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

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Article Info:

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. 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. In Unani system of medicine, hair loss or hair fall is described under the heading of Intithār al-Sha’r. The Intithār is an Arabic word, which has several meanings, one of them is falling of leaves from a tree, while Sha’r also means a pair of words used for hair. 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 Stemosyidine 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

Pathophysiology:

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 Abā Suhal Mashī. It is produced by bukhārāt-i- dukhānīyya of the body which is expelled towards the skin by tabāt. Bukhārāt-i- dukhānīyya is an end product of the 3rd and 4th phases of food digestion (*Hadhm* ‘ Udwī wa’ Urqāgl. It is formed up of the words bukhār and dukhān. Bukhār is made up of ajzā mā’ īyya and ajzā hawāyya, whereas, Dukhān is made up of ajzā ardiyya and ajzā nāriyya.

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 tabāt. In the skin pores, ajzā mā’ īyya 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.12,14 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 ḥārr Ḥābīṣ 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’ īyya will be more and their components will be unable to stick together.

3. **Mizāj of the body should be ḥārr** 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 contract, 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 *māddā* or defects in masamaat or *dā’ 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 *Ghīdā* (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 Sā’ al-qinyya, Sil wa Diq (TB and Pithiass)

2. Muthkalhalk-l-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 (khuskhī 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 Ismaiul 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.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, Secondly due to **Defect in Masamaat** which is further associated with;12,24

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

ii. Narrowing of pores, impeding middā 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.14,9,25


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.

**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 follicles, absence of hair shaft variation and peripilar halo with the presence of upright regrowing hair.

**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.

**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.

**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.

**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 antimicrobial antibody should be performed.

**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.

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

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

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.

**Usoole’ Ilāj and Ilāj:**

Usoole’ Ilāj is based on removing the cause, followed by Ta’dīl mizāj through tadbīr or Ghidhā and use of advice with particular qualities of Muqawwī Dimāḡh, Quwwat Qābīdā, Quwwat Jadhibā, Latif harārat, Muqawwī wa Muṣawwī Sha’r, Munbit-i Sha’r and Tufiyl al-Sha’r.

The’ Ilāj of Intīthār 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)

2. **Hammām** (Bath)

3. **Sukān Badani** (Body Rest)

4. **Ghasūl Sha’r** (hair wash): It should be done with Jadhib (absorptive) and lesdar (Mucilaginous) medicines e.g. Āb khatmi (Althaea officinalis Linn), Asapghol (Plantago ovata) and Barge Baid (Salix Capreae).

5. **Haleela Siyah** (Terminalia chebula Retz), Āb Turnus (Lupinus Albus), Āb Chukandanar (Beta vulgaris), Āb Hanzal (Citrus ulocynthis) and Nahkood (Cicer Arietnum).

6. **Dalk** (Massage): Massage of the scalp should be done with Roghane Bonafsha (Viola Pilosa Blum) and Roghane Nilofer (Nymphaea Alba Linn)

7. **Sa’ āt** (Inhalation): The drugs used are Bonafsha (Viola Pilosa Blum), Nilofer (Nymphaea Alba Linn) and Āb mushk (Salix Capreae).

8. **i’ Ilāj bi'l-Ghidhā**: The drugs used are Bande (Spicy foods)

- Use of Latif Jayyid al-kaymūs Ghidhā (Good chyme foods), Zarūt Baiza Murgh (Egg yolk), Bhuna Hua Gosht (Meat).
- Avoid the use of ghalfiz (greasy), khushk (Dry), namkeen (Salty) and hiirf Ghidhā (Spicy foods).

Following compound formulations have been mentioned in classical books such as

- Amla munaqqa (Embic Officinalis), Haleela Zard (Terminalia chebula Retz), Paast Baleela (Terminalia Bellerica) and Sharbat Unaab (Zizyphus Sativa).
• Maghz badam (Prunus Amygdalus), Maghz tukhm Kaddu (Cucurbita Moschata Duch), Maghz tukhm-e-Khayrarin (Cucumis Sativa), Saboos gandum (Wheat), Tukhme khaskash (Papaver Somniferum), Dana Iluchi khurad (Eletraria Cardamum) and Misri (Sugar).

• Gule-Surkh (Rosa Damascene), Zanjabeel (Zingeb), Maghz badam (Prunus Amygdalus), Maghz tukhm Kahu (Lactuca Sativa), Maghz tukhm-e-Khayrarin (Cucumis Sativa), Turbud (Operculina turpethum), Sana (Cassia angustifolia Vahl) and Habbne neel (Indigofera Tintoria Linn).

• Jawarish Amla, Majoon Falasfa

• Avoid hair wash with Sabun (soap) and Bora (Boric powder)

2. Muttukhalqul-e-jild (Abnormal dilatation of pores): The treatment approaches utilized to correct it is Ilaj bi'l-Tadbir (Regimental therapy) wa 'Ilaj bi'l Ghidhâ (Dietotherapy) and Ilaj bi'l Dawâ (Pharmacotherapy)

i) 'Ilaj bi'l- Tadbir: It is done by Hammmâ Mu'tadîl 12,15,18,19,21,24

ii) 'Ilaj bi'l-Dawâ: 12,15,18,19,21,24,30

Tilâ (Liniment): Use of Qabiz (Astringent), Jâdhîb (Absorptive) and Muqawwâ (Tonic) drugs e.g

• Roghane Aas, Roghane Laadin and Roghane Amla

• Hubla (Trigonella Foenum-Gracum), Mazu (Quercus Infectoria), Kishnee (Coriandrum Sativum), Sumbul-ut-teeb (Nardostachys Jatamansi), Laadin, Aquaqa (Acacia Arabica), Javitri (Myristica Fragrance) and Khabuls Hadeed (Iron rust) are powdered together, then mixed with Osara to form Qurs. Use three times in every month as tilâり

Oral: Muqawwû Dimâgh (Brain Tonic) drugs like Itrifal Ustahkudoos, Itrifal Sagaheer, Itrifal Muqawwi Dimâgh

3. Khuskhi wa kasafat-e-jild (Compactness and dryness of skin): The treatment approaches utilized to correct it is Ilaj bi'l-Tadbir (Regimental therapy) wa 'Ilaj bi'l Ghidhâ (Dietotherapy) and 'Ilaj bi'l Dawâ (Pharmacotherapy)

i) 'Ilaj bi'l-Tadbir: 12,15,18,19,21,24

• Hammmâ ratab, Ghâsîl Sha'r (hair wash) should be done with lazojat and lesdar (Mucilinious) 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) 'Ilaj bi'l Gidhâ: 12,15,18,19,21,24

Use Ghidhâ that produces hararat (Heat) e.g Siyah mirch (Piper nigrum), Darchini (Cinnamonum zeyancicum)

iii) 'Ilaj bi'l-Dawâ: 12,15,18,19,21,24

Tilâ (Liniment): Use following drugs as tilâ ' on scalp to open the masamaat (skin pores) such as:

• Roghane Saya (Anethum Sowa)

• kardil (Brassica nigra) and Safsiyah

• kardil (Brassica nigra), Sudhab (Ruta Graveolans), Bora (Boric Powder) and Payaz (Urginea Scilla)

Conclusion

Intithar al-Shar’a mainly occurs due to the defect in the madda, masamaat or hararat resulting in hair thinning and shedding. Despite the availability of a number of therapies in conventional medicine comprises corticosteroids, stemoxynide, CNPDA (Caffeine, niacinamide, panthenol, dimethicone, and acrylate polymer) still their efficacies are not up to 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 Muqawwû Dimâgh (Brain tonic), Quwwat Qâbîda (Astringent), Quwwat Jâdhîb (Absorptive), Latîf hararat Muqawwû wa Musawwîl Sha’r (Hair tonic), Munabbit-Sha’r (Hair grower) and Tatwîl al-Sha’r (Hair elongator). Therefore, the efficacy and outcomes of different treatment modalities described in text should be further evaluated and validated by randomized clinical trial

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