



Management of Melasma through Ayurveda – A Case Report

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Abstract

Melasma is a pigmented disorder hyperpigmentation primarily occurring on the cheeks, forehead, and bridge on the nose, upper lip, and occasionally elsewhere on the face. It is painless, superficial brownish macular patches. Modern science recommends laser therapy and various types of steroid use for treating melasma. Laser therapy is very expensive, and steroids have many side effects. So, in this study management of melasma has been done through *Ayurveda*, which is cost-effective, and easily available with the least side effects. From the signs and symptoms, melasma looks identical to *Vyanga* as per Ayurvedic texts that come under *Kshudraroga* (minor disease). In *Ayurveda*, external therapy *Lepa* (local application), is prescribed as one of the therapeutic measures for effectively managing melasma. A 32-year-old female patient was diagnosed clinically with melasma. She got treatment from a dermatologist and applied an allopathic care cream over the brownish patches. After regular application of the cream, a brownish patch does not decrease. She has no history of sunray exposure and has no family history. So, she went to Ayurvedic treatment. She was treated with Ayurvedic *Lepa* for local application and *Panchanimbadi Churna* internally for 21 days. The content of Ayurvedic *Lepa* was Nutmeg (*Myristica fragrans Houtt.*) *Churna* (powder), and *Dugdha* (milk). In ancient science, Nutmeg is known by the name of *Jatiphala*. Nutmeg is a very useful drug utilized therapeutically, and spice and *Panchanimbadi* are useful in all types of *Raktavikara* (blood disorders). The result was assessed with subjective and objective parameters, i.e., colour score and MASI score. After 21 days of treatment, significant changes were observed without any side effects. The colour score decreases from 3 to 1, and the MASI score from 15.2 to 10.1.

Keywords: Ayurvedic *Lepa*, Melasma, Nutmeg, *Panchanimbadi Churna*

1. Introduction

Beauty is a subject of socio-medical importance, so demand for beautification and problems also increase due to polluted atmospheres, and faulty lifestyles, which damage beauty and personality. Melasma is a hyperpigmented disorder occurring mainly in females more than males. Melasma is characterised by brownish patches typically on the malar prominence and forehead¹. As per Ayurvedic texts, melasma can be correlated with *Vyanga*. In modern science, the causes of melasma are UV radiation, use of steroids, polluted atmosphere, and faulty lifestyle¹. For the protection of

skin problems, people use various types of cosmetics, and natural beauty is spoiled by the regular or random use of cosmetic products. Cosmetics are not used to cure skin problems, but to maintain the skin's appearance and beauty². Cosmetology is increasing rapidly due to the high demand and need of society². Modern science recommends oral as well as topical steroids for the management of melasma³. *Ayurveda* is a science that uses natural products to cure disease and has the least side effects. In Ayurvedic texts, many types of medicine are described for skin care, such as massage oil, local application of paste, etc., making the skin smooth, soft, and glowing⁴. In addition to this, bloodletting is

also described⁵. For managing any type of skin disorder, drugs having *Kusthaghna* (skin disorder), *Kandughna* (relieves itching), *Raktasodhaka* (blood purification), *Twaka Prasadaka* (improves skin), and *Varnyakara* (improves complexion) properties are helpful. Hence, in the present study, Nutmeg *Churna* and *Dugdha* were selected for *Lepa*, and *Panchanimbadi Churna* was chosen for internal medicine⁶⁻⁸. There are many research articles found for the management of melasma using various types of *Lepa*, *Abhyanga*, *Nasya*, and *Siravedha* with or without internal medicine. Hence, in this study, local application of Nutmeg *Churna* and *Dugdha* with *Panchanimbadi Churna* was internally used. These drugs are easily available, and cost-effective.

2. Materials and Methods

- Study design – single case study.
- Informed consent was taken from the patient.
- The assessment was done according to subjective and objective parameters.
- The patient was treated with Ayurvedic *Lepa* once daily and internal medicine *Panchanimbadi Churna* 250mg thrice a day with lukewarm water for 21 days.

2.1 Patient Information

A 32-year-old female patient comes to Panchakarma OPD of Dr. D. Y. Patil Ayurved Hospital, Pimpri, Pune, Maharashtra, India, complaining of hyperpigmentation on the face without pain and itching sensation for one year.

2.2 Clinical Findings

The brownish patches were present on both sides of the malar region without pain and itching sensation. These were very thin layered.

2.3 Diagnostic Assessment

The history, signs and symptoms were suggestive of melasma and from the Ayurvedic perspective, it is correlated with *Vyanga*.

2.4 Assessment Chart

The assessment was done with subjective and objective parameters (Tables 1 and 2):

2.4.1 Subjective Parameter⁹

Table 1. Colour Score

Parameter	Findings	Score
Colour	Light Brown	1
	Brown	2
	Dark Brown	3
	Black	4
	Dark Black	5

2.4.2 Objective Parameter¹⁰

The Melasma Area Severity Index (MASI) score is calculated by assessment of three parameters: Area (A), darkness (D), and homogeneity (H) of involvement where the forehead (f) constitutes 30%, right malar region (rm) 30%, left malar region (lm) 30% and chin (c) 10% (Figure 1). The MASI score is calculated by adding the sum of the severity ratings for darkness and homogeneity, multiplied by the value of the area of involvement, for each of the four facial areas. The total score range is 0-48. The higher the score, the higher the severity.

Table 2. Grading for parameters of MASI score

Parameters	Findings	Score
Area(A)	No involvement	0
	0-9	1
	10-29	2
	30-49	3
	50-69	4
	70-89	5
	90-100	6
Darkness(D)	Absent	0
	Slight	1
	Mild	2
	Marked	3
	Maximum	4
Homogeneity(H)	Absent	0
	Slight	1
	Mild	2
	Marked	3
	Maximum	4

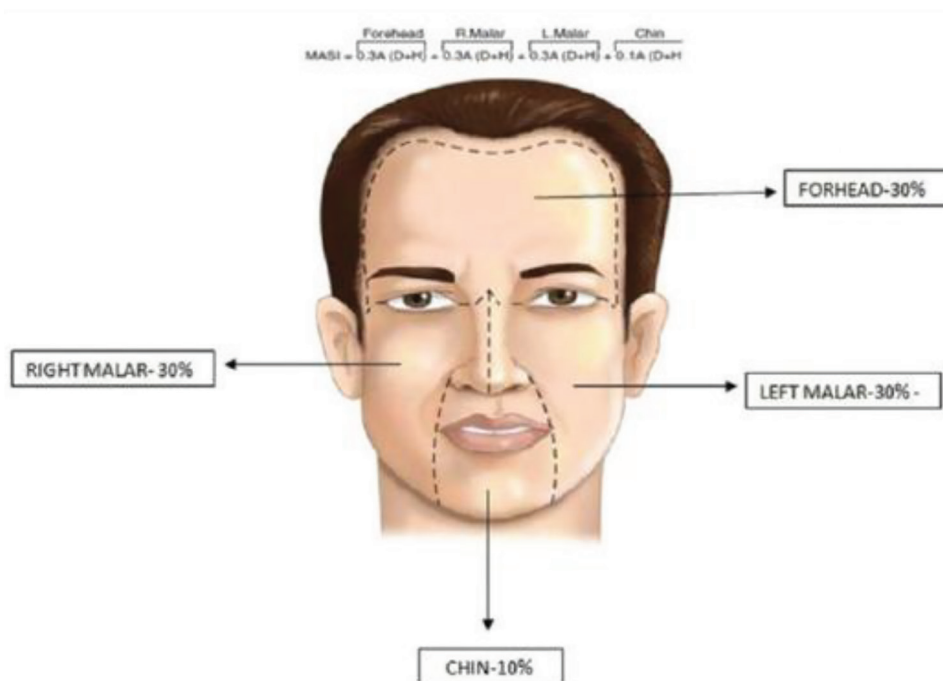


Figure 1. Melasma area severity index score.

The following formula is used for calculation:

$$\text{MASI Score} = 0.3A(f)[D(f) + H(f)] + 0.3A(lm)[D(lm) + H(lm)] + 0.3A(rm)[D(rm) + H(rm)] + 0.1A(C)[D(C) + H(C)]$$

2.5 Therapeutic Intervention

The patient was treated with Ayurvedic *Lepa* along with internal medicine (Tables 3 and 4).

2.6 Procedure

2.6.1 Pre-Procedure

The face was cleaned with water and wiped off using cotton or a towel. *Lepa* was prepared with Nutmeg *Churna* and *Dugdha*.

2.6.2 Main Procedure

After preparation, a patient was allowed to lie down on the table. *Lepa* was applied on the face in the opposite

direction of hair in the upward direction and left for 20 minutes.

2.6.3 Post Procedure

Wash the *Lepa* with water or wipe off it using a wet cotton or a towel.

3. Observations and Results

The purpose of the present study was to assess the effectiveness of Ayurvedic *Lepa* and *Panchanimbadi Churna* as internal medication for melasma. The result was assessed before and after treatment by grading subjective and objective parameters. After 21 days, signs and symptoms decreased and significant changes were observed in subjective and objective parameters. So, it could be observed that after the full treatment, the patient got good results without any side effects in the

Table 3. Key ingredients of Ayurvedic *Lepa*

Sr. No.	Name	Botanical Name	Family	Dose	Days
1.	Nutmeg <i>Churna</i>	<i>Myristica fragrans</i> Houtt.	Myristicaceae	5g	21 days
2.	<i>Dugdha</i>	-	-	Sufficient quantity to make <i>Churna</i> in paste form	21 days

Table 4. Ingredients of *Panchanimbadi Churna*¹¹

Sr. No.	Sanskrit Name	Botanical Name	Part Used	Quantity (mg)
1.	<i>Nimba</i>	<i>Azadirachta indica</i> A. Juss.	Stem bark	115
2.	<i>Pippali</i>	<i>Piper longum</i> L.	Fruit	7
3.	<i>Marich</i>	<i>Piper nigrum</i> L.	Fruit	7
4.	<i>Chitraka</i>	<i>Plumbago zeylanica</i> L.	Root	7
5.	<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	Fruit	7
6.	<i>Amlaki</i>	<i>Embllica officinalis</i> Gaertn.	Fruit	7
7.	<i>Bakuchi</i>	<i>Psoralea corylifolia</i> L.	Seed	7
8.	<i>Gokshura</i>	<i>Tribulus terrestris</i> L.	Fruit	7
9.	<i>Vidanga</i>	<i>Embelia ribes</i> Burm. F.	Fruit	7
10.	<i>Araghwada</i>	<i>Cassia fistula</i> L.	Fruit pulp	7
11.	<i>Haridra</i>	<i>Curcuma longa</i> L.	Rhizome	7
12.	<i>Chakramarda</i>	<i>Cassia tora</i> L.	Seed	7
13.	<i>Sunthi</i>	<i>Zingiber officinale</i> Rosc.	Rhizome	7
14.	<i>Bhallataka</i>	<i>Semecarpus anacardium</i> L.	Fruit	7
15.	<i>Louha bhasma</i>	Ash of iron (Fe ₂ O ₃)	Incinerated iron	5
16.	<i>Sharkara</i>	<i>Saccharum officinarum</i> L.	–	7
17.	Bhringaraja	<i>Eclipta alba</i> Hassk.	Whole plant	16
18.	Khadira	<i>Acacia catechu</i> Willd.	Stem bark	16

Table 5. Assessment chart before and after treatment

Sr. No.	Assessment Criteria	1 st Day	7 th Day	14 th Day	21 st Day
1.	Colour Score	3	3	2	1
2.	MASI Score	15.2	15.2	12.5	10.1

given dose and duration. These are mentioned below in Table 5 (Figures 2-4).

4. Discussion

4.1. Mode of Action of Nutmeg Churna

Nutmeg has potent melanin biosynthesis-inhibitory activity. Macelignan is a constituent of Nutmeg and has a hypopigmentary effect and related melanogenic activity. Macelignan inhibits melanogenesis in melanocytes by down-regulating tyrosinase, tyrosinase-related protein-1 (TRP-1), and tyrosinase-related protein-2 (TRP-2) expression. Therefore, macelignan is a useful inhibitor of melanogenesis and beneficial in the treatment of hyperpigmentation of melasma¹². According to *Ayurveda*, the *Tikta* (bitter), *Katu* (pungent) *Rasa* (taste) of Nutmeg tackle *Srotadusti* (vitiation of channels) caused by *Agnisada* (lack of digestive power)

which forms *Ama* (undigested food material) and leads to *Srotadusti*. The *Tikta Rasa* of Nutmeg causes *Pitta Samaka* (pacification), which is vitiated due to the intake of *Pitta Ahara Dravyas*. *Tikta Rasa* and *Ushna*



Figure 2. Reduction of the colour of patches on the front face from day one to the 21st day.



Figure 3. Reduction of the colour of patches on the right cheek from day one to the 21st day.



Figure 4. Reduction of the colour of patches on the left cheek from day one to the 21st day.

Virya (hot potency) of Nutmeg mitigate *Vata Dosha* and simultaneously stimulate *Bhrajaka Pitta* and help in scrape the rough, thick, black, and dark layers formed on the skin. The *Laghu*, *Tikshna Guna* (properties), and *Ushna Vriya* properties, along with *Katu Rasa*, clear the channels helping the *Bhrajaka Pitta* and open the free movements of *Bhrajaka Pitta* on the skin. Also, Nutmeg removes excessive *Kleda* (moist) from the skin and does the *Shodhana* (purification) of *Rasa-Rakta Dhatu*, thereby improving *Varna*¹³.

4.2 Mode of Action of *Dugdha*

Milk contains casein and whey proteins, which have antioxidant and antimicrobial properties. Lactoferrin has also antioxidant properties. Including this the other active ingredients present in milk also regulate sebum secretion, ameliorating inflammatory changes as well as bestowing a range of moisture, toning, smoothing, whitening, soothing, and anti-ageing

effects¹⁴. From the Ayurvedic point, the *Madhur Rasa* of cow milk subside the *Pitta Dosha*, which is the leading cause of melasma, and *Sita Vriya* also acts as *Pittasamak*. The *Snigdha Guna* alleviates the *Vata Dosha* and is responsible for maintaining the skin's moisture level. It mitigates *Rakta* and *Pitta's* aggravation and is best to alleviate the aggravation of *Vata* and *Pitta*¹⁵.

4.3 Mode of Action of *Panchanimbadi Churna*

In *Panchanimbadi Churna* the main ingredient is *Nimba* which has melanogenesis inhibiting activity that stops the synthesis of melanin and protects against UV damaged¹⁶. It has antioxidant properties which also help to improve the complexion¹⁷. *Panchanimbadi Churna*-containing drugs have *Rakta Prasadaka* (blood purification) and *Twak Doshahara* (skin disorder) properties. *Nimba* has *Tikta*, *Kashaya Rasa* and *Laghu*, *Snigdha* properties by which *Pitta Samaka* action can be observed. *Aragwadha*, *Amlaki*, *Maricha*, *Nimba*, and *Haridra* have *Kusthaghana* (skin disorders) and *Kandughna* (relieves itching) properties¹¹.

5. Conclusion

Melasma is a pigmentary disorder, and hyperpigmentation affects facial looks. In this study, Ayurvedic *Lepa* containing Nutmeg *Churna* and *Dugdha* followed by internal medicine *Panchanimbadi Churna* was found to be safe and effective and traditionally acceptable for the treatment of melasma. This treatment produced no adverse drug reactions in the prescribed dose and duration. Hyperpigmentation of Melasma was reduced through *Ayurveda* in this case. However, this clinical trial was applied with large samples to establish the potentiality of Ayurvedic management in cases of melasma.

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