



A STUDY ON HERBS USED TO CURE HYPERPIGMENTATION

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Abstract

One of the main issues that affect people's quality of life, especially women, is issues with skin pigmentation. Skin pigmentation problems are mostly caused by irregularities in the synthesis of melanin and due to modern pollutants. Natural medicines have been utilised to treat skin hyperpigmentation issues for millennia. Due to the potential adverse effects of synthetic cosmetic chemicals, focus has been placed on herbal products, which are thought to be benign, biodegradable, and demonstrate minimal toxicity. Face packs and face masks are the most effective solution in this circumstance. As plant extracts have been shown to be useful in treating other skin-related issues as well as hyperpigmentation of the skin. Since they provide more advantages than synthetic skin-care formulations, the use of plant extracts as a skin care agent is growing in popularity.

KEY WORDS: hyperpigmentation, plant extracts, face masks, skin-care

1 Introduction:

Hyperpigmentation is one of the most prevalent problems in people with skin of colour. As a result, herbal formulations are required for the treatment of hyperpigmentation. This review article discusses the many forms of hyperpigmentation, their causes, and herbal remedies for managing skin hyperpigmentation. As hyperpigmentation, or uneven skin pigmentation, is a frequent skin issue caused by an increase in melanin production, it is important to understand this condition. Patients with several skin-related issues, often known as patients with skin of pigmentation, are becoming more prevalent as the number of patients grows. As a result, skin blemishes or patches may look darker than their surroundings. Areas of the face are more susceptible to some types of hyperpigmentation with post-inflammatory, melasma, and sun spots.

2. Pigmentation

An issue with the tone and colour of the skin is called pigmentation. It typically happens when the liver and endocrine glands aren't working properly. The skin either becomes overly coloured and darkened or loses its colour and pigment all over the body or only in sections and spots as a result of the pigmentation problem. The majority of middle-aged women have pigmentation. With few exceptions, very few younger women experience pigmentation, and the severity of the issue is very small. In actuality, this is connected to endocrine changes in middle-aged women. The extent of the pigmentation issue is linked to a number of illnesses and disorders. We must comprehend these underlying problems in order to comprehend the unique incidence of pigmentation.

2.1 The Internal Disorders That Cause Pigmentation

Skin pigmentation is a sign of many different medical diseases. To properly treat the pigmentation, these illnesses and disorders must be diagnosed correctly.

- Addison's disease may be the cause of an epidemic of dark freckles and patches all over the body. The cortical region of the adrenal glands is harmed and impaired by this condition.
- A bronze coloration emerges all over the body as a result of intestinal tract over-absorption of iron from diet.
- The skin develops a brownish pigmentation, or other chemicals' colours are also poorly absorbed. For instance, women who habitually use nasal drops absorb excessive amounts of the silver included in the drops and get silver-gray skin pigmentation.
- Another reason is jaundice, which is caused by too much bile in the blood and bodily tissues. As a result, the skin appears yellow. When the liver is compromised or when the bile duct becomes blocked, this condition manifests.
- Dark brown spots may occasionally develop during pregnancy, mainly on the face. The hormonal abnormalities brought on by pregnancy are the primary cause of these brown patches.
- Due to a deficiency of oxygen in the blood, the skin will become blue or purplish. The blood is bluish-red in colour due to the low oxygen content. This form of pigmentation causes concerns for women with long-term illnesses like pneumonia and some cardiac issues.
- The hormone levels drop after menopause, which in turn influences the release of the skin-coloring pigment. The pigmentation is more evident and severe in cases of surgical menopause, which involves uterus and ovaries removal.
- Amoebiasis is a long-lasting intestinal condition. It results in severe bowel laxity, dehydration, sallowness of the complexion, and colour loss. Patchy and spotty skin discoloration is caused by a lack of iron, calcium, vitamin a, b, and b complex.
- Skin thickens and darkens when vitamin A deficiency is present. Lack of vitamins E and B complex can result in an issue with excessive skin pigmentation.

2.2 Outside Factors Responsible for Pigmentation

There are three outside elements that contribute to skin pigmentation.

Excessive Sun

Skin tans and darkens with excessive sun exposure without protection. Skin cells are harmed by the sun's UV radiation, which also enter the skin.

False Cosmetic Use

Certain cosmetics with chemical colouring and creams containing mercury-based drug preparations cause negative reactions on the skin's surface. Pigmentation is the end effect.

Medications taken orally

Drugs used to treat high blood pressure, asthma, diabetes, sleeplessness, acne, and birth control have a negative impact on skin. Spot pigmentation is frequently brought on by these drugs.

2.2.1 Hyperpigmentation

Hyperpigmentation, a condition, will cause your skin to darken. This could affect every part of your body or just some parts. The age spots, often called liver spots, are frequently hyperpigmented. Although hyperpigmentation is mostly benign, it can occasionally be caused by an underlying medical condition. Some medications can also cause your skin to darken. It's more of an aesthetic issue for the majority of people. The synthesis of the pigment melanin in our skin is affected by the hormones generated by our endocrine system, as was previously discussed in the chapter. The endocrine system is negatively impacted by situations like menopause and disorders, which leads to hormonal imbalance.

Additionally, the skin's complexion darkens as a result of excessive keratinization, a condition marked by the accumulation of dead skin cells on the skin's surface. In actuality, the surface of our horny skin absorbs too much melanin, giving it a black appearance.

Physicians and dermatology patients alike are looking for long-term topical skin care treatments to address the issues caused by skin hyperpigmentation. In particular, some women frequently express a desire to "lighten" skin tone by achieving improved visible tone, reduction in yellowness, and reduction in the appearance of hyperpigmented spots. Traditional depigmenting agents, such as hydroquinone, corticosteroids, and kojic acid, although highly effective, can raise severe side effects.

Understanding the advantages of natural and botanical extracts opens the door to the creation of novel pigmentation-related products. Arbutin, aloesin, gentisic acid, flavonoids, hesperidin, licorice, niacinamide, yeast derivatives, and polyphenols are examples of active substances extracted from plants that decrease melanogenesis without melanocytotoxicity through various methods. An overview of current practises for using plant extracts topically to treat hyperpigmentation problems is provided in this article. Some of the most significant natural extracts are highlighted.

2.2.2 Types of Hyperpigmentation

Hyperpigmentation is when some parts of your skin become darker than the rest. There are different types of hyperpigmentation that can happen.

- Age spots, also called "liver" spots
- Melasma
- Post-inflammatory hyperpigmentation

2.2.2.1 Age spots

Age spots, often called liver spots or solar lentigines, are dark spots that can develop on a person's skin as they age. [figure.1]



Fig.1 sun tan

2.2.2.2 Melasma

Large patches of darkened skin, also known as chloasma or "the mask of pregnancy," are common on the forehead, face, and stomach in women, pregnant women, and persons taking birth control pills, as well as those with medium to dark skin tones. [figure.2]



Fig.2 Melasma

2.2.2.3 Post-inflammatory Hyperpigmentation

Anyone who has had inflammation or an injury to the skin will get post-inflammatory hyperpigmentation spots or patches of darkened skin after developing an inflammatory skin condition, such as acne or eczema, anywhere on the body. [figure.3]



Fig.3 Post –Inflammatory Hyperpigmentation

3.1 Effective Natural Ingredients for the Treatment of Hyperpigmentation

Always test a new therapy or natural remedy on a tiny patch of skin before using it on the entire body, and stop using it if the skin becomes irritated.

In order to better prepare doctors to inform patients, we reviewed clinical papers examining the utility of several natural items in treating hyperpigmentation. Azelaic acid, aloesin, mulberry, licorice extracts, arbutin, green tea, and ascorbic acid are among the specific components examined can be used to cure the women's beauty problem of hyperpigmentation.

3.1.1 Azelaic acid

Rye, wheat, and barley all contain azelaic acid (AZA), a saturated 9-carbon dicarboxylic acid that comes from the fungus *Pityrosporum ovale*.

3.1.2 Aloesin

According to in-vitro investigations, the aloe vera plant's aloesin has been proven to block the enzymes tyrosinase, tyrosine hydroxylase, and dopa oxidase. Using an in-vitro analogue of pigmented skin, aloesin directly inhibits melanogenesis and dose-dependently lowers both melanin content and tyrosinase activity.

3.1.3 Mulberry

Morus alba, or dried mulberry leaves, are used to make the extract known as mulberry. The leaves of mulberry trees are fed to silkworms in a number of East Asian nations, and they are also used in traditional Chinese and Thai medicine for the management and prevention of diabetes. According to research conducted in vitro, the active ingredient in mulberries, called mulberroside F, suppresses tyrosinase activity, melanin production in melanocytes, and melanin transfer. It may also act as a reactive oxygen species (ROS) scavenger.

3.1.4 Licorice Extracts

The primary licorice chemical is glabridin, which is isolated from the root of the perennial shrub *Glycyrrhiza glabra* Linnaeus. It has been demonstrated that this substance has anti-inflammatory activities, can scavenge ROS, and can suppress UVB-induced pigmentation and tyrosinase without impacting DNA synthesis. Glabridin has been demonstrated in vitro to have a 16 times stronger skin-lightening impact than hydroquinone and may lessen UVB pigmentation.

3.1.5 Arbutin

Arbutin is a hydroquinone -D-glucopyranoside derivative found in herbs like bearberry. Studies conducted in vitro have revealed that it has reversible tyrosinase activity.

3.1.6 Green Tea

Green tea's antioxidant and anti-inflammatory qualities have long been researched. Epigallo-catechin-3-gallate (ECGC), the primary active component among the several polyphenolic antioxidants present in green tea extracts, is one of these compounds.

3.1.7 Ascorbic acid

Citrus fruits are the main source of ascorbic acid (AA; vitamin C), an acidic, hydrophilic antioxidant that acts as a cofactor in a number of human enzymatic reactions.

4. Application method

Skin pigmentation remedies appear to have a brighter future than ever because to the advancement of innovative technology. Application of face masks made of nonwoven materials finished with herbal extracts is one of the most promising new treatments for illnesses of skin pigmentation. It works incredibly well without physically harmed patients.

The fibres of the tissue in medical textiles are actually physically connected to the active substances throughout the manufacturing process. Furthermore, it is crucial to emphasise that all of the carriers and components suggested are of natural origin, fully biodegradable, and safe for the skin and the environment. Additionally, these sustainable, genderless, and smart beauty masks were developed in accordance with recent consumer demands and standard cosmetic principles, focusing on natural-derived ingredients and cutting-edge technologies.

These unique and safe beauty masks are made without preservatives, emulsifiers, colours, scents, and other chemicals. They are processed, distributed, and used only when water is added to activate them.

5 Conclusion

Pigmentary disorders account for a sizable portion of patients who see dermatologists. Many over-the-counter skin whitening products lack clinical proof of efficacy, and patients are frequently inundated with them.

The current gold standard, hydroquinone, has competition from botanical and natural substances, which have gained popularity as depigmenting agents. But many of these compounds still need evidence-based research. There are also concerns about the long-term efficacy and safety of much technological advancement due to the short period of the trials. Several botanical and natural compounds do show preliminary promise in treating diseases of hyperpigmentation based on the outcomes of clinical trials, notwithstanding the need for additional lengthy, carefully conducted, randomised, controlled investigations. These include mulberry, licorice extracts, arbutin, and ascorbic acid. These herbal extracts only offer hope for the treatment of hyperpigmentation but also deepen our understanding of the pathophysiology of dyschromias, adding to our comprehension of the myriad complexity of pigment diseases.

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