Published online in http://ijam.co.in ISSN No: 0976-5921

International Journal of Ayurvedic Medicine, Vol 15 (2), 2024; 490-497

Comparative evaluation of *Chakramarda* ointment and Psoralin ointment along with *Guduchi* capsule in the management of *KitibhaKushtha* (Psoriasis)

Research Article

Khushhali Balpande[1*], Sadhana Misar Wajpeyi[2], Praveen Nandal[1]

1. PG Scholar, 2. Professor & HOD, Department of Kayachikitsa,
Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (H),
Datta Meghe Institute of Higher Medicine and Research (Deemed to Be University), Sawangi (M), Wardha. India.

Abstract

In Ayurveda skin disorders are mentioned under *Kushtharogaadhikar* and categorised into seven Mahakushthas and eleven *Kshudrakushthas*. Among all the *Kshudrakushthas, Kitibhakushtha* is one of the types. Sign & Symptoms of *Kitibhakushtha* are *Kina Khara Sparsham* (rough on touch), *Shyava Varna* (blackish brown color) and *Kandu* (itching). It is a *Tridoshaja* with the predominance of *Vata-Kapha* along with the involvement of *Twak, Rakta, Mamsa and Lasika* in the *Samprapti*. *Nidanas* of *KitibhaKushtha* are *Aaharaj, Viharaj, Upsargaja and Krimija*. *KitibhaKushtha* can be correlated with psoriasis due to similarities in symptoms. Aim and objectives: -Evaluation of comparative efficacy of *Chakramarda* ointment versus Psoralin ointment with capsule Guduchi internally in the management of *Kitibha Kushtha* (Psoriasis). Material and Methods - This study comprises a total of 60 patients in which patients in Group A were treated with *Chakramarda* ointment once daily in the morning after bath and 2 Guduchi capsules 500mg thrice a day internally whereas patients in Group B were treated with Psoralin ointment once daily in the morning after bath and 2 Guduchi capsules 500 mg thrice a day internally for 30 days. Patients were assessed for subjective parameters like *Kandu, Shyav Krishna Varna and Rookshata* and objective parameter PASI scale. Result – Significant improvement was observed in Subjective and Objective parameters. Conclusion- *Chakramarda* ointment is as efficacious as Psoralin ointment in the treatment of *Kitibha Kushtha*. Hence *Kitibha Kushtha* can be effectively managed with *Chakramarda* ointment.

Keywords: *Kitibha Kushtha, Chakramarda,* Psoriasis, *Guduchi,* Psoralin.

Introduction

The largest organ in the human body is the skin. It is the most defensive organ of the body and a good indicator of general health. Skin color reflects one's personality. Many infectious illnesses target the skin as their primary organ.(1)

It is susceptible to a number of illnesses because of its size and location outside the body. The prevalence of skin conditions has suddenly increased in recent years in tropical and developing nations like India.(2) All skin conditions in *Ayurveda* are categorized into seven *Mahakushthas* and eleven *Kshudrakushthas* discussed under *Kushtharogaadhikar.*(3) *KitibhaKushtha* is one of the types of eleven *Kshudrakushthas*. *Kina Rauksham* (hard and dry nature), *Shyavam* (lesion blackish brown/ash in color), *Ugrakandu* (severe itching), and *Kharasparsha* (rough to the touch) are the specific features of *KitibhaKushtha.*(4)

*** Corresponding Author:**

Khushhali Balpande

PG Scholar, Department of Kayachikitsa, Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (H), DMIHER (Deemed to Be University), Sawangi (M), Wardha India.

Email Id: balpandekhushhali@gmail.com

A change in lifestyle, inactivity, poor cleanliness, stress, and unhealthy eating habits are all contributing factors to the prevalence of skin problems in the modern world.(5) Among various skin disorders *Kitibha Kushtha* is quite prevalent in society and can be related to plaque psoriasis because of their similar signs and symptoms.

Psoriasis is a widespread genetically determined immune-mediated dermatological condition that affects the body's skin, nails, joints, flexures, and folders. It is one of the most complicated, multifactorial skin conditions with complex etiology and high hereditary predisposition. It is a papulosquamous skin disorder characterized by erythematous squamous lesions that are clearly defined and have reddish scaly regions on the skin. Psoriasis causes psychological issues like worry, depression, and others that lowers the quality of life. Physical, psychological, and socioeconomic complications are common among psoriasis patients. Mental stress brought on by this embarrassment aggravates any underlying illness.(6)The number of T cells and natural killer cells in the circulation increases in psoriatic patients under psychosocial stress, which was pathologically relevant in the aggravation of psoriatic plaques.(7)

According to the WHO, psoriasis is a major global illness that affects at least 100 million individuals, with predominance rates ranging from 0.09

per cent to 11.43 percent in various countries. Its prevalence is nearly similar however males are more likely to have it (2.4%) than female gender (0.8%).(8)

In contemporary medicine, psoriasis is treated using topical corticosteroids and vitamin D3 analogues, both of which have limitations due to side effects and recurrence.(9)

The three basic concepts of *Kushtha* treatment in Ayurveda are *Nidanparivarjana* (prevention of etiological factors), *Shodhana Chikitsa* (detoxification procedure) and *Shamana Chikitsa* (palliative treatment). Intake of *Ghrita, Vamana* and *Virechana* as well as *Raktamokshana* are indicated in *Vata, Kapha*, and *Pitta* dominance *Kushtha* respectively by *Acharya Charaka*.

Chakramarda Lepa mentioned in *Chakradatta* consists of *Edegaja (Cassia tora Linn,)*, triturated with *Gomutra* (*Bos indicus)* and *Snuhiksheer (Euphorbia nerifolia Linn*) which was used for external application in the form of ointment.(10)*Guduchi (Tinospora cordifolia*) is recommended for *Kushtha* in *Bhavprakash Nighantu (Guduchyaadi varga*) because it brings equilibrium of all the *Tridoshas* and helps in reducing *Rookshata* (roughness), *Shyavata* (brownish black discoloration) and *Ugrakandu* (excessive itching). (11)

In this study *Snuhiksheer* having antibacterial and wound healing property is used with *Chakramarda* powder to enhance the healing process. The roughness of skin in *KitibhaKushtha* is reduced by the *Snigdha* (unctuous) property of *Snuhiksheer. Gomutra* have antiseptic, bio enhancer and antimicrobial properties. It enhances the drugs bioavailability by increasing its absorption through skin. It functions primarily as a penetration enhancer that directly affects the skin's permeability to drugs by chemicals and solvents like urea, N-diethyl-M-toluamide etc. Due to effective characteristics of *Gomutra* it is useful in various *Lepakalpana. Gomutra* and *Snuhiksheer* are cost effective and easily available.(12)

Need of the study

- The skin condition psoriasis, also known as *Kitibha Kushtha,* does not have a fatal outcome, but it affects the quality of life and daily activities of an individual. The prevalence of the condition is rising as a result of changing lifestyles, stress, and different environmental variables.
- Due to its autoimmune nature, there is currently no radical treatment for this condition, and the available options have restrictions because of associated side effects.
- Due to its chronic nature and increased risk of recurrence, it requires long-term treatment.
- There is a requirement of cost effective and safe herbal formulation with radical cure.
- *Acharyas* mentioned *Lepa Chikitsa* as one of the best *Bahyachikitsa* for skin disorders, and *Chakramarda* possesses *Kushthaghna, Kandughna* properties. Previous research studies proved its anti-psoriatic activity but in ointment form it is not used in *Kitibha Kushtha.*
- Previous researches recommended *Kushthaghna, Kandughna, Rasayana and Medhya* properties of *Guduchi* hence it is used in autoimmune disorders like psoriasis.

Aims and Objectives

Evaluation of comparative efficacy of *Chakramarda* ointment versus Psoralin ointment with capsule *Guduchi* internally in the management of *Kitibha Kushtha* (Psoriasis).

Materials and Methods

Material: Data related to the study was collected from literary sources, modern science books and publications etc.

Clinical source: This study included 60 patients from the OPD and IPD at our institute's *Kayachikitsa* department as well as from nearby camps.

Study design: Randomized Standard Controlled Trial.
Study type: Interventional

Inclusion Criteria

- Subjects having age ranges from 20-60 years of either sex & all *Prakruti.*
- Subjects with cardinal symptoms such as *ShyavaKrishna Varna* (blackish brownish coloured lesions), *Ruksha (*dry), *Khara Kinsparsha* (roughness on touch), *Ugrakandu* (intense pruritus) of *Kitibha Kushtha.*
- PASI indicating mild to moderate score
- Patients willing to participate in the study

Exclusion Criteria

- Already pre-diagnosed cases Cancer, AIDS, Diabetes mellitus (DM), as well as TB (tuberculosis).
- Participants of other infectious skin ailments
- Breastfeeding mothers and pregnant females
- Chronicity lasting longer than five years.

Posology

Group A

1.*Chakramarda* Ointment – Sufficient quantity applied once a day (morning).
2.*Guduchi* capsule- 2 capsule of 500mg thrice a day after food.

Group B

1.Psoralin Ointment – Sufficient quantity applied once a day (morning).
2.*Guduchi* capsule- 2 capsule of 500mg thrice a day after food.

Composition of material

Table 1: Showing Ingredients of *Chakramarda* ointment

SN	Ingredients	Latin Name	Used Part	Amount
1	*Edagaja (Chakramarda)*	Cassia tora Linn	*seed*	One part
2	*Snuhi ksheer*	*Euphorbia nerifolia* Linn	*latex*	Quantity sufficient
3	*Cow urine (Gomutra)*	*Bos indicus*	-	
4	Bees-wax- Base	-	-	
5	*Sidhhataila (Sesame oil)*	*Sesamum indicum*	-	
6	Lavender Essence	-	-	

Preparation of Material: *Chakramarda* ointment:

- *Chakramarda* seeds were taken and fine powder was prepared in a pulverizer.
- 250gm of *Chakramarda* powder was taken in *Khalwa yantra* and given *Bhavana* with a sufficient quantity of *Snuhiksheer* and *Gomutra* to form *Kalka*.
- In a stainless-steel vessel 1 litre of *Tila Taila* and 4 litres of water were taken.
- The *Taila* was added with the previously prepared *Kalka*, and was stirred constantly to ensure even homogenous mixing.
- It was left to cool naturally after continuous heating of 5.15 hours. A lid was then placed on top to keep out of any outside contaminants.
- On the second day, heating process was continued for 3 hours until the *Taila* became moisture less as well as *Siddhi Lakshanas* were obtained.
- The heating was stopped after confirming all the *Siddhi Lakshanas*, and the *Taila* was filtered through a muslin sheet in warm condition.
- *Taila* obtained after filtration was poured into an airtight container, and provided with a label.
- Through the double boiler method, *Taila* was heated and mixed with bee wax and continuous stirring was done.
- Essence was added to the above mixture and ointment was packed in an airtight container.

Table 2: Showing Ingredients of Cap. *Guduchi*

Ingredient	Latin Name	Used Part	Amount
Giloya (Guduchi)	*Tinospora cordifolia* Linn	*Kanda*	500mg in each capsule

Preparation of *Guduchi* Capsule

1. Raw *Guduchi* stems were taken and dried properly.
2. After that fine powder was prepared from it.
3. 500 mg *Guduchi powder* was poured in 500 mg capsule through a capsule filler.
4. *Guduchi* capsules were packed in small plastic zip lock pouch bags and labeled.

Table 3 Showing Ingredients of Psoralin ointment- It was procured from JRK pharamaceuticals

Sr. No.	Content	Botanical Name
1	*Shweta Kutaja*	*Wrightia tinctoria* R. Br.
2	*Durva*	*Cyanadon dactylon* (L.) Pers
3	Base	-

Assessment Criteria: -

Assessment was done on day 0 and 30 day.

Subjective Parameters: -

1. *Kandu*(pruritus)
2. *ShyavaKrishna Varna* (blackish discoloration)
3. *Rookshata*(dryness)

Objective parameters: PASI scale
Investigation: Random Blood Sugar
Study Duration: 30 Days
Follow-up period: On 30th day

Table 4: Showing gradation of subjective parameters

Assessment parameters (Subjective)	0	1	2	3
Kandu (Itching)	Nil	Mildly Present without disturbing routine activity	Moderately Disturbing routine activity	Severely Disturbing routine activity and sleep
Shyavakrishna varna (Blackish discoloration)	No Colour change	Near-normal colour that seems normal to a distant observer	Slightly blackish discoloration	Completely blackish Coloured
Rookshata (Rough and dry)	Nil	Mildly dry and rough without scales and cracks	Moderately dry and rough with scales	Severely dry and rough with cracks

Table 5: Showing gradation of objective parameters (PASI scale)

Plaque	Lesion Score	Head	Upper Limb	Trunk	Lower Limb
Erythema	0=none				
Indurations	1=slight				
Scaling	2=moderate				
	3=severe				
	4=very severe				
Add together each of the 3 scores for each body region to give 4 separate sum (A)					
Lesion score sum (A)					

Percentage area affected	Area score	Head	Upper limb	Trunk	Lower limb
Area score (B) Degree of involvement as a percentage for each body region affected (score each region with score between 0-6)	0 =0% 1 =1% - 9% 2 =10% - 29% 3 = 30% -49% 4 = 50% -69% 5 = 70% -89% 6 = 90% - 100%				
Multiple lesion score sum (A) by area score (B). for each body region to give 4 individual subtotal (C).					
Subtotals (C)					
Multiply each of the subtotals (C) by amount of body surface area represented by that region i.e., × 0.1 for head × 0.2 for upper body , ×0.3 for trunk , and × 0.4 for lower limbs.					
Body surface area		**× 0.1**	**× 0.2**	**× 0.3**	**×0.4**
Total (D)					
Add together each of the scores for each body region to give the final PASI score.					

Statistical analysis

The Statistical analysis was prepared by using inferential and descriptive statistics using Mann Whitney U test, Wilcoxon Signed Rank Test and Chi-square test. SPSS 27.0 version and Graph Pad Prism 7.0 version software were used for the analysis. $P < 0.05$ is taken as an acceptable level of significance.

Observations and results

Table 6: Distribution of patients according to Demographic Data

Demographic Data	GroupA (n=30)	Group B (n=30)	χ2-value/ t-value	p-value
Average of Age in years	40.10±10.03	39.63±11.39	0.16	0.86, NS
Age Range	21-56 yrs	22-59 yrs		
Gender				
Male	15(50%)	16(53.33%)	0.06	0.79, NS
Female	15(50%)	14(46.67%)		
Lesion				
Upperlimbs	9(15%)	9(15%)	-	-
Lower limbs	18(30%)	18(30%)		
Trunk	22(36.6%)	22(36.6%)		
Head	1(1.67%)	1(1.67%)		
Chronicity of disease				
Mean±SD	1.45±0.76	1.30±0.78	0.75	0.45, NS
Range	6 mth-2 yrs	6 mth-2 yrs		
Addiction				
Smoking	3(10%)	3(10%)	1.40	0.70, NS
Alcoholic	3(10%)	2(6.67%)		
Tobacco	3(10%)	1(3.33%)		
Not Any	21(70%)	24(80%)		
Occupation				
Business	4(13.33%)	5(16.67%)	2.36	0.66, NS
Farmer	8(26.67%)	4(13.33%)		
Housewife	9(30%)	10(33.33%)		
Service	7(23.33%)	10(33.33%)		
Student	2(6.67%)	1(3.33%)		
Diet				

Vegetarian	7(23.33%)	12(40%)	1.92	0.16, NS
Mixed	23(76.67%)	18(60%)		
Stress				
Present	21(70%)	19(63.33%)	0.30	0.58, NS
Absent	9(30%)	11(36.67%)		
Prakruti				
Kaphapittaj	7(23.33%)	7(23.33%)	3.28	0.65, NS
Kaphavataj	3(10%)	6(20%)		
Pittakaphaj	3(10%)	2(6.67%)		
Pittavataj	1(3.33%)	2(6.67%)		
Vatakaphaj	14(46.67%)	9(30%)		
Vatapittaj	2(6.67%)	4(13.33%)		
Socio-economic Status				
Low	13(43.33%)	15(50%)	0.26	0.60, NS
Middle	17(56.67%)	15(50%)		
High	0(0%)	0(0%)		
Sleep				
Sound	10(33.33%)	13(43.33%)	0.63	0.42, NS
Disturbed	20(66.67%)	17(56.67%)		
Water for bathing				
Bore Water	13(43.33%)	15(50%)	0.39	0.82, NS
River Water	9(30%)	7(23.33%)		
Well Water	8(26.67%)	8(26.67%)		
Sun Exposure				
Present	25(83.33%)	19(63.33%)	3.09	0.07, NS
Absent	5(16.67%)	11(36.67%)		

Table 7: Comparison of Effect of therapy on *Kandu* in both groups before and after treatment

Group	Day 0	Day 30	Z-value Wilcoxon Signed Rank Test	p-value
A	2.83±0.37	0.93±0.52	21.65	0.0001, S
B	2.83±0.37	1.10±0.60	13.73	0.0001, S
Comparing both groups using- Mann Whitney U test				
z-value	0.00	1.14		
p-value	1.00, NS	0.25, NS		

Table 8: Comparison of Effect of therapy on *Shyav Krishna Varna* in both groups before and after treatment

Group	Day 0	Day 30	Z-value Wilcoxon Signed Rank Test	p-value
A	2.80±0.40	1.23±0.56	17.02	0.0001, S
B	2.80±0.40	1.06±0.58	18.22	0.0001, S
Comparing both groups using- Mann Whitney U test				
z-value	0.00	1.12		
p-value	1.00, NS	0.25, NS		

Table 9: Comparison of Effect of therapy on *Rookshata* in both groups before and after treatment

Group	Day 0	Day 30	Z-value Wilcoxon Signed Rank Test	p-value
A	2.93±0.25	1.03±0.71	13.71	0.0001, S
B	2.93±0.25	0.86±0.73	16.37	0.0001, S
Comparing both groups using- Mann Whitney U test				
z-value	0.00	0.89		
p-value	1.00, NS	0.37, NS		

Table 10: Percent of overall relief in group A after completion of treatment

Improvement Criteria	Number of patients	% age of patients
Excellent relief (more than 70%)	6	20
Moderate relief (30% to70%)	24	80
Poor relief (less than 30%)	0	0
Total relief	30	100

Table 11: Percent of overall relief in group B after completion of treatment

Improvement Criteria	Number of patients	% age of patients
Excellent relief (more than 70%)	5	16.67
Moderate relief (30% to70%)	25	83.33
Poor relief (less than 30%)	0	0
Total relief	30	100

Table 12: Percent of overall relief in Total patients (n=60) after completion of treatment

Improvement Criteria	Number of patients	% age of patients
Excellent relief (more than 70%)	11	18.33
Moderate relief (30% to70%)	49	81.67
Poor relief (less than 30%)	0	0
Total relief	60	100

Overall relief in patient was assessed by subtracting after treatment with before treatment multiplied by 100 and divided by before treatment.

Discussion

KitibhaKushtha is the *Tridoshaja* with the predominance of *Vata-Kapha Dosha*. The main causative factors of *KitibhaKushtha* are *Aharaja, Viharaja, Upsargaja* and *Krimaja*. In *Samprapti* there is the involvement of *Rasa, Rakta, Mamsa* and *Lasika* which leads to *Dosha- Dushya Samurchana* in the *Twak* leading to *KitibhaKushtha*.

In Demographic data present study showed that more incidence of disease was observed in fourth decade, equal in both the genders. Majority of patients had involvement of the trunk (36%) followed by lower limbs (30%). In this study maximum number of patients had chronicity of disease less than 2 years. 75% patients were not involved in any addiction. Regarding occupation more incidence was observed in housewives followed by service people, farmers, business class and students. It was prevalent in patients having *Vatakaphaj Prakruti,* mixed diets, disturbed sleep and more stress. Disease was predominant in middle and lower socioeconomic status. Incidence of disease was more in patients using bore water for bathing. Aggravation of symptoms was observed in patients after exposure to the sun.

Kandu, Shyav Krishna Varna, and *Rookshata* was present in all patients of group A and B. Both groups showed statistically, significant improvement in *Kandu, Shyav Krishna Varna and Rookshata* and PASI score after treatment with a p-value of 0.0001. Mann Whitney U Test was used for comparing both the groups and statistically non-significant result was obtained before and after treatment with a p-value of 1.00 and 0.25 in *Kandu,* 1.00 and 0.25 in *Shyav Krishna Varna,* 1.00 and 0.37 in *Rookshata,* 0.71 and 0.71 in PASI score respectively in both the groups.

Mechanism of action -*Chakramarda* ointment

In the management of *Kitibha Kushtha*, *Chakramarda* ointment is indicated by *Acharya Chakradatta*. The contents of *Chakramarda* ointment includes *Edagaja (Chakramarda), Snuhi* latex and cow urine.

Chakramarda has *Tikta Katu Rasa*, *Laghu Ruksha* and *Tikshna Guna*, *UshnaVirya* and *KatuVipaka*. *Chakramarda* has *Tej, Vayu* and *Akash Mahabhuta*. It possesses *Kandughna, Kushthaghna, Tridoshashamaka, Vishahar* and *Krumighna* properties. (13) The *Ushnavirya* soothes exacerbated *Kapha* and *Vata*. It acts on *Swedavahistrotas* because of its hot, penetrating, and minute qualities, and thus results in perspiration which serves as a means of local toxin removal and helps in the cleaning of *Sukshmastrotas. (*14*)* It further stops the progression of pathogenesis and helps in reducing the *Lakshanas* of *Kitibha Kushtha*. *Chakramarda* contains *Tikta rasa* which has anti-pruritic action and is indicated in various skin disorders like *Kitibha Kushtha*. Pre-clinical research conducted on *Chakramarda* proved its antifungal, antipsoriatic, antioxidant, antipruritic, antiinflammatory, antibacterial, and antihelminthic properties. All these pharmacological characteristics are useful for treating skin conditions like psoriasis. Various studies conducted on *Chakramarda* in managing other types of *Kshudrakushtha*such as *Dadru (Tinea)* as well as *Vicharchika* (*Eczema)*showed its antipruritic activity. (15)

Snuhi has *Tikta Katu Rasa, Snigdha Laghu* and *Tikshna Guna, Virya Ushna* and *Vipaka Katu*. Due to *Katu Tikta Rasa* and *Ushna Virya,* it helps in reducing inflammation in psoriasis. *Tikshna* and *Laghu Guna* of *Snuhi* helps in penetrating and reaching the minute channels. It possesses *Vatakaphashamak, Kushthaghna, Krimighna, Rookshaghna* and *Vranaropaka* properties. The *Vranaropak* property of *Snuhi* helps to reduce erythema, induration which are the main feature observed in *KitibhaKushtha. Snigdha Guna* helps in reducing dryness and scaling which are the main characteristic of *Kitibha Kushtha*. The latex of *Snuhi* is known for its anti-inflammatory, analgesic (16) and wound healing activity.(17) The *Snuhi* latex contains Euphol which is responsible for its anti-inflammatory activity. (18)The clinical studies available on *Snuhiksheer* in types of *Kshudrakushtha* like cracked foot-*Padvidarika,* Tinea-*Dadru* and Eczema-*Vicharchika,* proved its *Vranaropaka* and *Rookshaghna* properties.(19, 20)

Gomutra has *Katu Tikta & Lavan Rasa, Laghu Tikshna Guna, Ushna Virya and Katu Vipaka.* It has *Kushthaghna, Kandughna, Krimighna, Rasayan Tatva, Shoolaghna* and *Vranaropak* properties. It increases the drug's bioavailability by enhancing its absorption through the skin due to its bio-enhancing property. The primary function of *Gomutra* is to increase skin's permeability to solvents and chemicals like urea, N and Ndiethyl-Mtoluamide, etc. It possesses analgesic, wound healing, immunomodulatory, antimicrobial, antifungal, anthelmintic and anti-carcinogenic properties.(21) The studies conducted on *Gomutra* in various other types of *KshudraKushtha* include Acne-*Mukhadushika,* Tinea-*Dadru and* Eczema-*Vicharchika* proved its antipruritic and wound healing properties. (22,23)

Chakramarda Lepa is modified to ointment formulation for local application. It consists of *Chakramarda, Snuhiksheer and Gomutra. Lepa* (paste) is described in *Charaka Samhita* as "*Sadyah Siddhi Karaka* (providing instant effect)" meaning of which is giving instant effects.(24) One of the different methods of *Shodhana* (purification) stated by *Acharya Sushruta* in the *Kushtha* is *Lepa* (local application). (25)It enters the *Romakupa* (hair follicle), then gets absorbed into the *Svedavahastrotas* (sweat glands) via *Siramukha* (skin pores). Ingredients of *Lepa* (paste) applied locally helps in alleviating vitiated local *Dosha* and aids in their elimination. All the drugs of ointment possess *Kushthaghna*, *Krimighna, Kandughna, Rookshaghna*, *Vatakaphashamak* and *Vranaropaka* properties which help in reducing symptoms when applied locally. *Tilataila (sesame oil)* is utilized to prepare this formulation acts as *Twachya* as well as *Tridoshahar*. (26)Therefore, locally applied formulation of *Chakramarda* reduces the *Lakshanas* of *Kitibha Kushtha.*

Mechanism of action - *Guduchi* capsule

Guduchi possesses *Katu Tikta Rasa, Laghu Ushna Guna, Ushna Virya, Madhur Vipaka. Guduchi* has *Tridoshshamak, Kandughna, Rasayan, Rakta shodhak* and *Mridu Virechaka* properties.

Due to *Katu, Tikta Rasa* of *Guduchi*, it reduces the aggravated *Kapha Dosha* which eventually reduces itching and acts as antipruritic. *Ushna Virya* and *Madhura Vipaka* of *Guduchi* act as *Vatakapha Shamak* and helps in reducing symptoms of *KitibhaKushtha*. *Pittashamak* and *Raktashodhak(*27) properties help in reducing *Shyavkrishna Varna* and acts as *Varnya*. The *Mridu Virechaka and Aamahara* action of *Guduchi* helps in removing endotoxins from the gut and cells which aids in quick healing. It also contributes in *Agnideepan* which helps in correcting the derranged *Agni*.

The *Rasayan* property of *Guduchi* helps in improving the quality of *Dhatu* production and brings back the normal state of *Dhatus*. Thus, it improves the *Vyadhikshamatva* in the patients. Psoriasis is an autoimmune disorder, presence of certain small molecules and 25 kDa acidic non-glycoprotein in *Guduchi* stem exhibits an immunomodulatory activity. (28)Stress is also considered one of the causative factors in psoriasis due to the antipsychotic activity of *Guduchi* it helps in calming the mind and acts as a stress reliever.(29)Thus *Guduchi* has anti-oxidant, immunomodulatory, analgesic, anti-inflammatory, hepatoprotective, anti-ulcer, antimicrobial, blood purifier and anti-anxiety properties.(***30***)

All these properties of *Guduchi* prevent the further progression of pathogenesis and reduce the clinical sign and symptoms of *KitibhaKushtha.*

Mechanism of action - Psoralin ointment

Psoralin ointment is the proprietary product of a renowned pharmaceutical company. The ointment has a hydrophilic predominance due to emulsion of oil in water. It consists 3.3percent *Cynodondactylon* and 3.3% *Wrightiatinctori*a and base (q.s.) for ointment. *Kutuja* (*Wrightia tinctoria*) have *Katu, Tikta Rasa, Laghu Guna, Sheeta Virya and Katu Vipaka*.It has *Kushthahara* and *Deepan* properties. *Durva* (*Cynodondactylon*) has *Katu Tikta Rasa, Laghu Guna, Sheeta Virya* and *Madhura Vipaka.* It also acts as *Kushthahara* and *Kanduhara*. Psoralin ointment with high Hydrophilic lyophilic properties known to bind and to enhance the permeation of the drugs through trans-epidermal layer which is basically a descending movement into the skin. Its main purpose is to moisturize and to improve the remission phase. The division and differentiation of keratinocyte cells in psoriasis leads to an ineffective epidermal barrier. The ointment base has a Hydrophilic lipophilic value of 11 and above, to progress the effect of physical barrier and decrease the development of the stratum corneum cells (senescent stage).([31])Due to more cell multiplication and shortening of the cell cycle, the loss of cholesterol can be several folds higher.([32])The hydrophilicity of the skin is increased due to the contents of psoralin ointment and thereby loss of cholesterol is stopped and maintains an epidermal layer of the skin.(33)

Limitations

- Sample size was small with a short study duration.
- *Shodhan Chikitsa* was not given.
- *Pathya- Apathya* was not advised.
- Patients having chronicity for more than 5 years with complications were excluded.
- Severe cases as per PASI were not included.

Recommendations

- Follow-up after the treatment can be done to assess the reoccurrence of the symptoms.
- Study can be conducted to evaluate the efficacy of *Chakramarda* ointment in other types of *Kushtha*.
- *Ghanavati* can be prepared to reduce the dose of capsules.
- Further clinical studies on *KitibhaKushtha* can be conducted with different combinations.

Conclusion

Statistically, significant improvement was observed in *Kandu, Shyava Krishna Varna, Rookshata* and PASI score in both groups. After comparing both groups, there was no statistically significant difference in all subjective and objective parameters. Thus, control and trial groups are similar at baseline and showed equal efficacy in reduction of symptoms. Overall assessment showed Moderate improvement (30 – 70%) in maximum patients (81.67%).

So it can be established that *Chakramarda* ointment is as efficacious as Psoralin ointment in the treatment of *KitibhaKushtha* (Psoriasis) and provided better results when combined with *Guduchi* capsule as *Abhyantar Chikitsa*.

References

1. Mythrey R.C., Madhu H.M., Hegde G., Conceptual Analysis of Dadru vis-à-vis Tinea‟, Journal of Biological and Scientific Opinion, Sept-Oct 2014, vol 2, issue 5, pg no. 332-334
2. Marks R, Roxburgh's Common Skin Diseases, 16th Edition, ELBS with Chapman and Hall, London, Chapter-1, 1993:1
3. Sharma R K ,Agnivesa's Charak Samhita (on Chakrapanidatta Ayurveda dipika) volume3, Chikitsa Sthan chapter 7, shloka number 13, Chowkambha sanskrit studies, 2013, page no 322
4. Sharma R K, Agnivesa's Charak Samhita (on Chakrapanidatta Ayurveda dipika) volume 3, Chikitsa Sthan chapter 7, shloka number 22, Chowkambha sanskrit studies, 2013, page no 325
5. Ibiebele TI, van der Pols JC, Hughes MC, Marks GC, Williams GM, Green AC Am J ClinNutr. 2007 May; 85(5):1401-8.
6. Singh S, Prasad R ,Tripathi J.S. and Rai. Psoriasis – an overview. World Journal of Pharmaceutical Sciences, 2015; 3(8): 1732-1740
7. Singh S, Tripathi J.S., Rai N.P.. An overview of Ayurvedic & contemporary approaches to

Psychodermatology. The Journal of Phytopharmacology 2014; 3(4): 286-299.
8. Enamandram M, Kimball AB. Psoriasis epidemiology: the interplay of genes and the environment. Journal of Investigative Dermatology. 2013 Feb 1;133(2):287-9.
9. Devaux S, Castela A, Archier E, Gallini A, Joly P, Misery L, Aractingi S, Aubin F, Bachelez H, Cribier B, Jullien D. Adherence to topical treatment in psoriasis: a systematic literature review. Journal of the European Academy of Dermatology and Venereology. 2012 May; 26:61-7.
10. Tripathi Indradev, Chakradatta of Sri Chakrapani datta (vaidyaprabhahindi commentary) chapter 50, shloka number 32, Chowkambha sanskrit Bhavan, 2015, page no 251
11. Saini N K: A Clinical Study: Role of Giloy (*Tinospora Cordifolia*) In The Treatment of Kitibha W.S.R to Psoriasis. International Ayurvedic Medical Journal {online} 2017
12. Vadi, Ankur K., et al. "A Pharmaco-Therapeutic Study to Assess the Comparative Efficacy of Chakramarda&GaumutraBhavitaChakramarda on Vicharchika." *AYU (An international quarterly journal of research in Ayurveda)* 29.3 (2008): 171.
13. World Health Organization. Global report on psoriasis. Global report on psoriasis 2016
14. Nimbhorkar, Ashish & Misar Wajpeyi, Sadhana.. Evaluation of Comparative Efficacy of Internal and External Use of Kushthadi Yoga in The Management of Ekakushtha (Psoriasis): Life Sciences-Ayurveda. International Journal of Life Science and Pharma Research. L30-L41. 10.22376/ijlpr.2023.13.2.SP1.L30-L41. (2023)
15. Vijayalakshmi A Et Al. Anti-psoriatic activity of flavonoids from Cassia Tora Leaves using the rat ultraviolet B Ray photodermatitis model, Revistabrasileira de Farmacognosia, Volume. On 29.04.2019. 2014, Page No. 322-329;24(3, MayJun):10am
16. Gaur K, Rana AC, Nema EK, Kori ML, Sharma CS. Anti-inflammatory and analgesic activity of hydro alcoholic leaves, extract of Euphorbia nerifolia Linn. Asian J. Pharm. Clin. Res. 2009; 2(1) :26-30
17. Rasik.AM, Shukla A, Patnaik GK, Dhawan BN, Kulshrestha DK, Srivastava S. Wound healing activity of latex of euphorbia nerifolia Linn. Indian J. Pharmacol. 1996; 28:107-109.
18. Bigoniya P, Shukla A. Dermal irritation and sensitization study of Euphorbia nerifolia latex and its anti-inflammatory efficacy. Int. J. Phytomed. 2010; 2(3):240-254.
19. Jagtap N, Wadnerwar N. Pharmaceutical evaluation of Snuhi ksheera siddha taila and a Pilot study on its efficacy in Padavidarika (cracks on heel). International Journal of Ayurvedic Medicine.;12(2):236-42.
20. Jadhav M, Sharma R, Gupta A. Int J Ayu Pharm Chem.
21. Mahajan SP, Chavan SA, Shinde SA, Narkhede MB. Miraculous Benefits of Cow Urine: A Review. JDDT [Internet]. 15Aug.2020 [cited 29Jul.2023];10(4-s):275-81. Available from: https://www.jddtonline.info/index.php/jddt/article/view/426.
22. Ghosh T, Biswas MK, Guin C. Efficacy of cow urine in wheat (Triticum aestivum) production as plant growth promoter and antifungal agent. Journal of Pharmacognosy and Phytochemistry. 2018;7(3):485-93.
23. Khan MY, Roy M, Saroj BK, Dubey S, Sharma VK. A Review-Benefits of Panchgavya therapy (Cowpathy) for health of humans. Asian Journal of Research in Pharmaceutical Science. 2015;5(2):115-25.
24. Sharma PV, editor, Chapter 5. Verse5. In: Shush rut Samhita, Nidansthan. Varanasi: ChaukhambaVishvabharti Publication; 2005; Pp-37
25. Shukla V, Tripathi RD, editors. Charak Samhita, Chikitsasthana, Chaptar 7, Verse 21, Delhi: Chukhamba Sanskrit Pratishthan, 2010; Pp-184.
26. Tripathi B, editor, Chapter 14. Verse 3-4 Delhi: Chukhamba Sanskrit Pratishthan. In: Ashtanga Hriday, Nidansthan; 2015, Pp-527.
27. Guduchi and goghruta are mentioned as Rasayana drug these drugs improved the quality of Dhatu production and also brought the Dusty of Dhatus (Dusyas) to a normal state. As a consequence of these Rasayana drugs improved the Vyadhikshamatva in the patients
28. Aranha I, Clement F, Venkatesh YP. Immunostimulatory properties of the major protein from the stem of the Ayurvedic medicinal herb, guduchi (Tinospora cordifolia). Journal of ethnopharmacology. 2012 Jan 31;139(2):366-72.
29. Jain VK, Shete A. Antipsychotic activity of aqueous ethanolic extract of Tinospora Cordifolia in amphetamine challenged mice model. Journal of Advanced Pharmaceutical Technology & Research. 2010 Jan;1(1):30.
30. Devi P. A review on Tinospora cordifolia: as an Immunomodulating agent. HJHS [Internet]. 15Mar.2021 [cited30Jul.2023];6(1):64. Availablefrom:http://hjhs.co.in/index.php/hjhs/article/view/88
31. SoundharyaR. Inclusion of Hydrophilic-Lipophilic Balance (HLB) in the treatment of Psoriasis-A new approach.
32. Masanori Takenouchi, M.S., Hiroyuki Suzuki, and HachiroTagami, M.D. Hydration Characteristics of Pathologic Stratum Corneum-Evaluation of Bound Water. TheJournal of Investigative Dermatology. 1986; 87(5): 574-576.
33. Pietrzak A, Michalak-Stoma A, Chodorowska G, Szepietowski JC. Lipid disturbances in psoriasis: an update. Mediators of inflammation. 2010; 2010.

*****