

Study of combined effect of *Khadirashtak kwath* and *Lodhradi lep* on *Mukhdushika* (Acne Vulgaris) – A pilot study

Research Article

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Abstract

Introduction: Skin is one of the five *Gyanendriyas* (Sense organ) as described in Ayurvedic texts. It is responsible for *Sparshdyanam*, hence plays important role in Physical and Mental well being. It plays the most important role by interfacing with surrounding. On contrary with this there is increased pollution, stress, change in diet, change in life style causing the most burning skin problem i.e. *Mukhdushika* so called Acne Vulgaris. In modern science most of the drug which are used have side effect and complications on long term used, so Ayurveda is an best option to treat the diseases. *Lodhradilep* mentioned in *Samhita* can be used for external application and *Khadirashtak kwath* can be used for internal application. It can be used as alternate therapy which is devote of complication and side effect. Aim: To evaluate the efficacy of *Lodhradi lep* and *Khadirashtak kwath* on *Mukhdushika*. Objectives: To study the effect of *Lodhradi lep* and *Khadirashtak kwath* on *Mukhdushika*. Methodology: Ten patients of *Mukhdushika* (acne) were enrolled into this pilot study. All patients were evaluated on the basis number of *Pidikas* (acne), Area Occupied, *Kandu* (itching), *Srava* (secretions), *Vedana* (pain). After 28 days of administration of *Lodhradilep* and *Khadirashtak Kwath* twice in a day after meal; result was analysed by paired t test. Results and conclusions: The result in all symptoms i.e. number of *Pidikas* (acne) ($P = <0.001$), Area Occupied ($P = 0.001$), *Kandu* (itching) ($P = <0.001$), *Srava* (secretions) ($P = <0.001$), *Vedana* (pain) ($P = <0.001$)) was found statistically significant. Thus *Lodhradi lep* and *Khadirashtak Kwath* on *Mukhdushika* is an effective combination for management for *Mukhdushika*.

Key Words: Acne, *Khadirashtak Kwath*, *Lodhradi lep*, *Mukhdushika*.

Introduction

Acne is the common inflammatory condition of the skin, which affects both male and female but in male the onset of disease is more during the puberty (1). Recent studies in India show 50.6 % boys and 38.13% girls of the age group between the age group 12-17 are affected with disease. (2) Where as in other research it is showed that adult female are more affected than the male above the age of 50 years. Researches also showed that mean age for the Acne for the female is 35.5 years (3) Acne vulgaris (AV) is consist of pilosebaceous follicles and they are categorised in different four stages according to their characteristic, they are comedones, papules, pustules and cysts, and they it changes to nodules and scar, which are mostly seen on face and neck. (2) The exact cause of acne is still unknown;

some theories assumed that it is due to activated androgens the early symptoms which are increased sebum production due to which the skin looks greasy (seborrhoea) and formation of horny plugs (comedone) (4).

Most of the researches showed that the treatment of the AV is challenging due to the tendency of relapsing even after the repeated cycles of antibiotics and isotretinoin. Also a research conducted in 2012 by Kamanagr and Shinkai, stated that the treatment of AV is difficult and often chronic with high rate failure and having different choices. (5) So it is important to give appropriate treatment with good monitoring and to avoid the adverse reaction of the drug used for the treatment and for this Ayurveda can be the good choice to treat the disease.

In Ayurveda, also there are several lines of treatment and a few studies suggested the *Panchkarma* procedures. Out of which procedure of *Lep* is common in all text. Acharya Sushruta, Acharya Vagbhat, Bhavprakasha and Sharangdhar mentioned the word *Lep* whereas in Yogratanakar and Bhaishjyarnatnavali the word used is *Pralep*. Most of the researches shows that only lep or any of the panchkarma along with lep is advisable. These all procedures are little bit time consuming which is not feasible for time bound people.

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(6,7). So this study was design to avoid the efforts of the patients and which would be the cost effective as well.

In this study, *Lodhradi lep* along with the *Khadhirashtak Kwath* is used. *Lodhradilep* is used as external application whereas *Khadhirashtak Kwath* is used as internal medicine. This will be the good alternative to treat the AV as the ingredients of both the drugs are easily available and also the cost effective.

Aim: To evaluate the efficacy of *Lodhradi lep* and *Khadirashtak kwath* in *Mukhdushika*.

Objective: To study the effect of *Lodhradi lep* and *Khadirashtak kwath* in *Mukhdushika*

Materials and Methodology

Materials

Lodhradi lep

It is made-up of *Lodhra (Symplococcus racemosa Roxb.)*, *Dhanyak (Coriandrum sativum Linn)* and *Vacha (Acorus calamus Linn)*, a mixture fine powder of all of these is applied on affected area with small quantity of water. It was applied on the face two times a day(7).

Khadirashtak kwath

It is the combination of eight herbal products which contain, *Khadir (Acacia catechu Willd)*, *Amalaki (Embllica officinalis Gaertn)*, *Bibhitaki (Terminalia bellirica Roxb)*, *Haritaki (Terminalia chebula Retz)*, *Neem (Azadirachta indica A. Juss)*, and *Guduchi (Tinospora cordifolia (Willd) Miers ex Hook F. & Thoms.)*, *Patol (Trichosanthes dioica Roxb)*, *Vasa. (Adhatoda vasika Nees)* Decoction of all these drug powder is used in quantity of 40 twice a day (8).

Source of Data: Participants were enrolled from OPD of Dirghayu Ayurveda Chikitsalaya, Ramnagar, Wardha

Type of Study: Interventional

Sampling procedure:

Depending upon Inclusion and exclusion criteria patients were selected.

Study Group: *Lodhradi lep* for external Application along with *Khadirashtak Kwath* for internal use.

Sample size:10

Population: Diagnosed patients of *Mukhdushika (Acne Vulgaris)*.

Inclusion criteria

- Patients showing signs and symptoms of *Mukhadushika* of either sex.
- Patients aging from 12-40 years.

Exclusion criteria

- Patients with systemic disorders like Thyroid dysfunction, *Amlapitta*, *Shitpitta*
- Patients less than age of 12 yrs and more than 40 yrs.
- Patients having inflammatory cysts and nodules.
- Patients having other skin disorders or drug dependency.
- Patients with major medical or surgical illness will be excluded from study

Assessment criteria

Subjective parameters

In this *Kandu* (Itching), *Srava* (discharge), *Vedana* (pain) is observed. Symptoms and its score is mentioned in Table 1.

Table 1: Subjective parameters and grading

Sr	Parameter	Symptoms	Score
1	<i>Kandu</i> (Itching)	No <i>Kandu</i>	0
		Occasionally	1
		Frequently	2
		Continuous	3
2	<i>Srava</i> (discharge)	No <i>Srava</i>	0
		Very less need	1
		Needs mobbing	2
		Profuse	3
3	<i>Vedana</i> (pain)	No <i>Vedana</i>	0
		On pressure	1
		On simple	2
		Without	3

Objective parameters

In objective parameter number of *pidika* and area occupied by the *Pidika* is observed Symptoms and its score is mentioned in Table 2.

Table 2: Objective parameter

Sr No.	Parameter	Symptoms	Score
1	No .of <i>Pidikas</i> (Eruption)	No <i>Pidika</i>	0
		No. of <i>Pidikas</i> < 5	1
		No. of <i>Pidikas</i> >5 but < 10	2
		No.of <i>Pidikas</i> >10 but < 20	3
		No.of <i>Pidikas</i> >20	4
2	Area occupied by <i>Pidikas</i>	No	0
		Any 1 part of face	1
		Any 2 part of face	2
		Any 3 part of face	3
		Whole face with or without chest & back	4

Duration of treatment and follow up

Total duration of treatment was 28 days.

Follow up was taken after every 7 days i.e. 7, 14, 21, 28 day of treatment.

Overall effect of therapy

Total effect of therapy was assessed considering overall improvement in signs and symptoms based on criteria mentioned in Table 3.

Table 3: Signs and symptoms and Effect of therapy

Signs and symptoms	Effect of therapy
Complete remission	100% relief
Marked improvement	Relief is between 75 %
Moderate	Relief between 50% and
Mild	Relief between 25% and
Unchanged	<25% relief.

% is depending upon the results of the patient before and after the treatment.

Observation and results

As in this study data was analysed before and after study in a single group and student Paired t-test were used. All the subjective and objective parameter were accessed before and after the treatment which includes *Kandu* (Itching), *Srava* (discharge), *Vedana* (pain) as a subjective parameter and Number of *Pidikas*, Area occupied by *Pidikas* as a Objective parameter.

Number of *Pidika* (Eruption)

Table 4: Statistical analysis of drug in number of *Pidika*

Treatment	N	Mean	Std Dev	SEM
BT	10	3	0.471	0.149
AT	10	1.7	0.483	0.153

Here, $t = 8.510$ with 9 degrees of freedom. ($P = <0.001$)

After the combine use of *Lodhradi lep* and *Khadirashtak Kwath*, in number of *Pidika* it shows statistically significant change ($P = <0.001$) (Table number 4) 40 % patient have moderate type of relief where as in 60 % patients it showed mild relief. (Fig. number 1)

Area occupied

Table 5: Statistical analysis of drug in Area occupied

Treatment	N	Mean	Std Dev	SEM
BT	10	3.4	0.843	0.267
AT	10	2.4	0.699	0.221

$t = 4.743$ with 9 degrees of freedom. ($P = 0.001$).

After the combine use of research, in number of *Pidika* it shows statistically significant change ($P = <0.001$) (Table number 5) 20 % patient have moderate type of relief where as in 60 % patients it showed mild relief and 20% patient don't show any kind of change in this particular symptom (Fig. number 2).

Kandu (Itching)

Table 6: Statistical analysis of drug in *Kandu* (Itching)

Treatment	N	Mean	Std Dev	SEM
BT	10	1.6	0.699	0.221
AT	10	0.1	0.316	0.1

$t = 6.708$ with 9 degrees of freedom. ($P = <0.001$)

The study shows good result in itching, it is statistically significant change ($P = <0.001$) for the particular symptom (Table number 6) and showed 90 % complete relief with 10 % moderate relief in patient. (Fig. number 3).

Srava (Discharge)

Table 7: Statistical analysis of drug in *Srava* (Discharge)

Treatment	N	Mean	Std Dev	SEM
BT	10	1.6	0.699	0.221
AT	10	0	0	0

$t = 7.236$ with 9 degrees of freedom. ($P = <0.001$)

Lodhradi lep and *Khadirashtak Kwath* proves statistically significant ($P = <0.001$) (Table number 7) by the use of these drugs patient got 100 % relief from the discharge of AV (Fig. number 4)

Vedana (Pain)

Table 8: Statistical analysis of drug in *Vedana* (Pain)

Treatment	N	Mean	Std Dev	SEM
BT	10	1.4	0.699	0.221
AT	10	0.3	0.483	0.153

$t = 6.128$ with 9 degrees of freedom. ($P = <0.001$)

The study also shows good result in pain, it is statistically significant ($P = <0.001$) for the for the particular symptom (Table number 8) and 90 % patient showed complete relief and 10 % patient showed moderate relief. (Fig. number 5).

Table 9: Comparative study before and after treatment

Symptoms	B.T	A.T	Relief	Relief %
Number of <i>Pidikas</i>	30	17	13	43.33%
Area Occupied	34	24	10	29.33%
Itching	16	1	15	93.75%
Discharge	16	0	16	100
Pain	14	3	11	78.75%

In comparison between before treatment and after treatment by using *Lodhradi lep* and *Khadirashtak Kwath*, patient had 43.33% relief from number of *Pidika*, area of *Pidika* reduces to 29.33%, 93.75% itching had reduces in comparison between before treatment and after treatment where as 78.75 % relief in pain. Combination of both of these drugs had good result. There was complete relief from the discharge after the treatment. (Table number 9).

Discussion

Mukhdushika or AV is known as *Yuvan pidika* or *Tarunya pitika* in Ayurveda, and it falls under the category of *Kshudraroga*. (Minor maladies) (9) According to Ayurveda, AV is caused by the vitiation of *Vata* and *Kapha doshas*, as well as the association of *Rakta Dhātu*, and symptoms include swelling, pain, redness, itching, and the appearance of *Shalmalikantak* (*Bombax ceiba* spikes) on the face (10) Pain is caused by *Vata* imbalance, while itching and discharge are caused by *Kapha* imbalance. As a result, the drugs used in this are mostly antagonistic to the *Kapha* and *Vata Doshas* and have the properties of *Shoolhar* (pain killer) and *Shothhar* (pain reducing quality) *Lodhradilep* is made up *Lodhra* (*Symplococcus racemosa* Roxb.), *Dhanyak* (*Coriandrum sativum* Linn) and *Vacha* (*Acorus calamus* Linn), (7) *Lodhra* has a *Kashaya* (Astringent) taste and a cold potency. It helps to reduce swelling and is helpful in skin diseases, as well as controlling the Vitiated *Kapha Dosh*, which is involved in AV. *Dhanyak* has Astringent, *Tikta Rasa* (bitter), post-digestive sweet effect, and hot in potency, and it is also useful in reducing swelling and pain. Whereas *Vacha* has a pungent and bitter taste, it is transformed into a pungent and hot potency after

digestion, and it is also beneficial in the pain and swelling that occurs in AV. It also has the ability to control the Vitiated *Kapha Dosha*. From all ingredients of *Lodhradi lep* collective, we can conclude that it has a dominant pungent, bitter and astringent taste and have light and hot property which is useful to control the Vitiated *Kapha*. (7)

Khadirashtak Kawath is formed by the combination of, *Khadir* (*Acacia catechu Willd*), *Amalaki* (*Emblica officinalis Gaertn*), *Bibhitaki* (*Terminalia bellirica Roxb*), *Haritaki* (*Terminalia chebula Retz*), *Neem* (*Azadirachta indica A. Juss*), and *Guduchi* (*Tinospora cordifolia (Willd) Miers ex Hook F. & Thoms.*), *Patol* (*Trichosanthes dioica Roxb*), *Vasa*. (*Adhatoda vasika Nees*) (8), out of this *Khadir*, (11) *Nimb* (12) and *Vasa* (13) are bitter and astringent in taste, and post-digestive it changes to pungent and Cold in potency and all these drugs are used in several types of skin disease. Among these *Nimb* and *Vasa* have the property to act on *Kapha dosha* and both are also used to treat the diseases of *Rakta Dhatu* hence both of these drugs are best to control the vitiated *Kapha* and impurities in Blood. *Khadir* also has the property to reduce swelling and itching. *Amalaki* (14) has five tastes with cold potency and changes to sweet after digestion and has the property to control all *Dosha* and is also used in various skin diseases, *Haritaki* (15) also have Five tastes but it is having hot potency and changes to sweet after digestion. It also controls the *Tridoshas* and has the property to reduce the swelling. *Bibhitaki* (16) is Astringent in taste and same after digestion and it is hot in potency so acts on vitiated *Vata Doshas* and reduces the pain present in AV. *Guduchi* (17) is also *Tridosahar* in property and has bitter and astringent taste and changes to Sweet after digestion and Hot in potency. It also has a property of purification of the blood. *Patol* (18) has the same property as that of *Guduchi* it is also *Tridosahar* and purifies the blood and has bitter, and post digestion it changes to pungent and hot in potency. Due to the combined effect of all of these drugs, *Khadirashtak kwath* is the best drug to treat AV, as it has the property to reduce swelling, and pain. It also controls all *Doshas* and purifies the blood which is impure in AV.

Conclusion

Lodhradi Lep and *Khadirashtak Kwath* both are effective in *Mukhdushika* (*Acne vulgaris*), *Lodhradi Lep* reduces the swelling and pain by external application whereas *Khadirashtak Kwath* acts internally and controls the vitiated *Kapha* and *Vata dosha* along with the *Rakta Dhatu*. All parameters such as the number of *Pidika*, an area occupied by the *Pidiaka*, *Veadna* (Pain), *Kandu* (Itching), and *Srava* (Discharge) have significant relief by using this treatment modality.

Scope

The comparative study can be conducted with more number of sample to evaluate the precise result of the combination of *Lodhradi lep* and *Khadirashtak Kwath* in *Mukhdushika*.

This study shows that *Lodhradi lep* and *Khadirashtak Kwath* had a good effect on the discharge of the *Mukhdushika*, so it can be studied in other skin disorders where discharge is prominent.

Consent and ethical approval

As per international standard or university standard guideline patients consent has been taken, collected and preserved by the authors.

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