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Review Article

Concept and Management of Diffuse Hair Loss (*Intithār al-Sha'r*) in the light of Unani medicine: A Review

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Abstract

Diffuse Hair loss (DHL) is an excessive loss of hair from all over the scalp without producing any bald spots, inflammation or scarring. It is the result of disruption of one phase of the hair cycle. According to Unani system, the term used is *Intithār al-Sha'r.* Various Unani scholars like *Dioscorides*, *Ibn Māswayh*, *Zakariyyā Rāzī*, *Ali Ibn Abbas Al-Majūsī*, *Ibn Sīnā* described *Intithār al-Sha'r* in detail with its etiopathogenesis and management in their treatises. They stated that the most common cause is poor production of *bukhārāt-i-dukhānīyya,* leads to poor gathering in the *masamaat* (Skin pores), thus, producing *yābusat* in the whole body. This *yābusat* alter the normal structure of body's skin, make it extremely thin and loose. So, hair comes out easily when gently pulled, resulting in hair thinning and shedding. The purpose of this review is to highlight the concept of Diffuse Hair Loss in Unani system with its treatment as mentioned in classical Unani books.

Keywords: Diffuse Hair Loss, *Intithār al-Sha'r, bukhārāt-i-dukhānīyya,* Unani scholars,

Introduction

The most common DHL is telogen effluvium(TE). It is a condition in which the anagen phase of the hair cycle is prematurely terminated, resulting in diffuse club hair loss. It is common throughout the world, affecting both sexes, but shows women preponderance.[1,2] It can be acute TE, chronic TE or chronic diffuse telogen hair loss. Fever or medical conditions are the most prevalent triggers, as these stimuli induce hair follicles to prematurely change from anagen to telogen. Excessive hair shedding occurs approximately 3 months after the telogen phase ends. About 100-1000 per day shedding of hair is noted.[3,4] In Unani system of medicine, hair loss or hair fall is described under the heading of *Intithār al-Sha'r.*[5] The *Intithār* is an Arabic word, which has several meanings, one of them is falling of leaves from a tree, while *Sha'r* is also Arabic word used for hair.[6,7] Collectively, both words represent an appropriate term for hair fall. In modern system, there is no specific treatment for it. However, corticosteroids and innovative cosmetic therapies including Stemoxydine and CNPDA (Caffeine, niacinamide, panthenol, dimethicone, and acrylate polymer) have been reported, but their efficacies remain unestablished. So, there is a need to explore alternative therapies for its treatment.[8,9]

Epidemiology:

Due to the preclinical nature of the disease, the true incidence or prevalence of telogen effluvium is unknown. It has no racial predilection and affects both males and females, with females having a greater incidence rate, because women present more frequently with this complaint, as they tend to find hair shedding more distressful than men and thus, women seek more medical attention. [1,3,4]

Pathophysiology[3,4,8-10]

When a large number of hair follicles in the anagen phase are stimulated to stop growing prematurely, TE develops. The fraction of hair entering the catagen, followed by the telogen, rises as a result of this. Excessive hair shedding occurs about two to three months after triggering events. There are five functional changes in the hair cycle, according to Headington, that could lead to more telogen hair shedding.

a) **Immediate anagen release:** It is the most common change in the hair cycle where triggers like **high fever**

cause the follicle to prematurely shift from anagen to telogen.

b) **Delayed anagen release:** Observed in a **postpartum state**. Due to estrogen hormone, hair remains in an extended anagen phase during pregnancy and leads to a very full head of hair. However, following delivery, a low estrogen level shifts anagen hair to the telogen phase and produces hair loss.

c) **Short anagen syndrome:** It is an **idiopathic** shortening of the anagen phase that results in persistent telogen hair loss. This is the underlying mechanism for the majority of cases with chronic telogen effluvium.

d) **Immediate telogen release:** This is due to the telogen phase shortening, which causes a huge discharge of club hair mainly due to drugs like **minoxidil.**

e) **Delayed telogen release:** This is due to a prolonged telogen phase and a delayed transition to the anagen phase, which is thought to be the cause of human seasonal hair loss.

To understand the pathogenesis of *Intithār al-Sha'r,* first it is to understand the physiology of *Sha'r,* which is discussed under three headings:

a) **Composition of *Bukhārāt-i- dukhānīyya (*hair substance*):***

Sha'r comes under *A'dā ' Mufrada* according to *Abul Hasan Bin Abbas* and *Abū Suhal Masīhī.*[11] It is produced by *bukhārāt-i-dukhānīyya* of the body which is expelled towards the skin by *tabī'at. Bukhārāt-i- dukhānīyya* is an end product of the 3rd and 4th phases of food digestion (*Hadm' Udwī wa' Urūqī*).[12] It is formed up of the words *bukhār* and *dukhān. Bukhār* is made up of *ajzā mā ' iyya* and *ajzā hawāyya,* whereas, *Dukhān* is made up of *ajzā ardiyya* and *ajzā nāriyya.*[13]

b) **Formation of *Sha'r:***

Initially, the *badani harārat* isolates the *bukhārāt-i-dukhānīyya* from the *akhlāt.* then, these isolated *bukhārāt* are shifted towards the skin by *tabī'at.* In the skin pores, *ajzā mā ' iyya* of *bukhārāt-i- dukhānīyya* is affected by *badani harārat*, which causes it to escape through pores (*masamaat*) while leaving other *ajzā* unaffected. By frequent supply of *bukhārāt-i-dukhānīyya* from the *akhlāt*, the unaffected *ajzā* is driven out of the skin pores with some part remaining inside the pores, resulting in the formation of hair.[12-16] This is similar to the hair follicle and hair shaft. The purpose behind the formation of hair is to provide protection and beautification. The *mizāj* of *Sha'r* is *hārr Yābis* and is one of the factors among the ten criteria of *Ajnās-i- mizāj*.[13,16]

c) **Factors regulates the formation and growth of *Sha'r*:**[12-17]

1. It's important to have **abundance of blood** because more blood means more *dukhān*, which is the substance of hair.

2. **Blood thickening** is vital because if it thickens, the *dukhān* that forms from it will thicken as well, allowing its constituents to cling together. In contrast, if blood is thin, the components of *mā ' iyya* will be more and their components will be unable to stick together.

3. ***Mizāj* of the body should be *hārr*** because strong *harārat* will produce more *dukhān*, this is the reason why hair grows less in cold temperaments.

4. It is important to keep the body **moderate *in rutūbat wa yābusat*** because increased *rutūbat* causes scalp skin pores to constrict, whereas increased *yābusat* causes scalp skin pores to expand, disturbing normal hair production because *bukhārāt-i- dukhānīyya* cannot assemble properly and emerge from scalp skin pores as hair.

5. Skin **Pores orifice should be an average in terms of narrowing and dilatation**, because dilatation of pores causes abnormal stagnation of *bukhārāt-i- dukhānīyya*, whereas, narrowing prevents these *bukhārāt* from penetrating the pores and preventing them from emerging as hair.

In the nutshell, the *harārat* (body and *bukhārāt-i- dukhānīyya)* acts on the stored *bukhārāt* in the *masamaat* until more *bukhārāt-i- dukhānīyya* comes, pushing these *bukhārāt* from the *masamaat* as in the form of hair. This detachment and contemplation of *bukhārāt-i- dukhānīyya* in the *masamaat* is cyclic.[13,14] This cycle may disrupt due to poor production of hair *mādda* or defects in *masamaat* or *dū' fal harārat*, thus resulting in *Intithār al-Sha'r.*

According to ***Akbar Arzānī***, ***Ibn Hubal Baghdadi***, ***Ali Ibn Abbas Al- Majūsī*** and various others considered several etiological factors for *Intithār al-Sha'r.* [15,18-23]

1. Alteration in *Ghidhā* (nutrients/ *Mādda*) causes a defect in the formation of *bukhārāt-i- dukhānīyya,* the main substance of hair formation leads to loss of hair, seen in *Sū 'al-qinya, Sil wa Diq (TB and Pthiasis)*

2. *Mutkhalkhul-jild* causes abnormal dilatation of pores (*masamaat)*, results in poor stagnation of *bukhārāt-i-dukhānīyya* in the pores, which makes hair thin and fall easily.

3. Dryness and compactness of the skin (*khuskhi wa kasafat-e-jild*) lead to constriction of pores, resulting in poor gathering of *bukhārāt-i- dukhānīyya* in the pores, which makes hair curly and during plucking, hair does not come out from the skin easily.

But according to ***Ibn Sīnā*** and ***Ismail Jurjānī***, *Intithār al-Sha'r* happens due to two reason, primarily due to d**efect in *mādda,*** which is further associated with three conditions viz are[12,24]

i. Poor production of *bukhārāt-i- dukhānīyya* mainly due to medical illnesses, e.g *Sil wa Diq,*
ii. Reduced production of *bukhārāt-i- dukhānīyya* as seen in women and children

iii. *Taghayyur in bukhārāt-i- dukhānīyya,*

Secondarily due to **Defect in *Masamaat*** which is further associated with,[12,24]

i. Abnormal dilation of pores, resulting in altered *mādda* stagnation

ii. Narrowing of pores, impeding *mādda* penetration

iii. *Mādda* degradation in scalp skin pores

Poor production of *bukhārāt-i-dukhānīyya* due to medical illnesses is the most prevalent cause of *Intithār al-Sha'r,* leading to poor accumulation of *bukhārāt-i- dukhānīyya* in the *masamaat*. The medical illnesses alter the *mizāj*, by producing *yābusat* in whole body. This *yābusat* alter the normal structure of body's skin, make it extremely thin and loose. So, hair comes out easily when gently pulled, resulting in hair thinning and shedding.

Diagnosis

Diagnosis of Diffuse Hair Loss (DHL) in general and in particularly about telogen effluvium is thoroughly based on medical history, followed by clinical examination and certain basic investigations. A detailed history on the occurrence of specific triggering events are beneficial. Accordingly, the scalp and hair examination can be carried out in three different methods:[1,4,9,25]

Non-invasive Method:

General examination: On inspection, the scalp is normal with no signs of inflammation or widening of the central part. Bitemporal recession may be noticed in some cases.

Hair Pull Test: This test is used to determine hair cycle disturbances. Near the scalp, a collection of around 60 hair is gathered between the thumb and forefingers of the hand. Gentle traction is performed away from the scalp in a steady, progressive motion. A hair of less than six or 10% indicates normal shedding, indicating a negative test, but a hair of more than six or 10% indicates active hair shedding, indicating a positive test. Shampooing should be avoided for at least 24 hours before a pull test. This test is carried out on all areas of the scalp (vertex and scalp margins). In both acute and chronic TE, the test is positive from all areas of the scalp. [1,4,9,25,26]

Trichoscopy: It is the term used for dermoscopic imaging of scalp and hair. In a healthy scalp, it shows follicular units containing 2-4 terminal hair and 1 or 2 vellus hair of uniform thickness and color. In Telogen effluvium, trichoscopy is a diagnosis of exclusion. It shows empty hair follicles, absence of hair shaft variation and peripilar halo with the presence of upright regrowing hair. [9,27]

Phototrichogram: This is a simpler, more reproducible and sensitive technique than classical trichogram and is used to assess the rate of hair growth, hair density and rate of shedding. All hairs within 2 sq cm area are trimmed 1 mm from the skin surface and a baseline photograph is taken. This process of trimming and photograph is repeated, until enough pictures are available for comparison.[25,26,28]

Semi-invasive Methods:

Trichogram or Hair pluck test: This test is used for hair cycle disturbances. In this test, 40-60 hairs are plucked with rubber- armed forcep and examining them under a microscope. It provides information about the state of proximal end of hair shaft and anagen: telogen ratio. In case of telogen effluvium, there is significant decrease in the anagen: telogen ratio with about 15% to 25% are telogen hair. [9, 25,29]

Invasive Methods:

Scalp Biopsy: This technique is used to differentiate chronic TE from female pattern hair loss and diffuse alopecia areata. In this test, two 4mm punch biopsies from the vertex of the scalp are taken with vertical and horizontal sectioning. 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. [1,4,9,25,26]

Blood tests:

To rule out an underlying cause, a comprehensive blood count including red blood cell indices, iron studies, thyroid function test, syphilis serology, serum zinc and antinuclear antibody should be performed. [1,3,4, 9,25]

Treatment

The main component of management is educating the patient about the disease's natural history and course. It is necessary to discuss the normal hair cycle as well as the relationship between triggers and the onset of hair loss. The patient can be reassured that they are unlikely to go bald. Regrowth can be noted 3-6 months after the trigger has been removed.[1,3,4]

It does not have a specific treatment. But based on the pathophysiology, various possible treatment methods can be used to reduce hair shaft shedding.

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

There are currently no FDA-approved catagen inhibitors or anagen inducers in the market. Catagen-inducing medicines including beta-blockers, retinoids, anticoagulants and antithyroid therapies should be avoided while catagen-inducing endocrine diseases such thyroid dysfunction, hyperandrogenism and hyperprolactinemia should be treated concurrently. Catagen-promoting deficiencies such as iron, zinc, estrogen or proteins can also be treated with substitution therapy. In case of iron deficiency anemia, iron supplementation should be continued for 3-6 months until iron stores are replenished.[26]

Besides, many new cosmetic treatments for hair thinning like Stemoxydine and CNPDA (Caffeine, niacinamide, panthenol, dimethicone and acrylate polymer) have been reported. CNPDA is the most effective treatment, as it increases 10% cross-sectional area of individual terminal hair. Though, efficacies remain to be unestablished.[8,9]

Usoole' Ilāj* and' *Ilāj:

Usoole' Ilāj is based on removing the cause, followed by *Ta'dīl mizāj* through *tadbīr* or *Ghidhā* and use of a*dvia* with particular qualities of *Muqawwī Dimāgh*, *Quwwat Qābiḍa, Quwwat Jādhibā, Latīf harārat, Muqawwī wa Muṣawwīd Sha'r, Munbit-i-Sha'r* and *Taṭwīl al-Sha'r.*

The' *Ilāj* of *Intithār al-Sha'r* depends upon the cause;

1. **Defective *mādda***: The treatment approaches utilized to correct it is *Ilāj bi'l-Tadbīr* (Regimental therapy) wa' *Ilāj bi'l Ghidhā* (Dietotherapy) and' *Ilāj bi'l Dawā* (Pharmacotherapy)

i)' *Ilāj bi'l- Tadbīr* [12,15,18,19,21,24]

- *Hammām* (Bath)
- *Sukūn Badanī* (Body Rest)
- *Ghasūl Sha'r* (hair wash): It should be done with *Jādhib* (absorptive) and *lesdar* (Mucilaginous) medicines e.g

✓ *Āb khatmi* (Althaea officinalis Linn), *Asapghol* (Plantago ovata) and *Barge Baid* (Salix Caprea).

✓ *Haleela Siyah* (Terminalia chebula Retz), *Āb Turmus* (Lupinus Albus), *Āb Chukandar* (Beta vulgaris), *Āb* Hanzal (Citrullus colocynthis) and Nakhood (Cicer Arietnum).

- *Dalk* (Massage): Massage of the scalp should be done with *Roghane Banafsha* (Viola Pilosa Blum) and *Roghane Nilofer* (Nymphaea Alba Linn)
- *Sa' ūt* (Inhalation): The drugs used are *Banafsha* (Viola Pilosa Blum), *Nilofer* (Nymphaea Alba Linn) and *Āb mushk* (Salix Caprea).

ii) ' *Ilāj bi'l Ghidhā*[12,15,18,19,21,24]

- Use of *Latīf Jayyid al-kaymūs Ghidhā* (Good chyme foods), *Zardi Baiza Murgh (Egg yolk), Bhuna Hua Gosht (Meat).*
- Avoid the use of *ghalīz* (greasy), *khushk* (Dry), *namkeen* (Salty*)* and *hirrīf Ghidhā* (Spicy foods).

iii) ' *Ilāj bi'l-Dawa* [12,15,18,19,21,24]

Following compound formulations have been mentioned in classical books such as

- *Amla munaqqa* (Emblic Officinalis), *Haleela Zard* (Terminalia chebula Retz), *Poast Baleela* (Terminalia Bellerica) and *Sharbat Unaab* (Zizyphus Sativa).

- *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 *Misri* (Sugar).
- *Gule-Surkh* (Rosa Damascene), *Zanjabeel (Zinjeb), Maghz badam* (Prunus Amgdalus), *Maghz tukhm Kahu (Lactuca Sativa), Maghz tukhm-e-Khyarain* (Cucumis Sativa), *Turbud* (Operculina turpethum), *Sana* (Cassia angustifolia Vahl) *and Habbe neel (Indigofera Tinctoria Linn).*
- *Jawarish Amla, Majoon Falasfa*
- Avoid hair wash with *Sabun (soap) and Bora (Boric powder)*

2. ***Mutkhalkhul-e-jild* (Abnormal dilatation of pores):** The treatment approaches utilized to correct it is *Ilāj bi'l-Tadbīr* (Regimental therapy) wa ʻ *Ilāj bi'l Ghidhā* (Dietotherapy) andʻ *Ilāj bi'l Dawā* (Pharmacotherapy)

i)ʻ *Ilāj bi'l- Tadbīr:* It is done by *Hammām Muʻtadil* [12,15,18,19,21,24]

ii) ʻ *Ilāj bi'l-Dawā:* [12,15,18,19,21,24,30]

Tilā ʼ (Liniment): Use of *Qabiz* (Astringent), *Jādhib* (Absorptive) and *Muqawwi* (Tonic) drugs e.g

- *Roghane Aas*, *Roghane Laadin* and *Roghane Amla*
- *Hulba* (Trigonella Foenum-Graecum), *Mazu (Quercus Infectoria), Kishneez* (Coriandrum Sativum), *Sumbul-ut-teeb* (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 *tilā ʼ*

Oral: *Muqawwī Dimāgh* (Brain Tonic) drugs like *Itrifal Ustukhudoos, Itrifal Sagheer, Itrifal Muqawwī Dimāgh*

3. ***khuskhi wa kasafat-e-jild* (Compactness and dryness of skin):** The treatment approaches utilized to correct it is *Ilāj bi'l-Tadbīr* (Regimental therapy) wa ʻ *Ilāj bi'l Ghidhā* (Dietotherapy) andʻ *Ilāj bi'l Dawā* (Pharmacotherapy)

i) ʻ *Ilāj bi'l- Tadbīr:* [12,15,18,19,21,24]

- *Hammām ratab,*
- *Ghasūl Shaʻr* (hair wash) should be done with *lazojat* and *lesdar* (Muciliginous) drugs like *Kafe daryah* (Sepia officinalis), *Samandar Jhaag* (Cuttle fish bone) *and Nora (Lime)*
- *Dalk (Massage):* Massage the scalp with *Roghane Babuna (Anthemis Nobilis)*

ii) ʻ *Ilāj bi'l Ghidhā:* [12,15,18,19,21,24]

Use *Ghidhā* that produces *harārat (Heat)* e.g *Siyah mirch* (Piper nigrum), *Darchini* (Cinnamomum zeyanicum)

iii) ʻ *Ilāj bi'l-Dawā:* [12,15,18,19,21,24]

Tilā ʼ (Liniment): Use following drugs as *tilā ʼ* on scalp to open the *masamaat* (skin pores) such as:

- *Roghane Soya (Anethum Sowa)*
- *kardil* (Brassica nigra) and *Safsiyah*
- *kardil* (Brassica nigra), *Suddab (Ruta Graveolans), Bora (Boric Powder) and Payaz* (Urginea Scilla)

Conclusion

Intithār al-Shaʻr mainly occurs due to the defect in the *mādda*, *masamaat* or *harārat* resulting in hair thinning and shedding. Despite the availability of a number of therapies in conventional medicine comprises corticosteroids, stemoxydine, CNPDA (Caffeine, niacinamide, panthenol, dimethicone, and acrylate polymer) still their efficacies are not upto the mark. Evidently, Unani scholar claims that they have successfully controlled conditions like *Intithar al Shar* without any adverse effects for a very long period of time. The treatment is based on the properties of *Muqawwī Dimāgh* (Brain tonic), *Quwwat Qābiḍa* (Astringent), *Quwwat Jādhibā* (Absorptive), *Latīf harārat Muqawwī wa Muṣawwīd Shaʻr* (Hair tonic), *Munbit-i-Shaʻr* (Hair grower) and *Taṭwīl al-Shaʻr* (Hair elongator). Therefore, the efficacy and outcomes of different treatment modalities described in text should further be evaluated and validated by randomized clinical trial

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