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ELĀDI LEPA AND *RAKTAPĀCAKA KVĀTHA:* AN EFFECTIVE *ĀYURVEDIC* TREATMENT IN THE MANAGEMENT OF *VYANGA* (MELASMA) – A CASE STUDY.

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ABSTRACT

Background: *Vyanga* is one of the *Raktapradoshaja roga,* characterized by the presence of *Niruja* (painless) and *Shyāvavarnan Mandn an la* (brown/ blackish-blue patches) predominantly on face. On the basis of clinical features, *Vyanga* can be correlated with hyper pigmentation with special reference to Melasma/Chloasma. Melasma is a complex disorder involving various factors in its pathogenesis, identification of which will help us in developing better treatment options with more efficacy, less side effects and longer periods of remission. Newer compounds, especially botanical extracts and device-based treatments are being developed and add to the list of options available for treatment. However, more randomized controlled trials are needed to evaluate their efficacy compared to the well- known treatments available. There is also need to define the role of combination therapy and design protocols to provide optimum results and prevent relapses.[1] In this article we are giving the holistic approach to treat the melasma with drugs like *Elādi Lepa* and *Raktapācaka kvātha* which have *Rakta Prasādaka*, *Tvaka Prasādaka* and *Varṇyakara* properties helpful in the management of *Vyanga* (Melasma). This combination therapy pacifies prakupita *Dośhas* and help in *Raktaśodhana* (blood purification) ultimately helping skin to regain its normal complexion. **Aim:** To evaluate the efficacy of *Elādi Lepa* and *Raktapācaka kvātha* in *Vyanga* (Melasma). **Materials and Methods:** A total 3 middle aged female patients of *Vyanga* with no history of any major systemic illness were selected from outpatient department No. 15 of M. A. Podar

Hospital Worli, Mumbai. In this study, the trial drugs used were *Elādi Curṇa* for Lepa (tropical application) and *Raktapācaka kvātha* for oral administration for 21 days. And *Elādi Curna* for Lepa (tropical application) given for 3 months. Care taken to avoid Sun exposure. After 3 months effect of therapy on chief complaint i. e. brown/ blackish-blue pigmentation was relieved by 70%. **Conclusion:** The clinical study has shown that combined therapy of *Elādi Curna* for Lepa and *Raktapācaka kvātha* orally gives better results in Melasma/ *Vyanga*.

KEYWORDS: *Elādi Curna*, *Raktapācaka kvātha,* Melasma, hyper-pigmentation, melasma, *Vyanga*.

INTRODUCTION

Melasma

Melasma, an acquired pigmentary disorder is characterized by hyper-pigmented brown to grayish brown macules on the face. It occurs mainly in women (90% cases) and 10% of males of all ethnic and racial groups.[2] In India, 20–30% of 40–65 years old women present a facial melasma.[3] Melasma results from complex interactions of various causative factors; Epidemiological studies revealed that in more than 25% of cases, an association with sun exposure has been declared.[4] UV rays induce increased production of alpha-melanocyte stimulating hormone and corticotrophin as well as interleukin (IL)-1 that, in turn, contribute to increased melanin production.

In melasma, paracrine melanogenic factors from keratinocytes, mast cells or dermal fibroblasts have been identified.[5]

In addition, over-expression of dermal stem cell factor and its receptor, c-kit, have been identified in melasma lesions and are believed to increase melanogenesis.[6]

Prevalence

The prevalence of melasma varies between 1.5% and 33.3% depending on the population.[7], [8] Study conducted by Achar Arun et al gives female to male ratio of 3.28:1 in 2011 which was 4:1 whereas in a study conducted in Brazil and Singapore it was 39:1 and 21:1 respectively.[9],[10]. Its prevalence in pregnancy is around 50-70%.[11],[12]

Melasma can also occur in men, though less common. Sarkar et al. conducted an etiological

and histological study in Indian males with melasma and found that men represent 20.5-25.83% of the cases. In men, the malar pattern is more common than the centrofacial and mandibular patterns. [13]-[15]

Melasma is the fourth most frequent diagnosis and the first most commonly reported pigmentary dermatosis as per study conducted in Nepal in 2008 with 546 dermatological patients.[16]

Etiology

Several factors have been implicated in the etiology of melasma. These are genetic predisposition, UV radiation, thyroid disease, pregnancy, oral contraceptive pills (OCPs) and drugs such as phenytoin.[17], [18]

Hormonal influences: -Various studies evaluating the hormonal profile in patients with melasma have found significantly increased levels of luteinizing hormone and lower levels of serum estradiol. Significant association has been reported between thyroid autoimmunity and melasma, mainly in women whose condition developed during pregnancy, or after ingestion of OCPs.[1]

A study conducted in male patients with melasma has shown that the levels of testosterone were low indicating a role of subtle testicular resistance in the pathogenesis of melasma.[19]

Other etiological factors that have been described in men with melasma include the use of vegetable oil especially mustard oil on the face.[13],[14] and diethylstilboestrol therapy for prostate cancer.[19]

Drugs: -Pigmentation resembling chloasma develops in 10% of patients receiving phenytoin. Pigmentation disappears in a few months after withdrawal of the drug.[1]

Classification of melasma

Melasma based on the depth of melanin pigment can be clsiified in to following three types:

1) Epidermal melasma: visible as light brown in normal light, under Wood's light shows enhancement of contrast. Histology shows melanin deposition in basal and suprabasal layers of epidermis and this respods to treatment very well.

2) Dermal: visible as Bluish gray in normal light, under Wood's light shows no enhancement of contrast. Histology shows melanin laden melanophages seen insuperficial and mid-dermis and this respods to treatment poorly.

3) Mixed: visible as Dark brown in normal light, under Wood's light shows Some areas show contrast enhancement. Histology shows melanin deposition found in the epidermis and dermis and this respods to treatment partialy.

THERAPEUTIC MODALITIES

Hydroquinone (HQ)

Topical treatment is an effective treatment modality for pigmentary disorders and hydroquinone (HQ), a hydroxyphenol (dihydric pheno), HQ used at a concentration of 2-4% is considered the gold standard of treatment for melasma and has been widely used across the world as the treatment of choice.[20]

Tranexamic acid

In the treatment of melasma, TA can be used orally, topically or by intradermal microinjection. As a hemostatic, TA is prescribed in a dose of 1000 mg 3 times daily, whereas in the treatment of melasma, it is used in a dose of 250 mg twice daily.[21] Side effects of TA are gastrointestinal discomfort and hypomenorrhea and recurrence seen in 9.5% patients.[22]

4-n-butylresorcinol

Studies have shown good efficacy and safety with 4-n-butylresorcinol in patients with melasma.[23]

Oligopeptides

Oligopeptides have emerged as a new class of tyrosinase inhibitors with a good efficacy and cytotoxicity profile. The Lumixyl Topical Brightening system (0.01% oligopeptide cream, an antioxidant cleanser, 20% glycolic acid [GA] lotion and physical sunscreen) in patients with mild to moderate melasma and found improvement in all patients with no side effects.[24]

Silymarin

Silymarin, is derived from the of milk thistle plant silybum marianum reduces the harmful effects of UV radiation and also inhibits melanin production in a dose-dependent manner.

Silymarin cream showed excellent improvement and lesion size reduction from the first week. No adverse effects were seen.[25]

Botanical/plant extracts: - There are various botanical/plant extracts that are being used for the treatment of melasma[26] namely: - 1) Grape seed extract, 2) Orchid extract, 3) Aloe vera extract, 4) Pycnogenol, 5) Marine algae, 6) Cinnamic acid, 7) Flavonoids, 8) Green tea extract, 9) Coffee berry extract, 10) Mulberry extract, 11) Soy extract, 12) Licoriceextract, 13) Umbelliferone 14) Boswellia

NEWER CHEMICAL PEELS

A number of new peeling agents are being developed for the treatment of melasma e.g. single or combination of following: Retinol, Salicylic Acid, Phytic Acid, Kojic Acid, Azelaic Acid, Emu Oil, Alantoin etc. out of which the following deserve mention.

LASERS FOR MELASMA

During the last decade, laser technologies have been increasingly used in the treatment of dermatological disorders. Although laser treatments can have dramatic results, they can be expensive and requires highly trained professional using specialist equipment.

Prevention is better than Cure:- Daily Photo-Protection

Clothing and hats have been proposed as an important photoprotective strategy with some advantages such as the high compliance from patients.[27]

However, clothing does not offer protection against UV exposure to the uncovered anatomical sites such as a facial region for which the use of sunscreens remains the most efficient exogenous photoprotective strategy.

As Indians present with several sun-induced damages including hyperpigmentation and photoaging, the use of sunscreens is therefore of paramount importance in the Indian scenario.[59]

Melasma And Āyurveda

As described in *Sushruta Samhitā Vyanga* is one of the *Kśhudraroga*, characterized by the presence of *Niruja* (painless) and *Shyāvavarnan Maṇḍala* (brown/ blackish-blue patches) on face; caused by vitiation of *Vāta Dośhas & Pitta Dośhas* and *Rakta Dhātu*. So it is considered as *Rakta Dośhaja vikāra* As it is characterized by the presence of painless, thin, brown/

bluish black patches on face; On the basis of clinical features, Melasma can be compared with *Vyanga.*

Types

1. *Vātaja - Paruśha, Shyāva*
2. *Pittaja - Tāmra , Anila*
3. *Kaphaja - Shvetaṅta, Kandn un mat*
4. *Raktaja - Raktāṅta, Ātāmra, Ośhayukta, Chimachimāyate*

Treatment mentioned in Āyurveda

1. *Sirāvvedha:* (Blood letting)
2. *Pralepa:* (Topical application of Medicines)
3. *Abhyanga:* (Topical application & Massage with medicated oils)

Considering above references we have chosen *Elādi Curnan* for Lepa (tropical application) and *Raktapācaka kvātha* for oral administration for this study.

MATERIALS AND METHODS

No. Of Cases :- 03

Age group: 27-34 years

Sex:- female

Chronicity less than 5 years

C/o Shyāva varnayukta, *Niruja Maṇḍala* present over the face (malar/forehead/chin)

No H/o any major illnes or of any specific disease underlying as the cause of *Vyanga* like,

Inflammatory pigmentation

Malignant melanoma

Acne Vulgaris.etc.

INTERVENTION

Elādi Curna for Lepa (tropical application) and *Raktapācaka kvātha* for oral administration for 21 days. And *Elādi Curna* for Lepa (tropical application) given for next 3 months.

A. *Elādi* Lepa

1. Initially the patient advised to clean the face with water.
2. Content of the Lepa- Consists of these drugs *Elā (Elettaria cardamomum), Brīnhada Elā (Amomum subulatum), Turushka (Liquidamber orientalis), Kuśṭha (Saussarea costus),*

Priyañgu (Callicarpa macrophylla), Jaṭāmāńsi (Nordostachys jatamamsi), Hṛīber/ jala (Plectranthus vettiverides), Rohisha/ Dhyamaka (Cymbopogon martinii), Sprikka (Schizachyrium Exile), Tvaka (Cinnamomum verum), Patra (Cinnamomum tamala),Tagar (Valeriana jatamamsi), Chanda (C ostus Speciosus), Jati (Myristica Fragrans), Rasa (Commiphora, myrrh), Sukti (pearl oyster Shell*), Vyāghranakhi (Capparis Sepiaria), Sthowneya (Casuarina equisetifolia),Choraka (Kaempferia Galanga), Devadāru (Cedrus deodara), Agaru (Aquilaria agallocha), Guggulu (Commiphora mukul), Kumkuma (Crocus sativus), Sarala-niryāsa (Pinus roxburghii), Sarjarasa (Shorea robusta), Kuńdaru (Boswellia serrata), Punnāga (Kesar) (Calophyllum inophyllum), Nāgakesara (Mesua ferrea)*. Fine powder (*Sukśhma Curnan)* of all these drugs in equal quantity are mixed with water to form thick paste and is given for application on the affected areas.

3. Thickness of the lepa- 0.5-0.8mm
4. Dose- Quantity sufficient
5. Duration of each application-Retained until it gets dried and once it dries the patient is asked to wash the face with water.
6. Duration - For 90 days twice daily in the morning and in the evening.

B. *Raktapācaka kvātha* Orally

1. 10 gms. of Bharad Curn na (coarse powder) mixture of *Paṭola, Sārivā, Mustā, Pāṭhā and Kuṭaki* taken in equal quantities taken and 160 ml of water added to it then boiled to remain 40 ml of decoction (*kvātha*) which was filtered and administered orally.

2. Dose & Duration: 40 ml taken 2 times a day empty stomach. Taken for 3weeks.

Assessment criteria

The improvement provided by the therapy assessed on the basis of following parameters.

Skin /Lesion Colour

1. Texture (Dry)	Absent	0
	Mild Dryness (Not seen but felt)	1
	Moderate Dryness (Stretching of the skin that a person feels)	2
	Severe dryness (Visible dryness chapping of skin (hardness of Skin)	3
2. Skin lustre	Good Radiant Lustre	0
	Moderate Lustre	1
	Mild Lustre	2
	Poor Lustre	3

3. Number of Lesions 1-2 1
2-4 2
4-6 3
>6 4

4. Size of Lesions 0-2cm 1
2-4cm 2
4-6cm 3
>6cm 4

5. Darkness of the lesion Absent 0
Slight 1
Mild 2
Marked 3
Maximum 4

6. Area of involvement Complete face 4
Both malar , Chin/mandible, Forehead 3
Malar Bilateral 2
Unilaterral Malar/Cin/Mandible/Forehead 1

OBSERVATIONS AND RESSULTS

The study registered 3 patients out of which non drop outs and all of them continued with the study. Observations of the patients are tabulated below.

		Texture (Dryness)	Skin lustre	Number Of Lesions	Size of Lesions	Darkness of the lesion	Area of involvement	Overall Effect Of Treatment
Patient 01	**BT**	2	3	2	4	3	3	0
	FU	1	2	2	4	3	3	50 %
	AT	0	0	1	2	1	3	75 %
Patient 02	**BT**	2	2	3	4	3	2	0
	FU	1	1	3	4	2	2	40 %
	AT	0	0	3	3	1	2	70 %
Patient 03	**BT**	1	2	2	3	3	2	0
	FU	0	2	2	3	3	2	50 %
	AT	0	2	2	2	1	2	70 %

BT: Before Treatment, FU: Follow Up, AT: After Treatment.

CONCLUSION

The participants in the study were having relapsed melasma after the modern topical treatment. It is obivous from above that the effects of combination thearapy of *Elādi Curnan* for Lepa (tropical application) and *Raktapācaka kvātha* for treatment of *Vyanga* gives 70-75% results. As described in ancient science there are more treatment options like *Shodhana Cikitsā* including *Sirāvedha* etc. but with limited number of patients participated in this study and good results obtained with the above treatment of *Elādi Curnan* for Lepa (tropical application) and *Raktapācaka kvātha*; we didn't find any need to go for these *Shodhana Cikitsā.*

Further Study

Patients on recovery are being closely observed for relapse provided that they have been asked to follow the *Svasthavritta* Rules and *Āyurvedokta* daily routine and dietary regimens exclusive of *Viruddha-āhāra*.

Shodhana Cikitsā including *Sirāvedha* should be considered along with this *Bāhyābhyantara Cikitsā* such approach would prove more beneficial to patients with special reference to *Apunarbhava cikitsā.* Also three is very small number of patients so we are trying to extend the study with large number of patients at least 60 in number so as to test the results with good statistical analytical tests. But still the ancient principle of treatment found very effective with respect to this modern era.

Before Treatment **After Treatment**

Fig 01 **Fig. 02**

Fig. 03

Fig. 04

Fig. 05

Fig. 06

REFERENCES

1. Sarkar R, Arora P, Garg VK, Sonthalia S, Gokhale N. Melasma update. Indian Dermatol Online J, 2014; 5: 426-35.
2. Rendon M, Berneburg M, Arellano I, Picardo M. Treatment of melasma. J Am Acad Dermatol, 2006; 54 5 Suppl 2: S272-81.
3. Hourblin V, Nouveau S, Roy N, de Lacharriere O. Skin complexion and pigmentary disorders in facial skin of 1204 women in 4 Indian cities. Indian J Dermatol Venereol Leprol 2014; 80: 395-401.
4. Achar A, Rathi SK. Melasma: A clinico-epidemiological study of 312 cases. Indian J Dermatol, 2011; 56: 380-2.

5. Lee AY. Recent progress in melasma pathogenesis. Pigment Cell Melanoma Res 2015; 28: 648-60.
6. Kang HY, Hwang JS, Lee JY, Ahn JH, Kim JY, Lee ES, *et al.* The dermal stem cell factor and ckit are overexpressed in melasma. Br J Dermatol 2006; 154: 1094-9.
7. Pichardo R, Vallejos Q, Feldman SR, Schulz MR, Verma A, Quandt SA, et al. The prevalence of melasma and its association with quality of life in adult male Latino migrant workers. Int J Dermatol, 2009; 48: 22-6.
8. Werlinger KD, Guevara IL, Gonzalez CM, Rincon ET, Caetano R, Haley RW, et al. Prevalence of self-diagnosed melasma among premenopausal Latino women in Dallas and Fort Worth, Tex. Arch Dermatol 2007;143:424-5.
9. Achar A, Rathi SK (2011) Melasma: a clinico-epidemiological study of 312 cases. Indian J Dermatol, 56: 380-382.
10. Hexsel D, Lacerda DA, Cavalcante AS, Machado Filho CA, Kalil CL, et al. (2014) Epidemiology of melasma in Brazilian patients: a multicenter study. Int J Dermatol, 53: 440-444.
11. Goh CL, Dlova CN (1999) A retrospective study on the clinical presentation and treatment outcome of melasma in a tertiary dermatological referral centre in Singapore. Singapore Med J, 40: 455-458.
12. Rathore SP, Gupta S, Gupta V. Pattern and prevalence of physiological cutaneous changes in pregnancy: A study of 2000 antenatal women. Indian J Dermatol Venereol Leprol 2011; 77: 402.
13. Wong RC, Ellis CN. Physiologic skin changes in pregnancy. J Am Acad Dermatol, 1984; 10: 929-40.
14. Sarkar R, Jain RK, Puri P.Melasma in Indian males. Dermatol Surg, 2003; 29: 204.
15. Sarkar R, Puri P, Jain RK, Singh A, Desai A. Melasma in men: A clinical, aetiological and histological study. J Eur Acad Dermatol Venereol, 2010; 24: 768-72.
16. Vazquez M, Maldonado H, Benmaman C, Sanchez JL. Melasma in men. A clinical and histologic study. Int J Dermatol. 1988; 27: 25-7.
17. Walker SL, Shah M, Hubbard VG, Pradhan HM, Ghimire M (2008) Skin disease is common in rural Nepal: results of a point prevalence study. Br J Dermatol, 158: 334-338.
18. Resnik S. Melasma induced by oral contraceptive drugs. JAMA, 1967; 199: 601-5.
19. Lutfi RJ, Fridmanis M, Misiunas AL, Pafume O, Gonzalez EA, Villemur JA, et al. Association of melasma with thyroid autoimmunity and other thyroidal abnormalities and their relationship to the origin of the melasma. J Clin Endocrinol Metab, 1985; 61: 28-31.

20. Sialy R, Hassan I, Kaur I, Dash RJ. Melasma in men: A hormonal profile. J Dermatol, 2000; 27: 64-5.
21. Chandra M, Levitt J, Pensabene CA. Hydroquinone therapy for post-inflammatory hyperpigmentation secondary to acne: Not just prescribable by dermatologists. Acta Derm Venereol, 2012; 92: 232-5.
22. Dunn CJ, Goa KL. Tranexamic acid: A review of its use in surgery and other indications. Drugs, 1999; 57: 1005-32.
23. Wu S, Shi H, Wu H, Yan S, Guo J, Sun Y, et al. Treatment of melasma with oral administration of tranexamic acid. Aesthetic Plast Surg, 2012; 36: 964-70.
24. Khemis A, Kaiafa A, Queille-Roussel C, Duteil L, Ortonne JP. Evaluation of efficacy and safety of rucinol serum in patients with melasma: A randomized controlled trial. Br J Dermatol, 2007; 156: 997-1004.
25. Hantash BM, Jimenez F. Treatment of mild to moderate facial melasma with the Lumixyl topical brightening system. J Drugs Dermatol 2012; 11: 660-2.
26. Altaei T. The treatment of melasma by silymarin cream. BMC Dermatol, 2012; 12: 18.
27. Sarkar R, Arora P, Garg KV. Cosmeceuticals for hyperpigmentation: What is available? J Cutan Aesthet Surg, 2013; 6: 4-11.
28. Gambichler T, Rotterdam S, Altmeyer P, Hoffmann K. Protection against ultraviolet radiation by commercial summer clothing: Need for standardized testing and labelling. BMC Dermatol, 2001; 1: 6.