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# BARAṢ (Vitiligo): Introduction, etiology, and its managements through Unani Medicine

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**Abstract**
Vitiligo, characterized by depigmented patches on the skin, affects a significant portion of the global population, with prevalence estimates ranging from 0.5% to 2%. Despite its prevalence, the exact cause of vitiligo remains uncertain, with various hypotheses proposed including autoimmune, environmental, neural, genetic, and biochemical factors. In Unani Medicine, the condition is attributed to factors such as *Zu'af-i Quwat-i-Mughayirra*, *Mushabbiha*, and *Dafi'a*, possibly stemming from imbalances in bodily humours. Unani treatment, focusing on body purification, digestive correction, and local applications, has emerged as a prominent therapeutic approach for vitiligo management.
This study aims to explore the historical background, etiology, and therapeutic approaches for vitiligo, particularly focusing on the efficacy of Unani treatment. The objectives include reviewing relevant literature, both modern and classical, to elucidate the principles underlying Unani medicine's approach to vitiligo management and assessing the safety and effectiveness of Unani therapies in comparison to other treatment modalities.
A comprehensive review of over 50 articles and classical Unani literature was conducted to gather insights into the historical context, etiological theories, and treatment strategies for vitiligo. Key databases were searched to identify relevant studies, and Unani texts were consulted to understand the theoretical framework guiding Unani treatment. The efficacy and safety of Unani therapies, including body purification, digestive correction, and local applications, were assessed based on available evidence.
The review highlights the central role of Unani treatment in vitiligo management, emphasizing its historical significance and theoretical foundation. Unani therapies, such as Tanqiya-i Badan (body purification) and local applications, have been shown to offer promising results in re-pigmentation and symptom alleviation. The review also underscores the safety profile of Unani treatments compared to other therapeutic modalities.
In conclusion, Unani medicine presents a viable, safe, and effective approach to the management of vitiligo, drawing on centuries-old principles of holistic healing. The findings suggest that Unani therapies, including body purification and local applications, hold promise in addressing the underlying imbalances contributing to vitiligo and promoting re-pigmentation. Further research and clinical trials are warranted to validate the efficacy of Unani treatment and establish its role as a primary therapeutic modality for vitiligo.

**Keywords:** Baraṣ, Vitiligo, Leukoderma, Unani Medicine

## Introduction
Baraṣ (Vitiligo) is a common depigmenting skin disorder, has an estimated prevalence of 0.5-2% of the population worldwide. The disease is characterized by the selective loss of melanocytes which results in typical non-scaly, chalky-white macules. In recent years, considerable progress has been made in our understanding of the pathogenesis of vitiligo which is now clearly classified as an autoimmune disease. Vitiligo is often dismissed as a cosmetic problem, although its effects can be psychologically devastating, often with a considerable burden on daily life [1].
In Unani Medicine most of the scholars described vitiligo as Baraṣ, a white discolouration of the skin, which may infiltrate up to the bones. The main cause is suggested *Du'f-i Quwwat-i-Mughayirra*, *Mushabbihā* and *Quwwat-i-Dāfi'a* and this weakness may be caused by the collection of *Balgham-i-Ghalīz* which results in *Fasād al-Dam* and *Barūdat al-Dam*. As far as prognosis is concerned, most of the physician proposed that *Baraṣ* is curable if it is not-

extensive and patches are reddish or yellowish or after rubbing the skin hyperaemia develops or after pricking the affected area, oozing of blood occurs. But head and feet respond to the treatment very slowly [2].

According to standard 'Unani treatment guidelines for common disease of CCRUM, Baraṣ is a whitish depigmentation of parts of the skin or whole of it and it is caused by *Su'-i-Mizāj Bārid* (cold morbid temperament) of the affected part of the skin and predominance of the *Balgham* (phlegm). Due to the weakness of *Quwwat-i-Mughayirra* (transformative faculty) of the region. Sometimes it appears as an after effect of the site of *Ḥijāma* (Cupping).

It is characterised by the appearance of bright white patches. The whiteness may reach more in-depth to the muscles and bones. The hairs growing on the affected area may also be white, sometimes [2].

**Historical Background**

The earliest reference to this disease is found in the period of Asūryan (2200 BC as described in Tārīkh-i-Tibb-Iran. Information concerning vitiligo comes from Pharaonic medicine in the Ebers Papyrus (1550 BC), where two types of diseases affecting colour of the skin are mentioned. One with tumours and mutations, probably leprosy (Thou shall not do anything to it) and other probably vitiligo (Thou findest only change of colour) which according to Ebers Papyrus was treatable. In the sacred Indian book Atharva Veda (1400 BC). The condition of Shweta Kushta vitiligo is mentioned. The use of Bābchī seeds (Black seeds of *Psoralea corylifolia*) in the treatment of vitiligo is also mentioned [3]. In the Buddhist sacred book Vinay Pita (624-544 BC) the word KILAS is mentioned which means 'White spots' on the skin. References to this disease are also found in the Bible (Laviticus, Chapter XII). Vitiligo has also been referred to in the Quran (3:49, 5:113) as 'Bohak' and 'Baraṣ The term Vitiligo, is derived from the Latin word 'Vitilus' meaning Calf was first used by the Roman Physician Celsus of the 1st century AD. The characteristic white patches of the disease resembled the white patches of a spotted Calf in India.[3] Common terms for Vitiligo are 'White spots or white patches' 'Sufed Dagh', 'Phuleri, 'Pandra Korh', etc. As far as 1400 BC mention of vitiligo (as variety of Leprosy) in sacred book, *Atharva veda*. Ayurvedic medicine suggested therapeutic value (Vasuchika) or Babchi seeds -Black seeds of psoralia corylifolia (containing active furocoumarins possessing melanogenic property). Ancient Chinese literature mentions about the use of pu-ku-c, (In thirteenth century In EL Baytar in Egypt treated vitiligo with the extract from the fruit of the plant known as Ammi majus) [3].

**Modern concept**

The typical vitiligo macules have a well-defined light-tan border and are chalky or snow white (*Trichrome vitiligo*), fourth colour being the dark brown macules of re-pigmentation, which are usually perifollicular (*Quadrichrome vitiligo*). Sometimes there may also be a hyper pigmented border or a red halo (inflammatory vitiligo). Distribution may include the dorsa of hands, the face, body folds including axillae and genitalia lesions are common around body openings such as eyes, nostrils, mouth, nipples, umbilicus and anus. Vitiligo also occurs at sites of trauma (Koebner's phenomenon) such as, around elbows, knees and digits and an amelanotic lesion conforming to the area of injury, burns, excoriations, and friction sites as shoulder strap areas, waistband and collar region, may be seen after two to four weeks, being delayed from six to ninety-six months. Segmental vitiligo presents in dermatomal, multidermatomal, quasidermatomal being arranged unilaterally. Most of such patients do not develop lesions elsewhere. Vitiligo of distant digits and the lips produces the lip-tip syndrome. Bilateral lesions may be symmetrical or asymmetrical. Palms and soles are commonly involved. Mucosal depigmentation, including gingiva, genitalia, lips and nipples. Leukotrichia-depigmented hair is common in vitiligo patched. Achromotrichia has been reported in 9-45 per cent of vitiligo patients. Depigmentation of scalp hair occurs with or without an underlying vitiligo patch, and it will have poorer re-pigmentation response [3].

**Classification [3]**

The vitiligo patches are classified in different ways by different authors as follows:

| S. No. | Different Classifications | |
|---|---|---|
| 1 | Elmofty's classification (According to the extent of the involved area) | A. Vitiligo localista<br>B. Vitiligo generalista<br>C. Vitiligo universalis |
| 2. | Punshi's classification | i. Acute vitiligo<br>ii. Sub-acute vitiligo<br>iii. Chronic vitiligo<br>a. Responsive to treatment<br>b. Non-responsive or resistant<br>A. Special<br>a. Recurrent vitiligo<br>b. Fleeting vitiligo<br>c. Linear vitiligo<br>d. Congenital vitiligo |
| 3. | Classification according to the distribution of lesions: | A. Focal<br>a. Localized<br>b. Segmental (Dermatomal or Zosteriform)<br>c. Mucosal<br>B. Generalized<br>a. Acrofacialis<br>b. Vitiligo vulgaris<br>c. Universal<br>d. *Trichrome vitiligo* |

| | | |
|---|---|---|
| | | e. *Leukoderma acquistium centrifugum* (perihalonevus). |
| 4. | Aetiological classification | A. Autoimmune vitiligo or progressive vitiligo<br>B. Segmental or dermatomal vitiligo<br>C. Chemical or contact vitiligo |
| 5. | Behl's classification | A. Active<br>B. Quiscent<br>C. Improving<br>D. Zosteriformis |
| 6. | Clinico-pathological classification (Ortonne J*et al*. (1983) | A. *Melanocytopenic leukoderma* reduction or absence of melanocytes, e g.<br>a. Chemical leukoderma<br>b. Piebaldism, etc.<br>B. *Vicanopenic leukoderma* - Reduction or absence of Melanin pigment, eg<br>a. Albinism<br>b. Nevus depigmentosus |
| 7. | Aetiopathological classification of vitiligo | A. Autoimmune vitiligo or progressive vitiligo, idiopathic vitiligo<br>B. Segmental or dermatomal vitiligo<br>C. Chemical or contact vitiligo |
| 8. | According to the patterns of distribution of lesions- Dutta-1998 | A. Vitiligo vulgaris 53.5 percent<br>B. Vitiligo acro-orificialis 29.5 percent<br>C. *Vitiligo segmentalis* (Zosteriforms) segmentalis 70 percent dermatomal |
| 9. | According to subsets of vitiligo patients- Dutta AK | A. Neuropathic<br>B. Autoimmunopathic<br>C. Atopic<br>D. Idiopathic |
| 10. | Histological classification of vitiligo on the basis of dopa reaction. | A. Absolute<br>B. Reactive type I<br>C. Reactive type II. |

**Aetiology** [3]

The aetiology of vitiligo is still unclear and under debate. There are several hypotheses, several factors like autoimmune, environmental factors, neural defects, melatonin receptor dysfunction, impaired melanocyte migration, genetic susceptibility, biochemical abnormalities etc.

**Hypotheses in the Causation of Vitiligo**

**1. Nutritional and metabolic defects**

- Infestations and dysfunction of gastrointestinal tract.
- Hepatic dysfunction.
- Deficiency of protein.
- Deficiency of copper and filtrate factors of B-complex.
- Excess of epidermal SH content.
- Abnormal tryptophan metabolism.
- Excess of tryptophan pyrolase.

**2. Toxic theory**

a. Some hypothetical melanodestructive toxins

- Neurotoxin
- Metabolic toxin

**3. Autoimmune mechanism**

- Circumstantial evidence because of frequent association of vitiligo with presumed autoimmunologic diseases such as diabetes mellitus, pernicious anaemia, Addison's disease and thyroid disease.
- Antimelanin antibodies in vitiligo.
- A humeral antibody (characterised as IgG) to melanocytes, nevus cells and melanoma cells have been reported.
- Possible lymphocyte mediated damage of melanocyte and keratinocyte in vitiligo.

**4. Self-destruction of melanocytes**

- By melanin precursors.
- Perhaps owing to lack of intracellular enzymatic protective mechanism.

**5. Neural mechanism**

- Involvement of neural component.
- Referable to functional and structural changes in cutaneous autonomic nerves.

**6. Combination of the above**

- Electron microscopic finding have brought forth substantial knowledge regarding defects of melanosome system to explain melanocytic tyrosinase inactivity.
- Vitiligo has been suggested to be sort of trophoneurosis.
- Abnormality may result from underlying disturbance in the neuro-endocrinal field. Vitiligo is the prototype of the hypomelanotic disorders. It results from an inherited defect in the skin and hair that leads to the disappearance only the melanocytes of skin, mucus membrane, the hair and not bulbs are affected those.

**Description by Unani Scholars**

Ahmad bin Muhammad Tabari (10th Cent AD), in Mu'ālajāt-i-Buqratiyyà, categorised the *Baraṣ* in two types. The first type is called *Baraṣ-i Uzma*, in which the site of *Baraṣ* is totally affected by *Rutūbāt-i-Fāsida*, even bones are also affected. This type of *Baraṣ* is generally difficult to treat. In the second type, Rutūbāt-e-Fasida is present in between skin and bone and the site is not entirely affected, so, there is more chance of cure. Differential diagnosis is performed by the pricking on the affected site. If whitish fluid oozes, then it is *Baraṣ*-i Uzma, and if reddish fluid oozes, then it's *Baraṣ* [4].

He also mentioned that evacuation of morbid humour, correction of temperament and the diet which produces hot temperament blood are also crucial in the treatment of blood. In the diet, young goat meat, bird and chick should be preferred, and milk and milk products should be avoided [4].

*Rabban Tabari* (810- 895 AD) in his famous book *Firdaus al-Hikmat*, describes that *Fasād al-Dam* (impairment of blood) is the leading cause of Baraṣ, results due to the weakness of *Quwwat-i Hāḍima* (digestive faculty). When this *Fasād* is due to *Burūdat al-Dam* (coldness of blood) and *Balgham*, it's called *Baraṣ*, and if it is due to *Sawdā*, it's called *Bahaq-i Aswad* [4].

*According to Tabari, Baraṣ* is curable, if after pricking the affected site blood comes out and vice versa.[5] *Zakariyya al-Razi* (850- 925 AD) has given a detailed description of *Baraṣ* in his most esteemed work *Kitab al-Hāwī*. He wrote: Baraṣ occurs when *Laḥm* (flesh) of any part becomes phlegmatic which in turn change the blood into phlegmatic blood, thus the part doesn't nourish properly, and it brings change in the skin and makes it whitish. Sometimes hairs and the flesh beneath the surface also change in the same manner. He quoted *Sham'ūn* that *Baraṣ* may occur due to the consumption of the foodstuff, which contains an excessive amount of water [6].

He also gave some prognostic points for Baraṣ according to certain conditions i.e.

1. If after rubbing the affected skin, the hyperaemic condition develops, most probably it's curable.
2. If Baraṣ is non-extensive and the colour of patches is reddish or yellowish, then it will recover fast. In other hand, if *Baraṣ* is extensive and the colour of the affected skin is milky white and cloudy, then it is incurable.
3. If after pricking the affected skin, whitish fluid comes out instead of blood, then it is not curable and vice versa.
4. The *Baraṣ* on head and feet respond to the treatment very slowly.

Al-Majūsī (930 - 994 AD) in his masterpiece *Kamil al-Sana'a* says *Baraṣ* is defined as the whitening of the body surface and hairs, either localised or entire body area. He also suggested the leading cause of *Baraṣ* as overriding of phlegm in the blood and weakness of *Qūwwat-i Mughayyira* (the power regulating the colour of body), in the organ. He also prospects like *Zakariyya Rāzi* that if the skin incised by the razor or pricked by the needle, white fluid comes out from incurable or persistent vitiligo and bleeding occurs in curable vitiligo. In the management of *Baraṣ*, he suggests initially to restrict the *Muwallid-i-Balgham Ghidhā* (phlegm forming diet) like milk, fresh fish and cold and wet edibles then the drugs which contain *Mukhrij-i Balgham* property should be given [7].

Ibn Sina (980 - 1037 AD), in his treatise Al-Qānūn fi'l Tibb, states that Baraṣ is a condition in which whiteness after passing through the skin and flesh, disseminates to the bone. He wrote that the leading cause of *Baraṣ* is the weakness of the *Qūwwa* (power) which regulates the colour of the whole, body parts and a *Qūwwat* which expulse the waste material from the tissue level [8]. Most of the Unani physicians termed these *Qūwwā* as *Qūwwat-i Mushabbiha* and *Qūwwat-i Dafi'a*, respectively.

The frailty of these *Qūwwa* is due to *Mādda-i Ghalīz*, i.e., hoarded in the affected area. Therefore, the nutrients that dived at the affected area through blood circulation get malformed, and when these nutrients become the part of organ, its healthy appearance is altered due to weakened *Qūwwat-i-Mushabbiha*.

*Ibn Habal* (1122-1213 AD) in his famous work *Kitab al-Mukhtārāt* describes that in Baraṣ, the colour of the skin becomes as white as of Balgham and the leading cause is *Su'-i Mizāj Barid wa Ratab* and accumulation of *Balgham-i Ghalīz* in the affected area.

As far as the treatment concerns, he suggested that *Mushil Advia* should be given in the early stage of *Baraṣ* with *Har wa Yabis Aghdhiya* and *Bārid wa Ratab Aghdhiya* should be restricted. Then *Mukhrij-i Balgham* drugs should be administered [9].

*A. H. Jurjāni* (12th Century AD) in his book *Dhakhirā Khawārzam Shāhi* described the Baraṣ same as by Ibn Sina. He also wrote that "Weakened *Qūwwat-i Mughayirra* and *Qūwwat-i Dāfi'a* cause Baraṣ and the weakness is due to excessive accumulation of *Balgham-i Ghalīz* [10].

Hakim Akbar Arzāni (17th century) in his book Tibb-i-Akbar has written that Baraṣ is a whiteness appearing on the outer surface of the skin and sometimes in organs. Sometimes it spread all over the body where it's called *Baraṣ-i-Muntashir* (Generalised vitiligo) [11].

If *Baraṣ* turns *Muzmin* (Chronic) and remains progressive, the treatment is challenging. He has also given somewhat same prognostic factor-like Zakariyya Razi that if the affected part is shaggy, light white, becomes red after rubbing and bleeding occurs after pricking, then it is curable [11].

According to Abul MH Qamari, Baraṣ is a whiteness of skin and its hair caused by Lesdār Balgham, i.e. mixed with the nourishing blood of A'za-i-Laḥmiya and it is mainly due to the unruliness of diet.

In the treatment initially, he suggested consistent induced vomiting for some days then Mushil should be started with *Hār Yābis Aghdhiya* [12].

**Diagnosis**

Vitiligo can be easily diagnosed clinically if acquired, amelanotic, nonscaly, chalky-white macules with clear edges are seen in a typical distribution on lips, periorificial, penis, segmental, and zones of friction at the points of distal extremities. Although Wood's lamp and Dermoscopy can be used to differentiate vitiligo from other depigmenting disorders [13].

**Differential Diagnosis**

It is very necessary to differentiate the vitiligo patch with leprosy, Pityriasis alba, Atopic dermatitis/allergic contact dermatitis, Psoriasis, Lichen planus, Toxic drug reactions, Piebaldism, Posttraumatic hypopigmentation (scar), Pityriasis versicolor, Lupus erythematosus etc. [13].

**Treatment**

In the present scenario, there is no cure, nor is any effective treatment available to stop the spread of this disease. Several interventions have been used including topical corticosteroids, immunomodulators, ultraviolet A (UVA), narrow- and broadband ultraviolet B (UVB), psoralen and UVA (PUVA), excimer laser, and monochromatic excimer light (MEL)); and various surgical procedures including grafting, melanocyte transplantation, micropigmentation [14]. Out of these, phototherapy with photochemotherapy (PUVA) is a well-known and well-studied modality for the treatment of vitiligo, which involves systemic or topical administration of chemicals known as psoralens and administration of ultraviolet light in increasing dosages after requisite time gap but it has its limitations and various

systemic and dermatological complications [15]. However, in classical Unani literature, there is a vast description of the management of Baraṣ. Most of the Unani Physicians advised initially, the treatment with Tanqiya-i Badan (Removal of harmful material from the body), i.e., performed in three steps; by administering Mundij-i Balgham drugs till Nuzj appears, followed by three Mushil (Purges) alternated with three Tabrid (Cooling agents/drugs) [16]. After Tanqiya, digestive system should be corrected by consuming easily digestible diet [17].

A number of single drugs like *Aṭrilāl* (*Ammi majus*), *Bābchī* (*Psoralea corylifolia*), *Khardal Safed* (*Brassica alba*), *Post Bikh-i-Kabr* (*Capparis spinosa*), *Būrā-i Armani* (*Armeniac bole*), *Gandhak* (Sulphur), and compound formulations like *Safūf Baraṣ, Safūf Bābchī, Ḥabb-i Baraṣ, Ḥabb-i Farfiyūn, Ayāraj Loghāziya, Dawā-i Hindi, Ma'jūn Sīr, Ma'jūn Suqrāt, Ma'jūn Ḥabb al-Fil, Marham-i Baraṣ, Ṭilā-i Hindi*, etc. were described in Mujarrab (Experimented) for the treatment of vitiligo in Unani system of medicine.

National Research Institute of Unani Medicine for Skin Disorders, Hyderabad is a pioneer institute in the treatment of vitiligo with Unani medicine including scientific parameters.

Various clinical trials have been successfully conducted to validate and confirm the claims of coded Unani drugs, including UNIM-001, UNIM-003, UNIM-004, UNIM-007 and UNIM-005 in the management of Baraṣ with positive results. More than 200 (New and Old), vitiligo patient, visit daily for the treatment.

According to the observation, CBT and patient's counselling with diet restrictions plays an important role along with these unani formulations.

## Scope of Unani Medicine

The term "Unani System of Medicine" refers to Greco-Arabic medicine, which was developed into a sophisticated medical system in the Middle Ages by Arabian and Persian doctors like *Rhazes* (*al Razi*), *Avicenna* (*Ibn-i-Sina*), *Al-Zahrawi*, and *Ibn Sina*. It is based on the teachings of Greek physician *Hippocrates* and Roman physician *Galen*. [18] The fundamental framework of this system is based on Hippocratic theory of four Humours (*Akhlāt*)-Blood (*Dam*), Phlegm (*Balgham*), Yellow Bile (*Ṣafrā'*), and Black Bile (*Sawdā*') and in its holistic approach [19]. The concept of four humours *(Akhlāṭ-i-Arba')* by Hippocrates forms the basis of health and disease. Derangement in equilibrium of these four humours leads to cause disease.

There are several unani formulations mentioned in classical texts of unani medicines with the power of healing many untreatable and chronic diseases but they are lack of review and lack of clinical and experimental trials. So there is a sudden need to review those miraculous formulations and performed evidence based clinical and experimental trials to benefit the mankind.

## Conclusion

In this paper authors thoroughly studied the literature of Baraṣ (vitiligo) in both Unani and Modern. However, the presentation of Baraṣ in both Unani and modern literatures are same, but their aetiology of the disease are different. The perception of Unani physician about clinical presentation of Baraṣ according to their clinical experienced almost identical as per the opinion of modern physician. While exploring the Unani literature we got different Unani formulations for treatment of Baraṣ. They are very beneficial in Baraṣ with no reactions and most of them are still not manufactured or not be in use. So, people should beware about Unani preparations. Now, there is a need of exploring Unani formulations, its efficacies, and prove how profitable it is. In Unani Pathy, many substitutes are available in topical as well as in systemic forms for the treatment of Baraṣ. Unani treatment can be used safely (Without side effects) in place of allopathic treatment.

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