

# To Evaluate the Efficacy of Mukhakantikara Cream and Microdermabrasion with Aluminum oxide crystal externally in the patients of Vyanga

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## ABSTRACT

**Introduction:** *Vyanga* refers to the dark spots on the cheeks. It is a disease manifesting over *Mukha Pradesha* due to the vitiation of *Vata* and *Pitta Dosha* leading to *Niruja*, *Tanu*, *Shyava Mandala*.<sup>1</sup> **Patients and Methods:** 15 patients with classical clinical presentation were selected and registered in the clinical study and were evaluated for the effects of therapy instituted on various subjective criteria. **Drug, Dosage and Duration:** One group of minimum 15 patients were treated with *Mukhakantikara cream*+ *Gharshan* (Microderma abrasion) locally *Mukhakantikar* cream in the dose - 1 FTU(0.5 mg) quantity sufficient as per area of affected part 2-3 times in a day. Total duration of therapy was 30 days. **Observation:** Among 15 patients, 2 patients were markedly improved, 6 patients were mildly improved, 7 patients were moderately improved. **Result and conclusion:** The study revealed encouraging positive effects on the disease profile without any adverse effects.

**Keywords:** *Vyanga*, *Mukha Pradesha*, *Shyava Mandala*, *Mukhakantikar*

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## INTRODUCTION

*Vyanga* is one of the *Kshudraroga*<sup>2</sup> characterized by the presence of *Niruja* and *Shavavarna Mandalas* on the face. In *Samprapti* of *Vyanga*, *Acharya Charak* has mentioned that the

aggravation of *Pitta* along with *Rakta* is the chief culprit for the initiation of the pathology.<sup>3</sup> *Vyanga* is a *Raktapradoshja Vyadhi* hence the very first *Dosha* affected is *Rakta Dhatu*. Beauty manifests through the complexion of skin and any unhealthy state of body is reflected by the skin. *Vyanga* mainly affects the skin of face. *Vyanga* is one such personality detrimental hyperpigmentation which decreases the glowing complexion of the skin. *Vyanga* hampers the beauty of face which results into inferiority complex, anxiety and isolation. *Vyanga* is a painless condition for body but it is painful to mind. It requires a proper treatment and therapy. In the present study *Gharsan*<sup>4</sup> (microderma abrasion) and *Mukhkantikar* for local application were selected for the management of disease.

### AIMS AND OBJECTIVES

1. To find out the relation of *Vyanga* with the age, sex, *Prakriti*, religion etc.
2. To evaluate the efficacy of *Mukhakantikara* cream + Microdermabrasion with aluminum oxide crystal externally in the patients of *Vyanga*.

### MATERIAL AND METHODS

Patients attending the OPD of Skin care unit and Derma Research Lab. under the P.G. Dept. of *Samhita* and *Siddhanta* of R.G.G.Ayu. Hospital Paprola (H.P.) fulfilling the criteria of the disease were selected and randomly distributed irrespective of their age, sex, religion, etc.

### PLAN OF THE STUDY

Clinical trial was done in one group. 15 patients of this group were given *Mukhakantikara* cream + *Gharshan* (Microderm abrasion) locally.

*Mukhakantikar* cream- Dose - 1 FTU (0.5 mg) quantity sufficient as per area of affected part.

Approximately using the finger tip units (FTU) as a rough guide, one FTU in an adult male from a standard nozzle of a tube provides 0.5 gm of ointment. So if the whole face is involved this 2 FTU would be required.<sup>5</sup>

**Duration-** 2-3 times in a day.

**Duration of trial: 30 days**

Follow-up (during trial) - after 15 days

Follow-up (after completion of trial) - after 15 days

### Inclusion criteria

- i. Individuals willing and able to participate in the trial for 30 days.
- ii. Individuals within age group 15-60 years of either sex.
- iii. Patients having following signs and symptoms-

- *Mandala* (Circular/ macular lesions with well defined scalloped margins)
- *Shyava* (Brown colored hyperpigmentation)
- *Niruja* (no pain in the lesion)

### Exclusion criteria

- i. Individuals not willing to participate in the trial.
- ii. Individuals below age of 15 years and above 60 years.
- iii. Pregnancy and patients taking hormonal therapy
- iv. Failure of patients to follow up successive visits.
- v. Patients not fulfilling the inclusion criteria.

### Objective criteria

Woods lamp examination, derma-scanning of the face and routine biochemical (haematological) investigations to assess the general condition of the patients and effect of therapy afterwards were carried out.

### Interventional Product

*Mukhkantika* Cream<sup>6</sup>

**Table 1:** Cream constitutes seven drugs (7+crembase)

Name	Rasa	Guna	Virya	Vipaka	Used part	Doshkarma
<i>Rakta chandan</i>	<i>Tikta Madhura</i>	<i>Guru ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Stem</i>	<i>Kapha pitta shamaka</i>
<i>Majistha</i>	<i>Tikta, Kashaya, Madhura</i>	<i>Guru Ruksha</i>	<i>Usha</i>	<i>Katu</i>	<i>Root</i>	<i>Kapha pitta shamaka</i>
<i>Kustha</i>	<i>Tikta, Katu, Madhura</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Stem</i>	<i>Kapha vatashamaka</i>
<i>Lodhra</i>	<i>Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Stem</i>	<i>Kapha Pitta Shamaka</i>
<i>Priyangu</i>	<i>Tikta, Kashaya, adhura</i>	<i>Guru, Ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Flower</i>	<i>Tridosha Shamaka</i>
<i>Vatankur</i>	<i>Tikta, Katu, Madhura</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katuj</i>	<i>Leaf buds</i>	<i>Kapha vata Shamaka</i>
<i>Masur</i>	<i>Madhura, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheeta</i>	<i>Madhu ra</i>	<i>Seed</i>	<i>Kapha Pitta Shamaka</i>

In *Ayurvedic* or classics texts three types of treatment has been given. Out of three types of treatment described in *Ayurvedic* texts *Bahiparimarjana* include the medicaments which are intended to be used externally. Different types of external applications have been described in *Ayurveda* for the convenience of patients for treatment of different diseases. *Acharya Charka* has described 32 formulations of *lepas* in *Aaragvadhiya Adhyaya*.<sup>7</sup> Face is the common site of the disease *Vyanga* and application of *Lepa* on the face is not palatable as well as acceptable to the patients. Hence instead of *Lepa*, cream has been prepared in the similar ingredients in a private pharmaceutical house and used in the patient of *Vyanga*.

**Assessment criteria-** The improvement provided by the therapy was assessed on the basis of signs and symptoms.

**Table 2: Criteria of Assesment**

Symptoms	Before Trial	After Trial
<b>1. Varn(Shyava)</b>		
Normal skin colour (0)	0	0
Light brown (1)	1	1
Dark brown (2)	2	2
Black (3)	3	3
<b>2. Sthan (Distribution of lesion)</b>		
No lesion (0)	0	0
Only cheeks (1)	1	1
Cheeks, Nose and forehead (2)	2	2
Cheeks, nose, forehead, malar, mandibular are the face and upper neck (3)	3	3
<b>3.Tanu</b>		
No lesion (0)	0	0
Superficial (1)	1	1
Deep (2)	2	2
Very Deep (3)	3	3
<b>4. Ruja (pain)</b>		
No pain (0)	0	0
Mild pain (1)	1	1
Moderate pain (2)	2	2
Severe pain (3)	3	3
<b>5. Akar(Size of the lesion)</b>		
No lesion (0)	0	0
Small (< 2cm) (1)	1	1
Medium (2-3cm) (3)	2	2
Large (>3cm) (4)	3	3

The overall effect of therapy was assessed considering the following criteria

**Complete Cure** -100% relief in the sign and symptoms was considered as cured.

**Marked improvement**- More than 61% and less than 90% relief in signs and symptoms.

**Moderate improved**-More than 31% and less than 60% relief in the signs and symptoms.

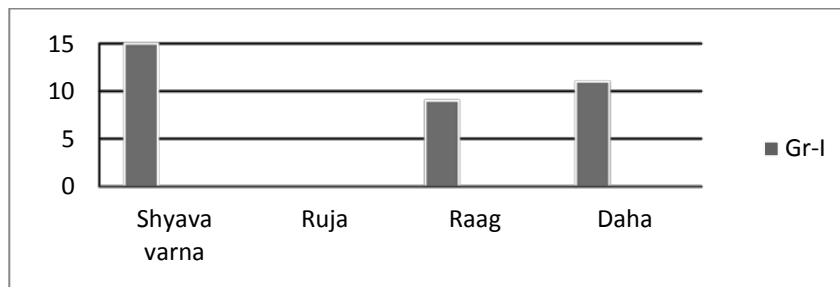
**Mild improvement**- Upto 30% improvement in signs and symptoms.

**No cure** –No change in the sign and symptoms was considered as unchanged.

**Table 3: Classification according to rupa of disease**

<i>Rupa</i>	Gr –I	Percentage
<i>Shyavavarna</i>	15	100%
<i>Ruja</i>	0	00
<i>Raag</i>	9	60%
<i>Daha</i>	11	73.33%

**Bar diagram 1- Rupa of disease wise distribution of 15 patients**

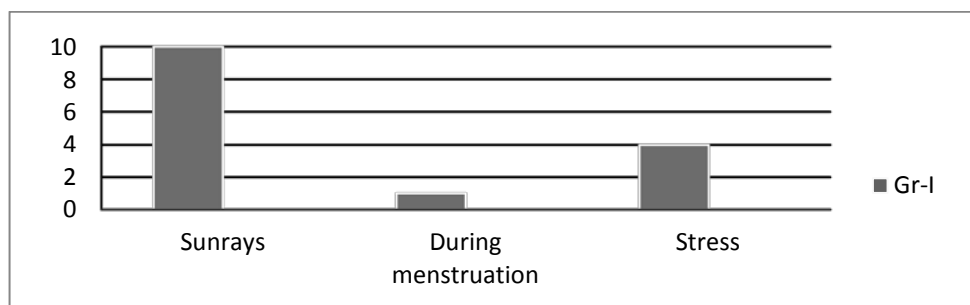


Hyperpigmentation was the chief complaint of the disease and it was present in all 100% patients. While *Daha*(burning sensation) was present in 73.33% patients, *Ruja* was not found in any patient of *Vyanga* and *Raag* (erythema) was present in 60% patients

**Table 4: Distribution of the patient as per history of aggravating factor**

Aggravating factor	Gr-I	Percentage
Sun rays	10	66.66%
During menstruation	1	6.66%
Stress	4	26.66%

**Bar diagram 2 -Aggravating factor wise distribution of 15 patients**

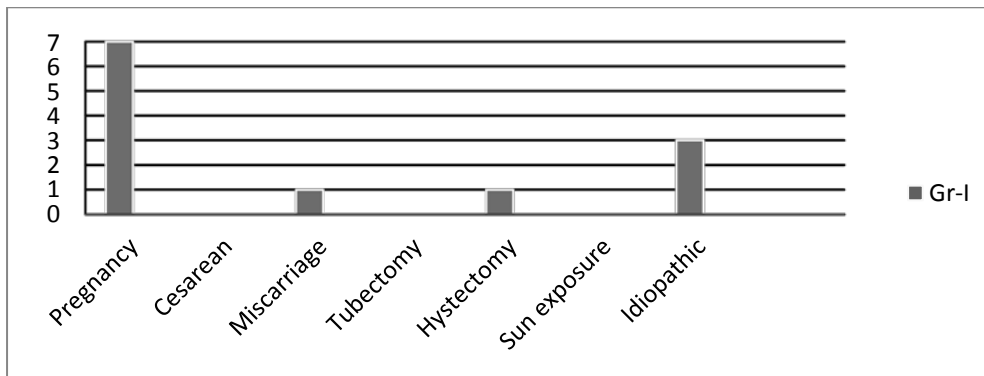


The disease *Vyanga* was aggravated by the sun exposure in 66.66% while due to stress in 26.66% patients and during menstruation in 6.66% patients.

**Table 5: Etiology wise distribution of 30 patients of *Vyanga***

Etiological factor	Gr-I	Percentage
Pregnancy	7	46.66%
Cesarean	0	00
Abortion	1	6.66%
Miscarriage	0	00
Tubectomy	1	6.66%
Hystectomy	0	00
Sun exposure	3	20%
Idiopathic	3	20%

**Bar diagram 3 -Etiology wise distribution of 15 patients**

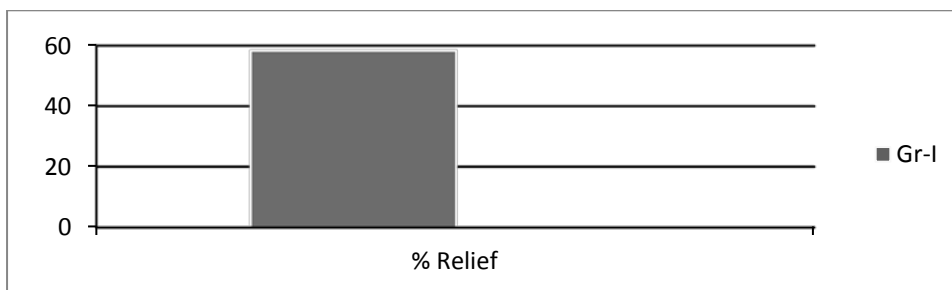


In 46.66% patients lesion was developed after pregnancy, while in 6.66% each after abortion and tubectomy of patients and 20% lesion each was developed after sun exposure and some idiopathic cause.

**Table 6: Effect of therapy on color of the lesion (*Varana*)**

Group	N	Mean		% relief	S.D.	S.E.	‘t’	P
		BT	AT					
I	15	2.4	1.0	58.33	0.507	0.131	10.693	<0.001

**Bar diagram 4 - percentage relief on effect of therapy on color of lesion**

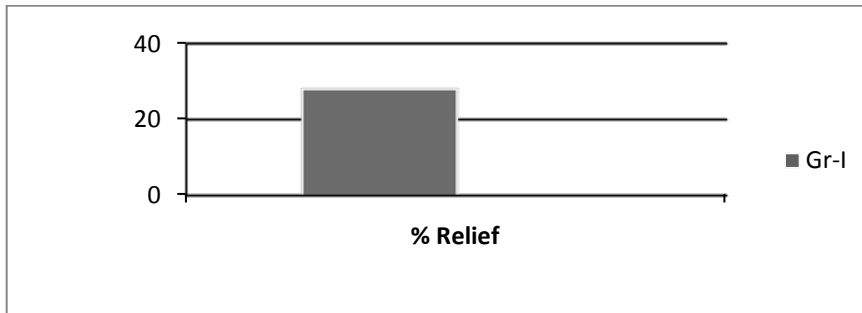


Color of the lesion was fade upto 58.33%. The value was statistically significant.

**Table 7: Effect of therapy on Area of the lesion (*Sthan*)**

Group	N	Mean		% relief	S.D.	S.E.	‘t’	P
		BT	AT					
I	15	2.133	1.533	28.129	0.737	0.190	3.154	<0.01

**Bar diagram 5 -percentage relief on Effect of therapy on area of the lesion**

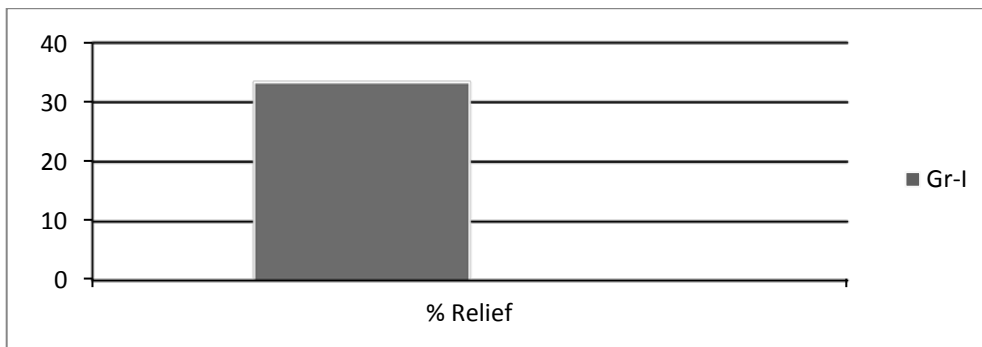


Effect of therapy on area the lesion was 28.129%. The value was statistically significant.

**Table 8: Effect of therapy on size of the lesion (*Akaar*)**

Group	N	Mean		% relief	S.D.	S.E.	‘t’	P
		BT	AT					
I	15	2.600	1.733	33.34	0.640	0.165	5.245	<0.001

**Bar diagram 6: percentage relief on Effect of therapy on size of the lesion (akaar)**



Effect of therapy on size of the lesion was 33.34% .The value was statistically highly significant.

**Table 9: Overall effect of therapy on *Vyanga***

Group	Nocure (0%)	Mild improvement (1-30%)	Moderate improvement (31-60%)	Marked improvement (61-90%)	Complete cure (100%)
Gr –I	0	6	7	2	0
Percentage	00	40%	46.66%	13.33%	00

Among 15 patients, 2 patients were markedly improved, 6 patients were mildly improved and 7 patients were moderately improved.

## DISCUSSION

*Vyanga* is a disease of serious concern so far as the cosmetological point of view for the patients is concerned. There are number of factors which can be held responsible for the aetiopathogenesis of the disease. The disease is mainly caused in young individuals. In *Ayurveda Vata* and *Pitta Dosha* are mainly held responsible for the causation of the disease *Vyanga*. The main features of disease are *Tanutwaka*, *Shayavavarana* and *MandalaAkaara* which seems to appear due to *Vatadosha* along with *Pitta*.

### Disease review

The disease *Vyanga* (chloasma) is considered as a '*Kshudraroga*' by most of *Acharyas*, *Maharishi Sushruta* and *Charaka* had considered it also as a *Raktajaroga*.<sup>8</sup> Brief description is available in classical texts indicated towards the *Dushti* of *Vata* and *Pittadosha* and *Rasa*, *Raktadhatus* in the manifestation of disease *Vyanga*. Specific etiological factors i.e. *Krodha*, *Aayas* are mentioned in the text but the *Vataprakopaka*, *Pittaprakopaka* and *Rasa*, *Raktadushtikaranidan* as play a role in the disease manifestation.<sup>9</sup> These are the causes which are not responsible for manifestation of disease directly but these are the causes which create a platform for imbalance of *Doshas* and aggravating factors in the disease.

### Drug Review

While selecting the drug for the management of disease *Vyanga*, *Ayurvedic* as well modern the aspects are taken into consideration. Before the application of *lepa*, *Gharshan* i.e. MDA (Micro Derma Abrasion) was done with aluminum oxide crystals because it removes the superficial dead skin, decreases hyper pigmentation mechanically and after that when cream applied gives the better penetration of drugs. *Chakaradutta* has mentioned this cream in the treatment of disease *Vyanga*. This cream consists of seven drugs i.e. *Manjishtha*, *Raktachandan*, *Kuth*, *Lodhra*, *Priyangu*, *Vatankur* and *Masuri*. *Kusthghna* and *Shothghana* properties according to modern parameter it has anti-inflammatory property, emollient and is helpful in discoloration of skin, allergic condition skin disease.

### Mode of action of Cream

The ingredients of *Mukhkantikara* cream are *Tikta*, *Madhura*, *Ksahya Rasa* predominant. *Sheeta Veerya*, *Katu Vipaka*, *Guru* and *Ruksha* in nature with obvious allevating action on all *Doshas*.<sup>10</sup> The probable mode of action of cream can be described into two steps as below



Pilosebaceous uptake:-

- Cream application
- release of active principle
- entry at proper site in skin<sup>11</sup>
- Absorption

Cutaneous biotransformation

- *Pachan* by *Bhrajakaagni* <sup>12</sup>
- New metabolites formation
- Locally pacification of *Doshas*
- Breaking down the pathogenesis

**Pilosebaceous uptake-**

When *Lepa*/cream is applied over the surface of skin through a proper base the active principles of ingredients of cream are released into the base. After that this combination enters the *Romkupa* and further gets absorbed through the *Swedwahistrotas* and *Siramukh* <sup>13</sup>

**Cutaneous biotransformation:-**

Thereafter it is subjected for *Pachan* by *Bhrajakagni* viz. the viable epidermis starts off the catabolic degradation of the absorbed material with help of essential enzymes<sup>14</sup> In due course of the above transformation, some new metabolites might be formed which pacifies the provoked *Doshas* locally and thus breaks the pathogenesis cycle leading to the relief in sign and symptoms.

By keeping *Ras*, *Guna*, *Veerya*, *Vipaka* in the mind out of seven ingredient of *Mukhkantakar* cream show the *Vatapitta Shamak* properties. Although the disease *Vayanga* is mainly caused by two *Doshas*, i.e. *Vata*, *Pitta* and *Mukhkantakar* cream has *Tridoshshamak* properties. *Acharyasushruta* clearly mentioned that before application of *Lepa* individual should rub or abrade the superficial skin with some mechanical material such as *Samudarfen*, rock stone or with some hard material. Intension was clear to remove the superficial dead skin and after that there is better penetration of drug and of drug and hence somewhat decrease in hyper pigmentation mechanically and drug of *Lepa* will effect more and quicker.

In modern medical science this same technique is called derma abrasion and microderma abrasion. Derma abrasion is a surgical procedure that involves the controlled abrasion (wearing away) of the upper layer of skin with sandpaper or other mechanical means. Now days it has become common to Microderma abrasion may be performed to decrease the appearance of superficial hyperpigmentation and photodamaged skin as well as diminish the fine lines

wrinkles and shallow acne scars. Removing the dead skin cells will aid in the penetration of skin care products by upto 80% and make up will go on much more smoothly.

## CONCLUSION

The contents of the drug are either *Vata-Shamaka Pitta-Shamaka*. The clinical data observed in total 15 patients who were given *Mukhkantakar* cream for local application along with *Gharsan* of the lesion. All the registered patients completed the trial. Among 15 patients registered for the trial, 2 patients (13.33%) were markedly improved, 6 (40%) patients were mildly improved and 7 (46.66%) patients were moderately improved. Total duration of therapy was one month. Disease has predominance of *Vata* and *Pitta Dosha*. *Mukhkantakar* cream, Microderma abrasion is effective in relieving the symptoms of *Vyanga*. The present clinical study gave satisfactory result and no adverse effects were observed during the course of trial.

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