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## A Clinical Study to Evaluate Efficacy of *Lodhradi Lepa* and *Mukhdooshikahar vati* along with *Virechan* in the Management of *Mukhdooshika* w.s.r. *Acne vulgaris*

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### ABSTRACT

**Background:** In *Ayurvedic* classics, in the context of *Kshudra rogas*, it is mentioned that *Mukhdooshika* occurs in *yuvavastha* and its signs and symptoms are similar to that of *Acne vulgaris*. In *Ayurvedic* classics many *lepas* and *shodhan* therapy are considered to be the effective treatment for *Mukhdooshika*.

**Purpose:** The purpose of the present study was to “Evaluate the efficacy of *Lodhradi Lepa* and *Mukhdooshikahar Vati* along with *Virechan* in the management of *Mukhdooshika* w.s.r *Acne Vulgaris*”. The clinical study was conducted over a period of 45 days on 20 diagnosed cases of *Acne vulgaris*. This was an Single Blind Randomized clinical study involving patients of either sex between 16-35 yrs suffering from *Acne vulgaris*.

**Results & conclusion:** In this clinical study, for managing the *Mukhdooshika*, patients were subjected through *Virechan* followed by local application of *Lodhradi Lepa* (two times a day) and *Mukhdooshikahar Vati* as oral drug (three tablet thrice a day). Patients got significant improvement and no complications were found during and after the clinical study.

### KEYWORDS

*Mukhdooshika*, *Yuvanpidika Lepa*, *Acne Vulgaris*, *Virechan*, *Lodhradi lepa*, *Mukhdooshikahar vati*



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## INTRODUCTION

Acne is usually considered a disorder of adolescence, and a number of studies have examined the prevalence of this condition in the adolescent population. There are however, relatively few data on the prevalence of Acne in the adult population<sup>1</sup>. Acne is referred as *Yuvanpidika*<sup>2</sup> (which means the eruptions of youth) or *Mukhdooshika* in *Ayurveda*. This shows the prevalence of Acne from ages. *Ayurveda* has described the causes of Acne and recommends the best treatment including internal purification (*Shodhan*) and external application (*Shaman*) of different local *Lepa*. *Vata* and *Kapha* are two main *Doshas*, which are involved in eruption of Acne. *Rakta Dhatu* or blood also plays an important role in formation of Acne<sup>3</sup>. *Vata* when gets vitiated due to unhealthy diet and lifestyles affects other two *Doshas* (*Kapha* and *Pitta*) to aggravate them. Aggravated *Pitta* affects *Rakta Dhatu* or blood. The vitiated blood affects the skin and causes excess secretion of oil from sebaceous glands. *Kapha* has sticky property. The aggravated *kapha* imparts the stickiness to the oil produced by sebaceous glands of skin. Thus the thick sebaceous plugs are formed in skin pores and hair follicles leading to eruption of Acne.

## MATERIALS AND METHODS

Ethical committee approval no. is UAU/R/C/IEC/2016-17/2

Twenty patients with *Mukhdooshika* were selected from the O.P.D. /I.P.D. Department of Kaya-Chikitsa, Rishikul Campus, Haridwar.

**Ethical clearance-** The research has been approved by the Institutional Ethical Committee. Written consent was taken from all the subjects before the trial and study was in accordance with ICH GCP Guidelines.

**Ethical Committee Approval no.** is UAU/R/C/IEC/2016-17/2

**Selection of Sample:** - Randomized Sampling

**Type of Study:** Single Blind

**Duration of Study:** 45 days

**Selection of Drug**

1. *Virechan*
2. *Lodhradi lepa*
3. *Mukhdooshikahar vati*

**Dose of Drug**

- 1) *Lodhradi Lepa-* Local application of *Lepa* (gel) twice a day.
- 2) *Mukhdooshikahar Vati:* Three vati (1.5gram) thrice daily for a month with *koshna Jal Anupan* after meals.

**Assessment & Follow-up:** Assessment of the patients was done after an interval of **15 days** i.e. two assessments were done



and follow-up was done **30 day** after completion of treatment to look for any recurrence.

**Inclusion criteria**

- Age: 16 – 35years.
- Patients of either sex will be taken.
- Diagnosed case of *Mukhadooshika* (Acne Vulgaris).
- Patients fit for *Virechan*
- Patient willing to participate in above mentioned trial with informed consent.

**Exclusion criteria**

- Age < 16 years and >35 years.
- Any other skin diseases.
- Patient not fit for *Virechan*.
- Patient with complicated Acne.

**Criteria for withdrawal-**

- (1) Personal matters
- (2) Intercurrent illness
- (3) Aggravation of complaints
- (4) Any other difficulties

**Investigations:-**

▪ Hb%. T.L.C., E.S.R. fasting blood sugar and post parandial, LFT (S. bil. Total / indirect, S.G.P.T./S.G.O.T.; these investigations were carried out before the initiation of trial and after completion of the trial, to rule out any systemic pathology.

**Assessment of results:-**

Effect of the therapies were compared before and after the treatment on the basis

of self-formulated scoring scales based on subjective and objective parameters (Table 1) associated with the disease.

**Table 1** Parameters of Assessment

1. Subjective parameters:-	2. Objective parameters:-
➤ <i>Pidika</i> (Type of Lesion)	➤ Number of Comedones
➤ <i>Vedana</i> (Pain)	➤ Number of papules
➤ <i>Vaivarnyata</i> (Discoloration)	➤ Number of Pustules
➤ <i>Srava</i> (Discharge)	➤ Number of Nodules
➤ <i>Kandu</i> (Itching)	➤ Number of Cysts
➤ <i>Snigdhatta</i> (oiliness)	➤ Number of Scars
➤ <i>Daha</i> (Burning Sensation)	
➤ <i>Paka</i> (Inflammation)	
➤ Scars	

**Procedure of *Virechan Karma***

*Virechana Karma* is one of the prime purificatory procedures employed in treating a constellation of diseases and conditions as well as treating stubborn disorders. It is also one of the measures of choice preferred by *Vaidya* because of its wide applicability and simplicity. *Virechana* not only helps in eliminating *Doshas* from the body but it also helps in promoting health.

All 20 patients of *mukhdooshika* were subjected through *Virechan*. *Virechan karma* is classified in three parts:-

1. *Purvakarma*:- includes *Deepan*, *snehan swedana*
2. *Pradhan karma*:- *Virechan karma*
3. *Paschat karma*:- *Sansarjan karma*

Procedure of *Virechan karma* followed for study is described under following therapy module (Table 2):-





**Table 2** Therapy Module

THERAPY	DRUG NAME	MATRA (AMOUNT)	DURATION	ANUPANA
<i>Deepan</i>	<i>Ajmodadichurna</i> (for 3 days)	3gm	Twice a day for 3 days	<i>Koshna jal</i>
<i>Snehapan</i>	<i>Panchtikta ghrita</i> (for 3/5/7 days)	25ml	On 1 <sup>st</sup> day	<i>Koshna jal</i>
		50ml	On 2 <sup>nd</sup> day	<i>Koshna jal</i>
		75ml	On 3 <sup>rd</sup> day	<i>Koshna jal</i>
		100ml	On 4 <sup>th</sup> day	<i>Koshna jal</i>
		125 ml	On 5 <sup>th</sup> day	<i>Koshna jal</i>
		150 ml	On 6 <sup>th</sup> day	<i>Koshna jal</i>
		175ml	On 7 <sup>th</sup> day	<i>Koshna jal</i>
<i>Sarvang Snehana and Sarvang Svedan</i>	For 2 days	--	--	--
<i>Virechan</i> (after gap of 2 days)	<i>Trivritta-avaleha</i> + <i>Triphalalkwatha</i>	75gm +50 ml	--	<i>Koshna jal</i>

After getting assumed that the proper *shodhan* has been achieved the patient of both groups were suggested to follow the *sansarjana krama* recommended by classics, after that the patients administered with *shaman* drug viz *mukhdooshikahar vati* and *Lodhradi lepa*.

**Procedure of Lepa (Modified as Gel) Application:-**

The patient were advised to conduct *Lepa (modified as Gel)* in the morning and evening hours (7 to 10 am and 9-10pm). It was conducted in three steps, viz-

1. **Purvakarma:-**The patient was asked to wash the face with lukewarm water prior to application of *gel*.

2. **Pradhankarma:-** Gel was advised to apply over the lesion. It was then kept for an hour

3. **Paschatkarma:-**After applying the *gel*, the patients were advised to wash the face with lukewarm water.

**STATISTICAL ANALYSIS**

Wilcoxon Signed Rank Test was applied on the subjective parameter and objective parameters. Paired ‘t’ test was applied on biochemical parameters. Thus the obtained results were interpreted as:

P> 0.05 Not Significant

P< 0.01 &<0.05 significant

P< 0.001 highly significant

**OBSERVATIONS**

**Table 3** Efficacy Study of Drugs on Subjective Parameters

SYMPTOMS	Median		Wilcoxon Sign Rank	P-Value	% Effect	Result
	BT	AT				
<b>PIDIKA</b>	2	0.5	-4.177 <sup>a</sup>	<0.001	79.2	<b>Highly Significant</b>
<b>VAIVARNYA</b>	2	1	-3.987 <sup>a</sup>	<0.001	69.4	<b>Highly Significant</b>
<b>KANDU</b>	2	0	-3.508 <sup>a</sup>	<0.001	88.5	<b>Highly Significant</b>
<b>VEDANA</b>	1	0	-3.071 <sup>a</sup>	<0.05	93.3	Significant
<b>SNIGDHATA</b>	2	0	-4.028 <sup>a</sup>	<0.001	94.3	<b>Highly Significant</b>
<b>DAHA</b>	0	0	-2.460 <sup>a</sup>	<0.05	90.0	Significant
<b>SRAVA</b>	0	0	-2.714 <sup>a</sup>	<0.05	88.2	Significant
<b>PAKA</b>	2	0	-3.852 <sup>a</sup>	<0.001	90.6	<b>Highly Significant</b>
<b>SCAR</b>	0.5	0	-2.828 <sup>a</sup>	<0.05	66.7	Significant

BT-Before Treatment, AT-After treatment



**Table 4** Efficacy STUDY of drugs on objective parameters

SYMPTOMS		Mean	N	SD	SE	t-Value	P-Value	Result
No. OF COMEDONES	BT	2.1	20	0.9	0.2	10.925	<0.001	Highly Significant
	AT	0.4	20	0.5	0.1			
No. OF PAPULES	BT	2.6	20	0.6	0.1	16.376	<0.001	Highly Significant
	AT	0.5	20	0.5	0.1			
No. OF PUSTULES	BT	1.4	20	1.0	0.2	5.877	<0.001	Highly Significant
	AT	0.2	20	0.4	0.1			
No. OF CYST	BT	0.2	20	0.4	0.1	2.179	<0.05	Significant
	AT	0.0	20	0.0	0.0			
No. OF NODULE	BT	0.1	20	0.2	0.1	1.000	>0.05	Non-Significant
	AT	0.0	20	0.0	0.0			
No. OF SCARS	BT	0.3	20	0.6	0.1	2.517	<0.05	Significant
	AT	0.0	20	0.0	0.0			

**Table 4** shows the effect of drugs on Objective parameters (symptoms) of the *Mukhdooshika*.

### EFFICACY STUDY OF DRUGS ON BIOCHEMICAL VALUES:

There was statistically Non-significant ( $p > 0.05$ ) result seen in all biochemical values i.e. Hb, TLC, ESR, BSF, BSPP, Serum bilirubin SGPT and SGOT.

**Table 5** Assessment of percentage relief in subjective Parameters

SYMPTOMS	%RELIEF
PIDIKA	79.2%
VAIVARNYA	69.4%
KANDU	88.5%
VEDANA	93.3%
SNIGDHATA	94.3%
DAHA	90.0%
SRAVA	88.2%
PAKA	90.6%
SCAR	66.7%

**Table 5** shows % relief In subjective parameters.

**Table 6** Estimation of overall response in each group

Improvement (%)	No
Excellent (75-100%)	12
Marked Improvement (50-74%)	5
Mild Improvement (25-49%)	3
No Improvement (<24%)	0

**Table 6** shows the estimation of overall Response

## RESULTS AND DISCUSSION

Statistically **highly significant** results were obtained in subjective parameters

like *Pidika, Vaivarnya, Kandru, Snigdhatta*

and *Paka* ( $p < 0.001$ ). Statistically

**significant** result was found in subjective

parameters like *Vedana, Daha & Srava* as

value of  $p < 0.01$ . In objective parameters

statistically **highly significant** result was

found in **number of comedones, papules**

& **number of pustules** ( $p < 0.001$ ). In

objective parameters statistically

**significant** result was found in number of

**cyst & scars** as value of  $p < 0.01$ . In

objective parameters statistically non-

significant result was found in **number of**

**nodules & biochemical values** ( $P > 0.05$ ).

The results are given in Table 4.

**Probable Mode of Action of *Lodhradi***

*Lepa* (Table 7):-

First trial drug for the study was *Lodhradi*

*lepa*; *Lepa* is one among the *Bahya*



*Pradana Upakarm*, which could be easily employed with effective results. Hence *Lepa* had been selected for external application along with *Virechana*. ‘*Lodhradi Lepa*’ as described in *Astang*

*Hridaya*, *Chakradatt*<sup>5</sup>, *sharangdhar samhita*<sup>6</sup>; had been selected for this study. It contains 3 drugs namely *Lodhra*, *Dhanyak*, *Vacha*.

### Probable Mode of Action of Drugs:

**Table 7** Probable Mode of Action of *Virechan Karma*<sup>4</sup>

KARMA	MODE OF ACTION
<i>Deepan.</i>	Enhances appetite and it pacifies vitiated <i>Vata dosha</i>
<i>Snehapan, Abhyang &amp; Swedana</i>	Expels vitiated Doshas from <i>Shakha</i> to <i>Kostha</i> . By virtue of its property <i>Ghrita</i> is <i>Pitta-Shamak</i> and <i>Agni-Dipak</i> .
<i>Virechan Karma</i>	It is targeted to expel increased <i>Pitta Dosha</i> out of the body i.e. <i>Srotoshodhan</i> . As we know that <i>Rakta</i> is said to be <i>Pitta Sadharmi</i> so it will pacify vitiated <i>Pitta</i> as well as vitiated <i>Rakta</i>
<i>Sansarjana kram</i>	Due to <i>shodhan (Virechan)</i> procedure <i>Mandagni</i> develops therefore <i>Sansarjan kram</i> maintain <i>Agni</i> balance or equilibrium.

Ingredients of *Lodradi Lepa* are having the predominance of *Tikta*, *Katu* and *Kashaya Rasa*, *Laghu Guna*, *Katu Vipaka* and *Ushna Virya*. These properties alleviate *Kapha Dosha*. *Lodradi Lepa* is capable of pacifying vitiated *Vata Dosha* by its *Madhura Rasa*, *Snigdha Guna*, *Ushna Virya* and *Madhura Vipaka*. Due to the presence of *Madhura*, *Tikta*, *Kashaya Rasa*, *Snigdha Guna* and *Sheeta Virya* it alleviates *Pitta Dosha*. *Ruksha guna* helps in drying up the *Pidika*. *Tikshna guna* assists the drug to act fast, spreading in to the deep and squeeze out the pus inside. As *Tikta Rasa* is having *Rakta shodhana* property acts on vitiated *Rakta Dhatu* and purifies it. By cleansing the blood, it cures the skin diseases and enhances the skin complexion. The drug consists of *Shothahara*, *Vrana ropana*, *Pachana* and

*Krimighna* properties. Hence it helps to enhance the healing process of *Mukhadooshika* (Acne Vulgaris). *Medoghna* property of *Vacha* will be useful in the subsiding of *Medogarbh pidika*. Ingredients of *Lodradi Lepa* are rich in flavonoides and tannins. Flavonoids are proven to possess good antioxidant property. Antioxidants protect the skin from the oxidative damage. Tannins promote the healing process by increasing capillary formation. All the ingredients are considered to possess anti-inflammatory, analgesic and anti bacterial actions. Due to the anti-inflammatory action the drug helps to improve the outcome at the site by reducing the inflammatory features such as *Saruja* (pain) and *Saraktata* (bleeding). The analgesic action of ingredients is beneficial in the management of pain



(*Saruja*). Due to antibacterial action they avoid secondary infections<sup>7</sup>.

**Probable Mode of Action of *Lepa***<sup>8</sup>: The probable mode of action of *Lepa* can be described in two steps as follows:

**I) Pilosebaceous Uptake:** When a *Lepa* is applied over the surface of skin opposite to the direction of hairs on it, through a proper base, the active principles of the ingredients of *Lepa* are released into that base. After that, this combination enters the *Romkupa* & further gets absorbed through the *Swedavahi Srotas* & *Siramukh*<sup>9</sup>. However, it should be kept in mind that the pilosebaceous uptake i.e. absorption of *Lepa* differs as per the site variation, skin condition & more important is the base through which it is applied.

**II) Cutaneous Biotransformation:** Thereafter it is subjected for *Pachana* by *Bhrajakagni* viz. the viable epidermis starts off the catabolic degradation of the absorbed material with the help of essential enzymes. In due course of the above transformation, some new metabolites might be forming which pacifies the provoked *Doshas* locally & thus breaks the pathogenesis cycle leading to the alleviation in the symptoms.

**Probable Mode of Action of *Mukhdooshikahar Vati***<sup>10 11</sup> (Table 7)

All the 6 ingredients (*Manjistha*, *Sariva*, *Chopchini*, *Nimb* *Haridra* And *Guduchi*)

of *Mukhdooshikahar vati* (Anubhut/self formulated drug) has shown their Anti-inflammatory, Anti-microbial, Anti-acne effect in various studies & *Acharya charaka*<sup>12</sup> has described *Manjistha* and *Sariva* in *Varnya Mahakashaya*, *Haridra* in *kusthaghna*, and *Vishaghna Mahakashaya*, *Guduchi* and *Sariva* in *Dahprashaman Mahakashaya*. This *Vati* basically contains *Raktaprasadan Dravyas* like *Sariva*, *Manjistha*, *Chopchini* which detoxifies blood, *Shothahar*, and *krimihar Dravyas* like *Nimb*, *Guduchi*, *Haridra* subsides *shotha*, excessive sebum production and reduces bacterial load; Almost all the drugs are having *Tridosh-Shamak* properties. *Mukhdooshikahar vati* is Mainly *Tikta Rasa*, *Pradhana*, *Laghu Ruksha Guna*, *Ushna Virya* and *Katu Vipaka Pradhana* through which it helps in management of *Mukhdooshika* by breaking the *Samprapti*.

Anti-inflammatory action of *Sariva*, *Guduchi*, *Nimb*, *Chopchini* & *Haridra* reduces *Shotha* (inflammation), Antibacterial action of *Manjistha*, *Chopchini*, *Nimb* & *Haridra* reduces bacterial load and its colonization thus reduces *Paka* (discharge) and improves healing of the lesions lesions, Anti-oxidant property of *Sariva*, *Guduchi*, *Chopchini* & *Haridra* reduces accumulation of dead cells or reduces retentional hyperkeratosis





thus removes scar or *Vaivarnya*, Analgesic property of *Guduchi* reduces pain (*Vedana*), Anti-allergic property of *Guduchi* reduces *kandu* by reducing stimulation of mast cell and Anti-stress activity of *Guduchi* reduces stress which is a main causative factor for the development of Acne Vulgaris. Moreover, it has ingredients (*Haridra & Guduchi*), having hepato-protective property by means of which it protects liver & repair damaged liver cells. It also has property of detoxification. It detoxifies the body & assists excretion of accumulated toxin from the body by enhancing liver function. In *Ayurveda* it can be understood in relation with *Shonita*, *Raktavaha Srotas*, and *Yakrit*. In *shonitaja rogas* (disorders due to vitiated blood), *Vaivarnya*<sup>13</sup> (skin discoloration) is mentioned *Prasanna Varnendriyarth* (bright skin tone and texture etc) are the *Lakshanas* of *Vishuddha Rakta Purusha*<sup>14</sup> (characteristics of a person having pure and detoxified blood) *snigdha rakta Varna in rakta sara*<sup>15</sup> and liver is said to be the *mula* of *Shonitavaha/ Raktavaha Srotas*. This shows that liver is the *Karana* (cause) for *Vaivarnya*, *Prasanna Varna* and other disorders of skin. Therefore, *Mukhdooshikahar vati* also has

rejuvenative action for liver. Therefore, multi factorial action of these contents of *Mukhdooshikahar Vati* may be the possible reason for its better effect.

## CONCLUSION









*Mukhdooshika* is a *Kapha- Vata- Rakta Pradhana Vyadhi* which has clinical features similar to Acne vulgaris. *Lodhradi Lepa*, *Mukhdooshikahar Vati as shaman chikitsa* and *Virechan as shodhan chikitsa* when given together proved quite effective than only *Virechan* in managing the patients of *Mukhdooshika*. Moreover, no side-effects were observed in patients during and after the treatment so, it can be concluded that the patients of *Mukhdooshika* can be managed effectively by *Ayurveda* without fear of side-effects as seen in Allopathic drugs like systemic and topical antibiotic and steroids.

Photographs of two cases {fig.1 a (BT), 1 b(AT), 1c(BT), 1d and fig. 2a (BT) 2 b(AT) 2c (BT) 2d (AT) } treated with *Virechan* followed by *Lodhradi Lepa* and *Mukhdooshikahar vati*, are annexed herewith for better understanding.

**Source of support:** Nil

**Conflict of interest:** None



	
<b>Fig.1 a (BT: RIGHT CHEEK)</b>	<b>Fig.1 b (AT: RIGHT CHEEK)</b>
	
<b>Fig.1 c (BT: LEFT CHEEK)</b>	<b>Fig.1 d (AT: LEFT CHEEK)</b>
	
<b>Fig. 2a (BT: RIGHT CHEEK)</b>	<b>Fig. 2b (AT: RIGHT CHEEK)</b>
	
<b>Fig. 2c BT: LEFT CHEEK</b>	<b>Fig. 2d AT: LEFT CHEEK</b>



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