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A CRITICAL REVIEW OF KUSTHA WITH SPECIAL REFERENCE TO MELASAMA

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INTRODUCTION

In Ayurvedic literature, all skin ailments are mostly concluded in the title under Kushtha and Kshudra Roga. The primary meaning of Kushtha is Twak vaivarnta (skin discoloration). Vyanga is Kshudraroga with Painless, small, and blackish-coloured features. Melasma is an acquired pigmentary disorder characterized by common clinical findings like hyperpigmented macules on the face. In its pathogenesis, various factors like genetic predisposition, UV rays, cosmetics, and hormonal drugs play an important role. In Ayurveda, this condition is similar to Vyang, which is mentioned in Kshudra rogadhikar. According to Ayurveda, it occurs due to excessive anger and hard work. So, as the results vitiate Doshas mainly Pitta, along with Vata, produce blakish patches on the face, which is called Vyang. Vyang is a Rakta pradoshja vikar, and in its probable Doshas involved are Udaan vaayu, Bharajak pitta, and Dushya Ras and Rakta dhatu. This condition disturbed our mental and physical state. A good physical appearance and natural colour show us to be healthy. So, for this purpose, in Ayurveda, lines of treatment like Shodhan (purification), Shaman chikitsa, and various numbers of Lepa, medicated oil, and ointment for external application are also mentioned. All accessory factors are also important during the management of disease, e.g., psychological condition, cosmetics, OCP, some drugs, etc. This article review attempts to understand the Vyang with the modern view of Melasma and to help in the treatment of it.

INTRODUCTION

Melasma is a common pigmentary disorder characterized by symmetrical hyperpigmented macules on the face. It mainly affects women, particularly of reproductive age, with Fitzpatrick skin type 4-6 and in darker skin types, such as Hispanics, Asian and African Americans. It has a deleterious impact on the patient's quality of life. The condition can also occur in men. This disorder is the epidemiological data for the female and male ratio, which shows a country-dependent difference, such as 21:1 in Singapore and 4:1 in India. The aetiopathogenesis of melasma includes genetic factors, UV exposure, hormonal activity, drugs such as phenytoin, and cosmetics etc3-6. Ayurveda has mentioned the melasma as Vyang in Kshudraroga by all Acharyas. The etiological factors and pathogenesis of Vyang are explained in Ayurveda. In Vyang, vata and pitta dosha are mainly involved. They, along with each other, due to causative factors, suddenly produce Vyang on the face region. Because there are not many research articles found in it. Hence, the research articles will highlight, evaluate, elaborate, and discuss the etiology, pathology, and perspective of Ayurvedic treatment of melasma with special reference to Vyang.

Skin Layers and the Development of Hyperpigmentation
The skin serves as the body's largest organ and is made up of three primary layers, each essential for protection, regulation, and overall skin health. Hyperpigmentation arises when there is an excessive production of melanin, the pigment that gives skin its color, triggered by several factors such as sun exposure, inflammation, or hormonal shifts.

1. Skin Layers

Epidermis (Outer Layer) The outermost skin layer serves as a protective barrier. It houses keratinocytes (skin cells) and melanocytes, the cells that produce melanin. This layer is primarily where hyperpigmentation occurs due to an accumulation of melanin.

B. Dermis (Middle Layer) Positioned beneath the epidermis, this layer contains blood vessels, collagen, and elastin, which provide strength and flexibility. When the skin experiences damage or inflammation (such as from acne or injuries), the dermis prompts melanocytes in the epidermis to generate more melanin, resulting in post-inflammatory hyperpigmentation (PIH).

C. Hypodermis (Subcutaneous Layer) The deepest skin layer consists of fat and connective tissue. It functions in insulation, cushioning, and delivering nutrients to the layers above. Although hyperpigmentation does not directly impact this layer, underlying issues like hormonal fluctuations or inflammation can lead to increased melanin production in the upper layers.

How Hyperpigmentation Develops

Hyperpigmentation occurs due to an excessive production of melanin, which is regulated by melanocytes located in the epidermis. The primary factors include.

1. Sun Exposure – Ultraviolet rays activate melanocytes to generate too much melanin, resulting in sunspots or freckles.
2. Inflammation & Skin Damage – Conditions such as acne, cuts, burns, or eczema can lead to postinflammatory hyperpigmentation (PIH).
3. Hormonal Fluctuations – Situations like pregnancy or hormonal imbalances can stimulate melanin overproduction, resulting in melasma.
4. Medications & Chemical Interaction – Certain medications (such as chemotherapy or antibiotics) and strong chemicals may lead to pigmentation problems.
5. Genetic Influences – Some individuals are genetically inclined to pigmentation issues, such as freckles or birthmarks. By grasping how the skin layers work and the origins of hyperpigmentation, it becomes more straightforward to identify treatments for prevention and correction.

Types of Hyperpigmentation

Hyperpigmentation is a condition characterized by the darkening of specific areas of the skin due to increased melanin production. It can arise from various factors such as sun exposure, hormonal fluctuations, and skin inflammation. Here are the primary types of hyperpigmentation.

Melasma (Chloasma)Appearance: Large, dark brown or grayish patches, frequently symmetrical.

- Common Areas: Face (cheeks, forehead, upper lip), occasionally forearms.
- Causes: - Hormonal fluctuations (pregnancy, birth control, menopause) - Sun exposure - Genetic factors.
- Treatment: Sunscreen, topical treatments (kojic acid, hydroquinone, vitamin C), laser treatments. 2. Post-Inflammatory Hyperpigmentation (PIH).
- Appearance: Dark spots or patches that remain after skin injury.
- Common Areas: Any location where inflammation or injury has occurred (face, body).
- Causes: - Acne scars - Cuts, burns, insect bites - Conditions like eczema or psoriasis.
- Treatment: Chemical peels, retinoids, exfoliation, Ayurvedic remedies (turmeric, sandalwood).

3. Sunspots (Solar Lentigines / Age Spots / Liver Spots)

- Appearance: Small, flat, dark brown or black spots.
- Common Areas: Face, hands, shoulders, arms (areas exposed to the sun).
- Causes: - Extended sun exposure - Aging - UV radiation damage

Treatment: Sunscreen, laser treatments, microdermabrasion, and vitamin C serums.

4. Freckles (Ephelides)

- Appearance: Small, light brown to reddish spots that become darker with sun exposure.
- Common Areas: Face, shoulders, arms (sun-exposed regions).
- Causes: - Genetic factors - Increased visibility due to UV exposure
- Treatment: Sun protection, chemical peels, laser treatments.

5. Drug-Induced Hyperpigmentation

- Appearance: Blue-gray or brown patches, sometimes affecting nails.
- Common Areas: Face, lips, gums, nails, inner mouth.
- Causes: - Medications such as antimalarials, chemotherapy, and antibiotics.
- Treatment: Discontinuing the medication, topical treatments, and laser therapy. 6. Acanthosis Nigricans
- Appearance: Thickened, dark, velvety skin.
- Common Areas: Neck, armpits, groin, and beneath the breasts.
- Causes: - Insulin resistance (often related to diabetes) - Obesity - Hormonal disorders (PCOS, thyroid problems)
- Treatment: Addressing underlying issues, weight management, and exfoliation.

Pathogenesis of Melasma Melasma is a common pigmentary disorder characterized by symmetric, brown-to-grayish facial patches. It primarily affects areas exposed to sunlight, such as the cheeks, forehead, upper lip, and chin. The condition is more prevalent in women, especially those with darker skin tones, due to higher melanin activity.

Key Factors in Melasma Development Melasma results from a complex interplay of genetic, hormonal, and environmental factors that stimulate excess melanin production. The pathogenesis involves melanocyte hyperactivity, dermal changes, and vascular involvement.

Melanocyte Dysfunction (Excess Melanin Production)

- In melasma, melanocytes (pigment-producing cells) are hyperactive and produce excess melanin.

● This leads to epidermal, dermal, or mixed-type pigmentation, depending on how deeply melanin is deposited in the skin.
● The condition is associated with an increased number and size of melanosomes (melanin-containing granules) in affected areas.
Hormonal Influence (Estrogen & Progesterone)
● Melasma is highly linked to hormonal fluctuations, especially during pregnancy, oral contraceptive use, and hormone therapy.
● Estrogen & progesterone stimulate melanocortin receptors (MC1R) in melanocytes, increasing melanin synthesis.
● Hormones also increase tyrosinase activity, a key enzyme in melanin production. UV Radiation & Visible Light Exposure.
● Ultraviolet (UV) rays trigger oxidative stress and activate melanocytes, leading to excess melanin production.
● Visible light (including blue light from screens) also worsens pigmentation by stimulating reactive oxygen species (ROS) in the skin.
● UV exposure increases vascularization, enhancing inflammation and pigmentation. D. Inflammatory & Vascular Changes.
● Inflammation from external factors (sunlight, pollution, cosmetics) can stimulate melanin production.
● Vascular abnormalities (increased blood vessels in affected areas) contribute to persistent pigmentation.
● Endothelial cells in blood vessels release growth factors that stimulate melanocyte activity.

E. Genetic Predisposition
● Family history increases melasma risk, especially in individuals with darker skin types (Fitzpatrick IIIV).
● Genes regulating melanocyte function, response to UV radiation, and hormone sensitivity may contribute to melasma.
Types of Melanin Deposition in Melasma Epidermal Melasma: Melanin is deposited in the superficial skin layers; responds well to treatment. Dermal Melasma: Melanin is deeper in the skin, making treatment more challenging. Mixed Melasma: A combination of both, leading to persistent pigmentation.

1. Acharya Charaka's Method (Charaka Samhita) Concept: Charaka advocates for internal detoxification and blood purification to treat skin discoloration.
● Treatments: Raktashodhana (Blood Purification) – Utilization of herbs such as Manjistha, Neem, Guduchi, and Haridra.
● Shamana (Palliative therapy) – Balancing Pitta and Vata doshas with soothing and nourishing herbs.
● Nidana Parivarjana – Steering clear of causative elements (e.g., spicy foods, excessive sun exposure, emotional strain).

2. Acharya Sushruta's Method (Sushruta Samhita) Concept Sushruta emphasizes detoxification and localized therapies
● Treatments: Virechana Karma – Purgative therapy employing Trivrit and Avipattikar Churna to eliminate surplus Pitta
. ● Lepana (Topical Applications) – Application of herbal pastes like Lodhra + Manjistha + Yashtimadhu blended with rose water or milk.
● Raktamokshana – Bloodletting (in severe cases) to rid the body of impure blood and enhance skin health.

3. Acharya Vagbhata's Perspective (Ashtanga Hridaya) Concept Focuses on both internal and external methods with particular regard for digestion and the mind-body connection
● Treatments: Deepana & Pachana – Enhancement of digestive fire through Trikatu and Chitrakadi Vati to eliminate Ama (toxins).
● Nasya Karma – Application of medicated oils like Anu Taila into the nostrils to address hormonal and mental factors.
● Medhya Rasayanas – Incorporation of rejuvenative herbs like Shankhpushpi, Brahmi, and Ashwagandha to alleviate stress-induced pigmentation.
● Recommended Ayurvedic Formulations by Acharyas Formulation. Purpose: Kumkumadi Tailam Enhances complexion and diminishes pigmentation (for external use). Sarivadyasava.
● Blood purifier that operates from the inside, Avipattikar Churna-Helps balance Pitta and supports gentle detoxification
● Manjishtadi Kwatha Promotes-liver function and purifies blood. Chandanadi Vati soothes Pitta, beneficial for facial heat and discoloration.

Lifestyle & Diet (Consensus Among Acharyas) Ahara (Diet)
● Steer clear of spicy, sour, fried, and fermented items. Embrace cooling, hydrating, and sattvic foods like cucumbers, ghee, and coconut water.
● Vihara (Lifestyle): Limit sun exposure, manage stress levels, and maintain consistent routines. Engage in Pranayama, meditation, and ensure adequate sleep.

DISCUSSION
Melasma is a chronic skin disorder characterized by symmetrical, brownish patches on sun-exposed areas, especially the face. It is more common in women and is often triggered by hormonal fluctuations, sun exposure, and genetic predisposition. From a treatment perspective, modern dermatology and Ayurveda approach melasma differently—modern medicine focuses on symptom relief and pigment reduction, while Ayurveda aims for root cause elimination and holistic healing. Melasma, also known as Vyanga in Ayurveda, is a common hyperpigmentation disorder characterized by dark, irregular patches on sun-exposed areas, especially the face. From a modern perspective, melasma occurs due to an overproduction of melanin triggered by factors such

as hormonal imbalances, UV exposure, genetics, and oxidative stress. It is more prevalent in women, particularly during pregnancy and while using oral contraceptives, earning it the term ―pregnancy mask.‖

Modern dermatology primarily focuses on symptom management through topical depigmenting agents like hydroquinone, retinoids, azelaic acid, and chemical peels, along with laser therapy for resistant cases. However, these treatments often provide temporary relief, with frequent relapses once the treatment stops. In contrast, Ayurveda takes a holistic approach to melasma treatment by addressing the root cause—Pitta and Vata dosha imbalances affecting Rakta Dhatu (blood) and Medo Dhatu (fat tissues). Ayurvedic treatment focuses on Shodhana (detoxification) and Shamana (palliative therapy) to cleanse the body and restore skin health. Virechana (purgation therapy), a key Panchakarma therapy, is highly recommended as it helps in Pitta detoxification, liver cleansing, and hormonal balance, thereby reducing pigmentation naturally.

Herbal formulations such as Avipattikar Churna, Trivrit Leha, and Patolakaturohinyadi Kashayam are commonly used to support internal detoxification. In addition, Raktamokshana (bloodletting therapy) helps eliminate deep-seated toxins from the blood, promoting clearer skin. For external care, Ayurveda recommends the application of Kumkumadi Tailam, a saffron-based oil known for its skin-lightening and rejuvenating properties. Herbal face packs containing Lodhra, Manjistha, Yashtimadhu, and Sandalwood help soothe the skin and reduce hyperpigmentation. Additionally, dietary and lifestyle modifications play a crucial role in melasma management. Avoiding spicy, fried, and fermented foods while incorporating cooling foods like ghee, pomegranate, coconut water, and amla helps in maintaining Pitta balance. Practicing Pranayama (breathing exercises) like Sheetali and Sheetkari also aids in cooling the body and reducing stress-induced pigmentation. Sun protection is essential in both modern and Ayurvedic treatments, with Ayurveda suggesting natural sunblock agents like Aloe Vera, Sandalwood, and Rosewater sprays. While modern treatments offer quick results, they often come with side effects and recurrence issues. Ayurveda, on the other hand, provides a long-term, sustainable solution by balancing the doshas and detoxifying the body naturally.

A combined approach that includes modern sun protection along with Ayurvedic detoxification, herbal formulations, and dietary corrections can be highly effective in managing melasma holistically.

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