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## Comparative Effect Of *Mulakadi Lepa* & *Guduchyadi Kwatha* On The Symptoms Of *Dadru Kushtha* W.S.R. To Fungal Dermatophytes: A Randomized Clinical Trial”

Ravi Prakash Verma,<sup>1</sup> B.K. Sevatkar<sup>2</sup>

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1. PG Scholar, PG Department of *Roga Nidana Evam Vikriti Vigyana*, National Institute of Ayurveda (To be Deemed), Jaipur
2. Associate Professor, PG Department of *Roga Nidana Evam Vikriti Vigyana*, National Institute of Ayurveda (To be Deemed), Jaipur

**Corresponding Author:-** Dr Ravi Prakash Verma, PG Scholar, PG Department of *Roga Nidana Evam Vikriti Vigyana*, National Institute of Ayurveda (To be Deemed), Jaipur Email: rv29690@gmail.com, Mobile No. - 7976582140

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### ABSTRACT: -

**Background:** *Dadru* is one type of *Kushtha*, all skin illnesses are categorised under the broad title of 'Kushtha' in *Ayurveda*. It involves clinical features like *Kandu*, *Deergha Pratana*, *Utsanna Mandala*, *Raga*, *Pidaka*, which exhibit the involvement of *Kapha* and *Pitta*. *Dadru* correlated with 'Fungal dermatophytes through a modern perspective based on presenting symptomatology. Globally, up to 20% of the population may be infected by ringworm at any given time. *Mithya Ahara-Vihar*, unhygienic condition and many environmental factors lead to increase cases of *Dadru*.

**Aim:** To evaluate and compares the efficacy of *Guduchyadi Kwatha* and *Mulakadi Lepa* in the management of *Dadru Kushtha*.

**Methodology:** Randomized Clinical Trial on 100 patients was conducted at NIA Jaipur for the duration of 1 month equal divided in 2 Groups.

**Result:** Statically significant improvements were showed in subjective parameters. **Conclusion:** it was found that average percentage of relief was higher in “Group A (*Mulakadi Lepa*)” (45.03%) followed by Group B *Guduchyadi Kwatha* (19.77%) without any serious adverse drug reaction.

**Key words:** *Guduchyadi Kwatha*, *Mulakadi Lepa*, Ringworm, *Dadru* & Clinical Trial



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## INTRODUCTION

According to *Acharya Charaka's* explanation of *Dadru* in *Kshudra Kushtha*, *Dadru* is a reddish-colored *Pidika* in the shape of a *Mandala* such as heightened edges as well as scratching<sup>[1]</sup>. The *Atasi* floral coloration or copper-colored *Pidikato* extending termed *Dadru* were defined by *Acharya Sushruta*<sup>[2]</sup>

*Kshudra Kushtha* considers *Acharya Charaka* to be *Dadru*, and *Kapha Pitta* is the primary *Dosha* in *Dadru Kushtha*. In *Maha Kushtha*, *Sushruta* is *Dadru*, and the *Kapha Dosha* is involved.<sup>[3]</sup> According to *Acharya Charaka*, *Kushthais* a *Bahu Dosha* condition and *Kleda Pradhana Vikara*. He also emphasized the importance of *Sapta Dravya* (because *Saptadravyas* are playing as *Sannikrishta Hetus* for *Kushtha*) i.e. *Tridoshas* and *Twak, Rakta, Mamsa, Ambu*. Whenever the *Dosha Dushya Sammurshana* occurs in *Twak* then *Kushtha* will be produced.<sup>[4][5]</sup>

According to *Acharya Sushruta*, due to *Nidana Sevana*, *Tridoshas* will get vitiated. These vitiated *Doshas* move in the *Tiryaka Sira*. Then they have *Sammurchhana* with the *Dushya*. Then it will reach the *Bahya Rogamarga* and produces the *Mandala* wherever it moves. The *Doshas* thus lodges into the skin continue to aggravate and if these *Doshas* are not treated properly they enter the deeper *Dhatus* of the body<sup>[6]</sup>.

*Dadru* created a simulation of 'Dermatophytosis' based on symptomatology. It is classified as Common fungal infections of the skin in today's terminology. Dermatophytosis come under the fungal infection's category.

Dermatophytoses are referred to as *Tinea* infections. They are also named for the body site involved. It is called ringworm because the itchy, red rash has a ring-like appearance<sup>[7]</sup>

### Need Of Study:

Now day-to-day life, the person consumes

incompatible diet and food habits, which lead to most of the diseases, among which skin disorders are prime. *Mithya Ahara-Vihar*, unhygienic condition and many environmental factors lead to decrease skin immunity. Due to the wide use of antibiotics and bad sanitation, the fungus starts to grow which leads to the main causes of *Kushtha*. In contemporary medical science, management of fungal dermatophytes is carried out with the usage of topical and systemic antifungal, corticosteroids. Long-lasting usage of these produces adverse effect. But the recurrence of diseases is the most common problem. To keep the above drawback in mind the present study is selected to carry out *Upashayatmaka*(clinical) trial.

## AIMS AND OBJECTIVES:

To evaluate and compare the efficacy of *Guduchyadi Kwatha* and *Mulakadi Lepa* in the management of *Dadru Kushtha*

## MATERIALS AND METHODS:

1. Selection of patients- The patients for the clinical study were selected from O.P.D. and I.P.D. of NIA *Ayogyashala* Hospital. Selection was carried out on the basis of relevant history, signs, symptoms and laboratory investigations suggestive for the disease *Dadru Kushtha*. A written information and consent form had been given to the selected patients. The patients were explained about the purpose, procedures and possible side-effects of the trial drugs. 107 patients have registered out of the 100 patients who completed the study and 07 patients dropped out.
2. Study design:
  - **CTRI Registration number: CTRI/2020/07/026503**
  - **Study type:** Open-label and Prospective, Randomized Comparative Clinical Study
  - **No. of group:** Two

- **Sample Size:** A total of 100 subjects were randomly selected for the study, with ages ranging from 18 yrs. to 60 yrs., irrespective of sex, religion, etc.
  - **Duration of trial:** 1 month
  - **Follow up:** 10<sup>th</sup>, 20<sup>th</sup>, and 30<sup>th</sup> days
  - Non-drug follow up have been done at the interval of one month for 1 month.
3. **Trial Drugs:** Trail drugs prepared in GMP certified pharmacy of NIA, Jaipur

**Group A:** 50 Patients, this group will receive *Mulakadi Lepa* for local application. Dose-*Mulakadi Lepa* use for local application 10 to 20 grams (according to size and area of the affected lesion) once a day

*Mulakadi Lepa* (*Chakraduta*, chap. 50/34 *Kushtha Chikitsa*)<sup>[8]</sup>

**Table No-1**

S.No.	Constituents	Botanical name	Part used	Ratio
1.	<i>Mulaka</i>	<i>Raphanussativus</i> Linn.	Seeds	1 Part
2.	<i>Sarshapa</i>	<i>Brassicacampestris</i> var. sarson Prain	Seeds	1 Part
3.	<i>Laksha</i>	<i>Lacciferlacca</i> (Kerr)	<i>Niryasa</i>	1 Part
4.	<i>Haridra</i>	<i>Curcumalonga</i> Linn.	Rhizome	1 Part
5.	<i>Chakramarda</i>	<i>Cassiatora</i> Linn.	Seed	1 Part
6.	<i>Sriveshtaka</i>	<i>Pinuslongifolia</i> Roxb.	<i>Niryasa</i>	1 Part
7.	<i>Sunthi</i>	<i>Zingiber officinale</i> Roscoe.	Rhizome	1 Part
8.	<i>Maricha</i>	<i>Pipernigrum</i> Linn.	Fruit	
9.	<i>Pippali</i>	<i>Piperlongum</i> Linn.	Fruits	
10.	<i>Vidanga</i>	<i>Embeliaribes</i> .Burm. F.	Seeds	1 Part
11.	<i>Kushtha</i>	<i>Saussurealappa</i> . C.B.Clarke	Root	1 Part
12.	<i>Gomutra</i>	Cow urine		As necessary

**Group B:** 50 Patients, this group will receive *Guduchyadi Kwatha* for internal use. Dose: *Guduchyadi Kwatha* (24 ml. prepared from 12gms dry raw medicine) B.D. before meal.

**Duration Of Trial:** 30 days with clinical assessment every 10 days. *Guduchyadi Kwatha: (Yogratnakar chapter- Kushtha Nidana Chikitsa Prakaran Slok 62)<sup>[9]</sup>*

**Table No-2**

S.No	Constituents	Botanical name	Used part	Ratio
1.	<i>Guduchi</i>	<i>Tinosporacardifolia</i> Miers ex Hook.F.andJhoms.	Steam	1 part
2.	<i>Amalaki</i>	<i>Emblicaofficinalis</i> Gaertn.	Fruit	1 part
3.	<i>Haritaki</i>	<i>Terminalia chebula.</i> Ratz.	Fruit	
4.	<i>Bibhitak</i>	<i>Terminaliabellirica</i> Roxb.	Fruit	
5.	<i>Daruharidra</i>	<i>Berberisaristata</i> DC.	Hard wood	1 part
6.	<i>Guggulu</i>	<i>Commiphoramukul</i> Engl.	Gum resin	<i>Prakshep</i>

**Follow Up:** A non-drug follows updo for 1 month after completion of therapy to identify the recurrence of the disease.

4. Ethical consideration: Ethics committee approval: Before initiating the study, approval for the study protocol, written informed consent, consent form updates and participant recruitment procedures was obtained from the Institutional Ethics Committee
5. Criteria for the selection of the patient

**Inclusion Criteria:**

- a. Patient with the classical sign and symptoms of *Dadru Kushtha* viz. *Kandu, Raga, Pidika* and *Mandala*.
- b. Patients 18 years to 60 years of age will be included.
- c. Patients belonging to either gender will be included.

**Exclusion Criteria:**

- a. The patient suffering from severe systemic disorders will be excluded.
- b. Pregnant women and lactating mothers will be excluded.
- c. Patients less than 18 yrs. and above 60 yrs. of age will be excluded.
- d. Skin malignancy and other skin diseases.

**ASSESSMENT CRITERIA:**

- a. Classical sign and symptoms of *Dadru Kushtha* will be scored and assessed accordingly
- b. The data will be collected before and after treatment and it will be, analyses for the result.
- c. Photography

## Subjective Parameters And Their Scoring:

The scoring is given in the following manner

### 1. *Kandu*

S.N.	Parameters	Score
1	No itching	0
2	Mild itching	1
3	Moderate itching	2
4	Severe itching	3

### 2. *Raga (Redness)*

S.N.	Parameters	Score
1	Normal skin colour	0
2	Faint normal	1
3	Blanching +Red colour	2
4	Red colour	3

### 3. *Pidika*

S.N.	Parameters	Score
1	No <i>Pidika</i>	0
2	1 to 3 <i>Pidika</i>	1
3	4 to 6 <i>Pidika</i>	2
4	More than 6 <i>Pidika</i>	3

#### 4. Number of Mandala

S.N.	Parameters	Score
1	No Mandala	0
2	1 to 3 Mandala	1
3	4 to 6 Mandala	2
4	More than 6 Mandala	3

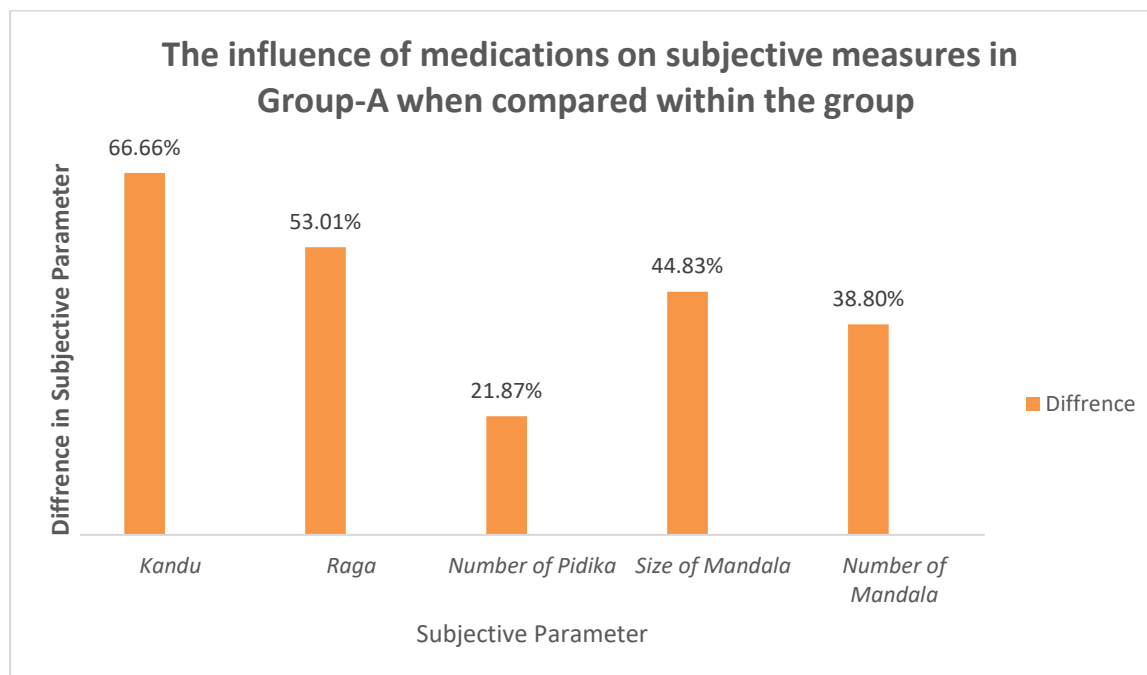
#### 5. Size of Mandala

S.N.	Parameters	Score
1	No Mandala	0
2	Less than 5 cm.	1
3	5 to 10 cm.	2
4	More than 10 cm.	3

#### LABORATORY PARAMETERS: - C.B.C. And RBS RESULTS (EFFECT OF THERAPY)

Table NO-3: - The influence of medications on subjective measures in Group-A when compared within the group. (Wilcoxon Signed Rank Test)

Subjective parameters	Mean		Diff.	Diff. %	S.D.	S.E.	W	p-Valve	Result
	BT	AT							
<i>Kandu</i>	1.86	0.62	1.24	66.66	0.876812	0.1240	810	<0.0001	Significant
<i>Raga</i>	1.66	0.78	0.88	53.01	0.622254	0.0880	534	<0.0001	Significant
Number of <i>Pidika</i>	1.92	1.50	0.42	21.87	0.721249	0.1020	240	<0.0001	Significant
Size of <i>Mandala</i>	1.74	0.96	0.78	44.83	0.62	0.08	194	0.0061	Very Significant
Number of <i>Mandala</i>	1.34	0.82	0.52	38.80	0.367696	0.520	414	<0.0001	Significant



**Table No 4:** The influence of medications on subjective measures in Group-B when compared within the group (Wilcoxon Signed Rank Test)

Subjective parameters	Mean		Diff.	Diff. %	S.D.	S.E.	W	p-Valve	Result
	BT	AT							
<i>Kandu</i>	1.88	1.55	0.33	17.55	0.41	0.06	210	0.0427	Significant
<i>Raga</i>	1.56	1.26	0.30	23.80	0.60	0.08	224	0.0106	Significant
Number of <i>Pidika</i>	2.26	1.92	0.34	15.04	0.52	0.07	190	0.0198	Significant
Size of <i>Mandala</i>	1.52	1.10	0.42	27.63	0.42	0.06	109	0.0061	Very Significant
Number of <i>Mandala</i>	1.28	1.09	0.19	14.84	0.24	0.03	214	0.0193	Significant

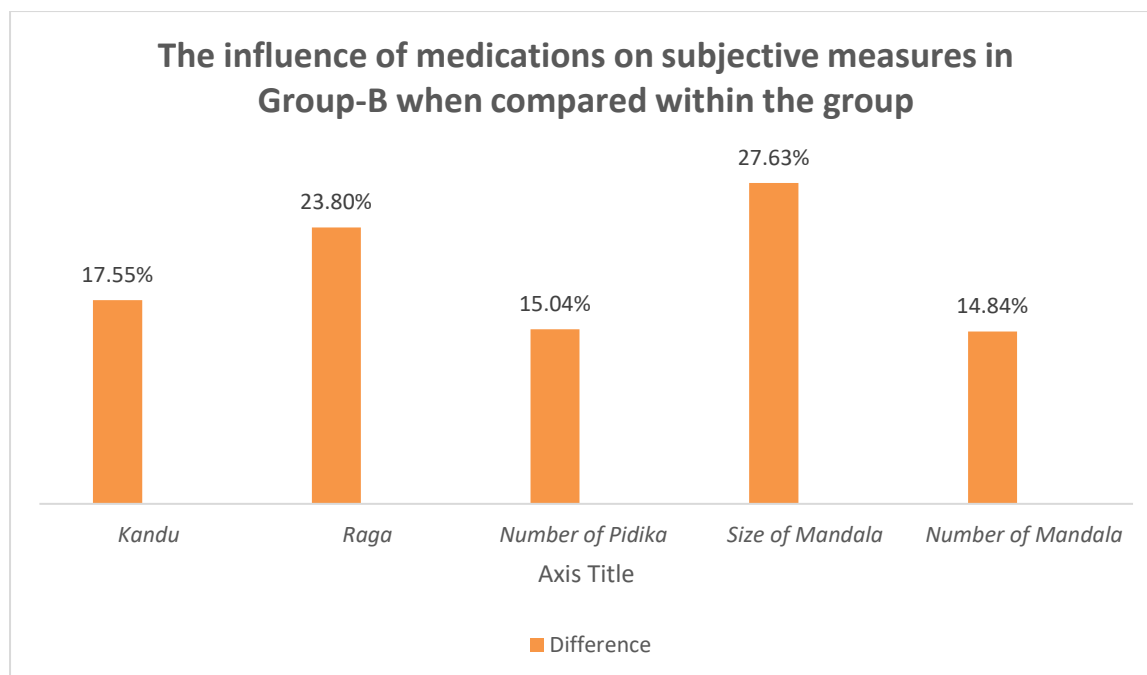
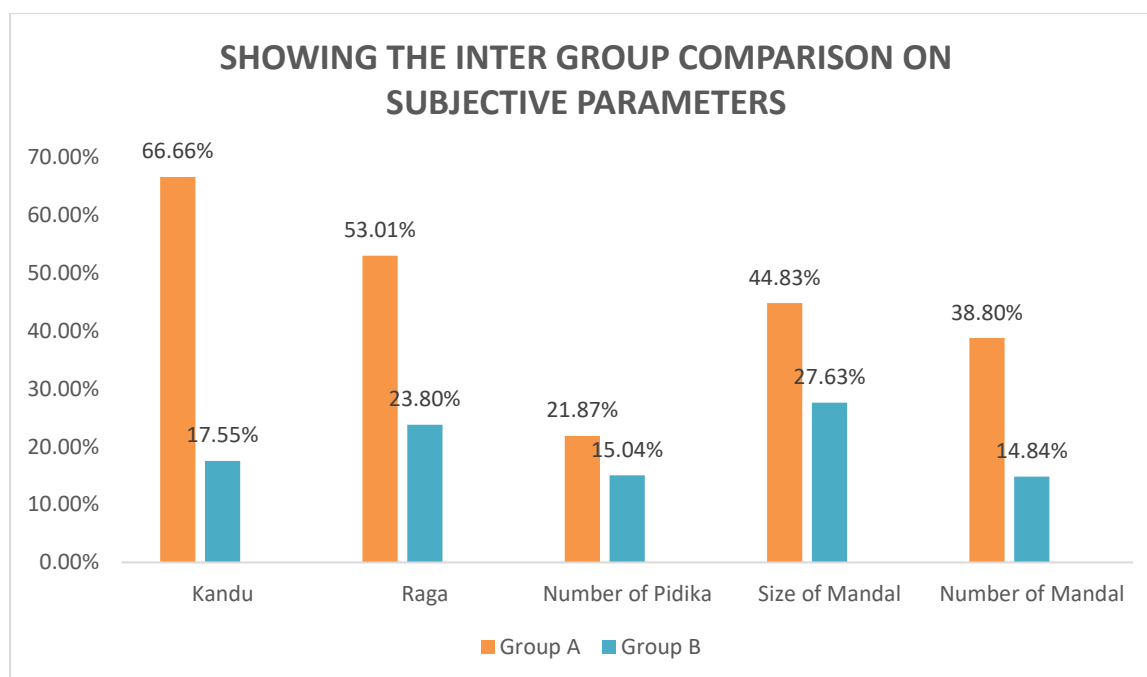


Table No-5: Showing the Intergroup Comparison On Subjective Parameters (Mann Whitney U Test)

Subjective Parameters	Group	Mean Diff.	±SD	SE	U Statics	U	P-value	R
<i>Kandu</i>	A	1.24	0.87	0.12	519.5	1918.0	< 0.0001	E.S.
	B	0.33	0.41	0.06				
<i>Raga</i>	A	0.88	0.62	0.08	710.0	1734.5	< 0.0001	E.S.
	B	0.30	0.60	0.08				
Number of <i>Pidika</i>	A	0.42	0.72	0.10	1025.5	1436.5	0.0826	N.S.
	B	0.34	0.52	0.07				
Size of <i>Mandala</i>	A	0.78	0.62	0.08	1135.5	1366.5	0.0892	N.S.
	B	0.42	0.42	0.06				
Number of <i>Mandala</i>	A	0.52	0.36	0.05	610.0	1903.5	< 0.0001	S.F.
	B	0.19	0.24	0.03				





**Table No-6:** In both Groups A and B, there was an overall clinical improvement in all of the symptoms:

Symptoms	Group-A		Group-B	
	%	Impression	%	Impression
<i>Kandou</i>	66.66	Moderate improvement	17.55	Minimal improvement
<i>Raga</i>	53.01	Moderate improvement	23.80	Minimal improvement
Number of <i>Pidika</i>	21.87	Minimal improvement	15.04	Minimal improvement
Size of <i>Mandala</i>	44.83	Mild improvement	27.63	Mild improvement
Number of <i>Mandala</i>	38.80	Mild improvement	14.84	Minimal improvement
Average % of Relief	45.03%		19.77%	

The average relief percentage: When the average percentage of relief in both groups was compared, it was discovered that “Group -A” (45.03 percent) had the highest average percentage of relief (followed by Group-B) (19.77 percent). In comparison to Group-B, the

effect of therapy was greater in Group-A. It is due to the chronic nature of the disease and the study duration is only one month’s the study duration is more than 6 months then a better change in subjective parameters may be found. (Table-5.43)

**(1) Effect of *Mulakadi Lepa***

Before Treatment



After Treatment

**(2) Effect of *Guduchyadi Kwatha***

Before Treatment



After Treatment

**DISCUSSION****A. Demographic profile**

1. Incidence of Age: In this study, the majority of patients (49%) were in the age groupings of 21-30 years. Due to their work, contact activities, and other exposures, this age group has a high risk of contracting *Dadru*.
2. Incidence of Gender: The bulk of the patients were male (78%) and female (22%) respectively. *Dadru* has no direct relationship with gender; the most likely reason is scrotal architecture, and this predominance is due to moistness in the region.
3. Incidence of Religion: The Hindu group accounted for 84 percent of the patients, while the Muslim community accounted for 16 percent. It's possible that the cause is due to the existence of the largest Hindu community in the area.
4. Incidence of Education: In this study, the majority (35%) of patients were educated up to Senior. The most likely explanation is that educated culture is more sophisticated and lives a fast-paced lifestyle, thus their dietary practices may be incorrect as a result of their negligence, leading to diseases like *Dadru*.
5. Incidence of Occupation: According to the aforementioned statistics, the majority of patients (40%) were students. The most likely reason is that the student's profession requires them to sit for long periods of time, causing excessive sweating in the inguinal region, which is the source of *Dadru*.
6. Incidence of Diet: A maximum of 65 percent of patients were vegetarian, with the remaining 35 percent eating a varied diet. While a non-vegetarian diet can cause *Rakta Dushti*, the majority of vegetarians overuse curd, which

can cause *Rakta Dushti*. Non-vegetarians are more susceptible to illness, although vegetarians had the highest incidence in our study.

7. Incidence of Addiction: In the current study, it was discovered that 66 percent of patients were Tea addict. The majority of the cases were tea addicts, which develops to *Agnimandhya*, which develops to *Ama Utpatti*, which produces *Kushtha Roga*.
8. Incidence of Dominant *Rasa*: In this study, the majority of patients (60%) were given *Madhura Rasa*. This definitely demonstrates *Pitta* and *Kapha Dosha* vitiation in the participants chosen for the research. *Snigdha*, *Ushnaguna*.

## B. Discussion on the symptoms of *Dadru Kustha*

1. ***Kandu***: In Group A, treatment gave 66.66% relief, which was statistically significant at ( $P < 0.0001$ ), and in Group B, treatment provided 17.55% relief, which was a statistically significant result at ( $P < 0.0001$ ). As a consequence, Group A achieved a better performance than Group B. Due to *Kapha Dosha* and *Rasa, Rakta Dhatu Dushti*, *Kandu* is present. *Kushthaghna*, *Kandughna*, and *Dadrughna* are all popular in *Chakramarda*. *Chakramarda's Ushnata*, *Laghuta*, and *Rukshata* are antagonists to *Kapha's Sitata*, *Guruta*, and *Picchilata*, and reduce *Kandu*. *Chakarmarda* is also owned by *Kaphavatahara*. *Rakta Sodhaka* and *Kaphavatahara* are additional properties owned by *Mulakadi Lepa*.
2. ***Raga***: In Group A, treatment provided 53.01% relief, which was statistically significant at ( $P < 0.0001$ ), and in Group B, treatment provided 23.08% relief, which was a statistically significant result at ( $P = 0.0106$ ). As a consequence, Group A achieved a better

performance than Group B. *Raga* is present due to *Pitta Dosha* and *Rakta Dhatu Dushti*. The drug's *Varnya* and *Rakta Sodhaka* effects have greatly diminished *Raga*.

3. ***Pidika***: In Group A 21.87% relief. Which was a statistically very significant result at ( $P < 0.0001$ ) And in Group B 15.04% relief. Which was a statistically significant result at  $P = 0.0198$  As a consequence, Group A achieved a better performance than Group B. *Pitta Dosha* and *Rakta, Mamsa Dhatu Dushti*, are the causes of *Pidika*. Based on the aforementioned findings, it's possible that *Chakramarda* decreased *Pidika* as a result of *Laghu Guna* and *Ushna Virya*. *Lavana* has the properties of *Lekhana*, *Shodhana*, and *Chhedana*. *Mulakadi Lepa's Raktasodhaka* property reduces the number of *Pidika*.
  4. ***Size of Mandala***: Treatment produced 44.83 percent relief in Group A, which was statistically highly significant at ( $P = 0.0061$ ), and 27.63 percent relief in Group B, which was statistically significant at ( $P = 0.0061$ ). As a consequence, Group A achieved a better performance than Group B.
  5. ***Number of Mandala***: Relief was 38.08 percent in Group A. Which was a statistically significant outcome ( $P < 0.0001$ ) and 14.84 percent alleviation in Group B. With a P value of 0.0193, this was a statistically significant finding. As a consequence, Group A had a better performance than Group B.
- The Average Percentage of Relief:** When comparing the symptomatic improvement in the two groups, it was discovered that "Group - A" (45.03 percent) had the highest average percentage of alleviation (followed by Group - B) (19.77 percent). In compared to Group - B, it demonstrates that treatment had a greater effect in Group - A.

**Probable mode of action of drugs:** *Mulakadi Lepa* is a combination of ten drugs i.e. *Mulaka*, *Sarshap*, *Laksha*, *Chakramarda*,

*Sriveshtaka, Sunthi, Marich, Pippali, Vidang, Kushtha. Go-Mutra* is a base with a variety of qualities, including *Laghu, Ushna, and Tikshna. Mulakadi Lepa's Shodhana* and *Kaphavatahara* qualities apply to the majority of its contents. Because *Dadru* is a *Kapha*-dominant condition, all *Lepa* content is lowered, resulting in a reduction in *Kapha Dosh*a and symptom alleviation. *Kandu* and *Pidika* are generally caused by *Kapha Dosh*a. Due to their *Kaphavatahara* properties, these *Mulakadi Lepa Rasapanchaka* aid in the elimination of *Kandu* and *Pidika* and other symptoms.

***Guduchyadi Kwatha***: Contents of *Guduchyadi Kwatha* have *Tridoshasamaka, Dipana, Raktasodhaka Dosh Pachana* etc...Above properties of *Guduchyadi Kwatha* able to break the pathogenesis of *Dadru Kustha*.

## CONCLUSION

Comparing the symptomatic improvement in all two groups it was found that average percentage of relief was higher in “Group A (*Mulakadi Lepa*)” (45.03%) followed by Group B *Guduchyadi Kwatha* (19.77%). It shows that effect of therapy was more in Group-A in comparison to Group-B. *Dadru Kustha* management requires the use of local applications.

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**Conflict of interest-None**

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