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# KALAF (MELASMA) - A Comprehensive Review on Epidemiology, Clinical Presentation and Treatment Modalities

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**ABSTRACT:** In Unani medicine, melasma is known as Kalf, and it has been defined as ‘a blackish patch formed by the integration of many black spots called Barsh’. Melasma is a common acquired condition of symmetric hyperpigmentation, typically occurring on the face, with higher prevalence in females and darker skin types. Multiple etiologies, including light exposure, hormonal influences, and family history, have been implicated in the pathogenesis of this disorder. Overall prevalence ranges widely at 1–50%, since values are typically calculated within a specific ethnic population within a geographic region. Various topical, oral and procedural therapies like tranexamic acid, Polypodium leucotomos, and glutathione. Procedures, including chemical peels, microneedling. But these medications and procedures having their own side effects. In Unani system of medicine *Ghaleez Saudavi Bukharat* (thick Melancholic vapours) ascend towards the face and gets trapped beneath the skin, *Ghalba-e-sauda* (the dominance of abnormal black bile) in the skin and blood are also involved in the disease pathogenesis. In unani system of medicine promising unani oral therapies for melasma is mentioned by renowned physicians. The Pharmacological activities like *Jali* (detergent), *qabdz* (astringent), *Qasir* (Scaling), *Ghassal* (irrigator), *Mubassir* (vesicant), *Muhammir* (rubefecient), *Raade-Mawaad* (divergent), *Mughazzi* (nutrient), *muhallil-e-awram* (anti-inflammatory), antioxidant, antimicrobial, *dafa-e-quba* (antifungal), *mana-e-sartan* (anticancer), *mana-e-qurooh* (antiulcer) are effective in the management of melasma. This review serves as a comprehensive update on the current understanding of the epidemiology, pathogenesis, clinical features of melasma, as well as treatments for this common, yet therapeutically challenging, condition.

**KEYWORDS:** Melasma, Kalaf, Skin disorder, Unani system and Management

## I. INTRODUCTION

Melasma is a chronic, acquired, symmetrical hyper melanosis of skin, characterized by irregular light to dark brown patches on sun-exposed areas, with a significant effect on psychological health; melasma is termed as Kalf in Unani medicine

Melasma, formerly known as chloasma, is an acquired pigmentary condition, occurring most commonly on the face. This disorder, which is more prevalent in females and darker skin types, is predominantly attributed to ultraviolet (UV) exposure and hormonal influences. It is common hypermelanosis that typically occurs on sun-exposed areas in the face. The pathogenesis is poorly understood, but genetic and hormonal influences in combination with UV radiation are important.<sup>(1)</sup>

It is a cosmetic issue that sometimes cause great psychological suffering. As per one study, which showed that melasma associated with significant impact on health-related quality of life. It is characterized by sharply demarcated, blotchy, brown maculae, usually symmetrical on the cheeks, forehead, sometimes on the upper lip and neck.<sup>(2,3)</sup>

The word melasma is said to originate from the Greek word ‘melas’ which means black, referring to the dark patches on the skin. The disease is also described in ancient literature since the time of Hippocrates (470-360 AD).<sup>(4)</sup> In Unani medicine, melasma is known as Kalf, and it has been defined as ‘a blackish patch formed by the integration of many black spots called Barsh’. According to *Ibn Sina*, *Majoosi*, *Razi*, *Kalaf* (melasma) is a chronic skin disease which is characterized by blackish discoloration (hyperpigmentation) occurring superficially (epidermal layer) and rarely slightly deep (dermal layer) to the skin of the face.<sup>(5,6,7)</sup>

### Prevalence:

The overall prevalence of Melasma in women varies by geography and population between 1.5% and 33.3%. The estimated prevalence of melasma in pregnant women is up to 70%. The prevalence of melasma in men as suggested in one simple survey is approximately 20%. It is more common and generally recognized in individuals with Fitzpatrick skin type IV-VI.<sup>8,9</sup>

Melasma is more common in women, especially those of reproductive age and sometimes begins or is exacerbated during pregnancy, explaining the common appellation "mask of pregnancy" and is rarely reported before puberty. Sun exposure intensifies the lesions.<sup>(1)</sup>

### Classification

The following types have been mentioned attributed to their causative factors.<sup>(10)</sup>

1. Kalaf-e-Rahmi: It occurs in pregnant women and the common sites of the lesion are forehead, face, and chest.
2. Kalaf-e-Zarbi: It results due to constant pressure over any part of the body leaving a hyper-pigmented lesion.
3. Kalaf-e-Kabidi: It occurs as a manifestation of liver diseases and the common distribution is face, forehead, and hands.
4. Kalaf-e-Hurri: It occurs due to prolonged exposure to sun rays and the lesions are distributed on the exposed body parts.

### Causes:

The exact cause of melasma is unknown even though, various different factors have been implicated in its etio-pathogenesis including genetic influences, exposure to UV radiations, pregnancy, oestrogen and progesterone therapies, thyroid dysfunction, cosmetics, phototoxic and anti-seizures drugs, as well as family history.<sup>(3,4,11,12)</sup>

In Unani system of medicine *Ghaleez Saudavi Bukharat* (thick Melancholic vapours) ascend towards the face and gets trapped beneath the skin, *Ghalba-e-sauda* (the dominance of abnormal black bile) in the skin and blood are also involved in the disease pathogenesis.<sup>(13,14)</sup>

Unani medicine, Kalf is considered a melancholic (sawdawi) disease that occurs due to the accumulation of sawda within the skin as a result of leakage from microvasculature.<sup>(15)</sup> It is associated with sawdawi disorders of the liver and spleen which lead to the predominance of black bile (ghalba-e-sawda) in the blood.<sup>(16,17)</sup>

### Symptoms:

Melasma is presented with light-to-dark brown-colored irregular macules on sun-exposed areas of the skin, particularly that of the face. It is most common in women in their thirties and forties, peculiarly in Asians.<sup>(11)</sup>

According to Unani system factors affecting *kalaf* includes frequent exposure to excess abnormal external heat; *Dam-e-Muharraq* (charred blood), *Sauda-e-Muharraq* (charred melancholic blood), *Ghiza-e-Kaseef* (indigestible food), constant local pressure, pregnancy, liver disease i.e. *Du'f al-kabid* (liver atony) and *Sughar al-kabid*.<sup>(13,14)</sup>

Although Melasma is asymptomatic it is disfiguring skin disease that has a negative impact on life and the self-esteem of effected individuals and causes distress in the patients as it mainly affects the face. It affects their psychological and emotional wellbeing and often feel bothered, frustrated, embarrassed, and depressed about their skin appearance.<sup>(12)</sup>

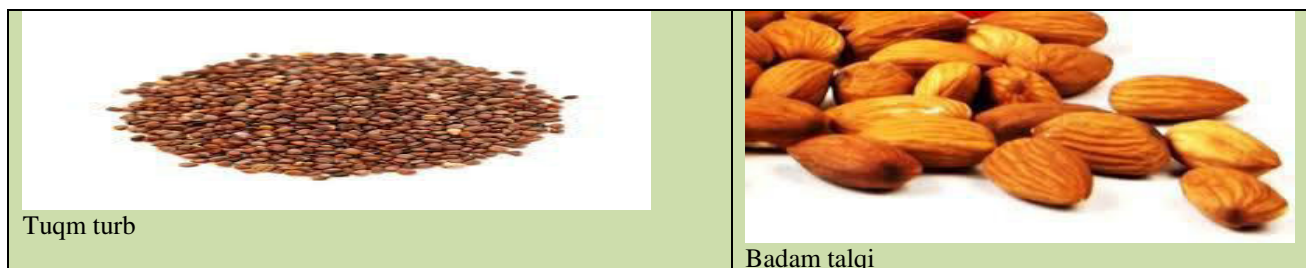
### Management:

Treatment of melasma has always been challenging due to its recurrent and refractory nature. As for the treatment, till date, there is no universally acceptable effective drug/ formulation which can cure this disease permanently.<sup>(18)</sup>

There is no universally accepted and effective therapeutic agent for the cure of melasma. Conventional treatments include topical and oral medications, resurfacing techniques like chemical peeling, light and laser treatments, etc. all of which have produced inconsistent or short-lasting results. Most of these treatments may also lead to skin irritation and further worsening of cutaneous pigmentation or even scarring. Triple-combination cream (TCC) containing hydroquinone, tretinoin, and steroids is currently the only hydroquinone-containing topical therapy approved.<sup>(19-21)</sup>

The physician described various regimens and pharmacotherapies for the management of Melasma. Unani drugs are reported to be very effective in various dermatological diseases especially melasma.

Some important Unani medicinal plants such as *Tukhm-e-Turb* (*Raphanus sativum*), *Maghz-e-Badam* (*Prunus amygdalus*), *Sandal Sufaid* (*Santalum album*), *Aab-e-Lemun* (*Citrus lemon*), *Gul-e-Surkh* (*Rosa damascena*), *Arad-e-Baqila* (*Vicia faba*), *Kaf-e-Dariya* (*Cuttlefish bone*), *Husn-e-Yusuf* (*Laminaria hyperborea*) etc.<sup>(15)</sup>





 <p>Sandal safed</p>	 <p>Neebu</p>
 <p>Gule surkh</p>	 <p>Aard Baqla</p>
 <p>Kare Darya</p>	<p>Husn Yusuf</p> 

These drugs exhibits the action of *Jali* (detergent), *qabiz* (astringent), *Qasir* (Scaling), *Ghassal* (irrigator), *Mubassir* (vesicant), *Muhammir* (rubefecient), *Raade-Mawaad* (divergent), *Mughazzi* (nutrient), *muhalil-e-awram* (anti-inflammatory), antioxidant, antimicrobial, *dafa-e-quba* (antifungal), *mana-e-sartan* (anticancer), *mana-e-qurooh* (antiulcer).<sup>(15-17)</sup>

Unani system of medicine, various treatment approaches have been mentioned to treat melasma such as drug therapy; dietotherapy, and Ilajbit- Tadbeer. The commonly used medicinal plants in Kalaf exhibit different pharmacological properties such as Jaali (detergent), Qashir (scaling), stripper, lavage, Ghassaal (irrigator), Mubassir (vesicant), Muhammir (rubefecient), Raade-Mawaad (divergent) and Mughazzi (nutrient).<sup>(22-25)</sup>

Topical treatment in Unani medicine includes peeling off of the affected area local application of detergent (Jali) drugs followed by astringent (Qabid) drugs. Topical application of irritant (Laze') drugs in combination with solvent (Muhallil) drugs is recommended in cases of chronic melasma.<sup>(26,27)</sup>

## II. CONCLUSION

Kalaf (Melasma) has been vastly discussed in Unani System of Medicine including its types, causes and treatment. The treatment modalities in Unani system of medicine are quite effective with no/ or minimal adverse effects. In addition to this, the Unani treatment is cost effective, economical and by far accessible.

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