reduced serum ferritin value, however 52% (n=84) were having low Hb levels. 2.3% (n=2) of FPHL patients had associated hypothyroidism. Similarly, 5 (62.5%) patients of MPHL and 9 (55.56%) patients of AA had associated iron deficiency. One patient had both AA and hypothyroidism. Based on reports provided by Institutional pathology laboratory, decreased hemoglobin value was found in 60% of cases, while 82% of patients showed decreased serum ferritin value. Thyroid profile was done in 35 patients who have either AA, or already diagnosed cases of thyroid disorder. Out of 35 patients 2 patients were having hyperthyroidism. Out of 9 patients of AA, 1 patient had hypothyroidism. 12 patients were already diagnosed cases of hypothyroidism and on medication. Out of those 12, 5 had abnormal profile. Out of remaining 12 patients, having history suggestive of thyroid abnormality, 2 had hypothyroidism associated with FPHL and 5 had hypothyroidism induced CDTHL. Hormonal profile was done in 37 patients who had signs of hyperandrogenism. Of these 37 patients, around 49 % (n=18) had raised testosterone level and around 9% (n=3) had raised LH and

FSH levels. 6 patients were diagnosed as having PCOS with the help of USG. These

patients were referred to obstetrics and gynecology department for further treatment.

Table 1: Age distribution

Age group	Number	Percentage (%)
<20	37	12.33%
21-30	87	29%
31-40	105	35%
41-50	45	15%
51-60	18	6%
>60	8	2.67%

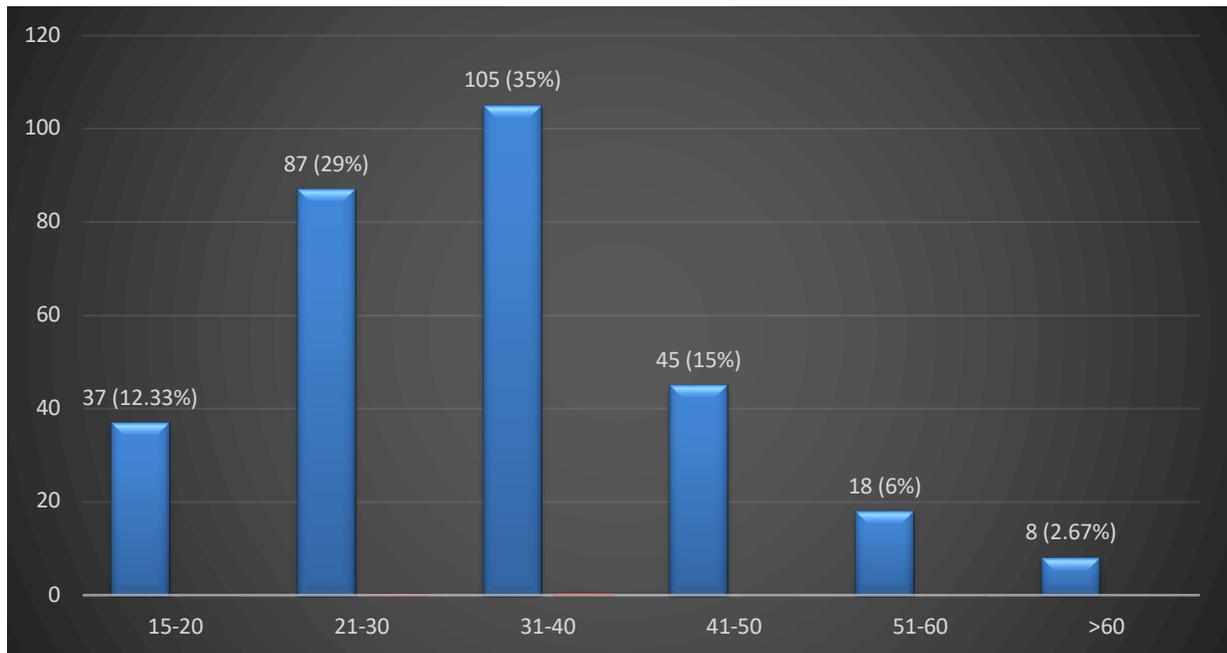


Figure 1: Age wise distribution of patients

Table 2: Socioeconomic status

Socio-economic group	Number	Percentage (%)
Higher	17	5.67%
Middle	88	29.33%
Lower	195	65%

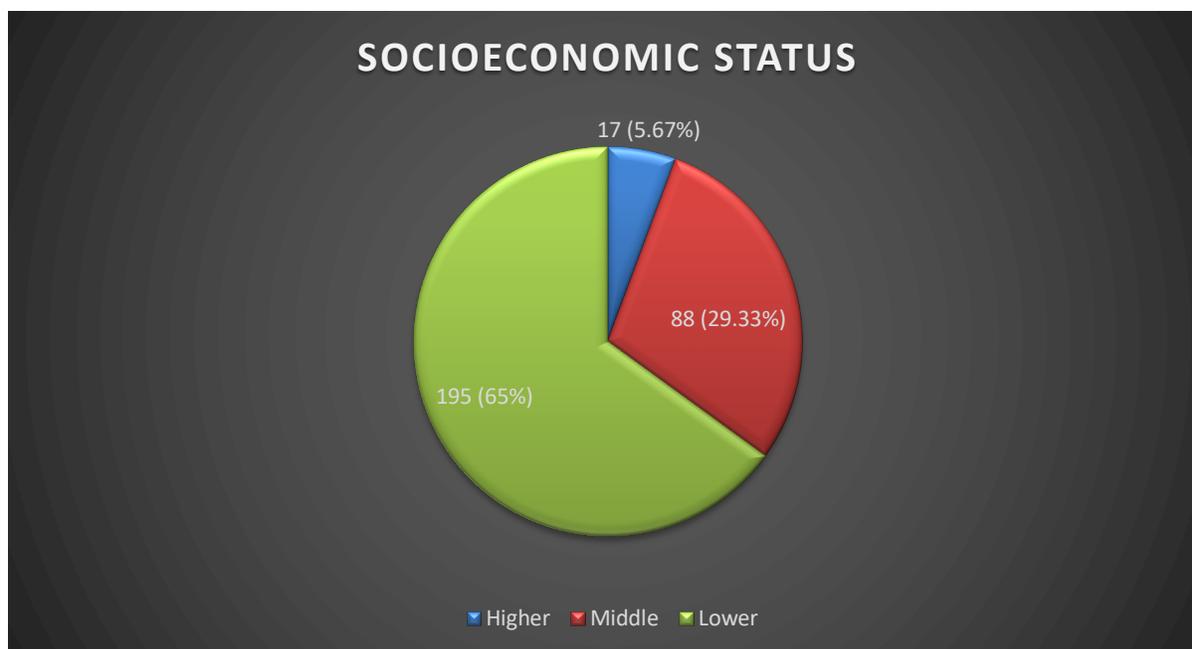


Figure 2: Socioeconomic status

Table 3: Incidences of diseases

Diagnosis	Number	Percentage (%)
Female Pattern Hair Loss	162	54%
Chronic Diffuse Telogen Hair Loss	67	22.33%
Acute Telogen Effluvium	21	7%
Seborrheic Dermatitis	14	4.67%
Chronic Telogen Effluvium	9	3%
Alopecia Areata	9	3%
Male Pattern Hair Loss	8	2.67%
Trichotillomania	7	2.33%
Anagen Effluvium	3	1%

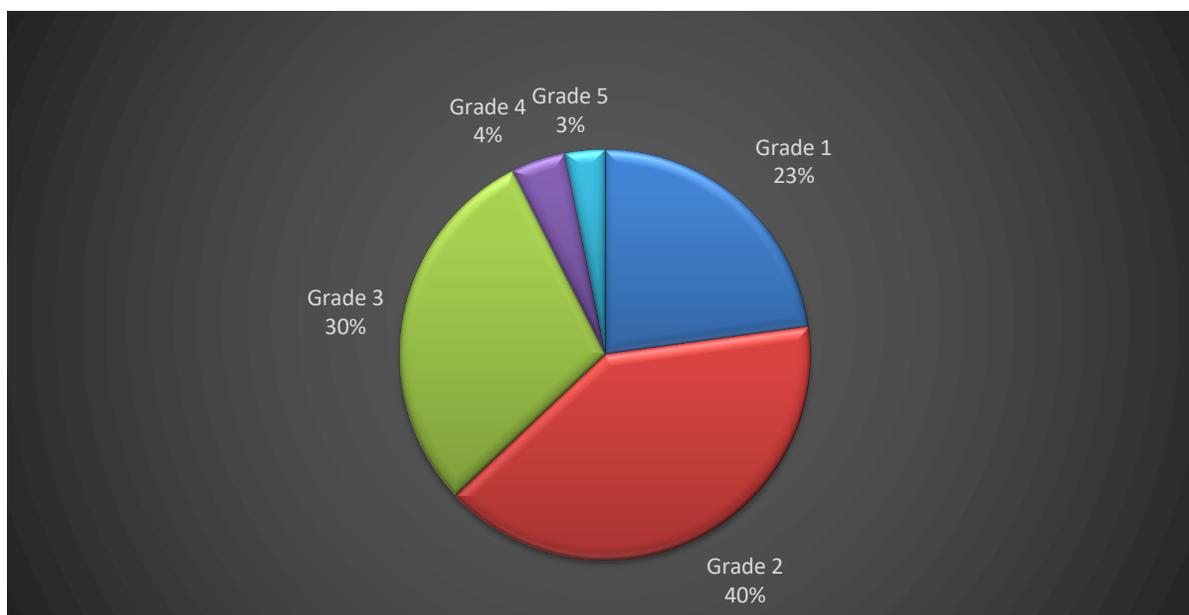
Table 4: Age distribution of various disorders

Diagnosis	<20 [No. (%)]	21-30 [No. (%)]	31-40 [No. (%)]	41-50 [No. (%)]	51-60 [No. (%)]	>60 [No. (%)]
Female Pattern Hair Loss [162(54%)]	8 (4.93%)	40 (24.69%)	61 (37.65%)	36 (22.22%)	11 (6.79%)	6 (3.70%)
Male Pattern Hair Loss [8(2.66%)]	-	1 (12.5%)	6 (75%)	-	-	1 (12.5%)
Acute Telogen Effluvium [21(7%)]	7 (33.33%)	7 (33.33%)	3 (14.29%)	2 (9.52%)	2 (9.52%)	-
Chronic Telogen Effluvium [9(3%)]	-	4 (44.44%)	5 (55.56%)	-	-	-
Chronic Diffuse Telogen Hair Loss [67(22.33%)]	14 (20.90%)	27 (40.30%)	20 (29.85%)	4 (5.97%)	2 (2.99%)	-

Alopecia Areata [9(3%)]	2 (22.22%)	2 (22.22%)	1 (11.11%)	1 (11.11%)	2 (22.22%)	1 (11.11%)
Trichotillomania [7(2.33%)]	3 (42.86%)	2 (28.57%)	1 (14.28%)	1 (14.28%)	-	-
Anagen Effluvium [3(1%)]	-	-	1 (33.33%)	1 (33.33%)	1 (33.33%)	-
Seborrhoeic dermatitis [14(4.67%)]	3 (21.43%)	4 (28.57%)	7 (50%)	-	-	-
Total 300 [(100%)]	37 (12.33%)	87 (29%)	105 (35%)	45 (15%)	18 (6%)	8 (2.67%)

Table 5: SINCLAIR scale

Sinclair scale	Number	Out of 162 (All FPHL)	Out of 300
Grade 1	37	22.84 %	12.33%
Grade 2	65	40.12 %	21.67%
Grade 3	48	29.63 %	16%
Grade 4	7	4.32 %	2.33%
Grade 5	5	3.09 %	1.67%

**Figure 3: SINCLAIR Grading****Table 6: (CDTHL) Etiological classification**

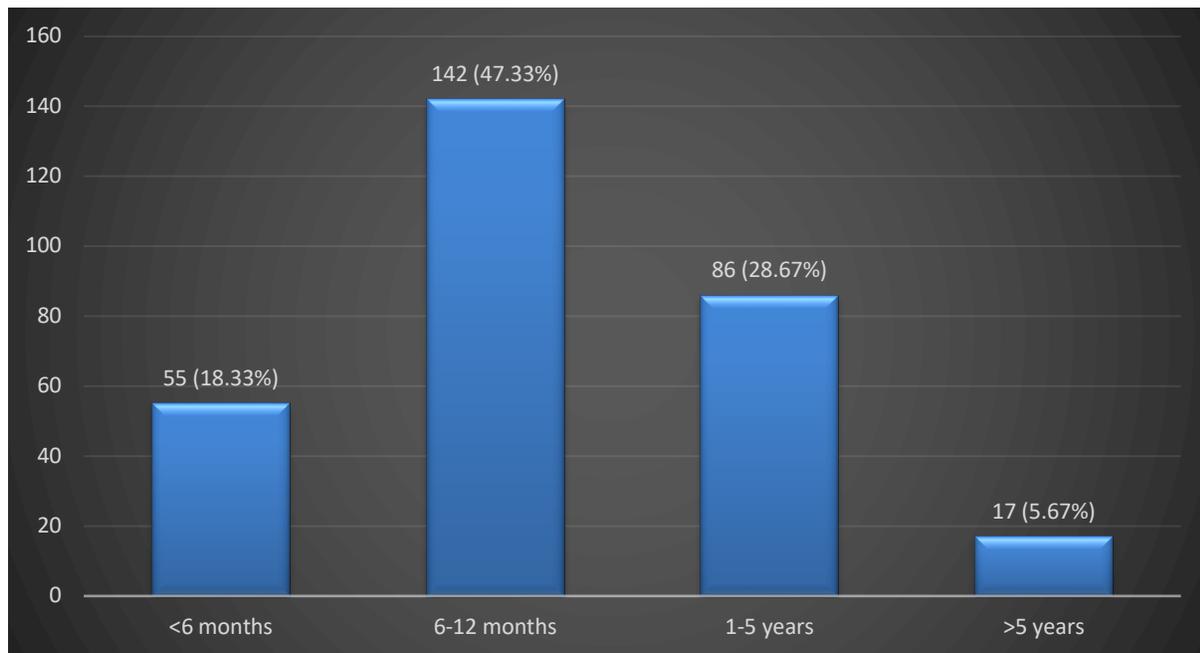
Etiology	Number	Percentage (%) (n=76)	Percentage (%) (n=300)
Primary (CTE)	9	11.84%	3%
Iron Deficiency	35	46.05%	11.67%
Hypothyroidism	17	22.37%	5.67%
Autoimmune	6	7.89%	2%
Chronic Illness	4	5.26%	1.33%
Chronic Infection	3	3.95%	1%
Hyperthyroidism	2	2.63%	0.67

Table 7: (Acute TE) Etiological classification

Etiology	Number	Percentage (%) (n=21)	Percentage (%) (n=300)
Acute Febrile Illness	8	38.10%	2.67%
Post-Partum TE	4	19.05%	1.33%
Drug Induced	3	14.29%	1%
OCP cessation	2	9.52%	0.67%
Post-operative	4	19.05%	1.33%

Table 8: Duration of symptoms

Duration	Number	Percentage (%)
<6 months	55	18.33%
6-12 months	142	47.33
1-5 years	86	28.67
>5 years	17	5.67

**Figure 4: Duration of symptoms****Table 8: Mixed etiology**

Diagnosis	Iron Deficiency	Hypothyroidism	Isolated
FPHL (162)	129 (79.63%)	2 (1.23%)	31 (19.13%)
MPHL (7)	5 (62.5%)	-	3 (37.5%)
Alopecia Areata (9)	5 (55.56%)	1 (11.11%)	3 (33.33%)

Table 9: Pattern of hair loss

Pattern	Number	Percentage (%)
Widened central parting	92	30.67%
Diffuse thinning	75	25%
Both	33	11%
Bitemporal Recession	8	2.67%
None	76	25.33%
Other	16	5.33%

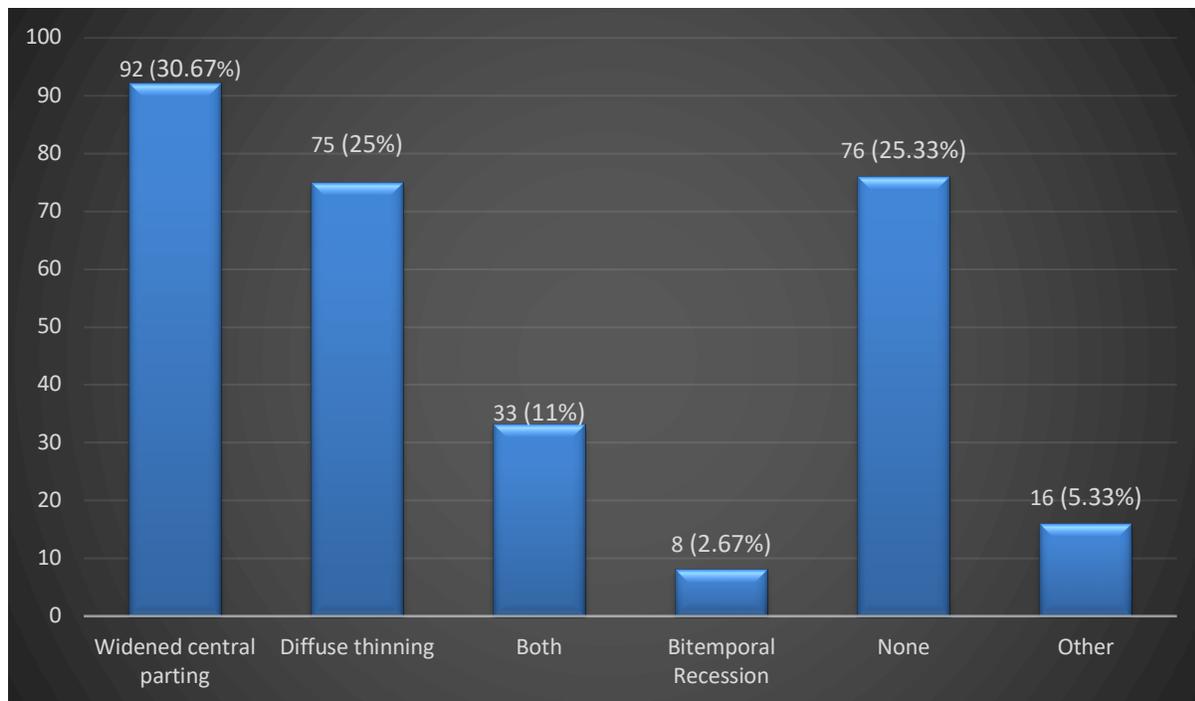


Figure 5: Pattern of hair loss

Table 10: Specific disease correlation with pattern of hair loss

Diagnosis	Diffuse Thinning	Widening of Central Parting	Both	Bi-temporal Recession	None	Other
Female Pattern Hair Loss [162(54%)]	-	92 (56.79%)	33 (20.37%)	-	37 (22.83%)	-
Male Pattern Hair Loss [8(2.66%)]	-	-	-	8 (100%)	-	-
Acute Telogen Effluvium [21(7%)]	11 (52.38%)	-	-	-	10 (47.62%)	-
Chronic Telogen Effluvium [9(3%)]	9 (100%)	-	-	-	-	-

Chronic Diffuse Telogen Hair Loss [67(22.33%)]	52 (77.61%)	-	-	-	15 (22.39%)	-
Alopecia Areata [9(3%)]	-	-	-	-	-	9 (100%)
Trichotillomania [7(2.33%)]	-	-	-	-	-	7 (100%)
Anagen Effluvium [3(1%)]	3 (100%)	-	-	-	-	-
Seborrhoeic Dermatitis [14(4.67%)]	-	-	-	-	14 (100%)	-
Total 300 [(100%)]	75 (25%)	92 (30.67%)	33 (11%)	8 (2.67%)	76 (25.33%)	16 (5.33%)

Table 11: Disease wise duration of hair loss

Diagnosis	<6 months	6-12 months	1-5 years	>5 years
Female Pattern Hair Loss [162(54%)]	19 (11.73%)	85 (52.47%)	46 (28.40%)	12 (7.40%)
Male Pattern Hair Loss [8(2.66%)]	-	5 (62.5%)	2 (25%)	1 (12.5%)
Acute Telogen Effluvium [21(7%)]	21 (100%)	-	-	-
Chronic Telogen Effluvium [9(3%)]	-	5 (55.56%)	2 (22.22%)	2 (22.22%)
Chronic Diffuse Telogen Hair Loss [67(22.33%)]	-	37 (55.22%)	29 (43.28%)	1 (1.49%)
Alopecia Areata [9(3%)]	1 (%)	1 (0.33%)	6 (2%)	1 (0.33%)
Trichotillomania [7(2.33%)]	1 (14.29%)	5 (71.43%)	1 (14.29%)	-
Anagen Effluvium [3(1%)]	3 (100%)	-	-	-
Seborrhoeic Dermatitis [14(4.67%)]	10 (71.43%)	4 (28.57%)	-	-
Total 300 [(100%)]	55 (18.33%)	142 (47.33%)	86 (28.67%)	17 (5.67%)

Table 12: Disease specific trichoscopic finding.

Total 300 [(100%)]	Seborrheic Dermatitis [14(4.67%)]	AE [3(1%)]	Trichotillomania [7(2.33%)]	AA [9(3%)]	CHTHL [67(22.33%)]	CTE [9(3%)]	ATE [21(7%)]	MPHL [8(2.66%)]	FPHL [162(54%)]	Trichoscopic Finding
161 (53.6%)	-	-	-	-	-	-	-	8 (100%)	156 (96.3%)	Anisotrichosis
102 (34%)	-	-	-	-	-	-	-	-	102 (63%)	Perifollicular halo
114 (38%)	-	3	-	-	37 (55.2%)	7 (77.8%)	-	-	57 (35.2%)	White Dots
6 (2%)	-	-	3 (42.9%)	5 (55.6%)	-	-	-	-	-	Yellow Dots
4 (1.3%)	-	-	-	7 (77.8%)	-	-	-	-	-	Exclamation mark hair
7 (2.3%)	-	-	7 (100%)	-	-	-	-	-	-	Hair length variability
5 (1.7%)	-	-	5 (71.4%)	-	-	-	-	-	-	Curled hair
212 (70.7%)	14 (100%)	-	7 (100%)	-	43 (64.2%)	4 (44.4%)	7 (33.3%)	3 (37.5%)	98 (60.5%)	Scali-ng
	-	-	Follicular hemorrhages 3 (42.9%)	Black dot & Cadaverized hair 4 (44.4%)	-	-	-	-	Focal Atrichia 10	Others

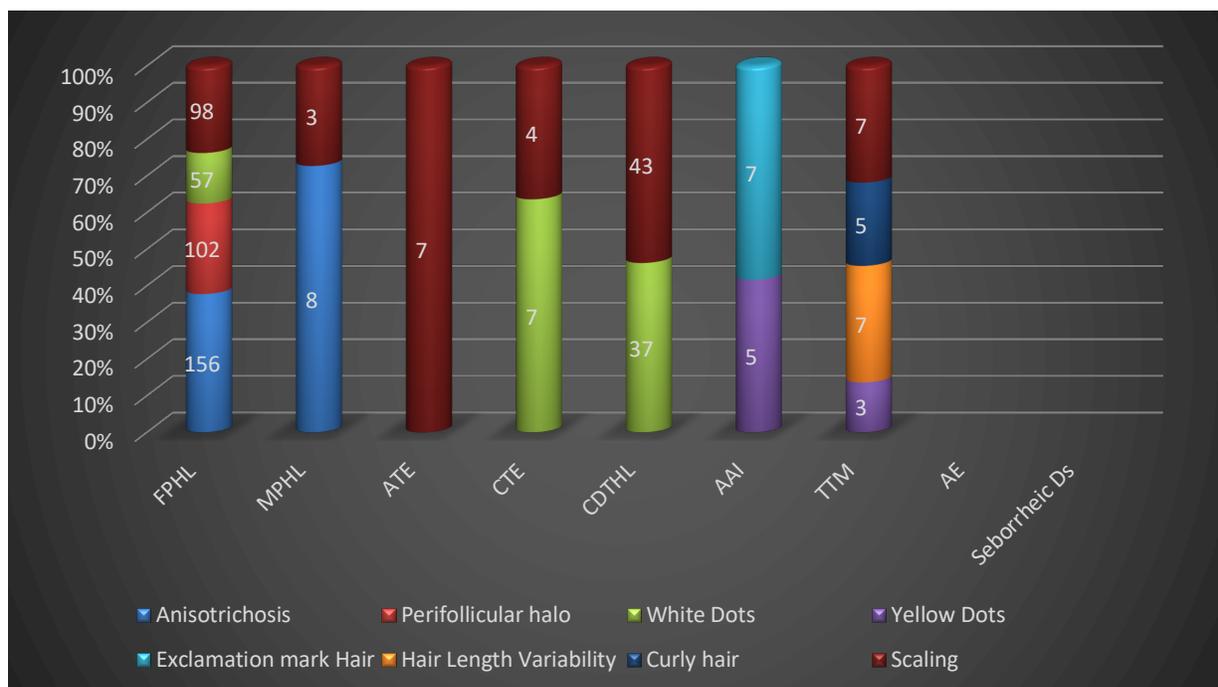


Figure 6: Disease specific trichoscopic findings

Table 13: Hemogram finding & serum ferritin values

Value	Hb	Serum Ferritin
Normal	119 (39.67%)	53 (17.67%)
Decreased	181 (60.33%)	247 (82.33%)
Total	300	300

Table 14: Thyroid profile

Value	S Free T3	S Free T4	S TSH
Normal	23 (65.71%)	23 (65.71%)	23 (65.71%)
Decreased	10 (28.57%)	10 (28.57%)	2 (5.71%)
Increased	2 (5.71%)	2 (5.71%)	10 (28.57%)
Total	35	35	35

Table 15: Hormonal profile

Investigation	S Testosterone	S DHEAS	LH	FSH	USG
Patients	18	5	3	3	6

Discussion

Hair is defining characteristic of mammals. Animals need hairs for their survival but with the evolution, humans are left with vestigial hairs on the scalp, axilla, beard and perineal areas.[5] Hair loss in women is an increasing problem. It affects over 25% of the women in

developing countries. The condition is distressing and has a great psychological impact on the quality of life. Scalp hairs have greater cosmetic importance especially in females which may be the reason that loss of

hair is associated with worsening of Dermatology Life Quality Index (DLQI).

FPHL has emerged as the preferred term for androgenetic alopecia in females owing to the uncertain relationship between androgens and this entity. It is a patterned, progressive and ~~until recently considered largely~~ irreversible loss of ~~an~~ excessive amount of hair from the scalp. Androgenetic alopecia (AGA) is the most common form of hair loss, affecting up to 50% of women ~~the course of their lives~~ in their entire lifespan.[6] It is characterized by reduction in hair density over the crown and frontal scalp with retention of the frontal hairline.[7] In 1977, Ludwig clearly described the distinctive features of FPHL and classified it into 3 grades ~~of~~ according to its severity, referred to as Ludwig grades 1, 2, and 3. [8] ~~The~~ Its prevalence increases with age from approximately 12% amongst women aged between 20 and 29 years to over 50% of women over the age of 80. AGA results from a progressive miniaturization in the size of terminal follicles with each successive cycle and ~~their eventual conversion to~~ ultimately gets converted to vellus hair follicle.[9] There is a reduction in follicle size, its depth and hair shaft diameter. ~~With time, almost all terminal hairs develop into vellus hairs.~~ Along with a miniaturization of the hair follicles, an increase in telogen hairs with a decrease in anagen leads to decreased anagen: telogen ratio. The duration of anagen phase decrease with each successive cycle whereas the duration of telogen phase remains constant or is prolonged. This prolongation of telogen occurs in the latent phase of AGA. This increases the proportion of empty hair follicles on the scalp and increases balding. Terminal hair follicles have a shaft diameter of greater than 0.06 mm, whereas vellus-like follicles are defined as hairs with a hair shaft diameter of 0.03 mm or lesser and are thinner than the hair's inner root sheath. Hair thinning is limited to

androgen dependent scalp regions and results from the effect of the testosterone metabolite dihydrotestosterone (DHT) on androgen sensitive hair follicles. The response of hair to androgen is site specific. In premenopausal women, AGA can be a sign of hyperandrogenism, together with hirsutism and acne. Female AGA frequently occurs in the absence of biochemical and/or clinical evidence of androgen excess.

The term telogen effluvium was coined by Kligman [10] to describe an excessive loss of hair that occurs under the influence of a variety of factors. Telogen effluvium is an abnormality of hair cycling which results in excessive loss of telogen hairs. Hedington has described five functional types of telogen effluvium based on different phases of the follicular cycle. [11] Three of these types are related to events in anagen and two are related to telogen.

These are: Immediate anagen release, delayed anagen release, short anagen syndrome, immediate telogen release and delayed telogen release. Iron deficiency could be an accidental finding as the study was conducted in a public hospital, where generally patients from lower as well as middle strata come, but could also indirectly reflect an underlying nutritional deficiency and a higher rate of acute and chronic illnesses in such populations. Furthermore, hairs are rapidly proliferating organ with requirement of rich blood supply. Multiple micronutrients are necessary for the hair growth. Iron is one of the key micronutrients required for various purpose in the body and also one of the most widely cited nutritional causes of hair loss worldwide.[12] In this study from the 162 total patients of FPHL 80 % (n=129) patients were having iron deficiency which signifies the impact of iron deficiency in FPHL.

Though iron deficiency was found in almost all the disorders in the study; FPHL, TE, AA,

CDTHL and others. The low iron level might be due to lower socio-economic class and/or menstruating age group. Iron deficiency is a frequent cause of patterned alopecia, although there is no sufficient evidence to recommend universal screening for iron deficiency in such cases.[13] In developing countries prevalence of iron deficiency is one of the commonly encountered deficiencies. Even after chronic diffuse hair loss is one of the common problems in clinical practice, only limited number of studies were done to evaluate the possible aetiology.

Apart from the patterned alopecia in case of chronic telogen hair loss, thyroid disorders, chronic starvation, acquired zinc and other micronutrient deficiencies play a significant role.[14] Alopecia appears to be a significant sign in the course of connective tissue diseases especially in SLE. Non scarring alopecia observed by the clinician is one of the diagnostic criteria included in ACR/EULAR criteria for SLE. Non-scarring alopecia is included among LE-nonspecific skin disorders in the modified Gilliam classification of LE-related skin lesions and seems to be very frequently encountered in SLE patients, especially during the active phases of the disease.[15] Not only the diagnostic, alopecia plays a role as an indicator of the disease activity in CTDs. SLE patients with late onset after age of 50 years have showed lower prevalence of alopecia than the earlier onset. Due to lack of any life-threatening consequence complains of the diffuse hair fall this complains often gets less attention in government hospitals. With the use of trichoscopy it would be easy to enlighten possible causes and etiological factors.

Conclusion

Alopecia is a benign condition, but it causes substantial psychological damage. It reduces the quality of life due to severe emotional suffering, and leads to personal, social and

work-related problems.[16] Cash et al [1993] suggested that women place a greater emphasis than men on physical appearance and outward attractiveness.[17]

Subtle loss in women may have a much greater problem than the overt loss in men.[18] Women are more likely than men to have a lowered quality of life and to restrict social contacts as a result of hair loss. They also suffer lower self-esteem, poorer quality of life and improper body image, all of which may be avoidable with some simple measures.

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