ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service

Available Online at: www.ijdsir.com

Volume – 7, Issue – 1, February – 2024, Page No. : 25 - 29

Telogen effluvium- etiological factors responsible- retrospective investigational study in Tata main hospital, Jamshedpur

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Citation of this Article: Kiran Kumre, Binod Kumar, Moni Singh, "Telogen effluvium- etiological factors responsible- retrospective investigational study in Tata main hospital, Jamshedpur", IJDSIR- February – 2024, Volume –7, Issue - 1, P. No. 25 – 29.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

One of the most frequent causes of diffuse nonscarring hair loss is telogen effluvium (TE). It causes the patient a great deal of anxiety in its acute form, which can be greatly reduced with a certain diagnosis. However, the hair loss may go unnoticed for a long time in its more chronic form.TE has been linked to a lot of issues, however there isn't enough concrete proof to support these claims. It's important to comprehend the function of stress in both the cause and effect of hair loss. We carried out a study to identify various causes of telogen effluvium.

Keywords: Telogen, Miniaturization, Acrodermatitis Enteropathica, Exogen.

Introduction

Hair loss or alopecia is a very common complaint. Alopecia can be divided into disorders where either hair growth cycle is abnormal or the hair follicle is damaged.This article reviews telogen effluvium (TE), one of the most common cause of alopecia, with regards to blood parameters which are seen commonly deranged. The term TE was first coined by Kligman to describe increased shedding of normal club hairs, with the hypothesis that irrespective of the cause, the follicle tends to behave in a similar fashion by undergoing a premature termination of anagen, precipitating telogen[1]. It is an abnormality of hair cycling[2] occurring as a reaction pattern to various physical or mental stressors[3]. The degree of effluvium depends on the severity and duration of exposure, rather than on the type of agent. Unexplained individual variations in susceptibility could also be responsible. TE is caused by any disruption of hair cycle resulting in increased, synchronized telogen shedding.

Material and Methods

We conducted a retrospective investigational study in our Tata Main Hospital, Jamshedpur including ninety – six patients suffering from telogen effluvium in whom blood parameters- Complete Blood Count, S. ferritin, S. Iron, TSH, Vitamin B12, Vitamin D were assessed in the

beginning on patients' first visit. The patients visited skin Opdon monthly basis for 6 monthsand were under follow up.

Inclusion criteria-

Male and female of age group between 15-50 yrs

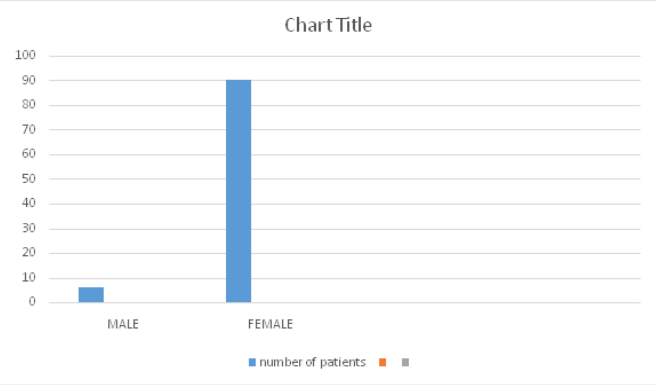
Exclusion criteria

Children and elderly patients

Consent was taken from all patients and ensured that their privacy will be maintained.

	96
Male	6
Female	90

Table 1



Graph 1

Brief history was taken from the patients regarding triggering factors of telogen effluvium and counselled about "do's and don't's". Patients' reports were then assessed and according to blood parameters derangements medicines were prescribed in consultation with General Physician.

Pictures of patients

Figure 1: Before

Figure 2: After

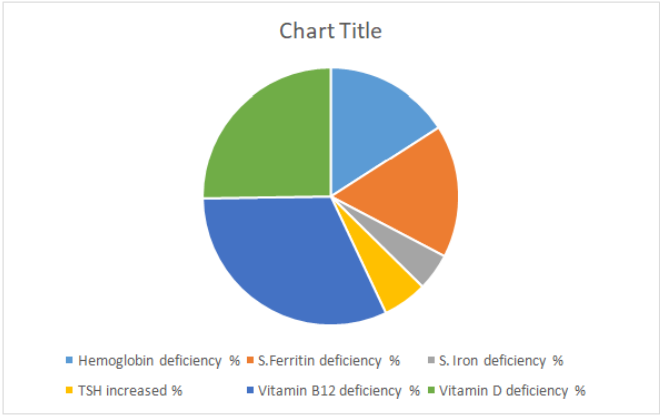
Figure 3: Before

Figure 4: After

Results and observations

Deficiency found	No. of patients	Percentage (%)
Haemoglobin	17	17.7%
S.ferritin	18	18.7%
S.iron	5	5.2%
TSH	6	6.25%
Vitamin D	27	28.1 %
Vitamin B12	34	35.4 %
Normal	30	62.5%

Table 2



Graph 1

All the patients were treated according to their deficiency spectrum. Patients who were having normal reports were prescribed multivitamins for 6 months. All patients were councelled about trigerring factors of telogen factors for eg. They were asked not to take tension, stress, follow healthy daily routine, take adequate nourished diet, atleast 6hrs sleep, and sleep early at night.

The patients who were suffering from haemoglobin/ iron/ ferritin deficiency were prescribed iron supplements for 6 months. The patients in whom TSH was raised were started anti-thyroid medicines. Those suffering from vitamin D deficiency were given vitamin D supplements for 3 months while those suffering from vitamin B12 were deficiency were prescribed Vitamin B12 supplements for 6 months.

All the patients showed improvement in hair fall within 1-2 months of starting the medicines and they are under follow-up.This restored their confidence and satisfaction.

Discussion

Patients visiting with complaints of generalised hair fall (telogen effluvium) were not getting optimum benefits with multivitamins alone. So we conducted retrospective investigational study in our hospital to elicit the triggering factors related to blood parameters. We found out, maximum patients suffer from Vitamin B12, Vitamin D, S.Ferritin, Hemoglobin, thyroid disorders and S. Iron deficiency in decreasing order. After treating the underlying deficiency, patients got optimum benefits. The normal hair follicle activity is cyclical, consisting of anagen (hair growth phase); catagen (involution phase); telogen (dormant phase); and exogen (release phase occurring in late telogen or early anagen)[4]. A telogen hair remains in its follicle for up to 4-6 weeks after the onset of anagen. This cycle results in the replacement of every hair on the scalp every 3-5 years, with individual follicles undergoing 10-30 such cycles in a lifetime[5].While follicles undergo individual cyclical activity, the entire follicular population on the scalp, simultaneously undergoes another cyclical activity, which may be synchronous (all neighbouring hair grow and are shed together within an anatomical region) or asynchronous. In humans, synchronous hair growth disappears in childhood. An average normal scalp has 100,000 hairs, with approximately 86% being in anagen, 1% in catagen, and 13% in telogen. With TE, the ratio shifts to 70% anagen and 30% telogen, with daily shedding of up to 300 hairs. A seasonal increase in TE is a frequent complaint. Patients generally present with complaints of increased hair loss while washing or brushing [6]. Pertinent questions about the onset and possible triggering events may be fruitful.ATE usually remits within few months in 95% of cases. A full recovery may also be compromised in senile women due to the concurrence of AGA and aging of follicles[7]. CTE is a primary, idiopathic condition affecting middle-aged women, which needs to be differentiated from chronic diffuse telogen hair loss (CDTHL) secondary to organic causes and AGA. It presents as TE lasting more than 6 months, without any widening of central part or follicular miniaturization. Clinical features include an insidious onset and a fluctuating course lasting for several years. It typically affects middle-aged women who are grossly disturbed due to an overall decrease in their hair length as well as volume [8]. However, on examination, the hair appears normal in thickness, with shorter regrowing hairs in the frontal and bitemporal areas. CTE may have a favorable prognosis despite ongoing hair fall with only a minimal reduction in average long-term hair volume [10]. The condition could spontaneously resolve after a decade or so[9].Chronic diffuse telogen hair loss(CDTHL) refers to telogen hair shedding, longer than 6 months, secondary to a variety of organic causes. Prominent ones include thyroid disorders, profound iron deficiency anemia (IDA), Acrodermatitis enteropathica, and malnutrition. CDTHL seen in thyroid disorders is generally reversible when euthyroid state is restored, except in long-standing hypothyroidism where hair follicles may have atrophied. Profound IDA (one of the most common nutritional deficiency worldwide) can cause CDTHL as telogen follicles fail to reenter anagen. This can generally be corrected by iron replacement.

Conclusion

All the patients visiting Dermatology with complaints of diffuse hair fall should undergo blood investigations also (foreg. Complete blood count, S.ferritin, S. iron, TSH, Vitamin B12, Vitamin D) and councelled regarding triggering factors so that treatment can be done effectively.

Declaration of patient and consent

The authors certify that they have obtained all appropriate patient consent form. In the form, the patients have given their consent for the images and other clinical information to be reported in the journal. They understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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