WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Management of Diffuse Hair Loss (Intithar Al-Sha'r) in the Unani System of Medicine: A Review

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ABSTRACT

Hair fall is a prevalent dermatological concern affecting approximately 1.7% of the global population with significant psychological distress and impact on quality of life. Telogen effluvium (TE) is a common cause of hair loss, classified into acute and chronic types. The pathogenesis of TE involves disruption in the hair cycle due to various factors, including stress, nutritional deficiencies, hormonal changes, systemic illnesses and drug-induced effects.Unani medicine describes hair loss as Intithār al-Sha'r, attributing it to factors like inadequate nutrition and changes in skin pores. Classical Unani scholars, such as Ibn Sīnā and Razi, identified causes related to deficient Bukhārāt-i-dukhānīyya (vapors necessary for hair formation) and pore abnormalities. Management strategies focus on patient education, eliminating triggers, and promoting hair regrowth by regulating the hair cycle. Unani system of medicine emphasizes on holistic approach for management of hair fall.It focuses on application of medicated oils and herbal liniment on the scalp along with certain life style modifications and dietary management.

Key words:- Telogen effluvium, Androgenetic alopecia, Alopecia areata, Hair cycle, Minoxidil, Hair loss.

INTRODUCTION

Hair fall is one of the common cosmetic problem, affecting approximately 1.7% of the population all over the world.[1] It is usually associated with many psychological disorders, distress, and depression. These conditions have detrimental effects on quality of life.[2] There are three different kinds of hair loss: telogen effluvium (11.3%), alopecia areata (18.2%), and androgenetic alopecia (37.7%) universally. [3] The prevalence of Telogen effluvium is (40.70%), alopecia areata is (12.81%), female pattern hair loss is (22.09%), and male pattern hair loss is (7.49%) in India.[4]

TYPES OF TELOGEN EFFLUVIUM

Acute telogen effluvium is characterized by hair loss that lasts less than six months. Usually, two to three months following the trigger exposure, hair loss happens.[6] Remission of acute telogen effluvium typically occurs in approximately 95% of patients. When individuals with resolved effluvium are examined, their scalp appear to possess shorter, regrowing frontal hair[5,7] while chronic telogen effluvium is a disorder that lasts longer than six months. The illness has a prolonged, fluctuating course and primarily affects middle-aged women.On inspection, the scalp exhibits normal-thickness hair with indications of shorter regrowth in the bitemporal and frontal regions..[5] In the Unani system of medicine Hair loss or hair fall is categorized as Intithār al-Sha'r. "Intithār" is an Arabic term that means "leaf falling from a tree. The sha'r is also an arabic word which means hair.[11,12]

To understand the pathogenesis of *Intithār al-Sha'r,* first it is important to understand the physiology of *Sha'r.*

Formation of *Sha'r*

The Bukhārāt-i- dukhānīyya separate from *akhlāt* (humors) due to Effect of *badani harārat* (heat), and reach such pores of the body which are balanced in width and narrowness and here they are deposited. Then in pores, some part of ajzā māiyya dissolve due to personal heat of Bukhārāt-i-dukhānīyya & body heat, whereas some part of ajzā māiyya remain unaffected and stick together with other ajza of Bukhārāt-i- dukhānīyya.

Bukhārāt-i- dukhānīyya clogged in skin pores according to their structure & capacity. Frequent supply of *bukhārāt-i-dukhānīyya* from the *akhlāt*, results in the formation of hair.[13]

Pathogenesis

Multiple factors might induce a disruption in the normal hair cycle, which leads to telogen effluvium.

Normal Hair Cycle

The life cycle of a hair follicle is divided into three stages: anagen (growth), catagen (involuting), and telogen (resting).

The anagen phase, comprising 90% of scalp hair, can extend for two to five years.

The catagen phase, which lasts three to six weeks, is substantially shorter. The hair follicles undergo a process known as apoptosis, or programmed cell death, during this stage.[8,9].

The telogen phase lasts for about 3-5 months, and 10% of the scalp hair are in this phase. The hair shaft develops into a club hair during this stage, which is ultimately removed from the follicle. An increase in the proportion of scalp follicles in the telogen phase causes significant hair loss. [8,9]

Mechanism of Shedding

The following five mechanisms have been implied as potential evidence for hair loss in telogen effluvium:

1. Immediate anagen release: There is an underlying cause for it. Follicles prematurely transit from the anagen phase to the telogen phase, which causes more profound shedding seen 2-3 months post pathological condition like **high feve**r. [6]

2. Delayed anagen release: Observed in a postpartum state. Because of the **oestrogen hormone, pregnancy** causes hair to remain in a longer anagen phase, giving the appearance of a full head of hair. However, following childbirth, reduced oestrogen levels induce hair loss by transitioning anagen hair into the telogen phase.[10,11]

3. Short anagen syndrome: The cause of the chronic telogen hair loss is an **idiopathic** reduction of the anagen phase. The bulk of chronic telogen effluvium cases have this underlying mechanism.[10.11]

4. Immediate telogen release: Immediate telogen release generally occurs with drug-induced shortening of telogen leading to follicles re-entering anagen prematurely. Hence, a massive release of club hairs occurs as is seen when starting therapy with minoxidil.[10,11]

5. Delayed telogen release: Prolonged telogen and a delayed transition to anagen are characteristics of delayed telogen release. Animals with synchronized hair cycles experience it, but humans may experience seasonal hair loss as a result of it.[6]

Pathogenesis of *Intithār al-Sha'r,* according to Unani system of medicine [14-20]

According to ***Hakim Kabiruddin, Hakim Kabeer Azrani, Abu Bakr Muhammed bin Zakriya Razi*** hair fall occurs due to of *Rutubate munasib*a (adequate moisture), broadness or narrowness of pores.

1. *Nuks-e-tagdhiya* (nutritional Deficiency)

Deficiency of such *Ghidha* or rutubat which is responsible for hair formation as seen in sual qiniya, sil wa diq (TB, Phthisis), in this condition patient appears thin and dry.

2. Tkhalkhul-jild

Mutkhalkhul-jild causes abnormal dilatation of *masamaat* (pores), resulting in poor stagnation of *bukhārāt-I-dukhānīyya* in the pores, which makes hair thin and fragile.

3. *Khuskhi wa kasafat-e-jild* (Dryness and compactness of the skin)

Leads to constriction of pores resulting in poor gathering of *Bukhārāt-i- dukhānīyya* which makes hair curly, coarse and dark that can be plucked easily.

Whereas according to ***Ibn Sīnā*** and ***Ismail Jurjānī***, *Intithār al-Sha'r* happens due to two reason, primarily due to defect in ***mādda,*** which is further associated with three conditions viz are:[32,33]

1. Low production of *Bukhārāt-i- dukhānīyya* seen in female & children.
2. Temporally poor production of *Bukhārāt-i- dukhānīyya* due to medical illness.
3. Nutrients separate from *mādda* which is required for hair formation.

Secondarily due to a defect in ***masamaat* (pores)**, which is responsible for hair formation.

1. Abnormal pore dilatation, which disrupts the *mādda* stasis.

2. Pore narrowing, that restricts *mādda* penetration.
3. Degradation of *mādda* in the skin pores of the scalp.

Etiopathogenesis of telogen effluvium according to contemporary literature

The regular cycle of hair can be disturbed by a number of events.

Drugs

A number of drugs may lead to telogen hair loss, which typically begins 12 weeks following the last treatment [6,12]. Additionally, excessive shedding may result from changes in medication dosage [21]. Therapies such as oral contraceptives, androgens, retinoids, beta-blockers, ACE (angiotensin-converting enzyme) inhibitors, anti-convulsants, antidepressants, and anticoagulants (heparin) may result in telogen effluvium [21].

Physiological Stress

Telogen effluvium can be brought on by increased physical stressors such as hemorrhage, high temperature, persistent systemic disease, and surgical trauma [22]. Excessive hair may enter the telogen phase after childbirth. Telogen gravidarum starting about three months post childbirth [22].

Medical Conditions

Telogen effluvium may occur from a number of medical conditions. Telogen effluvium can result from either hyperthyroidism or hypothyroidism, and it is reversible once euthyroid stage is attained [23]. Telogen effluvium can also be caused by long-term systemic conditions such as systemic amyloidosis, hepatic failure, chronic renal failure, inflammatory bowel disease, and lymphoproliferative diseases [22]. Additionally, it has been linked to chronic infections, including HIV, secondary syphilis, and a few autoimmune illnesses like dermatomyositis. Diffuse telogen hair loss can also result from inflammatory conditions like psoriasis and seborrheic dermatitis [21].

Dietary Factors

Telogen effluvium may result from severe protein, fatty acid, and zinc deficiencies, as well as from prolonged starvation and calorie restriction [21]. Telogen effluvium, which is caused by an essential fatty acid shortage, often manifests two to four months following inadequate consumption [11, 24]. It can be caused by decreased bodily iron storage. However, there is a lot of controversy in this relationship [24]. A vitamin D deficiencies may possibly be the cause of it, considering it is essential for cell proliferation."Biotin insufficiency is another possible reason; however, it is said to occur rarely [20, 25].

Diagnosis

Diagnosis of hair fall Intithār al-Sha‘r is based primarily on the patient's medical history, clinical examination, and a few fundamental investigations. Consequently, there are three possible ways to examine the scalp and hair.

1. General assessment

On examination, the scalp appears normal, showing no signs of inflammation or central portion widening. In certain situations, bitemporal recession may be observed [11,21,26].

2. Hair Pull test

In this test shampoo should be avoided for at least 24 hours. Then we grasp a bundle of approximately 50- 60 hairs near the scalp and tugged them with pull from root to tip. Revised in all four quadrants of the scalp and bitemporal areas.

Negative test:-Less than 10% or 5-6 hairs are pulled out are indicates normal shedding.

Positive test:- If more than 10% or 6 of grasped hairs are pulled out; its considered Positive test [27].

3. Trichogram /Hair pluck test

Performed 5 days after shampooing, a quick pull of 50-100 hairs through a clamp or needle holder, in the direction of hair.The extracted hairs are examined under the microscope to look proximal hair bulbs for determination of anagen /telogen ratio [28].

Normal Scalp:- About 86% of plucked hairs are anagen, 1% catagen and 13% Telogen [29].

Acute Telogen Effluvium:- Usually shows more than 25% telogen hairs[22].

4. Trichoscopy

It is a non invasive technique that uses a digital dermatoscope to examine the scalp and hair. Follicular units with 2-4 terminal hair and 1 or 2 vellus hair of uniform thickness and color are present in a healthy scalp. Trichoscopy is an exclusion diagnosis in telogen effluvium. It demonstrates empty hair follicles, absence of peripilar halo and hair shaft variation, with presence of regrowing hair [26,30].

5. Phototrichogram (PTG)

This is a non invasive technique used to evaluates hair density, shedding rate, and growth rate.It is easier to use, more accurate, and reproducible. In this procedure a small area of scalp approximately 2 centimeter square is selected and all hair are trimmed 1 millimeter from skin surface.The process is repeated over time, allowing for comparison of hair growth and shedding.The photographs are taken to determine and analyze the percentage of hairs in anagen phase as well as hair density [5,31,32].

6. Scalp Biopsy

This technique is used to differentiate chronic TE from female pattern hair loss and diffuse alopecia areata. In this procedure the area to be biopsied is typically numbed with local anesthetic drug and small piece of skin including hair follicle is removed using a punch biopsy technique. This test mainly assesses the terminal and vellus count and anagen: telogen ratio. In chronic TE, there is increased telogen hair as compared to anagen hair with an anagen: telogen ratio of 8:1 compared to 14:1 on normal scalp biopsy [11,21,26].

7. Laboratory test

To rule out an underlying cause, a comprehensive blood count including red blood cell count, iron studies, thyroid function test, syphilis serology, serum zinc and antinuclear antibody should be performed [10,11,20,25].

Management

Educating the patient that provides details about the natural history and progression of the disease is the most significant management. It is crucial to discuss the typical hair cycle and the correlation between hair loss onset and triggers. It is possible to reassure the patient that going bald is unlikely to happen. After the trigger has been eliminated, regrowth might be observed three to six months later [10,11,21]. There is not a specific treatment for it. To minimize hair shaft shedding, however, a variety of potential therapeutic approaches might be employed, depending on the pathophysiology.

- Suppressing catagen phase
- Promoting anagen phase
- Inhibiting exogen phase

Currently, neither anagen inducers nor catagen inhibitors have FDA approval.It is recommended to avoid catagen-inducing medicines such as beta-blockers, retinoids, anticoagulants, and anti thyroid treatments, and to treat catagen-inducing endocrine disorders such as thyroid dysfunction, hyper-androgenism, and hyperprolactinemia simultaneously. Additionally, replacement treatment can be used to alleviate deficiencies that promote catagen, such as those in proteins, iron, zinc, or estrogen. When iron deficiency anemia occurs, iron supplements should be taken for three to six months until iron stores are restored [5].

Besides, there have been reports of other novel cosmetic therapies for hair thinning, including CNPDA (Caffeine, Niacinamide, Panthenol, Dimethicone, and Acrylate Polymer) and Stemoxydine. The most successful treatment is CNPDA, which raises the cross-sectional area of each terminal hair by 10%. However, efficacies are still unknown [26, 33].

Usūle Ilāj (line of treatment)

The Usūle ‘Ilaj wa ‘Ilaj has been diligently documented by Unani scholars in their classical literature. In treating Intithār al-Sha‘r, Unani physicians use a comprehensive approach that includes risk factor modification. ‘Ilāj b’il Ghiza wa Tadbīr (diet and regimen therapy), ‘Ilāj bi’l Dawa (pharmacotherapy), by use of advia with particular qualities of *Muqawwī Dimāgh, Quwwat Qābiḍa, Quwwat Jādhibā, Latīf harārat, Muqawwī wa Muṣawwīd Sha‘r, Munbit-i-Sha‘r* and *Tawīl-al-Sha‘r.*

I. Ilāj bil-Dawa [14-20,34]

There are various herbs used in Unani medicine that are validated to have beneficial properties for hair health.. *Amla* (Emblica officinalis), *Brahmi* (Bacopa monnieri), *Bhringraj* (Eplita alba), *Jatamansi* (Nardostachys jatamansi), and *Neem* (Azadirachta indica), *Maghz badam* (Prunus Amgdalus), *Maghz tukhm Kaddu* (Cucurbita Moschata Duch), *Maghz tukhm-e-Khyarain* (Cucumis Sativa), *Suboos gandum* (Wheat), *Tukhme khashkash* (Papaver Somniferum), *Dana ilaichi khurad* (Elettaria Cardammum) and *Mishri* (Rock Sugar) are a few of them. The nourishing, revitalising, and anti-inflammatory properties of these herbs strengthen hair follicles, promote hair growth, and improve scalp health.

Oral - *Muqawwī Dimāgh* (Tonic) drugs like *Itrifal Ustukhudoos, Itrifal Saghir, Itrifal Muqawwī Dimāgh* should be used.

II.Ilāj bil-Tadbīr [14-20,34]

***Dalk* (Massage):** *Roghane Banafsha (Viola Pilosa Blum), Roghane Nilofer (Nymphaea Alba Linn), Roghane Babuna (Anthemis Nobilis), Roghan-e-Badam (Almond oil), Roghan-e-Zaitoon (Olive oil)* and *Roghan-e-Gul (Rose oil) and Roghan-e-Zarareeh.* should be used to massage the scalp.

Tila: *Hulba* (Trigonella Foenum-Graecum), *Mazu* (Quercus Infectoria), *Kishneez* (Coriandrum Sativum), *Sumbul-utteeb* (Nardostachys Jatamansi), *Laadin, Aqaqia* (Acacia Arabica), *Javitri* (Myristica Fragrance) and *Khabsul Hadeed* (Iron rust) are powdered together, then mixed with *Osara* to form Qurs. Use three times in every month as *tila*, in hair loss caused by Mutkhalkhul-e-jild (Abnormal dilatation of pores).

Employ the following remedies as tilā to the scalp to open the skin *masamaat (*pores), *khardal* (Brassica nigra) and Safsiya, *khardal* (Brassica nigra), *Suddab* (Ruta Graveolans), Bora (Boric Powder) and *Payaz* (Urginea Scilla).

III. Ilāj bil-Ghidha [14-20,34]

- If hair loss is caused by protein malnutrition use Latīf Jayyid al-kaymūs Ghidhā (Good Chyme Foods), such as Zardi Baiza Murgh (egg yolk) and Bhuna hua Gosht (meat).
- The use of Ma-al-Jubn,or whey cheese water, is effective for blocked skin ppores.
- Avoid hirrīf Ghidhā (spicy meals), namkeen (salty), ghalīz (greasy), and khushk (dry).
- It is advised to avoid meals that produce balgham (phlegm) in narrow skin pores and consume spices and dry foods like camel meat, goat, and fresh fish, as well as darchini (Cinnamomum zeylanicum) and siyah mirch (Piper nigrum).

Discussion

Telogen effluvium (TE) is a common type of hair fall, triggered by factors such as stress, nutritional deficiencies, medical conditions, and medications. Contemporary system of medicine explains TE through disruptions in the hair cycle, leading to premature hair shedding.Whereas the Unani system provides a holistic view of TE's etiology and management. Modern medicine emphasizes the hair growth cycle and identifies various mechanisms, that contribute to hair loss. Treatment in contemporary medicine focuses on managing triggers, correcting deficiencies, and using cosmetic or pharmacological interventions. However, there is no FDA-approved treatment specifically for telogen effluvium, which necessitates exploring alternative approaches. The Unani system of medicine classifies hair loss as Intithār al-Sha'r, drawing parallels between natural physiological processes and traditional concepts of Rutubat (moisture) and Bukhārāt-i-dukhānīyya (smoke-like vapors) responsible for hair formation. Unani scholars attribute TE to factors such as nutritional deficiencies, abnormal pore dilation, and dryness of the scalp. Treatment strategies in Unani medicine emphasize restoring balance through dietary modifications, herbal applications, and scalp massage with medicinal oils that are recommended for strengthening hair follicles and promoting regrowth. A combined approach of both systems can improve the management of TE, addressing both symptomatic relief and underlying causes.

Conclusion

This paper successfully highlights both contemporary and Unani perspectives of telogen effluvium, offering a comparative insight into the etiopathogenesis, diagnostic tools, and treatment strategies. While modern medicine provides an evidence-based framework for diagnosis and management, the Unani system brings a holistic natural approach with herbal remedies. A multidisciplinary approach integrating both systems could lead to more effective cultural significance, long standing uses, patient-friendly treatment strategies for hair loss in the future.

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