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## A randomised comparative clinical study to assess the efficacy of *Arjuna Twak Churna Lepa* and *Yastimadhu Churna Lepa* along with *Khadira Churna* in the management of *Vyanga* with special reference to *Melasma*

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### ABSTRACT

**Background:** *Vyanga* is one of the skin disease and it is included under the heading of a *Kshudra Rogas*. *Vyanga* is pathological condition of the facial skin which is produced by the vitiation of the *Vata*, *Pitta Doshas* and *Rakta Dhatu* and *Manasika Nidanas* such as *Bhaya*, *Krodha* and *Shoka* are the main culprits characterized by the presence of *Niruja*, *Tanu*, and *Shyava Mandalas* over the face. *Vyanga* is correlated with facial *Melasma*, *melasma* is skin condition in which a hyperpigmented patches over the face of the individual showing the similarities in clinical features. **Objectives:** To assess the efficacy of *Arjuna Twak Churna Lepa* and *Yastimadhu Churna Lepa* along with *Khadira Churna* in the management of *Vyanga* with special reference to *melasma*. **Methodology:** A comparative clinical study was conducted on *Vyanga Roga* for the period of 21 days. The patients were divided into 2 groups. In Group A 20 patients were administered with *Arjuna Twak Churna Lepa* along with *Khadira Sara Churna* and in Group B 20 patients were administered with *Yasthimadhu Churna Lepa* along with *Khadira Sara Churna*. **Results:** Group A and Group B have shown statistically significant result. Group A treated with *Arjuna Twak Churna Lepa* along with *Khadira Sara Churna* shown better result compared with Group B treated with *Yasthimadhu Churna Lepa* along with *Khadira Sara Churna*.

**Key words:** *Vyanga*, *melasma*, *Kshudra Rogas*, *hyperpigmentation*.

### INTRODUCTION

Ayurveda is the science of life. Aim of Ayurveda is to maintain health of healthy person and to eradicate the disease of the diseased person.<sup>[1]</sup> Skin is the largest and important organ of the body; face is the index of the

mind. In day today life everyone is very much concerned about healthy skin beauty.

In *Ayurveda* number of skin diseases have been explained under the heading *Kshudraroga*.<sup>[2]</sup> *Kshudrarogas* are minor diseases having simple etiology and symptoms. *Vyanga* is one among them which effects the skin beauty characterized by presence of painless thin and bluish black patches on face occurs by of the vitiation of *Vata* and *Pitta Dasha*.<sup>[3]</sup> i.e., *Brajak Pitta* followed by *Rakta Dhatu*.

*Charaka* mentioned *Vyanga* is the *Raktapradoshajvikar*.<sup>[4]</sup> aggravated *Pitta* along with *Rakta* is the main culprit for the initiation of pathology, Etiological factors like *Krodha*, *Shoka* mainly *Pitta* vitiation takes place which inturn affects the *Jatharagni* and normal functioning of *Ranjakpitta*. *Varnotpatti* based on *Ashrayaashrayee Bhavas* derangement of *Pitta Dasha* leads to abnormality of *Raktadhatu*.

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*Shrama, Shoka* will lead to *Udana Vata* vitiation, thus vitiated *Ranjak Pitta* and *Rakta Dhatu* as well as *Udanavata* travel in the body through *Dhamanis* and gets *Sthansamshraya* in *Mukhagatatwacha* and causes the vitiation of *Bhrajakapitta*.

*Vyanga* is co-related with Melasma.<sup>[5]</sup> In modern science exact cause of melasma is unknown. However, some factors are explained as etiopathogenesis, those are sunlight, genetic predisposition and role of female hormonal activity, a form of hyperpigmentation associated with increased melanin, especially seen on cheeks, nose, forehead, chin and upperlip.

The reported prevalence of melasma ranges from 0.25 - 4.0% in several south east Asian population.<sup>[6]</sup> The age of onset is also unknown, with average age ranging between 20 to 40 years. Melasma however affects women more than men.

In *Ayurveda* skin is the one of route of the administration of the drugs is considered equally important, as the other route of administration. many preparations are available in different forms in classics. Which are to be used topically.

The *Lepa* helps in removing the *Doshas* locally and gives rise to the normal colour of the skin.

There are many cosmetic products available, but their results are not satisfactory on spending lots of money. but in *Ayurveda* preparations are in greater demand in treatment of skin diseases with economically cheaper treating methods.

Hence, present study is intended to know the effect of *Arjun Twak Churna Lepa*<sup>[7]</sup> and *Yasthimadhu Churna Lepa*<sup>[8]</sup> along with *Khadira Churna*<sup>[9]</sup> as these preparations having properties like *Twakprasadak*, *Varnyakar*, *Raktaprasadak*, *Kustagna*,<sup>[10]</sup> can produce the cutaneous depigmentation and useful in the management of *Vyanga*.

## MATERIALS AND METHODS

### Drug Source

*Arjun Twak*, *Yasthimadhu* root and *Khadira Churna* were collected from local market. They are authenticated by the Dept. of *Dravyaguna* BLDEA'S

AVS Ayurveda Mahavidyalaya, Vijayapura. The formulations of present study will be prepared as per the classical reference in the BLDEA'S AVS Ayurveda Pharmacy attached to the Dept. of Rasashastra and Bhaishajya Kalpana.

### Clinical Source

*Vyanga* cases which were attended to OPD in A.V.S *Ayurveda* Mahavidyalaya, Vijayapura. 40 patients diagnosed with *Vyanga* were taken for the study from OPD of BLDE'S AVS Ayurveda Mahavidyalaya, Vijayapura

### Inclusion criteria

- Patients with classical signs and symptoms of *Vyanga*
- Patients of either sex between 20 to 50 years.

### Exclusion criteria

- Secondary to systemic diseases.
- Women using oral contraceptives.
- Pregnant women and lactating mothers.
- Patients not willing to participate and not giving consent for the study.

### Laboratory Investigations

Hb%

### Study Design

40 patients of *Vyanga* were selected randomly and divided into two equal groups, Group- A and Group-B.

#### Group-A

- *Lepa* : *Arjuna Twak Churna Lepa* with *Madhu*, thickness of *Lepa* is 3-4mm and it should be washed before it dries up.
- Time : Daily Morning Once
- *Shamana Yoga* : *Khadira Churna* 1gm Twice Daily with lukewarm water (two *Pala* - 98ml)
- Duration : 21days.

#### Group-B

- *Lepa* : *Yasthimadhu Churna lepa*, thickness of *lepa* is 3-4mm and it should be washed before it dries up.
- Time : Daily morning once

- *Shamana Yoga* : *Khadira Churna* 1gm Twice Daily with lukewarm water (two *Pala* - 98ml)
- Duration : 21days

**Assessment criteria:** The effect of therapy was assessed on the basis of subjective and objective criteria.

#### Subjective criteria

Subjective criteria includes,

- Itching.
- Burning sensation.

#### Objective criteria

Objective criteria includes,

- Skin/lesion colour.
- Texture (dry/oily).
- Number of lesions.
- Size of lesions

#### Subjective Criteria

##### 1) *Kandu* (Itching) - Score

- No Itching - 0
- Mild Itching (Occasional itching but does not disturb routine Activity) - 1
- Moderate Itching (Frequent itching, disturbs routine activity but does not disturb sleep) - 2
- Severe Itching (Frequent itching that disturbs routine activity as well as sleep) - 3

##### 2) *Daha* (Burning sensation) - Score

- No Burning sensation - 0
- Mild Burning sensation (Occasional burning sensation mostly when patient undergoes to Sun exposure) - 1
- Moderate Burning sensation (Frequent burning sensation which increases when patient undergoes to Sun exposure) - 2
- Severe Burning sensation (Continuous burning sensation with or without sun exposure) - 3

#### Objective Criteria

##### 1) *Rukshata* (Dry Skin) - Score

- Normal - 0
- Mild Dryness (Not seen but felt by touch) - 1
- Moderate Dryness (Stretching of the skin that person feels) - 2
- Severe Dryness Visible dryness (Chapping of the skin, hardness of the skin) - 3

##### 2) *Snigdhatta* (Oily Skin) - Score

- Normal - 0
- Mild Oiliness (Not seen with naked eye, Oiliness feel by touch, no need to wash face frequently, Wash face only 1-2 times a day) - 1
- Moderate Oiliness (Oiliness is visible on skin Need to wash face frequently 3-4 times a day) - 2
- Severe Oiliness (Excessive Oiliness, Formation of Acne, need to wash face more frequently > 4 times a day) - 3

##### 3) Size - Score

- <1 cm - 1
- 1-3 cm - 2
- 3-6 cm - 3
- >6 cm - 4

When lesions or patches are multiple, the size of the largest lesion is taken into consideration

##### 4) Color - Score

- Light Brown - 1
- Brown - 2
- Dark brown - 3
- Black - 4
- Dark black - 5

##### 5) Number of Lesions - Score

- 1-2 - 1
- 3-4 - 2

- 5-6 - 3
- 6 - 4

### Overall assessment

**Good result:** The color of the hyperpigmented lesion fading to 6-8 shades on the fairness meter is considered as good result.

**Moderate result:** The color of the hyperpigmented lesion fading to 4-6 shades on the fairness meter is considered as moderate result.

**Mild result:** The color of the hyperpigmented lesion fading above the 2-4 shade on the fairness meter is considered as mild result.

### OBSERVATIONS

This comparative clinical trial was conducted on 40 Vyanga patients. The patients were selected randomly and divided into two groups namely Group A and Group B. Group A patients were given *Arjuna Twak Churna* along with *Khadira Sara Churna* and Group B patients were given *Yasthimadhu Churna* along with *Khadira Sara Churna*. For both the groups *Chikitsa Kala* was 21days. The one of the inclusion criteria for this study is selection of patients between age group of 20 to 50years. The observations of the present study in the age category reveals Out of 40 Subjects, There is a peak evidence (45%) of discolouration in the age group of 30-40 years and 10% were from age group of 20- 30 years and 35% were from the age group of 40 to 50years and 10% were from age group of 50 to 60 years in group A. And in group B 40% of the patients were of 30 to40 age group and 10% of subjects were of 20 to 30 age group and 35% of subjects were of 40 to 50 age group and 15% of subjects were of 50 to 60 age group, in the study majority of the subjects were female than males in both the groups 75% of the subjects were female and 25% of the subjects were males in group A. and 85% of subjects were females and 15% of subjects in group B. In this study majority of the subjects affected are housewives, Out of 40 Subjects 15% of the Subjects were in service, 5% Subjects were Farmer, 60% of Subjects were housewives, 15% of Subjects were labour, 5% of Subjects were students in Group A. And in Group B 25% of Subjects were in service, 65%

of Subjects were housewives, 10% of Subjects were labour. In this study majority of the subjects were affected due excessive exposure to sun light as a *Nidana*, Out of 40 Subjects 60% of Subjects were excessive exposed sunlight in group A and in Group B 65% of Subjects were showing presence of excessive exposure. *Manasika Nidana* wise study reveals that Out of 40 Subjects 25% of Subjects were having *Krodha*, 35% were having *shoka*, 50% of Subjects were having *Ayasa* in group A. And in Group B 35% of Subjects were having *Krodha*, 60% of Subjects were having *Shoka*, 5% of Subjects were having *Bhaya* and 10% of Subjects were having *Ayasa*.

Menstrual cycle wise distribution study reveals that Out of 40 Subjects 45% of Subjects were have regular cycle and 55% were have irregular cycle in group A, and Group B 65% of Subjects were have regular cycle and 45% of Subjects have irregular cycle.(not applicable for male Subjects), Menopause wise study reveals that Out of 40 Subjects 20% of Subjects were attained menopause and 80% of Subjects not attained in group A, in Group B 25% of Subjects were attained and 75% of Subjects not attained. (Not applicable for male pts and who have underwent hysterectomy).

### RESULTS

**Table 1: Effect of therapy on group A and Group B on size of lesion.**

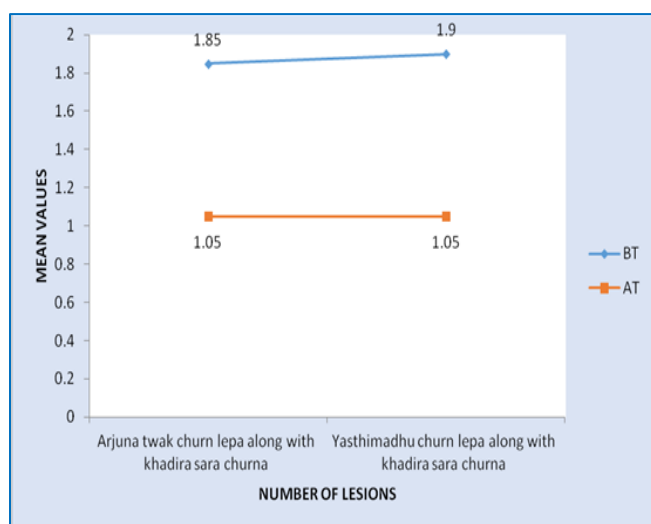
Assessment Observations Recorded on	Descriptives			Paired test		
	N	Mean	±SD	Reduction (in %)	Wilcoxon signed rank test	P value
<i>Arjuna Twak Churn Lepa</i> along with <i>Khadira Sara Churna</i> (Group A)						
BT	20	2.10	0.641		4.472	0.001
AT	20	1.10	0.641	1.0(48)		
<i>Yasthimadhu Churn Lepa</i> along with <i>Khadira Sara Churna</i> (Group B)						
BT	20	2.25	0.444		4.379	0.001

AT	20	1.20	0.410	1.05(47)	
HS - Highly significant					

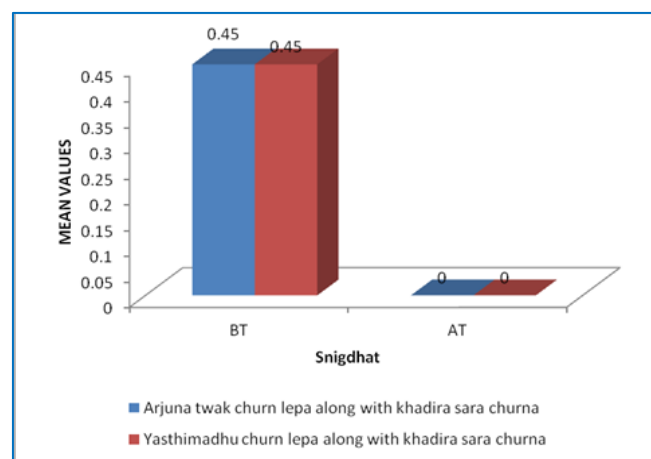
**Table 2: Effect of therapy on Group A and Group B on colour of Lesion.**

Assessment Observations Recorded on	Descriptives			Paired test		
	N	Mean	±SD	Reduction (in %)	Wilcoxon signed rank test	P value
<i>Arjuna Twak Churn Lepa along with Khadira Sara Churna (Group A)</i>						
BT	20	2.70	1.031		3.782	0.001
AT	20	1.15	0.671	1.15(57)		
<i>Yasthimadhu Churn Lepa along with Khadira Sara Churna (Group B)</i>						
BT	20	2.80	1.196		3.571	0.001
AT	20	1.30	0.470	1.5(54)		
HS - Highly significant						

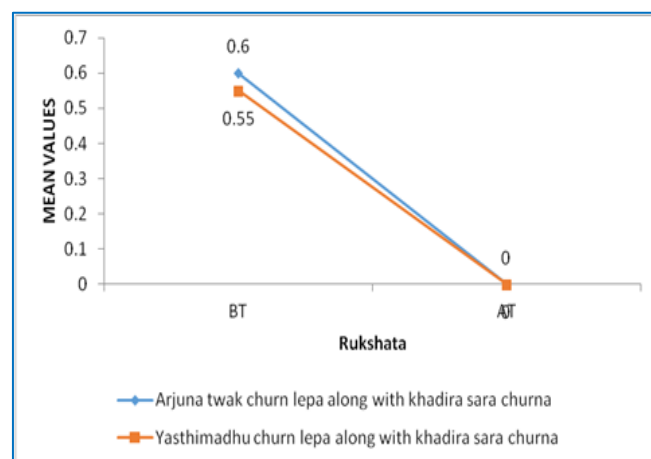
**Graph 1: Showing effect of group A and Group B on Number of Lesion**



**Graph 2: Effect of therapy in both the group on Snigdhat**



**Graph 3: Effect of therapy in both groups on Rukshata.**



**Over all outcome of result**

**Table 4: Statistical outcome of the study Before Treatment & After Treatment**

Parameter	Mean		Mean Difference	SD±		%	p	Remarks
	BT	AT		BT	AT			
Size Of Lesion	2.10	1.10	1.0	0.641	0.641	48	0.001	H.S
Color Of Lesion	2.70	1.15	1.15	1.0331	0.671	57	0.001	H.S
Number Of Lesion	1.85	1.05	0.8	0.587	0.510	43	0.001	H.S

Fairness Scoring / Grading	14.30	9.80	4.5	3.686	2.726	32	0.001	H.S
Rukshata	0.60	0	0.6	0.503	0	100	0.001	H.S
Snigdhatata	0.45	0	0.45	0.605	0	100	0.001	H.S
BT- Before Treatment; AF - After; H.S - Highly Significant								

**Table 5: Statistical outcome of the study Before Treatment & After Treatment**

Parameter	Mean		Mean Difference	SD±		%	p	Remarks
	BT	AT		BT	AT			
Size Of Lesion	2.25	1.20	1.05	0.444	0.410	47	0.001	H.S
Color of Lesion	2.80	1.30	1.5	1.196	0.470	54	0.001	H.S
Number of Lesion	1.90	1.05	0.85	0.447	0.224	45	0.001	H.S
Fairness Scoring / Grading	16.15	10.65	5.5	2.852	1.927	34	0.001	H.S
Rukshata	0.55	0	0.55	0.510	0	100	0.001	H.S
Snigdhatata	0.45	0	0.45	0.510	0	100	0.001	H.S
BT- Before Treatment; AF - After; H.S - Highly Significant								

## DISCUSSION

*Vyanga* is one of the hyperpigmentary disorder, which is noticed certain areas over the face. On the basis of the symptoms it is co-related with Melasma. *Vyanga* is one among the 44 *Ksudra Rogas*. *Charaka* mentioned it as *Raktapradoshaja Vikara* and *Sushruta* explained under *Ksudraroga*, *Acharya Vagbhata* described *Vyanga* in *Ksudra Roga Adhyaya* including types of *Vyanga*. *Vyanga* is skin pigmentary disorder specially affects to the facial skin.

Melasma is one of the Hyperpigmentary disorder, that causes the great impact on the life of patients. in *Ayurveda Vyanga* comes under *Ksudra Roga* as it is having *Alpa Nidhana*, *Alpa Lakshana* and *Alpa Chikitsa*. In modern science also the information about pathogenesis of Melasma is still very limited.

*Manasika Nidanas* like *Shoka*, *Krodha*, *Ayasa* and *Bhaya* are the main *Nidanas* for the manifestation of *Vyanga Roga*, these *Nidanas* intern vitiates *Vata Dosha* along with *Pitta Dosha*. Mental stress is the main causative factor for the causation of *Vyanga Roga*. Sun exposure, use of cosmetics, use of Medications, are the main causes of for the causation of Melasma. Stress is one of the influencing factor for the development of Melasma. Profound emotional stress implicated the release of MSH by the hypothalamus as a cause.

Clinical features are based on the shape of Lesions (*Mandala*), Unelevated pigmentation of lesion (*Tanuka*), Colour of Lesion (*Shyva*), and pain (*Neeruja*).

Due to the *Manasika Nidhanas* like *Shoka*, *Krodha*, *Ayasa*, *Bhaya* vitiates *Vata* and *Pitta Doshas*, exposure to sunlight, hormonal imbalances are also the causative factors for *Vyanga Roga*, these *Nidanas* intern causes the *Rasavaha*, *Raktavaha* and *Manovaha Sroto Dusti*. And gets lodges in the facial skin by producing *Shyava*, *Neeruja*, *Tanuka*, *Mandalas* over the face.

*Twacha* is the *Adhistana* for *Varna* and also site of *Rasadhatu*, by *Ashraya*, *Ashrayee Bhava*, it can be concluded that *Kapha* is also involved, if the subjects presents the symptom *Kandu* (itching). This can be suggested that there is a involvement of *Kaphadosha*.

The pathogenesis of melasma is multifactorial and not entirely characterized. A direct relationship with female hormonal activity appears to present, because Melasma occurs more frequently in females than males and commonly develops or worsens with use of oral contraceptive pills, and one half melasma cases present initially during pregnancy, due to the increased level of progesterone and oestrogen. The most important factor in the development of melasma is due to exposure to sunlight. UV light induces production of oxygen species in the skin, which subsequently promotes melanogenesis.

The treatment modalities for Vyanga are *Bahirparimarjan* and *Sodhana Chikitsa* basically aims to correct the vitiated *Doshas*, *Dushyas*, *Agnivikriti*, *Srotodusti*. The treatment modalities mentioned are applied to improve *Vaivarnyata* of the skin. *Khadira Churna* which is having the property of *Raktashodha* and *Kustaghna*. It is advised internally by *Yogaratanakar*.

*Arjuna Twak Churna Lepa* with *Madhu* over the hyperpigmented patches along with *Khadira Churna* given for 21 days for group A. *Arjuna Twak* is having *Kashaya Rasa*, *Laghu*, *Ruksha Guna* and *Veerya* is *Sheeta* and its having *Pittashamaka* and *Rakta Prasadak* properties. *Kashya Rasa* encounters the *Pitta* and *Rakta Dosh* and removes the *Twak Vaivarnyata*. *Sheeta Veerya* of the drug pacifies the *Pitta Dosh*. *Prasadan* property of *Sheeta Veerya* purify the accumulated *Doshas*. The *Twak Prasadak* and *Raktaprasak* properties encounters the locally accumulated *Doshas*.

*Madhu* with its *Tridosha Prashamana* property may affect *Doshas* which are vitiated in *Vyanga* (*Vata*, *Pitta*). *Madhu* with its *Yogavahi Guna* it enhances the property of *Arjuna Twak Churna*. The topical application of the medicine aims at providing the high concentrations locally. *Madhu* with its *Prasadana* property it improves the skin complexion as it is having the *Varnyakar* property. *Madhu* has not showed any skin reactions so it can be used safely.

*Khadira Churna* internally it is having *Tikta Kashaya Rasa*, *Sheeta Veerya*, *Laghu Ruksha Guna*, are the properties of *Agneya Dravya*, which are responsible for

*Prabha* and *Varna*. It alleviates *Pitta Kapha*. *Charak Acharya* mentioned it as best *Kustahara Dravya* in *Agraprakarana*. The *Churna* has ingredients like catechin catechu tannic acid. There by *Khadira* helps for better absorption. it has properties like *Kandughna*, *Kusthagna*. *Kakshya rasa* of *Khadira* holds *Twakprasadak* and *Raktaprasadka* properties which ultimately leads to *Raktaprasadana* and reduction in *Vaivarnyata* of skin.

*Yasthimadhuchurna Lepa* with water over the hyperpigmented patches along with *Khadira Churna*. *Yasthimadhu* is having *Madhura Rasa*, *Guru Snigdha Guna* and *Sheeta Veerya*. And its *Vatapitta Shamaka*. its properties are *Varnya Kandughna*. *Madhura Rasa* pacifies the *Vata Pitta* and *Snigdha* and *Guru Guna* are responsible for *Mardava* and *Varna Prasadana*. *Sheeta Veerya* has property of *Rakta Prasadana*. By its properties like *Kandughna* and *Varnya* it reduces the *Vaivarnyata* of the facial skin.

Thus, it can be concluded that *Arjuna Twak Churna Lepa* and *Yasthimadhu Churna Lepa* along with *Khadira Churna* has moderately effect on *Vyanga Roga*.

## CONCLUSION

*Arjuna Twak Churna Lepa* and *Yasthimadhu Churna Lepa* along with *Khadira Churna* are found to be moderately effective treatment in melasma. Female patients are prone more than male patients may be due to hormonal changes post menopause and usage of oral contraceptives), stress and strain of day today life. *Arjuna Twak Churna Lepa* along with *Khadira Churna* with its *Kashya Rasa* and *Sheeta Veerya*, and properties like *Twachya* and *Pittashamak* and *Raktaprasadak* properties may reduce the *Vaivarnyata* of skin and found significant result. *Yasthimadhu Churna Lepa* along with *Khadira Churna* with its *Madhura Rasa* and *Sheeta Veerya* and has the *Varnyakar* and *Rakta Shodhak* property reduces the *Vaivarnyata* of the skin and found significant results. Application of *Lepa* helps for micro absorption of the chemical constituents and improves discolouration of the lesion.



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