

A RANDOMIZED COMPARATIVE CLINICAL TRIAL TO ASSESS THE VARNYA EFFECT OF RAKTACHANDANADI LEPA AND YAVADI LEPA

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ABSTRACT

Introduction: The concept of beauty, tradition of cosmetic and perfumery is as old as human civilization. *Medical classics* added a health related significance to it. Such type of conditions does not cause a painful manifestation, but it affects the person psychologically. *Tvakvaivarnya* is such type of condition. They suffers from various inferiority complexes and keep themselves isolated from the society.

Aim and Objective: To define the term *Varnya* in terms of skin color, moisture, oiliness and lustre. To evaluate the *Varnya* effect of *Raktachandanadi Lepa* and *Yavadi lepa*. To study the comparative

efficacy of both the administered *Lepa*. **Material and Methods: Group A:** In this group 30 volunteers were applied *Raktachandanadi Lepa*. **Group B:** In this group 30 volunteers were applied *Yavadi Lepa*. **Result:** Both *Raktachandanadi lepa* and *Yavadi lepa* have no major difference in *varnyakara* effect in both Groups A & B respectively. **Discussion & Conclusion:** The meaning of the *Varna* is not just color but it includes all the parameters of healthy and radiant skin like texture, color, luster, moisture, elasticity etc.

KEYWORD: *Varnya*, Color, Moisture, Lustre, *Raktachandanadi*, *Yavadi*.

INTRODUCTION

Beauty is a divine gift to human beings. The concept of beauty, tradition of cosmetic and perfumery is as old as human civilization. *Medical classics* added a health related significance to it. Cosmetology is the science of alteration of appearance and beautifying skin and its appendages. Since *Vedic* times we see aware effort of man towards looking beautiful.

According to Drugs and Cosmetics Act (India) 1940 Cosmetology is defined as that “Intended to be applied to the human body for cleansing, beautifying, promoting attractiveness or altering the appearance without affecting the body’s structure or function”.

The definition of the health is given by *Ayurveda*, in which, the equilibrium state of *Dosha*, maintenance of *Jatharagni*, equilibrium of the *Dhatu* as well as of *Mala*, well-functioning of all these and clarity of *Atma*, sense organs and mind – the person having all these is called in Healthy state.^[1] The equilibrium of all the *Dhatu* is the root cause for *Vridhhi*, *Bala*, *Varna*, *Oja*, *Jatharagni*, *Medha*, *Ayu* and *Sukha* and disturbed state of the same results in ailments. *Varna* word is used in a broader aspect which includes most of the parameters which are necessary for healthy skin. Here, *Varna* is given as sign of Health.^[2]

Any unhealthy state of physique or the psyche would be reflected by the skin disbeautifies the person, as beauty manifests through the appearance of the complexion of the skin. Such type of conditions does not cause a painful manifestation, but it affects the person psychologically. *Tvakvaivarnya* is such type of condition. They suffers from various inferiority complexes and keep themselves isolated from the society.

NEED OF STUDY

A wide range of products are launched in the market every year, amongst them a large number claim to be herbal in origin, but we all know that these products do have some chemical adulterants which may have hazardous effects on skin. There is a great demand of *Ayurveda* in the field of cosmetology due to its unique concept about beauty and its effectiveness, cheaper and long lasting beauty therapy without any side effect. In *Ayurveda*, we find so many drugs which are said to have *Varnya Karma*. *Varnya Karma* is to have a modifying effect on skin texture; it may include a positive effect on color, moisture, luster, elasticity, and removal of any type of skin discoloration.

People believe in safety and efficacy of *Ayurveda* topical applications. These are protective and promotes to skin health as these are free from artificial chemicals. As *Lepa* is made at the time of application so irrespective of facial creams it doesn't need any preservatives (chemicals). That's why in this study, *Varnya dravya* used in the form of *Lepa*.

AIMS AND OBJECTIVES

- ✓ To define the term *Varnya* in terms of skin color, moisture, oiliness and lustre.

- ✓ To evaluate the *Varnya* effect of *Raktachandanadi Lepa* and *Yavadi lepa*.
- ✓ To study the comparative efficacy of both the administered *Lepa*.

MATERIALS AND METHODS

In the present study with the above mentioned aims and objectives, the clinical study progressed utilizing the clinical materials as under:

Source of Data: Volunteers from NIA campus and surrounding area full filling the inclusion criteria were studied.

Sampling Technique: Healthy volunteers were selected irrespective of their age, sex, education, occupation etc. and giving informed consent to participate in the trial were selected and randomly divided into two groups.

Diagnostic Criteria: Apparently healthy individuals were considered and conditions explained in exclusion criteria was ruled out. A special Performa was prepared incorporating all the conditions of wellbeing and for assessment of *Prakriti* to know the type of skin.

INTERVENTIONAL STUDY

Grouping: All the participants were divided into two groups to compare the efficacy of the trial drug.

Group A: In this group 30 volunteers were applied *Raktachandanadi Lepa*.

Group B: In this group 30 volunteers were applied *Yavadi Lepa*.

Inclusion Criteria

- ✓ Males and females between the ages of 18-60 years.
- ✓ Volunteers with minor spots and blemishes without inflammation and induration.
- ✓ Volunteers showing negative sensitivity test for the *Lepa*.

Exclusion Criteria

- ✓ With the history of any skin disease like psoriasis, dermatitis, herpes, chicken pox, eczema, SLE, acne etc.
- ✓ In the conditions like *Pinasa*, *Ajirna*, after *Nasya*, *Hanugraha*, *Arochaka*, *Ratrijagrana*^[3]
- ✓ History of hypersensitivity to drugs, sunlight, cosmetics etc.
- ✓ Indulged in smoking, alcohol, intake, or any other such addiction.

Discontinuation (Withdrawal) Criteria

- ✓ Any major illness if seen during the trial

- ✓ Drug compliance is less than 80 percent
- ✓ Patient does not want to continue trial

Approval of Ethics Committee

Before initiating the study, approval for the study protocol and the procedure was obtained from the Institutional Ethics Committee.

Details of Intervention

Group A- *Raktachandanadi Lepa*

Group B- *Yavadi Lepa*

- **Dose-** 20gm
- **Preparation of drug-** Powder
- **Route of administration-** Local application on Face
- **Time of administration-** in the morning hours before taking bath.
- **Duration-** 4 weeks
- **Method of application of *Lepa*-** Before the application of *lepa*, the volunteer was advised to wash the face with normal water. Then mix the powder in quantity of 20gms with milk and applied externally on face in the morning hours before taking bath. When it starts drying, then wash the face with pure water. It was directed to apply once per day in the morning in a standard quantity and in a prescribed manner. Sensitivity test was done before application on face by applying *Lepa* on forearm and washing it just after drying. The area was then observed for 24 hours for any hypersensitivity reaction.

Assessment Criteria

Subjective: Color, moisture, lustre, oiliness

GRADING

- Color of the skin was assessed by Fitzpatrick's Scale.

Fitzpatrick scale^[4] - The following list shows the six categories of the Fitzpatrick scale:



- The difference in luster of skin will be noted on visual analogue scale on 0-10 number. 0 means lusterless and 10 means skin is glorious and lustrous.
- Moisture content and Oil content were calculated by using BIA skin analyzer. Before using BIA for readings, fixed part (lateral part of cheek) was cleared with spirit swab and after 10 minutes readings were recorded.

BIA skin analyzer

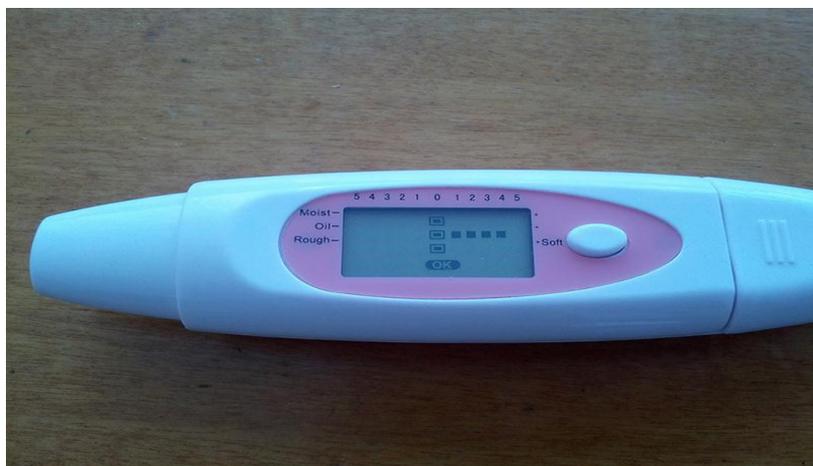


Table No. 1.

Moisture and Oil Content of Skin	Grade
Grade 0 (0 and positive scores in BIA skin analyzer)	0
Grade 1 (-1,-2 scores in BIA skin analyzer)	1
Grade 2 (-3 score in BIA skin analyzer)	2
Grade 3 (-4 score in BIA skin analyzer)	3
Grade 4 (-5 score in BIA skin analyzer)	4

OBSERVATIONS

Color- More individuals registered were of IV category i.e. 70.83%, followed by 25% of category V and 4.1% of category III.

Lustre- maximum volunteers of Grade 2 (36.66%) followed by Grade 3 (30%), Grade 1 (13.34), Grade 0 (11.66%) and Grade 5 & 6 with 1.67% are found.

Moisture- maximum individuals (40%) with moisture of Grade 3 followed by Grade 2 (28.33%), Grade 4 (23.33%) and 8.34% of Grade 1 are found in present study.

Oiliness- maximum individuals (33.33%) with moisture of Grade 3 followed by 26.66% of Grade 1 and Grade 2 & Grade 4 (20%) are found in present study.

RESULTS

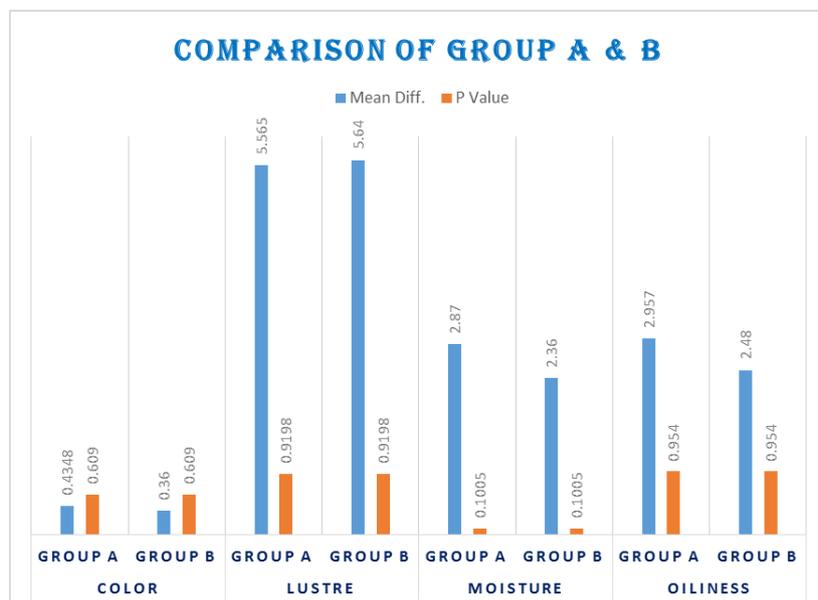
- Intragroup assessment of group A and B done by-(Wilcoxon matched-pairs signed-ranks test).
- Intergroup assessment of group A & B done by (Mann Whitney test).

Table No.2: Comparison of group A and group B.

Assessment Criteria	Groups	Mean Diff.	SD	SE	P Value	Result
Color	Group A	0.4348	0.5069	0.1057	0.6090	NS
	Group B	0.3600	0.4899	0.09798	0.6090	NS
Lustre	Group A	5.565	0.8435	0.1759	0.9198	NS
	Group B	5.640	0.7572	0.1514	0.9198	NS
Moisture	Group A	2.870	0.8689	0.1812	0.1005	NS
	Group B	2.360	1.036	0.2072	0.1005	NS
Oiliness	Group A	2.957	0.9283	0.1936	0.954	NS
	Group B	2.480	1.046	0.2091	0.954	NS

Statistically P value 0.690, 0.9198, 0.1005 and 0.954 of Color, Lustre, Moisture, and Oiliness are found which shows not significant results in both the groups.

It means both *Raltachandanadi lepa* and *Yavadi lepa* have no major difference in *varnyakara* effect in both Groups A & B respectively.



DISCUSSION

Effect of *Raktachandandi Lepa* on *Varnya* (complexion)

The properties of each *dravya* of *Raktachandanadi lepa* are explained below.

- *Raktachandana* is *Rakta-pitta shamaka*, *Raktashodhaka*, *Twakdoshahara* and *Kushthagha* and having *Tikta* and *Kashaya rasa*, *Guru* and *Ruksha guna*.
- *Manjishtha* is one of the *dravya* of *Varnya gana* and it is beneficial in many skin diseases and has *guna* such as *guru* and *Ruksha* and *rasa* such as *Madhura*, *Tikta* & *Kashaya*.
- *Lodhra* is also used in skin diseases and has *Laghu* and *Ruksha guna* and *Kashaya rasa*.
- *Kushtha* is *Raktashodhaka*, *Kushthagha*, *Varnya* and *Madhura*, *Tikta* & *Katu rasa pradhana* and having *laghu*, *Ruksha guna*.
- *Priyangu* is *Raktashodhaka*, *Twakdoshahara* and very advantageous in skin diseases having *guru* and *Ruksha guna* and *rasa* such as *Madhura*, *Tikta* & *Kashaya*.
- *Vatankura* is *varnyakara*, *Madhura* & *Kashaya rasa dominant* and having *Guru Ruksha guna*.
- *Masura* is *Varnyakara* and also having *Madura* & *Kashaya rasa* and *Ruksha guna* as explained by *Bhavprakash*.

Thus all the *dravya* of the *Raktachandanadi lepa* having the properties such as *Varnya* and *Twakdoshahara* due to which they are used in this study. As all the *dravya* of this *lepa* are mentioned as *varnyakara*, *raktashodhaka*, *twakdoshhara*. These *dravya* act on *Bhrajaka pitta* and helps in improving the *Mukhakanti*. Skin is the seat of *bhrajaka pitta* which imparts the characteristic complexion to skin and also performs *dipana* and *pachana* of substance used for *Abhyanga*, *lepa*, *parisheka* etc. According to Modern science, Melanin contributes color quality to the skin and protects the organism from the ultra-violet rays.

Skin radiance contributes the personal appearance; it depends on the blood supply to the skin and reflect in the form either darkling or lighting of skin. The essential oil present in the *raktachandana* is beneficial in blood circulation which improves *Varna* (complexion) of skin. These ingredients are present in *Varnya- Mahakashaya*, i.e., drugs of these groups have ability to enhance the radiance or bright complexion of the skin.^[5]

Raktachandana and *manjishtha* are the *dravya* which mainly act on *Bhrajaka pitta*. The pleasingly improvement in moisture occurs and dryness of skin was reduced and skin showed normal texture after application of *lepa*. *Manjishtha* holds the status of a very good skin care herb as is used to make the complexion even and lighten dark spots.^[6] *Manjishtha* also

contains glucosides known as Manjisthin and Purpurine, Pseudopurpurine, Xanthopurpurine along with resins, lime salts and coloring agents.^[7] Methanolic extract of this herb has inhibition of tyrosinase activity thereby acting as skin whitening agent.^[8] *Lodhra* is credited with cleansing and soothing properties, and hence is used in various skin ailments. Salireposides isolated from its extract has well documented activity against acne producing bacteria.^[9] It has also tyrosinase inhibitory activity,^[10] and thus is useful as a mild skin care herb. *Kushtha-moola* is indicated in various skin disorders such as leprosy, erysipelas, as well as to improve complexion.^[11] In Modern research also, methanolic extract of crude drug has tyrosinase inhibition when assayed with slightly modified dopachrome method showing its usefulness as a skin whitening agent.^[12]

Out of 7 *dravya* of this *lepa*, five (*manjishtha*, *lodhra*, *priyangu*, *vatankura*, *masura*) are of *kashaya rasa* dominant, which are natural astringent acts on skin tone and skin becomes glowing & lustrous.

Effect of Yavadi Lepa on Varnya (complexion)

The properties of each *dravya* of *Yavadi lepa* are explained below-

- Yava is madhura, *kashaya rasa* dominant and having laghu, ruksha guna, kapha-vatashamka and indicated raktavikara.
- Yashtimadhu is madhura *rasa* dominant and having guru, snigdha guna, Vata-Pittashamaka. It has property of varnya and indicated in varnavikara and skin disorders.
- Lodhra is also used in skin diseases and has laghu and ruksha guna and *Kashaya rasa*. And kapha-pittashamaka.

Two out of three contents of *Yavadi lepa* are of *kashaya rasa* which cause *stambhana* and provides tonicity to the skin which enhances the lustre and skin becomes glorious.

Proper skin hydration is dependent on hygroscopic agents like, HA (Hyaluronic acid). β -glucans are the active components of *Yava*^[13] and exerts beneficial effects on skin health, by decreasing hyaluronidase (which maintains moisture of the skin) and collagenase expressions. They also stimulate collagen protein expression and reduce wrinkling of skin^[14] and clear skin come to be lustrous. Ethanolic extract of *Glycyrrhiza glabra* is reported to show improvement in the viscoelastic and hydration properties of the skin. Synergistic effect of UV protective, antioxidant and anti-inflammatory properties of liquorice extract might be responsible for providing valuable effects on skin.^[15] Role of *G. glabra* on skin is mainly

attributed to its antioxidant activity of phytochemicals namely triterpene, saponins (Glycyrrhizin-salts of glycyrrhizic acid) and flavonoids.^[16] Glycyrrhizetic acid controls the secretion of melanin in skin and it has the effect of reducing dark pigmentation and making the complexion fairer.^[17] Extract of liquorice is reported to be an effective and safest pigment lightening agent known with least side effects. Liquiritin present in liquorice extract disperse melanin, thereby inducing skin lightening.^[18] Methanolic extract of its rhizome has been reported to be a potent tyrosinase inhibitor in human skin with more than 75% inhibition. The IC50 value was found to be within range when compared to well-known skin whitening agent i.e. Kojic acid.^[19] Therefore, it is likely to be useful for cosmetic applications. Some other active compounds in liquorice extract like glabrene, Licochalcone A, Isoliquiritin are also accountable for inhibition of tyrosinase activity cultured B16 murine melanoma cells which caused due to modification of action site of the enzyme. Due to good tyrosinase inhibition activity, liquorice extract can be used to formulate cosmetic formulations with de-pigmenting activity.^[20]

In both the lepa i.e. *Raktachandanadi lepa* and *Yavadi lepa*, some of the *dravya* have *Snigdha Guna*, and some *dravya* possess *Laghu, Ruksha Guna*. *Snigdha Guna* is responsible for *Mardava* and *Varna Prasadana* and maintains moisture and oiliness of skin whereas *Laghu, Ruksha* are the properties of *Agneya Dravya*, which are responsible for *Prabha, Prakasha* and *Varna*.^[21] Almost all the drugs selected are of *Shita Virya* and *Shita Virya Dravya* have *Rakta Prasadana Karma*.

Mode of Action of Lepa- While explaining the direction for application of *Lepa*, it is said that the active principles of the drug enter through the *Sira Mukha*,^[22] *Romakupa, Sweda vahini* hence after the entry of the drug by virtue of *Virya*, it enters the circulation. The selected drugs mainly are of *Madhura Vipaka*. *Vipaka* is basically defined as *Karma Nishthaya*, here the term *Nishtha* incorporates *Jatharagni, Dhatvagni* and *Bhutagni* irrespective of their order. *Madhura Vipaka* by virtue of its *Snigdha Guna* and *Kapha Vardhana Karma* is responsible for *Varna Utkarsha*. By the term *Twachi Vipakva*,^[23] it can be said that the drug is absorbed by virtue of *Vipaka* into the circulation.

CONCLUSION

- The meaning of the *Varna* is not just color but it includes all the parameters of healthy and radiant skin like texture, color, luster, moisture, elasticity etc.

- Whatever brings softness, suppleness and beauty to the skin, provides lustre and bring the discolored skin to the natural color is termed as *varnya*, *varna prasadana* and *varchasya dravya*.
- *Varnaprasadana* is not to convert the normal colour and complexion in fairer one, but to purify the abnormal color which is changed by some disturbance in normal state.

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