

A Review on Herbal Cream for Treatment of Melasma

Sumit Ashok Lingayat, Sameer Salam Ahmed

Student, Dr. VedPrakash Patil Pharmacy College, BAMU, Ch. Sambhajinagar
Associate Professor, Dr. Vedprakash Patil Pharmacy College, BAMU, Ch. Sambhajinagar.

Date of Submission: 10-11-2024

Date of Acceptance: 20-11-2024

ABSTRACT: Herbal medicine has a product of worldwide importance of both medicinal and economical. Although usage of this herbal cosmetics has increased its quality, efficacy, safety, cultural acceptability and lesser side effects are concerned worldwide. Melasma is an acquired hyperpigmentary disease that comes under disorders of hyperpigmentation. The main purpose of this literature review is how to tackle this problem by using herbal cream containing Glycyrrhiza Glabra Linn., Rubia Cordifolia Linn., and Calotropis Procera herbal extract for the treatment of melasma.

Keywords: Melasma, Herbal cream, Glycyrrhiza Glabra Linn., Rubia Cordifolia Linn., Calotropis Procera.

I. INTRODUCTION:

Cosmetics are the formulations applied on the body. Herbal cream is used as cosmetics for softening and cleansing effects. The Ayurvedic system of medicine was one of the most principal systems that uses herbal plant and extract for the treatment of management of melasma.

Melasma:

Melasma is a common hyperpigmentation disorder, especially in the female gender, that is usually presented symmetrically as light brown to dark brown hyperpigmented spots in the face and also it can be exacerbated through prolonged sun exposure. Melasma, as a multifactorial disorder, is the most common pigmentary disorder and can be

presented as centrofacial, malar, and mandibular skin patches with possible inflammatory features. The prevalence of melasma can be varied from 1% in the normal population to 50% in the high-risk population. The difference in the prevalence of melasma in different nations can be attributed to ethnicity, genetics, and also the degree of sun exposure. As it has been reported, the prevalence of melasma is much higher in the Middle East and South East Asians, Hispanic Americans, Mediterranean Africans, and also Brazilians. Melasma can affect all skin phototypes, however, it is more common in the middle (Fitzpatrick skin phototypes II, III, IV, and V). The average age of onset of melasma can be varied from 20 to 40 years old according to reports from various nations. In addition, melasma is more predominant in the female gender and it has been reported that females are 9-10 times more prone to melasma disorder in comparison to males. The prevalence of melasma in females during pregnancy is much higher and can be up to 63% in pregnant women. The most common risk factor for melasma in women is pregnancy, while the most common risk factors in men are sun exposure and positive family history of melasma. Although melasma is a non-malignant skin disorder, however, if a proper, well-timed, and optimum therapeutic regimen is not considered, it can induce various psychological and emotional distress including feelings of frustration, unattractiveness, and embarrassment.

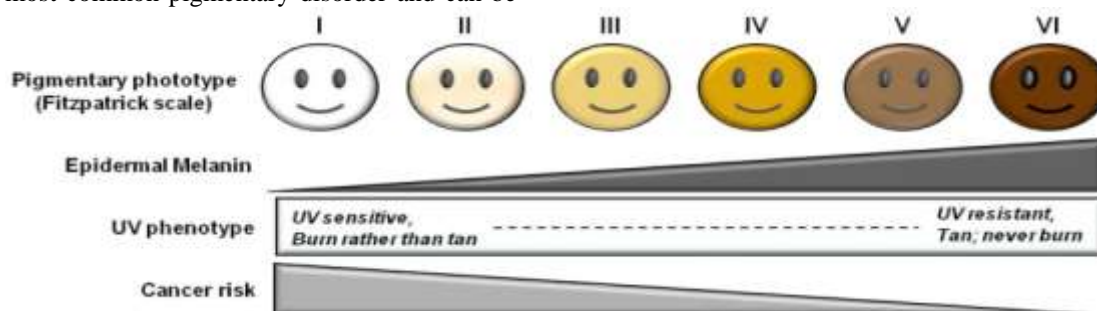


Fig. 1 : Image of Fitzpatrick Scale

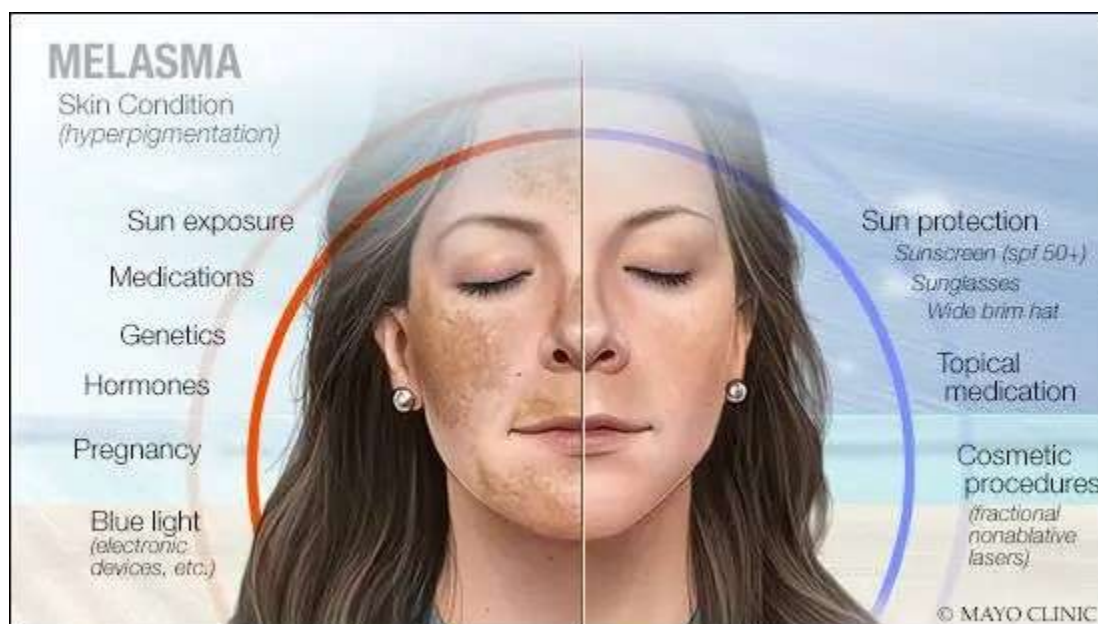


Fig. 2 : Image of Melasma Skin Condition

Melasma :Acquired hyperpigmentary disease.

Etiology :

1. Sunlight.
2. Endocrine : Thyroid disorders.
3. Pregnancy : Chloasma - mask of pregnancy.
4. Drugs : OCP, Phenytoin.

Clinical Features :

- Lesion : Hyperpigmented, symmetrically distributed macules (Brown).
- Site : Malar area, nose, mandibular area.
- D/D (Differential Diagnosis) : Malar rash in SLE (Systemic Lupus Erythematosus) (Red colour).

Treatment / Modalities :

1. General : Sunscreen
2. Skin lightening agents : Mechanism - Tyrosinase inhibition
3. Chemical peels : Mechanism - Controlled exfoliation of skin

Herbal Drugs Used In Treatment Of Melasma :

1. Glycyrrhiza Glabra Linn.
2. Rubia Cordifolia Linn.
3. Calotropis Procera

Glycyrrhiza Glabra Linn. :

Liquorice derivatives :

Liquorice is the root of the perennial herb Glycyrrhiza Glabra. Glabridin is an oil soluble derivative of liquorice extract. Glabridin has been shown to have tyrosinase inhibitory as well as anti-inflammatory properties in experimental studies. A clinical trial with Liquiritin, another liquorice derivative, has also shown benefit in treating melasma.

A Japanese patent (Chem. Abs., 1992, 117, 55948) describes the formulation of a liquiritin cream as beneficial, with no adverse effects, for the removal of skin stains in patients with chloasma, senile melanoderma, etc.

Common name :Black sugar, Common licorice, Licorice, Liquorice(UK), Mulaith, Sweetwood

Biological source : Glycyrrhiza Glabra Linn. Yasti consists of dried, unpeeled, roots and stolons of Glycyrrhiza Glabra Linn. belonging to family Leguminosae. Yasti contains not less than 3.0 % of glycyrrhizic acid.

Family : Fabaceae

Habitat :India, Iran, Italy, China, Pakistan and England.

Parts used :seeds, roots, etc.

Chemical constituents :Glycyrrhizin, Isoflavoneglabridene, Glabrene, etc.

Medicinal properties and it's used : Antitussive and expectorant activity, antioxidant activity, skin lightening and skin tightening activity, anti-inflammatory activity, antiviral effect, antifungal activity, antibacterial activity,

antimalarial activity, anti-hyperglycemic activity, immunostimulatory effects, memory enhancing activity, hepatoprotective activity, anti-coagulant.

Dose : 200-800 mg/day

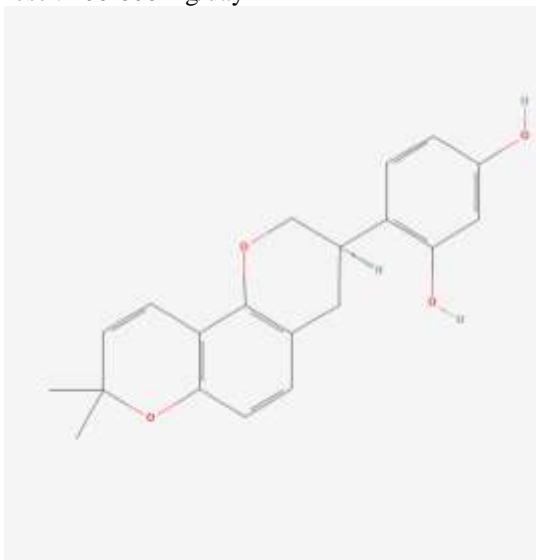


Fig. 3 : Structure of Glabridin

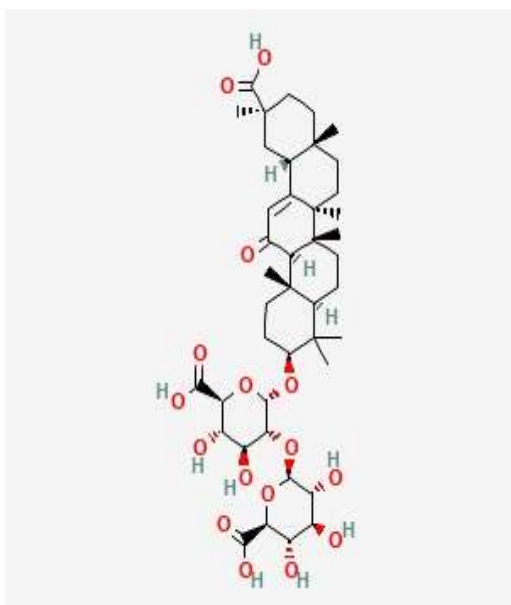


Fig. 4 : Structure of Glycyrrhizic acid / Glycyrrhizin

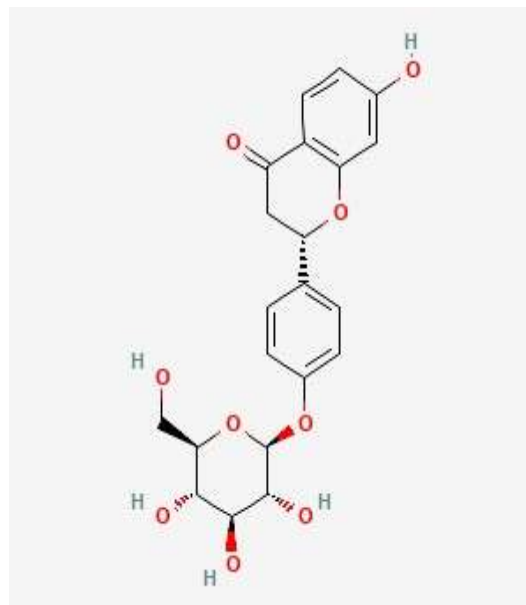


Fig. 5 : Structure of Liquiritin



Fig. 6 : Image of Glycyrrhiza Glabra Linn.

Rubia Cordifolia Linn. :

Common name : Indian madder and Manjishtha
Biological source : It consists of dried stems of a climber known as Rasta pushpin Rubia Cordifolia Linn. Sensus. Hook f. Belonging to the family Rubiaceae. It should contain not less than 0.02 % of rubiadin on a dried basis.

Family : Rubiaceae

Habitat :Asia, Europe, Africa, etc.

Parts used :Flower, leaves, stem, roots, etc.

Chemical constituents : Alizarine (colourant), Anthraquinones, Iridoids, Hexapeptides, Rubiaprasiens, Quinones, and Triterpenoids. It consists of glycosides manjistin, purpurin, resin and red dye rubiadin.

Medicinal properties : Anti-inflammatory activity, organic compounds, as a dye, colourants, blood purifier activity, anti-cancer, astringent, antidiarrhetic, deobstruent properties and anti-rheumatic, hepatoprotective. It is used in treatment of leucoderma, gouty arthritis and skin pigmentation. It helps to gain lustre and glow of skin and aids to remove pimples, freckles and discoloration in ayurvedic medicine. It is used as a blood purifier and in the textile industry used for dyeing of fabrics.

Dose :Powder - 1 to 3 gm; Kashaya - 20 to 50 ml in divided dose or as directed by

Ayurvedic doctor.

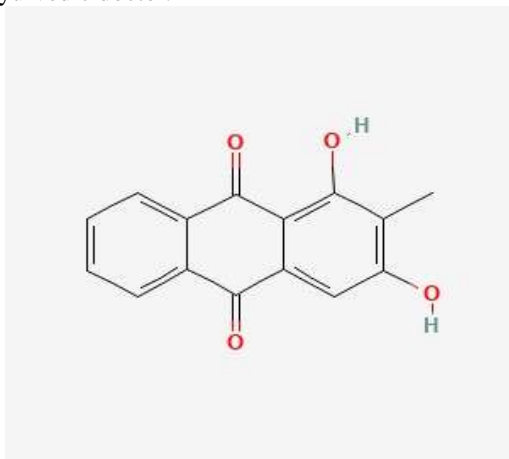


Fig. 7 : Structure of Rubiadin

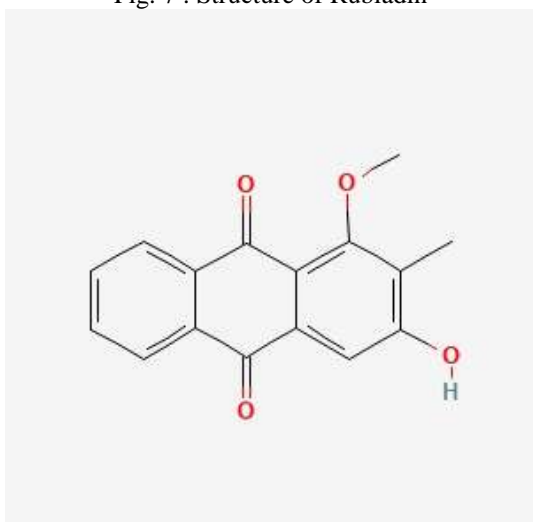


Fig. 8 : Structure of Rubiadin-1-methyl ether



Fig. 9 : Image of Rubia Cordifolia Linn.

Calotropis Procera :

Common name : Apple of Sodom, Rui, Aak or Madar.

Biological name :Calotropis Procera

Biological source and Family :It belongs to family Apocynaceae. Habitat :North Africa, Tropical North Africa, Western Asia, etc. Parts used :Flower, leaves, seeds, roots, etc.

Chemical constituents : Calotropin, Calotoxin, Calotropagenin.

Medicinal properties :Anti-acne property, skin lightening, anti-arthritis property, anti-cancer property, anti-inflammatory activity, wound healing activity, antimicrobial activity, anticonvulsant activity. Calotropis Procera is a well known plant and has been traditionally used for diarrhoea, stomatic, sinus fistula, and skin disease, and the leaf part is used to treat jaundice.

Dose :200-300 mg/week

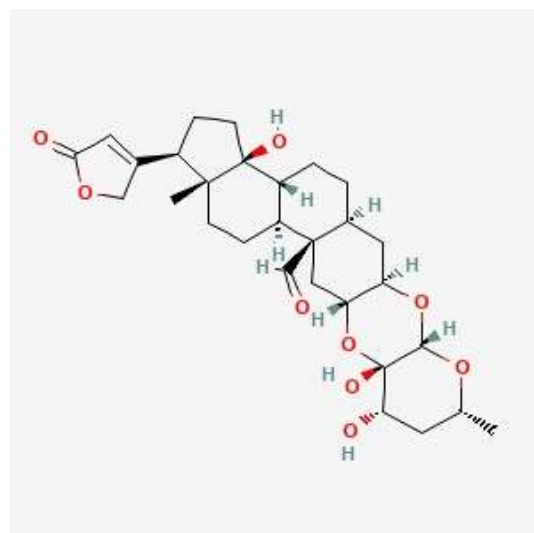


Fig. 10 : Structure of Calotropin

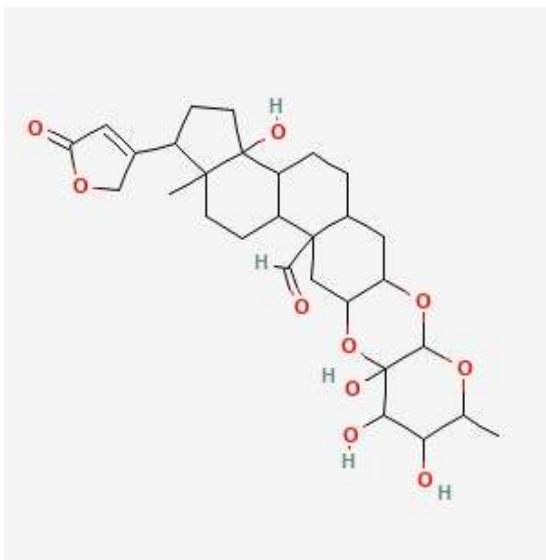


Fig. 11 : Structure of Calotoxin

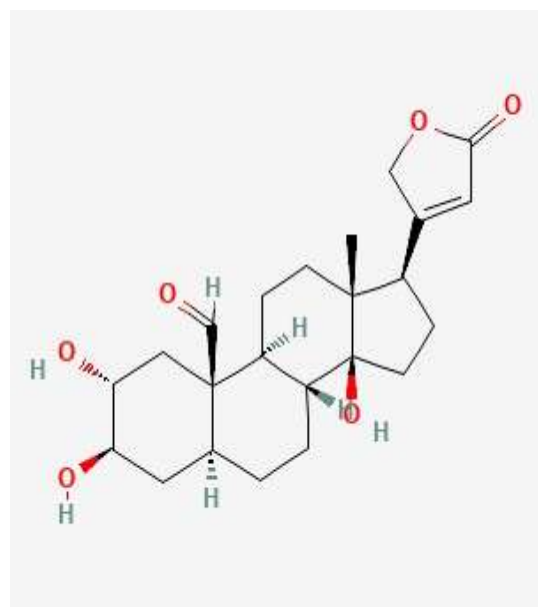


Fig. 12 : Structure of Calotropagenin



Fig. 13 : Image of Calotropis Procera

Herbal Cream For Melasma :

A Japanese Patent (Chem. Abs., 1992, 117, 55948) describes the formulation of a liquiritin cream as beneficial, with no adverse effects, for the removal of skin stains in patients with chloasma, senile melanoderma, etc. Herbal cream blocks sun rays and prevents secretion of melanin, which gives dark colour to skin. The herbal extracts of the herbal drugs such as Glycyrrhiza Glabra Linn., Rubia Cordifolia Linn., and Calotropis Procera are used for the preparation of herbal cream for the treatment and management of melasma.

II. DISCUSSION:

Herbal cream has emerged in the last 50 years to improve complexion.

Fairness is considered equal to attractiveness. Herbal cream blocks sun rays and prevents secretion of melanin, which gives dark colour to skin. Herbal medicine is being used by about 80 % of the world population primarily in the developing countries for primary health care. Glycyrrhiza Glabra Linn., Rubia Cordifolia Linn., and Calotropis Procera were selected for the preparation of herbal cream. Plant materials containing polyphenol organic substance which imparts potent antioxidant activity. The antioxidant substance scavenges the reactive oxygen species and inhibits the production of melanin in the human skin. Moreover, it also absorbs the UV rays and prevents the formation of free radicals in the skin. Therefore, we had studied the herbal fairness cream containing the extract of Glycyrrhiza Glabra Linn., Rubia Cordifolia Linn., and Calotropis Procera in different concentrations along with almond oil. Glycyrrhiza Glabra Linn., Rubia Cordifolia Linn., and Calotropis Procera are well known for its medicinal and cosmeceuticals value in the Indian traditional system of medicine. Our

literature review was based on extraction of these herbs and to formulate cosmetic cream.

The tyrosinase inhibitor substances are used in cosmetic products as skin whitening agents to reduce skin pigmentation by decreasing the melanin production. The liquorice extracts a glabrene reported to exhibit anti-tyrosinase activity and also inhibit melanin production in cell culture. It has been reported that glabrene is present in liquorice extract as a bioactive compound. From the literature review, it was concluded that herbal cream can be formulated by fusion method, for the treatment of melasma disease which minimizes the black colour of the patches.

III. CONCLUSION:

The herbal cream containing extracts of Glycyrrhiza Glabra Linn., Rubia Cordifolia Linn., and Calotropis Procera showed tremendous improvement of melasma in a dose-dependent manner, and was effective in prevention of skin damage caused by UV sunlight. It is safe for new candidates in effective treatment of melasma.

REFERENCES:

- [1]. Bhagwan M. Kale, Vaishnavi K. Chivte, Rutuja G. Dhakne, Snehal S. Dhewale. "Formulation and Evaluation of Herbal Cream for Treatment of Melasma". IJSDR, Volume 7, Issue 12, 2022, p.no. 805-812.
- [2]. Dermatology, v1.0, Marrow 8.0, 2024, p.no. 130-131.
- [3]. Parisa Ghasemiyeh, Rahil Fazlinejad, Mohammad Reza Kiafar, Shiva Rasekh, Mohammad Mokhtarzadegan, and Soliman Mohammadi-Samani. "Different therapeutic approaches in melasma : advances and limitations". Frontiers in Pharmacology, 2024, p.no. 1,4,5.
- [4]. William C. Evans. "Trease and Evans Pharmacognosy". 16th edition, 2009, p.g.no. 316-317.
- [5]. Debabrata Bandyopadhyay. "Review Article on Topical Treatment of Melasma". Indian J Dermatol 2009:54(4), p.g.no. 307.