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Evaluation of combined efficacy of *Lodhradi lep* with *Khadirashtakkwath* in *Mukhdushika*

Research Article

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Abstract

Mukhdushika (Acne vulgaris) is burning issue among young generation. It gives inferiority complex in social life. There are lots of medicines for acne vulgaris but the results are not upto the mark. Our aim is to combat with *Mukhdushika* with simple herbal formulation. Randomised controlled trial is preferred for the study. Methods – Aim: To evaluate efficacy of combination of *Lodhradilep* and *Khadirashtak kwath* in management of *Mukhdushika.* Objectives: To study the *Nidan panchak* of *Mukhdushika* as described in Ayurveda samhita. To study the effect of combination of *Lodhradi lep* and *Khadirashtak kwath.* Randomized control trial was conducted in two arms, Group A (*Lodhradilep*) and Group B (*Lodhradi lep with Khadirashtak kwath*). 30 patients were selected randomly and *Lodhradi lep* was given for group A. 30 patients were selected randomly and *Lodhradi lep* with *Khadirashtak kwath* was given for group B. Result – The group B shown significant result in all the signs and symptoms. Discussion–The Z value was significant in all the objective criteria which shows Group B was more effective than group A in treating *Mukhdushika.*

Key Words: Acne vulgaris, *Kshudrarog*, *Khadirashtak kwath*, *Lep*, *Lodhradi lep*, *Mukhdushika.*

Introduction

'Face is index of mind'

Among five sense organs, Skin is largest organ of body. Facial skinreflects joy, sorrow, anger and all other expressions.

We can say personality of person reflects through his face. In this, present scenario, people are very much conscious about their health aswell as beauty and good looking. Skin is one of the five *Gyanendriyas* (sense organs) as described in *Ayurvedic* texts. (1) It is responsible for touch sensation, henceplays important role in Physical and Mental wellbeing. It plays the mostimportant role by interfacing with surrounding. On contrary with this thereis increased pollution, stress, change in diet, change in life style causingthe most burning skin problem i.e. *Mukhdushika* so called Acne Vulgaris.It affect wonder years of an individual's life i.e. 16-30 years. People aremore beauty conscious during this age. Thisminor ailment may causepermanent disfigurement of face which may result in inferiority complexand sometimes isolation in social life. Acne vulgaris means vulgar to vision and the *Mukhdushika* suggests the *dushan* (vitiation) of Mukha (face). In most cases, Acnefirst appears at 12-14 yearsof age. According to the global burden ofdisease study (GBD), Acne vulgaris affects 85% of young adults aged 12– 25 years. Acne consistently represents the top three most prevalent skinconditions in the general population (2).Researchers have determined thatthe patient of acne had greater impairment in mental health as comparedto patients having Diabetes mellitus, Hypertension, Asthma, Joint pain,Epilepsy etc. Huge amount of money is spend to cure acne by Teenagers.The attitude towards acne varies physician to physician. Somedermatologist takes a more sympathetic stance and proactive and keen totreat the condition. Some take it very normal and helps the sufferer towait and grow out of it. Ayurveda has described *Mukhdushika* under *Kshudrarogas* (minor ailments). Thisdisease is called as *Kshudrarog* (3),as compared to *Mahavyadhis* (major illnesses) or *Vyadhis* (diseases).Vitiation of *Kapha* (factor giving lubrication and structure), *Vatadosha* (factor causing movement) along with *Dushya Rakta* (affected blood cells) give rise tosymptoms like swelling, pain, redness, itching and *Shalmali kantak* (Thorn of Salmalia malabarica Schott & Endl.) like appearance on the face (4). According to modern science, it causes due to Propionobacterium acne (5).

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This causes chronic inflammation of Pilosebaceous follicles characterized by comedones, papules, cyst, nodulesand often scars on face and neck (6). In nonprofessional language, comedones are called as blackheads. It is the basic lesion produced byHyperkeratosis of lining of follicles which retain Keratin, Sebum andMicroorganisms. It is not only caused due to bacterial infection, but alsoinfluence of Endocrine glands, stress, excessive use of cosmetics,temperature, nutritional status etc. Ayurveda has given number of Upakramas (treatment) for this burning problem. It is embarrassing Skin disorder occurred in that particular age whenyoungster wish to have good looking. Inflammation of Pilosebaceous unit characterized by formation of comedones in form of papules, pustules andless commonly nodules. Increased sebum production, Hyperkeratinization and inflammation are the important factors involved in pathogenesis ofAcne vulgaris. Along with skin Acne also affects emotional sensitivity andcontributes to depression, psychological distress and suicidal tendencies.To treat this problem modern practitioners give antibiotics, vitamin A,hormones, Ultraviolet radiations, Corticosteroids and various types oflotions for external applications. According to modern Cosmetology,treatment depends upon grades and severity of Acne. Mostly used topical retinoids are Adaptene and Tretioin. Erythromycin and Clindamycin orcombination with Benzoyl peroxide and some lipophilic antibiotics such asDoxycycline and Minocycline are used which causes sideeffects like Skinirritation, peeling, Redness and associated with sun sensitivity. Number of treatment modalities in various sciences are in practice forAcne, but the results are not very encouraging. Hence, it is a need to takeover a study on such a disease, which is affecting most of the adolescentsin their personality developing years and it has been redefined towards aschronic disease instead of simple and self-limiting disease. According to Ayurved principles, the treatment that subsides one disease and provokesother is not ideal treatment. On the contrary the treatment which doesn'tprovoke other disease is Good treatment *.Ayurved chikitsapaddhati* (Ayurved way of treatment) is grouped in *Shodhana* (purification) and *Shamana* (pacification).We have decided to treat the patient externally as well as internally. *Lepa* (poultice/pack)application to Skin gives emollient effect that provides softness andincreases absorption of drugs. Effectiveness of Lepa is described by *Acharya Sushruta*. He states that *Lepa* work as water over the burninghouse, the fire extinguish immediately (7). In the same manner, *Lepa* works on *Doshas* (bodily elements) locally. *Khadir* (*Acacia catechu* Willd) is the drug of choice in all Skin ailments (8). *Triphala* (*Amalaki* (Emblica officinalis Gaertn), *Bibhitaki* (*Terminalia bellirica* Roxb), *Haritaki* (*Terminalia chebula* Retz)) Is *Rasayan* (antioxidant) as it has rejuvenating properties. *Nimba* (*Azadirachta indica* A. Juss) is well known drug having anti-bacterial property. *Guduchi* (*Tinospora cordifolia* (Willd) Miers ex Hook F. & Thoms.) is the best immunomodulatory drug of choice. *Vasaka* (*Adhatoda vasika* Nees) is one of effective Anti-inflammatory drugs, which is also useful in various types of skin diseases. (9) So we have planned *Khadirashtak kwath* (10). *Lodhradi lep* has *Lodhra* (*Symplococcus racemosa* Roxb.), *Dhane* (*Coriandrum sativum* Linn) and *Vacha* (*Acorus calamus* Linn) as its content (11). *Lodhra* is having Astringent and healing property. *Dhanyak* and *Vacha* can be used as Anti-inflammatory agents.

In this study entitled as "Evaluation of combined efficacy of *Lodhradi lep* & *Khadirashtak kwath* in *Mukhdushika*", a sincere effort has been made for betterment of patients with Acne vulgaris. For this purpose,two groups of 30 patients were taken under study. A group is provided with *Lodhradi lep* and B group is with *Khadirashtak kwath* along with *Lodhradi lep*.

Review of literature

Concept of *Twakadosha* (skin disorder)

The term *Twakdosha* (skin ailmemts) can be used to describe all the primarycutaneous disorders where the predominant pathology is *Twakdushti* (skin vitiation).Acharya Dalhan included *Kushtaadhisthan* (seat of Kushta) in Fifth layer of skin. (11) According to Sushruta, *sang* (obstruction), *atipravritti* (excessive oozing) or *apravritti* (complete absence) of Mala (product after digestion) results in *Twakdosha* and *Malayatan doshas* (12). Though there are number of *Twakdosha*, the term *visheshataha sparshghnani* (superior in sensation loss) '*Kushta'* is reserved for those 18 cutaneous disorders stated by Chakrapani commentary (13). Thus, *Mukhdushika* can be satisfactorily included in the term *Twakdosha* and therapeutic guidelines can be appliedto treat patients of *Mukhdushika*.

Concept of Kshudraroga

According to Acharya Indu, the term kshudra is synonyms with the word '*Swalpa* '(minor), *'Adham'* (inferior) and '*Krura'*(cruel) (14)

According to Shabdakalpadruma, the meaning of *Kshudraroga* is *Swalpa Vyadhi* (minor disease) (15)

Acharya Shrikanthadutta gives possible explanation of the term *Kshudra* (16)

- *Kshudrarogas* represents the disorders with *Kshudra hetus*, (minimal causative factors), *Lakshanas* (signs and symptoms) and *Chikitsa* (treatment).
- The disorders like *Vrana* (injury) *Jwara* (fever) are not classified into many subtypes and are dealt with in concise manner.
- The term *Kshudra* includes both *Raudraywatwa* (severity or Morbidity) and *Alpatwa* (mildness).
- Numbers of *Kshudrarogas* mentioned by different *Acharyas* are as follows-
- Sushruta has mentioned 44 *Kshudrarogas*.
- Ashtang hridaya uttartantra and Ashtang samgraha uttartantra have described 36 *Kshudrarogas*.
- 44 *Kshudrarogas* are described by Madhav nidan
- 60 *Kshudrarogas* are described by Sushruta samhita purvakhanda.

Mukhdushika is one of the *Kshudrarogas*. It is mentioned under *Kshudrarogadhikar*.*Yuvanapidika* is the synonym of *Mukhdushika* (17).Acharya Sushruta has mentioned that the *Pidikas* which arise due to vitiation of *Kapha*, *Vata* along with *shonita* (blood) on the face of *Yunaha* (young adults) assembling '*Shalmalikantakas'* are termed as *Mukhdushika* (18).

Acharya Vaghabhata has additionaly mentioned that it is *Medogarbha* (filled with Meda) and it *Saruja* (pain) (19). Charakacharya has not directly mentioned *Mukhdushika* but the pathogenesis of *Pidika* (cyst) and the prevalence of many other Pidikas has been cited by him (20). When vitiated *Pitta dosha* localises in the Skin viacutaneous blood flow, the resultant inflammatory swelling is termed as *Pidika*.

Sharangdhara has mentioned *Vakrasnigdhatwa* (oilyness on face) and Vaktrapitika (cyst on face) as being the *Shukra mala* (21). Acharya Madhav has same description as Sushrutacharya. Thus,

a. The predominance of lesions (*Mukhdushika*)
b. Age of onset and prevalence of *Mukhdushika* coincide with *Shukrapradurbhava kala* (puberty) (Yuvanpidika)
c. *Medogarbhatwa* (fat content of *pidikas*, sebum also consists of fat)
d. Present day concept of androgen mediated sebaceous gland hyperactivity as the reason for Acne vulgaris and *Vaktrasnigdhatva*. (22) Vaktrapidika being *Shukramala* (biproduct of Semen) provide sound basis for co-relation of *Mukhdushiksa* with Acne vulgaris.

Aims and Objectives

Aims: To evaluate efficacy of combination of *Lodhradi lep* and *Khadirashtak kwath* in management of *Mukhdushika*.

Objectives:

- To study the effect of combination of *Khadirashtak kwath* in *Mukhdushika*.
- To study the effect of combination of *Lodhradi lep* and *Khadirashtak kwath* in *Mukhdushika*.

Materials and Methods

Study design – Randomized controlled clinical trail

Grouping and randomization of patients

- **Group A -** 30 patients will be selected randomly and *Lodhradi lep* will be given.
- **Group B -** 30 patients will be given *Lodhradi lep* along with *Khadirashtak kwath***.**

Diagnostic criteria

Diagnosis is made on the basis of clinical signs and symptoms in *Ayurveda* and Modern text.

Inclusive criteria

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

Exclusive criteria

- Patients with systemic disorders like Thyroid dysfunction, *Amlapitta* (hyperacidity), *Shitpitta* (urticaria).
- 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

- *Ruja* (pain)
- *Kandu* (Itching)
- *Daha* (burning)

Objective

- *Shalmali kantak sadrush*
- *Shotha* (inflammation)
- *Strava* (discharge)
- *Paka* (stage of inflammation)

Table 1: Grading of parameters

Grades Symptoms	0	1	2	3	4
Number of *Pidikas*	No *Pidika*	Number of *Pidikas* < 5	Number of *Pidikas* > 5 but < 10	Number of *Pidikas* >10 but < 20	Number of *Pidikas* >20
Area occupied by Pidikas (nose, chin, forehead, chick, upper chest, upper back)	No *Pidikas*	Any 1 part of face	Any 2 part of face	Any 3 part of face	Whole face with or without chest & back
***Kandu* (itching)**	No *Kandu*	Occasionally *Kandu*	Frequently	continuous	
***Daha* (burning)**	No *Daha*	Occasionally	Frequently	continuous	
***Srava* (discharge)**	No *Strava*	Very less need not to mob	Needs mobbing	Profuse	
***Vedana* (pain)**	No *Vedana*	On pressure	On simple touch	Without touching	

Duration of treatment and follow up

Total duration of treatment was 30 days.

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

Overall effect of therapy (23)

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

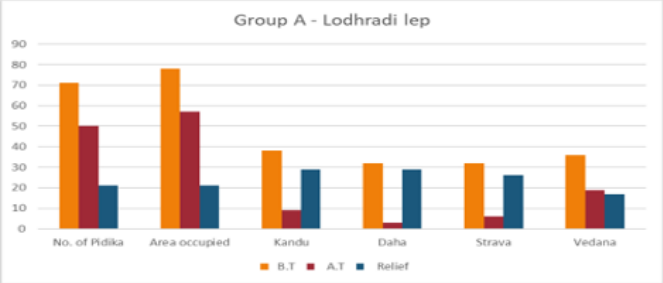
- Complete remission - 100% relief
- Marked improvement - Relief is between 75 % and 100 %
- Moderate - Relief between 50% and 75 %
- Mild - Relief between 25% and 50 %
- Unchanged - < 25% relief.

Overall assessment

Total effect of therapy showing relief in symptoms.

Table 2: Group A (*Lodhradi lep*)

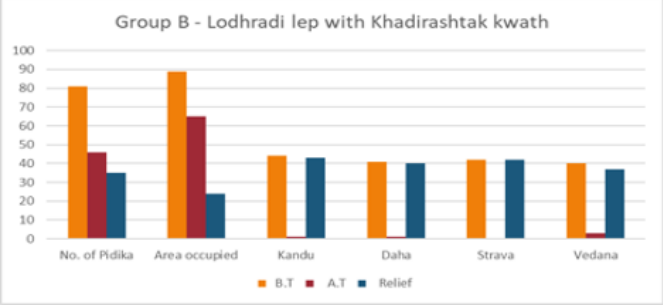
Symptoms	B.T	A.T	Relief	Relief in %
Number of *Pidika*	71	50	21	**26.58**
Area occupied	78	57	21	**26.97**
Kandu	38	9	29	**76.32**
Daha	32	3	29	**90.63**
Strava	32	6	26	**81.25**
Vedana	36	19	17	**47.23**



Total effect of therapy showing relief in symptoms of Group B (Lodhradi lep with Khadirashtak kwath).

Table 3: Overall assessment of Group B

Symptom	B.T	A.T	Relief	Relief in %
Number of *Pidika*	81	46	35	**43.21**
Area occupied	89	65	24	**26.97**
Kandu	44	1	43	**97.73**
Daha	41	1	40	**97.57**
Strava	42	0	42	**100**
Vedana	40	3	37	**92.50**



Statistical assessment

In this research work, the aim of study is, Evaluation of the combined efficacy of *Lodhradi lep* with *Khadirashtak kwath* in *Mukhdushika"* For this purpose, we have selected 60 patients from our OPD randomly. Here, we have two Groups,

- Group A (Control group) – 30 patients treated with *Lodhradi lep.*
- Group B (Experimental group) – 30 patients treated with *Lodhradi lep* with *Khadirashtak kwath.* For knowing combined efficacy of *Lodhradi lep* with *Khadirashtak kwath* in *Mukhdushika*, Let us compare it with efficacy of *Lodhradi lep.*

Now, compare the cardinal parameters of *Mukhdushika*.

For statistical analysis, the Z test for significance of difference of Mean is applied. 121 For comparing the efficacy of two drugs for each symptom,

$H0 = \mu A = \mu B$

Mean reduction in symptom due to Drug B is not better than Drug A.

$H1 : \mu A < \mu B$ (Left tailed alternative)

Under H0, the test Statistics is, $Z = \bar{x} - \bar{y} \sqrt{\sigma 1\ 2\ n1 + \sigma 2\ 2\ n2} \sim N(0,1)$ As $\sigma 1\ 2$ and $\sigma 2\ 2$ are unknown.

Hence, for Large samples, $\sigma 1\ 2 \approx s1\ 2\ \sigma 2\ 2 \approx s2\ 2$ Where, $\bar{x}$ - Mean reduction in symptom due to drug B. $\bar{y}$ - Mean reduction in symptom due to drug A. $s1\ 2$ and $s2\ 2$ are Sample variances due to Drug A and B. Let us compare these drugs, w.r.t each parameter one by one.

Number of *Pidika*

H0 = µA = µB Mean reduction in Number of *Pidika* due to Drug B is not better than Drug A. H1 : µA < µB (Left tailed alternative) Under H0, the above formula for Z test is applied. Here, $\bar{x}$= 11.66667, $\bar{y}$ = 6, Known variable is 1, n = 30.

After putting values in above equation,

	Variable 1	Variable 2
Mean	11.66667	6
Known variance	1	1
Observations	30	30
Hypothesized Mean		
Difference	0	
Z	21.94691	
P (Z<=z) one-tail	0	
z Critical one-tail	1.644854	
P (Z<=z) two-tail	0	
z Critical two-tail	1.959964	

Here, the Z value i.e. 21.94691 is greater than the value of z Critical (1.644854). Therefore, null hypothesis is rejected and the drug B (Lodhradi lep with Khadirashtak Kwath) is effective in reducing No. of Pidika.

Area occupied –

H0 = µA = µB

Mean reduction in Area occupied due to Drug B is not better than Drug A.

H1 : µA < µB (Left tailed alternative)

Under H0, the above formula for Z test is applied.

Here, $\bar{x}$= 8, $\bar{y}$ = 6.33333, Known variable is 1, n = 30.

After putting values in above equation,

	Variable 1	Variable 2
Mean	8	6.33333
Known variance	1	1
Observations	30	30
Hypothesized Mean		
Difference	0	
Z	6.4549	
P (Z<=z) one-tail	5.41	
z Critical one-tail	1.644854	
P (Z<=z) two-tail	1.08	
z Critical two-tail	1.959964	

Here, the Z value i.e. 6.4549 is greater than the value of z Critical (1.644854). Therefore, null hypothesis is rejected and the drug B (*Lodhradi lep* with *Khadirashtak Kwath*) is effective in reducing Area Occupied by *Pidikas*.

Kandu

$H0 = \mu A = \mu B$

Mean reduction in *Kandu* due to Drug B is not better than Drug A.

$H1 : \mu A < \mu B$ (Left tailed alternative)

Under H0, the above formula for Z test is applied. Here, $\bar{x}$= 14.33, $\bar{y}$ = 9.66, Known variable is 1, n = 30. After putting values in above equation,

	Variable 1	Variable 2
Mean	14.33	9.66
Known variance	1	1
Observations	30	30
Hypothesized Mean		
Difference	0	
Z	18.073	
P (Z<=z) one-tail	0	
z Critical one-tail	1.644854	
P (Z<=z) two-tail	0	
z Critical two-tail	1.959	

Here, the Z value i.e. 18.073 is greater than the value of z Critical (1.644854). Therefore, null hypothesis is rejected and the drug B (*Lodhradi lep* with *Khadirashtak Kwath*) is effective in reducing *Kandu*.

Daha

$H0 = \mu A = \mu B$

Mean reduction in Daha due to Drug B is not better than Drug A.

$H1 : \mu A < \mu B$ (Left tailed alternative)

Under H0, the above formula for Z test is applied. Here, $\bar{x}$= 13.333, $\bar{y}$ = 9.666, Known variable is 1, n = 30. After putting values in above equation,

	Variable 1	Variable 2
Mean	13.333	9.66
Known variance	1	1
Observations	30	30
Hypothesized Mean		
Difference	0	
Z	14.200	
P (Z<=z) one-tail	0	
z Critical one-tail	1.644854	
P (Z<=z) two-tail	0	
z Critical two-tail	1.959	

Here, the Z value i.e. 14.200 is greater than the value of z Critical (1.644854). Therefore, null hypothesis is rejected and the drug B (*Lodhradi lep* with *Khadirashtak Kwath*) is effective in reducing *Daha*.

Srava

$H0 = \mu A = \mu B$

Mean reduction in *Strava* due to Drug B is not better than Drug A.

$H1 : \mu A < \mu B$ (Left tailed alternative)

Under H0, the above formula for Z test is applied. Here, $\bar{x}$= 14, $\bar{y}$ = 8.66, Known variable is 1, n = 30. After putting values in above equation,

	Variable 1	Variable 2
Mean	14	8.66
Known variance	1	1
Observations	30	30
Hypothesized Mean		
Difference	0	
Z	20.655	
P (Z<=z) one-tail	0	
z Critical one-tail	1.644854	
P (Z<=z) two-tail	0	
z Critical two-tail	1.959	

Here, the Z value i.e. 20.655 is greater than the value of z Critical (1.644854). Therefore, null hypothesis is rejected and the drug B (*Lodhradi lep* with *Khadirashtak Kwath*) is effective in reducing *Strava*.

Vedana –

$H0 = \mu A = \mu B$

Mean reduction in *Vedana* due to Drug B is not better than Drug A.

$H1 : \mu A < \mu B$ (Left tailed alternative)

Under H0, the above formula for Z test is applied. Here, $\bar{x}$= 12.333, $\bar{y}$ = 5.66, Known variable is 1, n = 30. After putting values in above equation,

	Variable 1	Variable 2
Mean	12.33	5.66
Known variance	1	1
Observations	30	30
Hypothesized Mean		
Difference	0	
Z	25.819	
P (Z<=z) one-tail	0	
z Critical one-tail	1.644854	
P (Z<=z) two-tail	0	
z Critical two-tail	1.959	

Here, the Z value i.e. 25.819 is greater than the value of z Critical (1.644854). Therefore, null hypothesis is rejected and the drug B (*Lodhradi lep* with *Khadirashtak Kwath*) is effective in reducing *Vedana*.

(* For the convenience of calculation, grades are taken in multiple of 10)

Discussion

Discussion on Drug

Probable mode of action of Drug

Lodhradi Lepa is applied locally over the affected area, pacifies *Doshas* (bodily component). Application of *Lepa* covers the opening of Pilosebaceous glands causing rise in local temperature. This increased temperature causes opening of pores. *Strotasavarodha* (blocked channels). This causes penetration of active ingredients at the pathological site. This results in *Sampraptibhanga* (Breaking of pathogenesis) according to their *Doshahgnata*(vanishing vitiated bodily component). *Acharya Sushruta* has explained the usual mode of action of *Lep*. According to him, when the Medicine is applied in *pratilomgati* (opposite to the direction of hair eruption), it gets absorbed through *romakupa* (hair follicles) which is *swedavahastrotas* (sweat conducting pores).It helps in betterment of action of *Lepa* (24). *Lodhradi lep* is most common local application suggested by *Acharyas*. In this lepa, there are three simple drugs, which are easily available, and having no side - effects. *Lodhra* is *Sheetaveeryatmak* (cold property) with *Shothahar* (anti-inflammatory), *Kaphapittaghna* (Vitiating Kapha & pitta) and *Twakadoshahara* (detoxifying skin) properties. *Dhanyak* (Coriandrum sativum) is *Shothahar*, *Shulahar* (analgesics) and *Tridoshahar*. It is *Ushnaveerya* (hot potency) drug. *Vacha* (acorus calamus) is *Vedanasthapan* (Analgesic), *Shothahar* and *Kaphavatashamak*. It is *Ushnaveeryatmakdravya*.

In *Lodhradi lep*, the *veerya* (potency) of *Dhanyak* and *Vacha* is *Ushna*. It helps to reduce *Strotasavarodh*. *Dhanyak*, *Vacha* and *Lodhra* are *Shothahar*.

Khadirashtak kwath is one of the *kashay kalpana* (therapeutic formulations). If internal medication is combined along with Local application, it will definitely give better results. *Kwath* means decoction. It contains active ingredients that can be directly absorbed and assimilated in the body.

This *kwath* contains *Khadir*, which is *shothahar*, *kandughna* (pacifying itching) and *Twakdoshahar*. *Khadir* is indicated in all types of skin related disorders. It has antibacterial properties (25). It contains *Triphala*, *Amalaki*, *Haritaki* and *Bibhitaki*. *Amalaki* is *Kushataghna* (fights with skin diseases), *Tridoshahar*. *Amalaki* contains Vitamin C in great amount that maintains the health of skin (26). *Bibhitaki* is *Vedanasthapan* (analgesic) and *Tridoshahar*. It detoxifies blood and is antibacterial (27). *Haritaki* is *Krimighna* (acts as devermin), *Shothahar* (Antiinflammatory) and *Tridoshahar*. It is rejuvenating, astringent and have antibacterial properties (28). *Neem* is *raktashodhak* (blood purifying), *Kushtaghna*, *dahashamak* (cooling property) and *kaphapittaghna* (29). It has cooling property due to *Sheetavirya*. *Nimba* is antibacterial, detoxifies blood. *Guduchi* is *Raktashodhak* and *Tridoshhar*. It is immunomodulatory drug and counters inflammation. *Guduchi* helps in treating problems related to skin (30). *Patha* is *raktashodhak*, *Shothhar* and *Tridoshahar*. It has anti-inflammatory activity (31). *Vasa* is *Kushtaghna*, *Raktashodhak* and *Kaphapittahar*. It is antimicrobial, blood purifier and anti-inflammatory (32).

All of these drugs act on Skin. Most of the drugs are antimicrobial and anti-inflammatory which are helpful to subside all the cardinal symptoms of *Mukhdushika*. This type of study is done as single arm pilot study with *Khadirashtak kwath* and *Lodhradi lep*. (33)

Discussion on Results

Number of *Pidika*	Group A	Group B
Uttamupshaya (Good relief)	0%	3%
Madhyamupashaya (mild relief)	20%	43%
Heenaupashaya (Less relief)	40%	47%
Anupashaya (No relief)	40%	7%

Here, the Z value is 21.946. So, the *Lodhradi lepa* with *Khadirashtak kwath* is more effective in reducing no. of Pidika. In *Mukhdushika*, there is predominance of *Vata*, *Kapha* and *Raktadosha*. In *Lodhradi lep*, all the drugs are *Shothahar*. *Dhanyak* and *Vacha* are *Ushnaviryatmak* which reduces the *Pidika*. In *Khadirshtak kwath*, all drugs are *Tiktarasatmak*. *Tiktarasa* (bitter) is having *Lekhana* (scrapping)property which reduced the *Pidika* (macule).

Area occupied	Group A	Group B
Uttamupshaya (Good relief)	0%	3%
Madhyamupashaya (mild relief)	27%	17%
Heenaupashaya (Less relief)	30%	53%
Anupashaya (No relief)	43%	27%

Here, Z value is 6.4549. So, our null hypothesis is rejected. Area occupied is reduced due to the reduction of no. of *Pidikas*.

Kandu	Group A	Group B
Uttamupshaya (Good relief)	73%	97%
Madhyamupashaya (mild relief)	37%	3%
Heenaupashaya (Less relief)	0%	0%
Anupashaya (No relief)	0%	0%

Here, Z value is 18.073. In accordance to *Kandu*, *Lodhradi lep* contain *Katurasatmak Dhane* and *Vacha* which is *kandughna*. It pacifies *Kandu* locally. *Dhanyak* and *Vacha* contain *Tiktarasa* which is *Kandunashak*. In *Khadirashtak kwath* all drugs, except *Behada*, contains *Tiktarasa* which is *kandughna* (34)

Daha	Group A	Group B
Uttamupshaya (Good relief)	90%	97%
Madhyamupashaya (mild relief)	3%	0%
Heenaupashaya (Less relief)	0%	0%
Anupashaya (No relief)	7%	3%

Here, the Z value is 14.200, the null hypothesis is rejected. *Daha* is highly subsided in Group B, *Lodhradi lep* has *Lodhra* and *Dhane* having *Kashayrasa* and *Dhane* and *Vacha* having *Tikta rasa*. Both *Kashay* and *Tikta* rasa possess *Sheetaguna*. Most of the drugs in *Khadirastak kwath* have *Tiktarasa* which has *Sheeta*

guna (35). *Sheeta guna* subsides *Ushnata* as well as *Daha*.

Srava	Group A	Group B
Uttamupshaya (Good relief)	80%	100%
Madhyamupashaya (mild relief)	10%	0%
Heenaupashaya (Less relief)	10%	0%
Anupashaya (No relief)	0	0%

Here, the Z value is 20.655. So, the null hypothesis is rejected and Group B is effective in reducing *Strava*. This *lep* and *Kwath* have shown good result in *Strava*. In lep, *Lodhra* and *dhane* have *Kashay* rasa. *Dhane* and *Vacha* have *Tikta rasa*. *Tikta* and *Kashayrasa* have *Shoshan Guna* (drying property). *Kashayrasa* has *Stambhanguna* (stopping property). So, absorption of *Puya* (pus) and *Strava* is initiated. In *Kwath,* all drugs contain *Kashayrasa* which *Shoshan* process. *Tiktarasa* is present in all drugs which is *Aampachak* (digestive for toxins) and in term *Puyashosha* (36).

Vedana	Group A	Group B
Uttamupshaya (Good relief)	37%	90%
Madhyamupashaya (mild relief)	3%	3%
Heenaupashaya (Less relief)	7%	0%
Anupashaya (No relief)	7%	10%

Here, the Z value is 25.819. Vedana is reduced to large extent. In accordance to Vedana, if there is pacification of *Daha and Strava*, there must be pacification of *Vedana* too.

Patients In group B, shown highly significant result in *kandu*, *Daha*, *Strava* and *Vedana*. *Khadirashtak kwath* and *Lodhradi lep* is given to Patients in group B

Conclusion

Mukhdushika means the disease, which is mostly confined to *Mukhapradesh*. The incidence rate is more in 16 – 20 age group, so it is also called as *Yuvanpidika*. Mukhdushika is not simple and Self-limiting disease as it affects an individual physically and psychologically. Pollution causes more incidences of *Mukhdushika*. As it found more in urban areas as compared to Rural. Tea addicted population is more prone to *Mukhdushika*. *Madhyamsatva* and *Heenasatva* (low entity) patients are more prone to *Mukhdushika*. Patients with *Krurakoshta* (hard bowel) are more prone to *Mukhdushika*. In this study, patients having *Pittakapha prakriti* have more incidence of *Mukhdushika*. In this study, Group B have more significant results than Group A. This helps to conclude that External application along with internal medication gives satisfactory effects in *Mukhdushika*. There are highly significant results of Group B drugs in *Kandu*, *Daha*, *Strava* and *Vedana*.

References

1. Charak, Acharya Vidhyadar Shukla, Pro. Ravidutta Tripathi, Charak Samhita Sutrasthan, Adhyay 8, 10, Varanasi, Chaukhamba surabharati Prakashan, 2007, 138
2. http:// nibh.nuhs.gov.com
3. Sushruta, Kaviraj Dr. Ambikadutta Shashtri, Sushruta Samhita,Nidansthan Adhyay 13, 3, Varanasi, Chaukhamba Sanskrit sansthan,2013, 365
4. Sushruta, Kaviraj Dr. Ambikadutta Shashtri, Sushruta Samhita,Nidansthan Adhyay 13, 3, Varanasi, Chaukhamba Sanskrit sansthan,2013, 372
5. Haslet C, Chilvers E. R, Boon N. A, Colledge N. R, Davidson's Principlesand practice of Medicine, 19th, London, Churchill livingstone, 2002,1081
6. Haslet C, Chilvers E. R, Boon N. A, Colledge N. R, Davidson's Principlesand practice of Medicine, 19th, London, Churchill livingstone, 2002,1081
7. Sushruta, Kaviraj Dr. AmbikaduttaShashtri, Sushruta Samhita,NidansthanAdhyay 13, 3, Varanasi, Chaukhamba Sanskrit sansthan,2013, 372
8. Acharya Bhavmishra, Bhishagratna Shri Bhamhashankar Shashtri,Bhavprakash nighantu, Vatadivarga, Varanasi, Chaukhamba Sanskrit Sansthan, 1984, 525
9. Deshpande A, Deshpande MA, Desai P. Study of combined effect of Khadirashtakkwath and Lodhradilep on Mukhdushika (Acne Vulgaris) – A pilot study. IJAM [Internet]. 2022 Oct. 9 [cited 2023 Feb. 25];13(3):629-33. Available from: https://ijam.co.in/index.php/ijam/article/view/2644
10. Yogratnakar, Vaidya Shrilaxmipati Shashtri, Uttarardha, Kushta chikitsaadhyay, Varanasi, Chaukhamba prakashan, 2008, 219
11. Acharya Sharangdhara, Adhmalla, Pandit Kashiram Vaidya, Sharangdhar Samhita, Bhishakwar Adhamallavirachit Dipika, Uttarkhanda 11, 11, Varanasi, Chaukhamba Orientalis, 2000, 355
12. Acharya Dalhan, Vaidhya Jadavji Trikamji Acharya, Sushruta Samhita with Nibanddha sangraha, Sharirsthan, 4, 4, Varanasi, Chaukhamba orientalia, 2012, 355
13. Sushruta, Kaviraj Dr. Ambikadutta Shashtri, Sushruta Samhita,Sutrasthan Adhyay 24, 17, Varanasi Chaukhamba Sanskrit sansthan,2013, 132
14. Acharya Chakrapani, Vaidya Jadavjitrikamji Acharya, Charak Samhitawith Ayurved Dipika, Chikitsasthanadhyay, 7, 1, Varanasi, Chaukhambaorientalia, 2011, 450 ,154
15. Acharya Vaghbhata, Acharya B. J. Thakkar, Ashtangsamgraha Induvyakhyasahit, Ksudrarogvidnyaniya, 62, 1, Nayee Delhi, VangmayAnusandhanEkak, Mauliksidhhantvibhag, 1988, 284
16. Radharaja Kantadev Bahadur, Shabdakalpadrum, Dvitiyakanda,Vyanjanvarna (ka-na), Varanasi, ChaukhambaSurbharatiPrakashan,2015, 245
17. Acharya YadunandanUpadhaya, Shrikantha Dutta Virachit, Madhavnidanam Madhukosh Vyakyavibhushit, Kshudrarognidanam,55, 33, Varanasi, Chaukhamba Sanskrit Sansthan, 2005, 193
18. Acharya Yadunandan Upadhaya, Shrikantha Dutta Virachit, Madhavnidanam Madhukosh Vyakyavibhushit, Kshudrarognidanam,55, 33, Varanasi, Chaukhamba Sanskrit Sansthan, 2005, 208

19. Acharya Sushruta, Kaviraj Dr. Ambikadutta Shashtri, Sushruta Samhita, Nidansthan Adhyay 13, 38 Varanasi Chaukhamba Sanskritsansthan, 2013, 372
20. Charak, Acharya Vidhyadar Shukla, Pro. Ravidutta Tripathi, Charak Samhita Sutrasasthan, Adhyay 18, 24, Varanasi Chaukhamba surabharati Prakashan, 2007, 278
21. Acharya Sharangdhara, Adhmalla, PanditKashiram Vaidya, Sharangdhar Samhita, Bhishakwar Adhamallavirachit Dipika,Prathamkhanda 5, 14, Varanasi, Chaukhamba Orientalis, 2000, 46
22. Charak, Acharya Vidhyadar Shukla, Pro. Ravidutta Tripathi, Charak Samhita Sutrasthan, Adhyay 28, 10, Varanasi, Chaukhamba surabharati Prakashan, 2007, 356
23. Deshpande A, Deshpande MA, Desai P. Study of combined effect of Khadirashtakkwath and Lodhradilep on Mukhdushika (Acne Vulgaris) – A pilot study. IJAM [Internet]. 2022 Oct. 9 [cited 2023 Feb. 25];13(3):629-33. Available from: https://ijam.co.in/index.php/ijam/article/view/2644
24. Sushruta, Kaviraj Dr. Ambikadutta Shashtri, Sushruta Samhita,sutrasthanAdhyay 15, 6, Varanasi, Chaukhamba Sanskrit sansthan, 2013, 97
25. Krishna CM, Kumar DP, Sivaram G, Venkateshwarlu B, Dhoke SP, Babu G. Promising Ayurvedic Herbs in the Management of Kitibha (Psoriasis)-A Review. International Journal of Ayurveda and Pharma Research. 2018 Feb 19.
26. Sawant DP, Dhamdere K, Sawant SP. National Journal of Research in Ayurved Science.
27. Ashok GA, Sharma G, Rath S. Pharmacognostical evaluation of Chaturthamalaka Rasayana - An Ayurvedic Compund.
28. Gupta PC. Biological and pharmacological properties of Terminalia chebula Retz.(Haritaki)-An overview. Int J pharm pharm Sci. 2012;4(3):62-8.
29. Giri RP, Gangawane AK, Giri SG. Neem the wonder herb: a short review. International Journal of Trend in Scientific Research and Development (IJTSRD). 2019;3(3):962-6.
30. Acharya R, Sojitra NH, Buha MM. A comprehensive review of Guduchi (Tinosporacordifolia (Wild.) Miers), the ambrosia of Ayurveda: A classical memoir. Annals of Ayurvedic Medicine. 2021 Jul 23;10(2):148-.
31. Singh SG, Nishteswar K, Patel BR. Therapeutic efficacy of Patha (Cissampelospareira Linn.)-A Review through classical texts of Ayurveda. Journal of Ayurveda and Integrated Medical Sciences. 2016 Oct 31;1(03):92-110.
32. Chaudhary SA, Patel Kalpana S, Kori VK, Rajagopala S, Harisha CR, Shukla VJ. Pharmacognostical and Pharmaceutical evaluation of Vasa Avaleha–An Ayurvedic compound. IJPBA. 2015;6(1):32-6.
33. Deshpande A, Deshpande MA, Desai P. Study of combined effect of Khadirashtakkwath and Lodhradilep on Mukhdushika (Acne Vulgaris) – A pilot study. IJAM [Internet]. 2022 Oct. 9 [cited 2022 Nov. 17];13(3):629-33. Available from: https://ijam.co.in/index.php/ijam/article/view/2644
34. Charak, Acharya Vidhyadar Shukla, Pro. Ravidutta Tripathi,Charak Samhita Nidansthan, Adhyay 26, 5, Varanasi, Chaukhamba surbharatiPrakashan, 2007, 371
35. Charak, Acharya Vidhyadar Shukla, Pro. Ravidutta Tripathi, Charak Samhita Nidansthan, Adhyay 26, 5, Varanasi,Chaukhamba SurbharatiPrakashan, 2007, 371
36. Charak, Acharya Vidhyadar Shukla, Pro. Ravidutta Tripathi,Charak Samhita Nidansthan, Adhyay 26, 5, Varanasi, ChaukhambaSurbharatiPrakashan, 2007, 371.

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