

## A CLINICAL STUDY ON EFFECT OF *LODRADI LEPA* ON *MUKHADUSHIKA* (ACNE VULGARIS)

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### ABSTRACT

*Mukhadushika* is a disease, described in Ayurveda as which occurs due to vitiation of *Kapha*, *Vata* and *Shonita*. Its clinical features are *Pidaka* (eruptions), *Snigdghata* (Seborrhoea), *Medogarbhā* (containing fat in eruptions), *Ghana* (thickness of eruption), *Kandu* (itching), *Saraktata* (bleeding) and *Daha* (burning sensation). Acne vulgaris is a skin disease characterized by papules, pustules, nodules, seborrhoea (greasy skin), comedones and possible scarring. *Mukhadushika* can be correlated with Acne vulgaris. Ayurveda pharmacopoeia describes *Lodradi Lepa* in treatment of *Mukhadushika*. But no known scientific studies have been conducted to evaluate its effectiveness. In this context, *Lodradi Lepa* consists of three ingredients; powder of stem bark of *Lodra* (*Symplocos racemosa*; Family: Symplocaceae), seeds of *Dhanya* (*Coriandrum sativum*; Family: Umbelliferae) and rhizome of *Vacha* (*Acorus calamus*; Family: Araceae). 5gm of mixture of powder of aforesaid ingredients are mixed with 5ml of water to make *Lodradi Lepa*. Thirty patients suffering from *Mukhadushika* were randomly selected and divided into two groups and named as first and second group. First group consisting of twenty three patients was treated with 5g of *Lodradi Lepa* for thirty five days. This paste was applied on the face in the morning and left for 15 minutes. Second group consisting of seven patients treated with placebo in the same regimen as the first group. It is observed that 96.3% of the patients reported complete or partial relief from symptoms. It is concluded that *Lodradi Lepa* is effective in the treatment of *Mukhadushika* (Acne vulgaris).

**Key words:** *Mukhadushika*, *Lodradi Lepa*, Acne vulgaris, *Lodra*, *Vacha*, *Dhanya*

### INTRODUCTION

In Authentic Ayurveda texts there is a group of diseases called *Kshudra Roga*<sup>1</sup>, which include 44 diseases. *Kshudra* means *Alpa* (minute, small or minor).<sup>2</sup> *Alpa Vyadhi* is said to be *Kshudra Roga* (Minor disorders). *Mukhadushika* is a disease that occurs papules resembling the sprout on the bark of the *Shalmali* tree (*Bombax malabaricum*) appearing on the face of adolescents caused by vitiated *Kapha*, *Vata Doaha* and *Rakta Dhatu* together

er which makes the face ugly<sup>3</sup> and also known as *Yuvana Pidaka*. The clinical features of *Mukhadushika* are *Pidaka*<sup>4</sup> (eruptions), *Saruja*<sup>4</sup> (pain), *Ghana* (thickness of eruption)<sup>4</sup>, *Medogarbhā*<sup>4</sup> (containing fat in eruption), *Kandu* (itching), *Saraktata*<sup>3</sup> (bleeding), *Daha* (burning sense), *Snigdghata* (greasy skin) and *Nimnata* (erosions or partial epidermal loss).<sup>5</sup> An equivalent terminology in modern is Acne vulgaris. Acne vulgaris is a common human skin

disease, characterized by areas of the skin with seborrhoea (scaly red skin), comedones (blackheads and whiteheads), papules (pinheads), pustules (pimples), nodules (large papules) and possibly scarring.<sup>6</sup> Acne vulgaris is a self-limited disorder primarily of teenagers and young adults, although perhaps 10-20% of adults may continue to experience some form of the disorder. Acne affects skin of the face, the upper part of the chest, and the back.<sup>7</sup> *Lodradi Lepa* is a medicine described in Ayurveda pharmacopoeia, Sri Lanka as a treatment for *Mukhadushika*.<sup>8</sup> Therefore the present study was carried out to evaluate the effectiveness of *Lodradi Lepa* in the management of *Mukhadushika* (Acne vulgaris).

## MATERIALS AND METHODS

### Source of the Data

30 patients suffering from *Mukhadushika* were randomly selected from the Ayurveda Teaching Hospital, Borella, and Ayurveda Hospital, Meegoda, Sri Lanka. The clinical study was carried out on the basis of a placebo controlled single blind study.

### Exclusion Criteria

Patients were excluded from Acne Fulminans, Acne Keloidalis Nuchae, Acneiform

Eruptions, Folliculitis, Seborrhoeic dermatitis, Perioral Dermatitis, Rosacea, Sebaceous Hyperplasia, Syringoma, Tuberculous Sclerosis, Keratosis pilaris, Chloracne and other long term diseases or noninfectious diseases (Diabetes Mellitus, Hyperlipidaemia, Cancer).

### Inclusion Criteria

Patients, who were between 10-50 years of age suffering from *Mukhadushika* (Acne vulgaris) with a period of less than 10 years, were included.

### Grouping

These patients were divided into two groups. The first group consisting of 23 patients was treated with 5g of *Lodradi Lepa* for 35 days with weekly inspection. The second group consisting 7 patients was treated with 5g of Placebo for 35 days with weekly inspection.

### Preparation of medicine

#### a) Preparation of *Lodradi Lepa*

##### Ingredients of *Lodradi Lepa*

The formula of *Lodradi Lepa* according to Ayurveda pharmacopoeia, Sri Lanka is given in Table No: 01.

**Table No 01: Ingredients of *Lodradi Lepa***<sup>9-11</sup>

Botanical Name (Family)	Sanskrit Name (Sinhala Name)	Part Used	Quantity
<i>Symplocos racemosa</i> (Symplocaceae)	<i>Lodra</i> (Loth)	Stem bark	1 kg
<i>Coriandrum sativum</i> (Umbelliferae)	<i>Dhanya</i> (Kottamalli)	Seeds	1 kg
<i>Acorus calamus</i> (Araceae)	<i>Vacha</i> (Vadakaha)	Rhizome	500g

### Method of Preparation:

These ingredients were washed thoroughly and dried in wither. They were powdered separately and mixed together. *Lodradi Lepa* was prepared by mixing 5g of powdered mixture mentioned above with 5ml of water.<sup>12</sup> This paste was used in the study as *Lodradi Lepa*.

#### a) Preparation of Placebo

Permitted brown colouring was added to boiled and cooled water and used as placebo.

### Method of Drug administration

The patients were advised to keep the medicine for 15 minutes, further they were

advised to wash their faces with lukewarm water.

Furthermore both groups were instructed to avoid using any soap, face wash, fairness creams and Night creams on face or make up during the treatment, and to with hold any cleanups or facials.

**Assessment criteria**

These patients were examined using a standard proforma to evaluate the symptoms. Every visit patients were examined and clinical features were recorded using prepared grading scale with “0” to “4” grading system. The face was divided in to 5 areas such as Supra orbital, Right cheek,

Left cheek, Nose and Chin area and data were recorded.

Clinical features such as *Saruja* (pain), *Kandu* (itching), *Daha* (burning sensation), *Pidaka* (eruptions), *Ghana* (thickness of eruption), *Medogarbha* (containing fat in the eruption), *Snigdhatta* (greasy skin), *Papule* (small palpable circumscribed lesion<0.5cm), *Nodule* (large papule >0.5cm) *Pustule* (yellowish White pus filled lesion), *Scars*, *Cysts*, *Saraktata* (bleeding), *Vivarnata* (pigmentation) and *Nimnata* (erosions/ partial epidermal loss) are taken into consideration.

**Subjective Parameters**

1. *Saruja* (pain):

Grade	Symptoms
00	No pain in <i>Pidaka</i>
01	Feel pain occasionally in <i>Pidaka</i>
02	Feel pain intermediately in <i>Pidaka</i>
03	Feel pain often in <i>Pidaka</i>
04	Feel pain always in <i>Pidaka</i>

2. *Kandu* (itching):

Grade	Symptoms
00	No itching in <i>Pidaka</i>
01	Feel itching occasionally in <i>Pidaka</i>
02	Feel itching intermediately in <i>Pidaka</i>
03	Feel itching often in <i>Pidaka</i>
04	Feel itching always in <i>Pidaka</i>

3. *Daha* (burning sensation):

Grade	Symptoms
00	No burning sensation in <i>Pidaka</i>
01	Feel burning sensation occasionally in <i>Pidaka</i>
02	Feel burning sensation intermediately in <i>Pidaka</i>
03	Feel burning sensation often in <i>Pidaka</i>
04	Feel burning sensation always in <i>Pidaka</i>

**Objective Parameters**

1. *Pidaka* (eruption):

Grade	Symptoms
00	No <i>Pidaka</i> in area
01	1- 5 <i>Pidaka</i> in area
02	5- 10 <i>Pidaka</i> in area
03	10- 15 <i>Pidaka</i> in area
04	More than 15 <i>Pidaka</i> in area

2. *Papule* (small palpable circumscribed lesion <0.5 cm):

<b>Grade</b>	<b>Symptoms</b>
00	No papules in area
01	1- 5 papules in area
02	5- 10 papules in area
03	10- 15 papules in area
04	More than 15 papules in area

3. Nodule (large papule >0.5cm):

<b>Grade</b>	<b>Symptoms</b>
00	No nodules in area
01	1- 5 nodules in area
02	5- 10 nodules in area
03	10- 15 nodules in area
04	More than 15 nodules in area

4. Pustule (yellowish white pus filled lesion):

<b>Grade</b>	<b>Symptoms</b>
00	No pustules in area
01	1- 5 pustules in area
02	5- 10 pustules in area
03	10- 15 pustules in area
04	More than 15 pustules in area

5. Open comedones (black heads):

<b>Grade</b>	<b>Symptoms</b>
00	No open comedones in area
01	1- 5 open comedones in area
02	5- 10 open comedones in area
03	10- 15 open comedones in area
04	More than 15 open comedones in area

6. Closed comedones (white heads):

<b>Grade</b>	<b>Symptoms</b>
00	No closed comedones in area
01	1- 5 closed comedones in area
02	5- 10 closed comedones in area
03	10- 15 closed comedones in area
04	More than 15 closed comedones in area

7. Cysts:

<b>Grade</b>	<b>Symptoms</b>
00	No cysts in area
01	1- 5 cysts in area
02	5- 10 cysts in area
03	10- 15 cysts in area
04	More than 15 cysts in area

8. Scars:

<b>Grade</b>	<b>Symptoms</b>
00	No scars in area
01	1- 5 scars in area
02	5- 10 scars in area

<b>03</b>	10- 15 scars in area
<b>04</b>	More than 15 scars in area

9. Sinuses :

<b>Grade</b>	<b>Symptoms</b>
<b>00</b>	No sinuses in area
<b>01</b>	1- 5 sinuses in area
<b>02</b>	5- 10 sinuses in area
<b>03</b>	10- 15 sinuses in area
<b>04</b>	More than 15 sinuses in area

10. Ghana (thickness of the *Pidaka*):

<b>Grade</b>	<b>Symptoms</b>
<b>00</b>	Feel nothing when touching the affected area
<b>01</b>	Feel very slight thickness when touching the affected area
<b>02</b>	Feel moderate thickness when touching the affected area
<b>03</b>	Feel hard when touching the affected area
<b>04</b>	Feel very hard when touching the affected area

11. *Medogarbha* (containing fat in *Pidaka*):

<b>Grade</b>	<b>Symptoms</b>
<b>00</b>	No <i>Pidaka</i> containing fat inside
<b>01</b>	1- 5 <i>Pidaka</i> containing fat inside
<b>02</b>	5- 10 <i>Pidaka</i> containing fat inside
<b>03</b>	10- 15 <i>Pidaka</i> containing fat inside
<b>04</b>	More than 15 <i>Pidaka</i> containing fat inside

12. *Vivarnata* (pigmentation):

<b>Grade</b>	<b>Symptoms</b>
<b>00</b>	No <i>Pidaka</i> become pigmented
<b>01</b>	1- 5 <i>Pidaka</i> become pigmented
<b>02</b>	5- 10 <i>Pidaka</i> become pigmented
<b>03</b>	10-15 <i>Pidaka</i> become pigmented
<b>04</b>	More than 15 <i>Pidaka</i> become pigmented

13. *Snigdhatta* (seborrhoea / greasy skin):

<b>Grade</b>	<b>Symptoms</b>
<b>00</b>	Skin does not feel greasy
<b>01</b>	Skin feels slight greasy
<b>02</b>	Skin feels very little greasy
<b>03</b>	Skin feels little greasy
<b>04</b>	Skin feels very greasy

14. *Nimnata* (erosions- partial epidermal loss):

<b>Grade</b>	<b>Symptoms</b>
<b>00</b>	No erosions in area
<b>01</b>	1-5 erosions in area
<b>02</b>	5-10 erosions in area
<b>03</b>	10- 15 erosions in area
<b>04</b>	More than 15 erosions in area

15. Crusting of the skin (dried serum or exudates on the *Pidaka*):

Grade	Symptoms
00	No <i>Pidaka</i> contains the crust
01	1- 5 <i>Pidaka</i> contains the crust
02	5-10 <i>Pidaka</i> contains the crust
03	10- 15 <i>Pidaka</i> contains the crust
04	More than 15 <i>Pidaka</i> contains the crust

16. *Saraktata* (bleeding):

Grade	Symptoms
00	No bleeding
01	Bleeding occasionally
02	Bleeding intermediately
03	Bleeding often
04	Bleeding always

**Criteria for Overall assessment**

Complete Remission- 100% relief in signs and symptoms

Partially Relieved – Less than 100% relief in signs and symptoms

Unchanged- No improvement

Aggravated- Increasing the signs and symptoms

**Statistical Analyze**

Data was analyzed using Mann-Whitney Test by using the new Microsoft Office Excel worksheet commands and SPSS (16<sup>th</sup> version).

**RESULTS**

In the present study most of the patients were between the ages of 10 and 30 years, had oily skin. *Pidaka* (eruptions), *Ghana* (thickness of eruption), *Medogarbha* (containing fat in the eruption), *Kandu* (itching), *Snigdhatta* (greasy skin), *Nimnata* (Erosions/partial epidermal loss) Papule (small palpable circumscribed lesion < 0.5cm), Pustule (yellowish white pus filled lesion), Scars and Cysts were the clinical features mostly presented in the patients suffering from *Mukhadushika*. These clinical features were mostly existed in Supra orbital region and both cheeks. Black heads and white heads were common in Nose area. Two types of *Pidaka* that is *Pakwa Pidaka* and *Apakwa Pidaka*

and *Medogarbha* (containing fat in *Pidaka*) were mostly found in Chin area.

**Symptomatic relief during the treatment with *Lodradi Lepa***

Table No 02 and Figure 01 and 02 show the percentage (%) of symptomatic relief during the treatment with *Lodradi Lepa* and placebo.

Symptomatic relief of symptoms in Supra orbital region, Right cheek and Left cheek during the treatment with *Lodradi Lepa* and placebo in *Mukhadushika* (*Acne vulgaris*) are tabulated in Table No 03; Figure 03, Table No 04; Figure 04 and Table No 05; Figure 05, respectively.

In 66.5% of patients were completely relieved and 29.8% of patients were partially relieved from most of the symptoms. 97.78 % of patients having *Pidaka* in *Pachymana* stage were cured completely. Clinical features such as *Kandu* (itching), *Medogarbha* (containing fat in *Pidaka*) and *Ghana* (thickness of the *Pidaka*) were completely relieved in more than 75% of the patients. The complete curability of Papules and Pustules is around 80%. Scars are partially relieved in 90.43% patients. None of the symptoms were aggravated after the treatment with *Lodradi Lepa*.

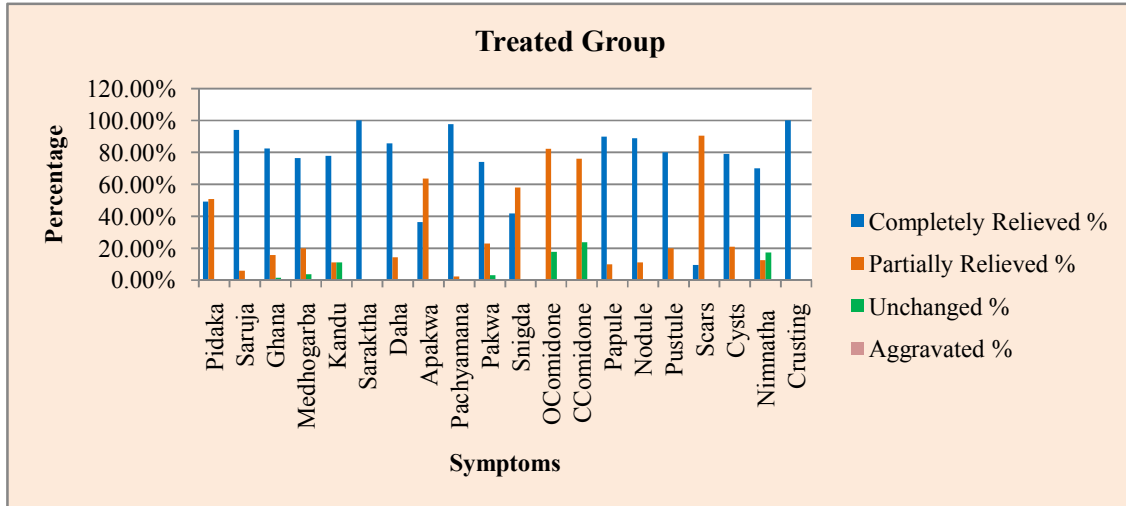
**Table No 02: Percentage of Symptomatic relief during the treatment with *Lo-***

**dradi Lepa and placebo in Mukhadushi- ka (Acne vulgaris)**

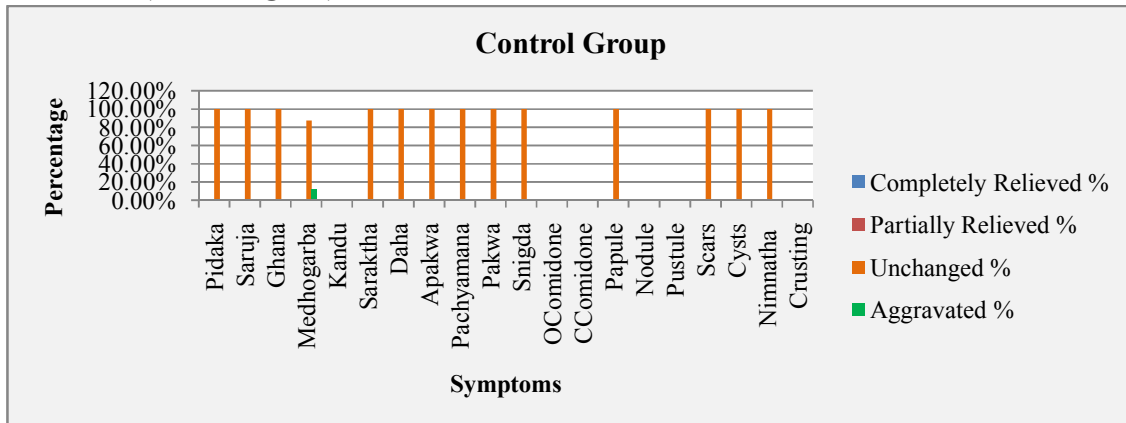
Symptoms	Control Group				Treated Group			
	Com-pletely Re-lieved %	Partial-ly Re-lieved %	Un-changed %	Aggra-vated %	Com-pletely Relieved %	Partial-ly Re-lieved %	Un-changed %	Aggra-vated %
<i>Pidaka</i>	0.00	0.00	100.00	0.00	49.11	50.89	0.00	0.00
<i>Saruja</i>	0.00	0.00	100.00	0.00	94.12*	5.88	0.00	0.00
<i>Ghana</i>	0.00	0.00	100.00	0.00	82.54*	15.87	1.59	0.00
<i>Medogarbh-ha</i>	0.00	0.00	87.50	12.50	76.41*	19.88	3.70	0.00
<i>Kandu</i>	0.00	0.00	0.00	0.00	77.78*	11.11	11.11	0.00
<i>Saraktata</i>	0.00	0.00	100.00	0.00	100.00*	0.00	0.00	0.00
<i>Daha</i>	0.00	0.00	100.00	0.00	85.71*	14.29	0.00	0.00
<i>Apakwa</i>	0.00	0.00	100.00	0.00	36.36	63.64	0.00	0.00
<i>Pachyamana</i>	0.00	0.00	100.00	0.00	97.78*	2.22	0.00	0.00
<i>Pakwa</i>	0.00	0.00	100.00	0.00	73.99*	22.98	3.03	0.00
<i>Snigdhatta</i>	0.00	0.00	100.00	0.00	41.91	58.09	0.00	0.00
<i>Open Com-idone</i>	0.00	0.00	0.00	0.00	0.00	82.35	17.65	0.00
<i>Closed Comidone</i>	0.00	0.00	0.00	0.00	0.00	76.19	23.81	0.00
<i>Papule</i>	0.00	0.00	100.00	0.00	89.93*	10.07	0.00	0.00
<i>Nodule</i>	0.00	0.00	0.00	0.00	88.89*	11.11	0.00	0.00
<i>Pustule</i>	0.00	0.00	0.00	0.00	80.00*	20.00	0.00	0.00
<i>Scars</i>	0.00	0.00	100.00	0.00	9.57	90.43	0.00	0.00
<i>Cysts</i>	0.00	0.00	100.00	0.00	79.17*	20.84	0.00	0.00
<i>Nimnata</i>	0.00	0.00	100.00	0.00	70.14*	12.50	17.36	0.00
<i>Crusting</i>	0.00	0.00	0.00	0.00	100.00*	0.00	0.00	0.00

\* p < 0.05 compare to control

**Figure 01: Percentage of Symptomatic relief during the treatment with *Lodradi Lepa* in *Mukhadushika* (Acne vulgaris)**



**Figure 02: Percentage of Symptomatic relief during the treatment with placebo in *Mukhadushika* (Acne vulgaris)**



**Table No 03: Symptomatic relief of symptoms in Supra orbital region during the treatment with *Lodradi Lepa* and placebo in *Mukhadushika* (Acne vulgaris)**

Symptom	Control Group (Mean ± SE)		Treated Group (Mean ± SE)	
	Before treatment	After treatment	Before treatment	After treatment
<i>Pidaka</i>	3.29 ± 0.29	3.29 ± 0.29	1.70 ± 0.28	0.30 ± 0.12
<i>Saruja</i>	0.57 ± 0.30	0.57 ± 0.30	1.26 ± 0.21	0.04 ± 0.04
<i>Ghana</i>	1.14 ± 0.04	1.14 ± 0.04	2.17 ± 0.18	0.57 ± 0.15
<i>Medogarbha</i>	0.29 ± 0.29	0.29 ± 0.29	0.52 ± 0.19	0.09 ± 0.06
<i>Kandu</i>	0.43 ± 0.20	0.43 ± 0.20	0.78 ± 0.23	0.09 ± 0.06
<i>Saraktata</i>	0.86 ± 0.55	0.86 ± 0.55	0.96 ± 0.20	0.00 ± 0.00
<i>Daha</i>	0.43 ± 0.43	0.43 ± 0.43	0.57 ± 0.20	0.04 ± 0.04
<i>Apakwa</i>	3.00 ± 0.53	3.00 ± 0.53	1.00 ± 0.27	0.13 ± 0.07
<i>Pachyamana</i>	0.57 ± 0.37	0.57 ± 0.37	0.35 ± 0.17	0.00 ± 0.00
<i>Pakwa</i>	0.29 ± 0.29	0.29 ± 0.29	0.57 ± 0.23	0.04 ± 0.04



<b>Snigdhata</b>	1.57 ± 0.43	1.57 ± 0.43	1.91 ± 0.23	0.52 ± 0.11
<b>Papule</b>	0.00 ± 0.00	0.00 ± 0.00	0.04 ± 0.04	0.00 ± 0.00
<b>Pustule</b>	0.00 ± 0.00	0.00 ± 0.00	0.26 ± 0.14	0.04 ± 0.04
<b>Scars</b>	1.57 ± 0.43	1.57 ± 0.43	0.48 ± 0.21	0.17 ± 0.08
<b>Nimnata</b>	0.29 ± 0.18	0.29 ± 0.18	0.13 ± 0.07	0.04 ± 0.04

Figure 03: Symptomatic relief of symptoms in Supra orbital region during the treatment with Lodradi Lepa and placebo in Mukhadushika (Acne vulgaris)

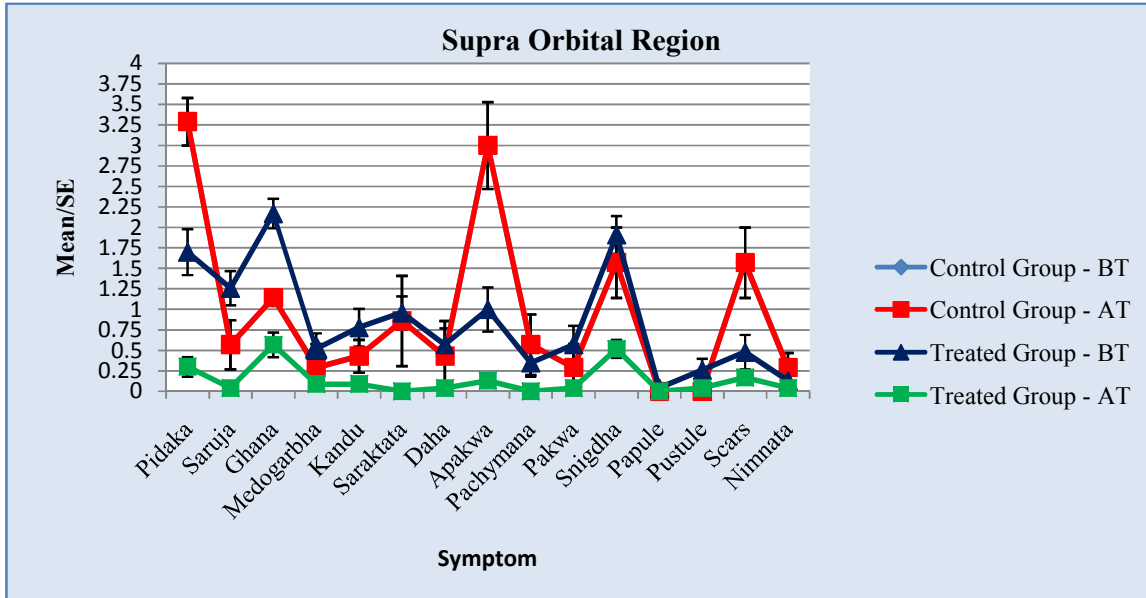


Table No 04: Symptomatic relief of symptoms in Right cheek during the treatment with Lodradi Lepa and placebo in Mukhadushika (Acne vulgaris).

Symptom	Control Group (Mean ± SE)		Treated Group (Mean ± SE)	
	Before treatment	After treatment	Before treatment	After treatment
<b>Pidaka</b>	2.86 ± 0.34	2.86 ± 0.34	3.00 ± 0.24	0.65 ± 0.12
<b>Ghana</b>	0.00 ± 0.00	0.00 ± 0.00	0.13 ± 0.13	0.00 ± 0.00
<b>Medogarbha</b>	0.86 ± 0.34	0.86 ± 0.34	1.26 ± 0.18	0.17 ± 0.07
<b>Apakwa</b>	2.29 ± 0.52	2.29 ± 0.52	2.48 ± 0.24	0.48 ± 0.10
<b>Pachymana</b>	1.0 ± 0.53	2.0 ± 0.53	1.04 ± 0.22	0.00 ± 0.00
<b>Pakwa</b>	0.43 ± 0.30	0.43 ± 0.30	1.00 ± 0.25	0.13 ± 0.07
<b>Snigdhata</b>	0.00 ± 0.00	0.00 ± 0.00	0.61 ± 0.24	0.17 ± 0.08
<b>Papule</b>	0.86 ± 0.55	0.86 ± 0.55	1.04 ± 0.25	0.13 ± 0.07
<b>Nodule</b>	0.00 ± 0.00	0.00 ± 0.00	0.43 ± 0.14	0.04 ± 0.04
<b>Pustule</b>	0.00 ± 0.00	0.00 ± 0.00	0.87 ± 0.23	0.09 ± 0.06
<b>Scars</b>	3.14 ± 0.26	3.14 ± 0.26	3.30 ± 0.15	1.65 ± 0.12
<b>Cysts</b>	0.29 ± 0.18	0.29 ± 0.18	0.70 ± 0.16	0.13 ± 0.07
<b>Nimnata</b>	0.71 ± 0.18	0.71 ± 0.18	0.96 ± 0.19	0.26 ± 0.10

Figure 04: Symptomatic relief of symptoms in Right cheek during the treatment with Lodradi Lepa and placebo in Mukhadushika (Acne vulgaris).

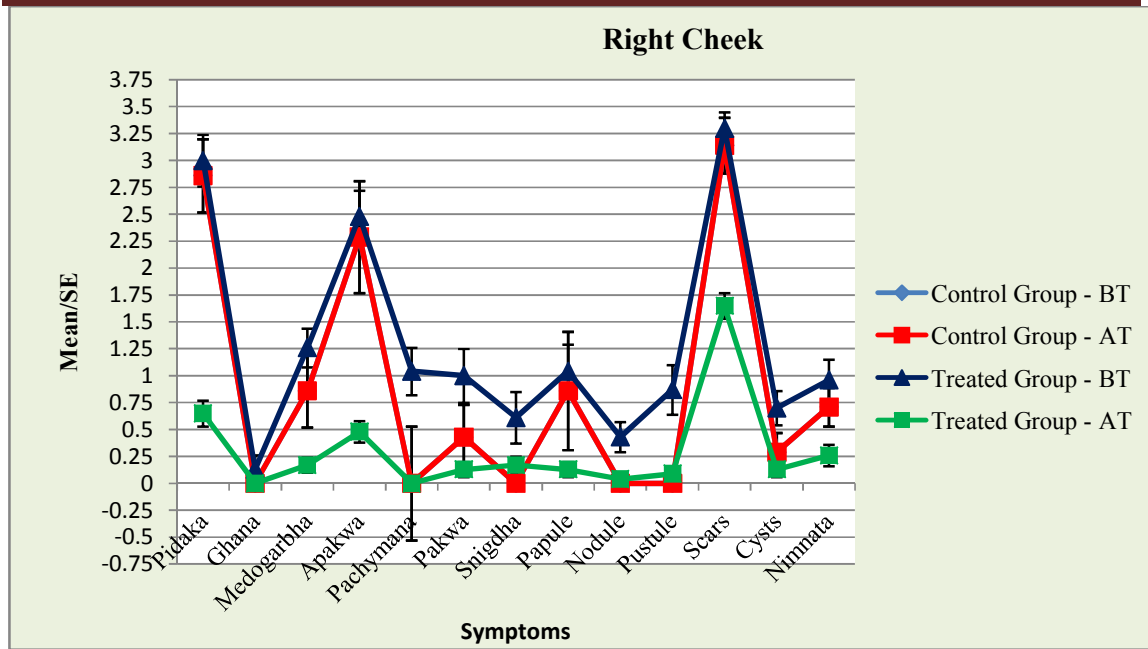
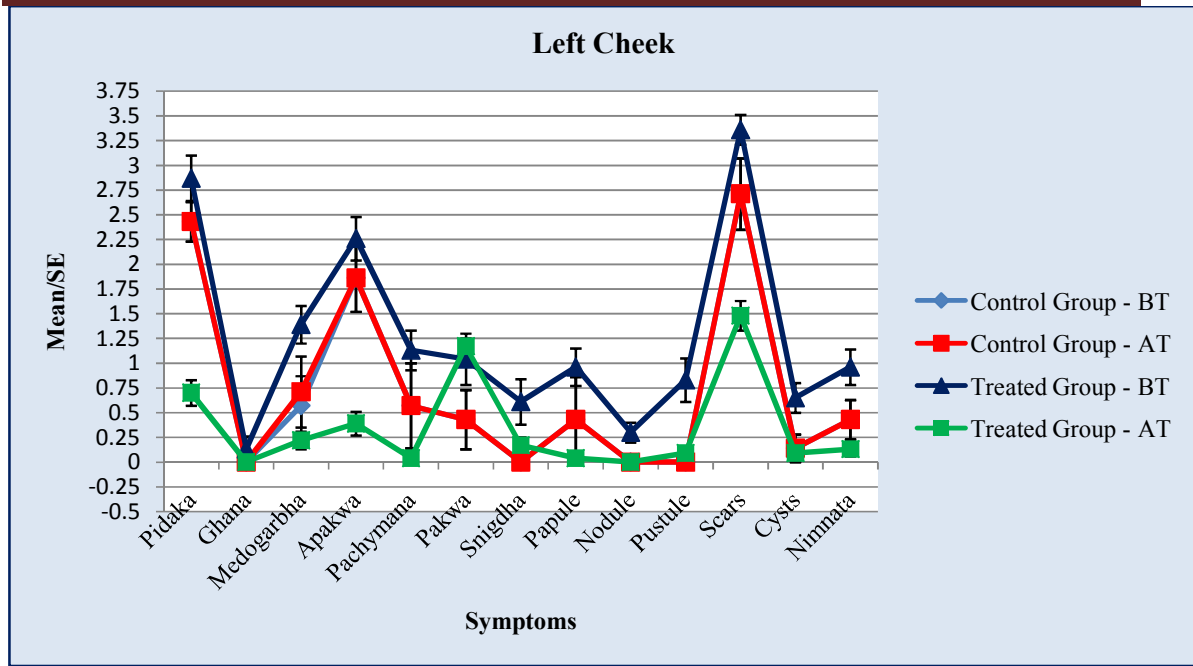


Table No 05: Symptomatic relief of symptoms in Left cheek during the treatment with *Lodradi Lepa* and placebo in *Mukhadushika* (*Acne vulgaris*)

Symptom	Control Group (Mean ± SE)		Treated Group (Mean ± SE)	
	Before treatment	After treatment	Before treatment	After treatment
<i>Pidaka</i>	2.43 ± 0.20	2.43 ± 0.20	2.87 ± 0.23	0.70 ± 0.13
<i>Ghana</i>	0.00 ± 0.00	0.00 ± 0.00	0.13 ± 0.13	0.00 ± 0.00
<i>Medogarbha</i>	0.57 ± 0.30	0.71 ± 0.36	1.39 ± 0.19	0.22 ± 0.09
<i>Apakwa</i>	1.86 ± 0.34	1.86 ± 0.34	2.26 ± 0.22	0.39 ± 0.12
<i>Pachymana</i>	0.57 ± 0.43	0.57 ± 0.43	1.13 ± 0.20	0.04 ± 0.04
<i>Pakwa</i>	0.43 ± 0.30	0.43 ± 0.30	1.04 ± 0.26	1.17 ± 0.08
<i>Snigdha</i>	0.00 ± 0.00	0.00 ± 0.00	0.61 ± 0.23	0.17 ± 0.08
<i>Papule</i>	0.43 ± 0.43	0.43 ± 0.43	0.96 ± 0.19	0.04 ± 0.04
<i>Nodule</i>	0.00 ± 0.00	0.00 ± 0.00	0.30 ± 0.10	0.00 ± 0.00
<i>Pustule</i>	0.00 ± 0.00	0.00 ± 0.00	0.83 ± 0.22	0.09 ± 0.06
<i>Scars</i>	2.71 ± 0.36	2.71 ± 0.36	3.36 ± 0.15	1.48 ± 0.15
<i>Cysts</i>	0.14 ± 0.14	0.14 ± 0.14	0.65 ± 0.15	0.09 ± 0.06
<i>Nimnata</i>	0.43 ± 0.20	0.43 ± 0.20	0.96 ± 0.18	0.13 ± 0.07
<i>Crusts</i>	0.00 ± 0.00	0.00 ± 0.00	0.35 ± 0.10	0.00 ± 0.00

Figure 05: Symptomatic relief of symptoms in Left cheek during the treatment with *Lodradi Lepa* and placebo in *Mukhadushika* (*Acne vulgaris*)



**Ayurvedic pharmacodynamic properties of ingredients of Lodradi Lepa**

Ingredients of *Lodradi Lepa* have various properties which are capable of pacifying vitiated

*Dosha, Rasa, Guna, Virya, Vipaka* and *Doshakarma* of these ingredients are explained in Table No 06.

**Table No 06: Ayurvedic pharmacodynamic properties of ingredients of Lodradi Lepa**<sup>13-16</sup>

Ingredient	Rasa	Guna	Veerya	Vipaka	Dosha karma	Other properties
<b>Lodra</b>	Kashaya	Laghu, Ruksha	Sheeta	Katu	Kapha, Pitta Shamaka	Krimighna Rakta shodhaka, Rakta sthambhana, Shothahara, Vrana ropana
<b>Dhanya</b>	Madhura, Katu, Tikta, Kashaya	Laghu, Snigdha	Ushna	Madhura	Tridosha Shamaka	Rakta shodhaka, Deepana, Pachana Shothahara, Shoolahara, Krimighna
<b>Vacha</b>	Tikta, Katu	Laghu, Teekshna	Ushna	Katu	Kapha, Vata Shamaka	Deepana, Shoolahara, Shothahara, Janthughna, Medoghna,

**Phytochemicals of ingredients of Lodradi Lepa**

The action of substance in the body is due to its phytochemical content. Phytochemicals are chemical compounds that occur

naturally in plants. Phytochemicals present in the ingredients of *Lodradi Lepa* are given in the Table No 07.

**Table No 07: Phytochemicals of ingredients of Lodradi Lepa**<sup>17-19</sup>

Ingredient	Phytochemicals
<b>Symplocos racemosa (Symplocaceae)</b>	Glucosides, Saponin, Terpenoid, Alkaloid, Carbohydrates
<b>Coriandrum sativum (Umbelliferae)</b>	Flavonoides, Resine, Lignin, Phytosterol, Tannin, Phenolic compounds, Fixed oil, Fat, Glycosides
<b>Acorus calamus</b>	Alkaloids, Palmitic acid, Linoleic acid, Acorin

<b>(Araceae)</b>	
<b>Bio activities of ingredients of Lodradi Lepa</b>	<i>Mukhadushika</i> are proven scientifically by researches and stated in the Table No 08.
Phytochemicals perform different bioactivities. Some of the bioactivities of ingredients which related to the treatment of	<b>Table No 08: Bio activities of ingredients of Lodradi Lepa</b> <sup>20-26</sup>

Ingredient	Bio activities
<i>Symplocos racemosa</i> ( <b>Symplocaceae</b> )	Anti-inflammatory, Analgesic, Anti bacterial
<i>Coriandrum sativum</i> ( <b>Umbelliferae</b> )	Anti-inflammatory, Analgesic, Anti bacterial, Anti-oxidant
<i>Acorus calamus</i> ( <b>Araceae</b> )	Anti-inflammatory, Analgesic, Anti bacterial, Anti-oxidant

## DISCUSSION

According to Ayurveda, *Shalmali* thorn like eruptions on the face due to vitiation of *Kapha*, *Vata Dosha* and *Rakta Dhatu* are known as *Mukhadushika* or *Yuvana Pidaka*.<sup>27</sup> It is a disease which destroys the beauty and cause disfigurement of the face especially in the adolescence. In *Mukhadushika* treatment, using of drugs in the form of *Lepa* are described as a *Shamana* therapy.<sup>28, 29</sup> *Lodradi Lepa* is used as an external application by Ayurveda as well as Traditional practitioners in Sri Lanka.

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 Veerya* 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 *Pidaka*. *Theekshna guna* assists the drug to act fast, spreading in to the deep and squeeze out the pus inside.

As *Kashaya 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 will help to enhance the healing process of *Mukhadushika* (*Acne vulgaris*). *Medoghna* property of *Vacha* will be useful in the subsiding of *Medogarbhya pidaka*.

Ingredients of *Lodradi Lepa* are rich in flavonoides and tannins. Flavonoides 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.

## CONCLUSION

It can be concluded that *Lodradi Lepa* which is efficiently decreases the clinical symptoms, controls infection, hastens the healing process can be recommended in the management of *Mukhadushika* (*Acne vulgaris*).

## REFERENCES

1. Shingel GD, editor, Susruta Samhita of Susruta acharya, English translation. Part 1. 2<sup>nd</sup> edi. Delhi. Chowkhamba Sanskrit Pratishthan.2007. p. 590.
2. Williems MM. Sanskrit English Dictionary. Corrected edi. New Delhi. Motilal Banarsidass. 2002. p. 330.
3. Srikanta Murthy KR. editor, Madhava Nidana of Madhavakara. English translation. Varanasi. Chaukambha Orientalia. 2013. p. 181.
4. Shingel GD, editor, Susruta Samhita of Susruta acharya, English translation. Part 1. 2<sup>nd</sup> edi. Delhi. Chowkhamba Sanskrit Pratishthan.2007. p. 596.
5. Srikantha Murthy KR, editor, Ashtanga Hridaya of Vagbhatacharya, English translation. Vol 3. Varanasi. Chowkhamba Krishnadas Academy.2012 p. 290.
6. Kumar P, Clark M. Essentials of Clinical Medicine. 5<sup>th</sup> edi. China. Saunders Elsevier. 2011. p. 806, 807.
7. Colledge NR, Walker BR, Ralston SH. editors. Davidson's Principles and practice of Medicine. 21<sup>st</sup> edi. China. Churchill Livingstone Elsevier. 2010. p. 1267, 1268.
8. [Anonymous], Ayurveda pharmacopeia Vol 1. Part 1, Colombo: Department of Ayurveda. 1969. p. 277.
9. [Anonymous], Ayurveda pharmacopeia Vol 1. Part 2, Colombo: Department of Ayurveda. 1994. p. 157.
10. Ibid p. 68.
11. Ibid p. 159.
12. Chandra Murthy PH, editor. Sharan-gadhara Samhita, Sharangara Acharya, English Translation, Varanasi, Chowkhamba Sanskrit Series Office. 2013. p. 370.
13. [Anonymous], Ayurveda pharmacopeia Vol 1. Part 3, Colombo: Department of Ayurveda. 1969. p. 315.
14. Ibid p. 146.
15. Warriar PK, Nambiar VPK, Raman-kutty C. editors. Indian Medicinal Plants. Vol 2. Madras. Orient Lonman Ltd.1994. p.184.
16. Warriar PK, Nambiar VPK, Raman-kutty C. editors. Indian Medicinal Plants. Vol 1. Madras. Orient Lonman Ltd.1994. p.51.
17. Jayaweera DMA. Medicinal Plants (Indigenous & Exotic) used in Ceylon. Part 5. Colombo: The National Science Council. 1981. p. 97.
18. Ibid p. 137.
19. [Anonymous], Osuthuru Visithuru Vol 2. Colombo: Department of Ayurveda. 1994. p. 319.
20. Ahmad, Iqbal, Zafar Mehmood, and Faiz Mohammad. Screening of some Indian medicinal plants for their antimicrobial properties. Journal of Ethnopharmacology 62.2 .1998 .p.183-193.
21. Lo Cantore, Pietro, et al. Antibacterial activity of *Coriandrum sativum* L. and *Foeniculum vulgare* Miller var. vulgare (Miller) essential oils. Journal of agricultural and food chemistry 52. 26. 2004. p.7862-7866.
22. Barua, Chandana Choudhury, et al. "A comparative study of the in vitro antioxidant property of different extracts of *Acorus calamus* Linn." Journal of Natural Product & Plant Resources 4.1 .2014.
23. Khan, M. A. A., & Islam, M. T. (2012). Analgesic and cytotoxic activity of *Acorus calamus* L., *Kigelia pinnata* L., *Mangifera indica* L. and *Tabernaemontana divaricata* L. Journal of Pharmacy & Bioallied Sciences, 4(2), 149–154. doi:10.4103/0975-7406.94820

24. Devi SA, Ganjewala D, Antioxidant Activities of Methanolic Extracts of Sweet-Flag (*Acorus calamus*) Leaves and Rhizomes, Journal of Herbs, Spices & Medicinal Plants Volume 17, Issue 1, 2011. p. 1 – 11.
25. Devmurari V P, Phytochemical screening study and antibacterial evaluation of *Symplocos racemosa*, Journal of Chemical and Pharmaceutical Research, 2012, 4(3): p. 1846-1850.
26. Sunil C, Ignacimuthu S, Kumarappan C. Hypolipidemic activity of *Symplocos S. Moore* leaves in hyperlipidemic rats. J Nat Med. 2012 Jan; 66(1):32-8. E pub 2011 Jun 18.
27. Shingel GD, editor. Susruta Samhita of Susruta acharya, English translation. Part 1.2<sup>nd</sup> edi. Delhi. Chowkhamba Sanskrit Pratishthan.2007. p. 596.
28. Srikantha Murthy KR, editor. Ashtanga Hridaya of Vagbhatacharya, English translation. Vol 3. Varanasi. Chowkhamba Krishnadas Acaademy.2012 p. 298.
29. Shingel GD, editor. Susruta Samhita of Susruta acharya, English translation. Part 2.2<sup>nd</sup> edi. Delhi. Chowkhamba Sanskrit Pratishthan.2007. p. 349.

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