



STUDY ON THE EFFECT OF KADALI PRATISARANIYA TIKSHNA KSHAR ON 30 PATIENTS OF VERRUCA VULGARIS

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ABSTRACT

Verruca vulgaris is a common viral wart occurring in different parts of the skin caused by local infection with specific Human Papilloma Virus types- 1,2,4,27,57 and 63. They occur mostly in children, and they are acquired from exposure to the virus or on inoculation with the virus. Nail-biting (Onychophagia) can spread this infection from nail to lips or other nails. In some cases, a single wart acts as a mother wart and grows multiple other warts with time. Tiny black dots appear which are the thrombosed, dilated capillaries and it helps distinguish it from corns or calluses. In this study, a total of 30 patients with Verruca vulgaris were diagnosed and selected to study the efficacy of *Kadali Pratisaraniya Tikshna Kshar* (Strong alkali prepared from a variety of banana). *Kadali* (banana plant) selected for study was of the variety *Musa balbisiana* Colla, commonly found and consumed in Assam and it belongs to the family of Musaceae. This variety is used since time immemorial in cooking traditional dishes such as khar. *Kadali Pratisaraniya Tikshna Kshar* was prepared in Assam State Pharmacy, Govt. Ayurvedic College and Hospital. This study on 30 patients of Verruca vulgaris showed that *Kadali Pratisaraniya Tikshna Kshar Karma* has a good effect in reducing the size and colour of the lesion along with reducing pain and itching and hence it can be used effectively in the management of Verruca vulgaris.

Keywords: Verruca vulgaris, *Kadali Pratisaraniya Tikshna Kshar*, *Musa balbisiana* Colla., Kola khar, Assam, alkali, clinical study.

INTRODUCTION

Skin is the human body's largest organ which covers and protects the body. It weighs an average of four kilograms, covers an area of two square meters, and is made up of three distinct layers: the epidermis, dermis, and subcutaneous tissue. A cutaneous condition is any medical condition that affects the integumentary system- the organ system that encloses the body and includes skin, hair, nails, and related muscle and glands.

Verruca vulgaris (squamous cell papillomas) are keratotic benign lesions of skin and mucosa, caused by localized infection with various subtypes of human papillomavirus⁹. Today, the genomes of more than 100 HPV types have been fully characterized and additional partial DNA sequences have been obtained, indicating the existence of at least 200 HPV genotypes. Human papillomavirus infects squamous epithelia of both keratinizing and non-keratinizing surfaces by direct inoculation with infected material. Verruca vulgaris are very common in India. 7-12% of the population are affected, and children and young adults are more commonly affected. Both the sexes are equally affected and larger lesions are observed in an immunocompromised individual. Histological changes seen are papillomatosis, hypergranulomatosis, acanthosis, hyperkeratosis, and parakeratosis⁹. Treatment includes cryotherapy, trichloroacetic acid (TCA), electrosurgery, curettage, scalpel or scissors excision, and laser vaporization. Cutaneous warts may be treated by daily application of salicylic acid/lactic acid/collodion. In Ayurveda, skin lesions like verruca vulgaris have been described under *Kshudra Rogas*^{1,6,7}. Verruca vulgaris can be studied in Ayurveda in relation to *Charmakeela*^{10,11} and other *Kshudrarogas* like *Ajagallika*, *Yavaphrakhya*, *Kacchapika*, *Pashangardabha*, *Kadara*, *Padminikantak*, *Jatuka*, and *Masaka*. Treatment mentioned for these diseases includes *Svedana*¹ (fomentation), *Raktamokshana*¹ (bloodletting therapy), *Lepana*¹ (ointment application), *Shastra Karma*¹ (surgical procedures), *Kshar Karma*¹⁵ (chemical cauterization with alkali) and *Agni Karma*¹ (thermal cauterization). *Kshar* (alkali) acts on the vitiated tissues and makes

them fall off hence it is called *Kshar*². The work *Kshar* implies two-fold action viz.-*Ksharana*-which mobilises and removes the vitiated dosha & *Kshanana*- which destroys and removes the unhealthy tissue. *Kshar* is considered more important than *Shastras* (sharp instruments) and *Anu-Shastras* (accessory instruments) because it has qualities like *Chedan* (excision), *Bhedan* (incision), *Lekhan* (scrapping/curettage), *Tridosha Shaman* (pacifying the 3 *Doshas*-*Vata*, *Pitta* & *Kapha*) and it can be used for special activities³.

Kadali kshar (traditionally used in Assam as Kola kshar), is basically used for cooking traditional dishes. *Kadali* has been mentioned as one of the 23 *Kshar Dravyas* of *Sushrut*⁴. References for use of *Kshar* in skin lesions have been described in the classics but still, very few research papers have been published for their use in verruca vulgaris. Moreover, no research has been found for use of *Kadali kshar* in this disease. Hence, 30 patients of verruca vulgaris were selected as per inclusion and exclusion criteria for studying the effect of *Kadali Pratisaraniya Tikshna Kshar*.

MATERIALS AND METHOD-

Selection of patient and study design:

1. All the patients were randomly selected from OPD, IPD; Govt. Ayurvedic College and Hospital, Guwahati, Assam.
2. A total of 30 patients with Verruca vulgaris were registered for study from the age group 18-60 years. Patients who gave their consent for *Kadali Kshar* application were selected.
3. Selected patients have been examined for their clinical symptoms and have undergone follow-up on the basis of subjective and objective parameters, before and after treatment.

Preparation of Medicine

The classical method for preparation of *Pratisaraniya Kshar* was followed according to *Sushruta Samhita* chapter 11, *Ksharapakavidhi Adhyaya*.

The time period of study

The total duration of the study was 2 years.

Methodology-

Materials required-

1. Kadali Kshar
2. Cotton
3. Sterile gauze
4. Triphala Kwath
5. Yastimadhu Siddha Ghrita
6. Roll bandage
7. Kidney tray
8. Forceps
9. Petroleum Jelly

Informed written consent was taken. Depending on the location of the lesion, the patient was placed in an appropriate position. The region of the lesion was first cleaned with Triphala Kwath. Kadali Kshar was applied carefully to the affected part specifically, avoiding the surrounding healthy areas, and kept for 100 Vakmatras¹³ (40-60 seconds). Petroleum Jelly was applied to the surrounding area for protecting it from a burn by the Kshar. The site was then washed immediately with Nimbu Swaras (lemon juice) and applied Yastimadhu Siddha Ghrita. The lesion was then bandaged with clean gauze. The patient was advised to follow up on the 7th, 14th, 21st, and 30th days.

Inclusion Criteria

Patients between the age of 18 to 60 years of both sexes, diagnosed with cases of verruca vulgaris and who gave their consent for the clinical study were included.

Exclusion Criteria

1. Patients below 18 years and above 60 years, pregnant and lactating mothers.
2. Patients with a secondary skin infection.

3. Lesions are present in sensitive parts like genitals, eye lids, lips, blood vessels, etc.
4. Patients with systemic disease and immunocompromised states like HIV, TB, Diabetes Mellitus, Hepatitis B & C, etc.
5. All the contraindications mentioned by Acharya Sushruta.

Criteria for withdrawal:

1. Aggravation of disease during the trial period.
2. Discontinuation of treatment during the trial period.
3. Any other serious complication requiring a change in treatment

Routine examination, assessment, and follow-up:-

All the patients were selected as per the specially designed proforma.

Required laboratory investigations were done for all patients and clinical assessment was done before, during, and after the treatment.

Duration of treatment: - The duration of a clinical trial for every patient was 1 month.

Follow-up: - Follow-up is to be made on the 7th day of the first application of Kshar. A regular follow-up is to be made at 7 days' intervals for up to a maximum of one month.

Laboratory investigations-Hb%, TC, DLC, ESR, BT, CT, CRP, RBS

RESULTS AND OBSERVATION

#BT-Before Treatment

#FU1-Follow up 1, FU2-Follow up 2, FU3-Follow up 3, FU4-Follow up 4

Table 1: Effect of Kadali Pratisaraniya Tikshna Kshar on Size of the lesion on Verruca vulgaris on 7th, 14th, 21st, and 30th day (n=30 Patients)

GROUP	Mean±S.D	df	S.E.	t value	p-value	Remark
BT	2.5±0.50	29	0.01			
FU 1	1.96±0.546			5.756	<0.05	Significant
FU 2	1.3±0.862	29	0.02	7.76	<0.05	Significant
FU 3	0.9±0.789	29	0.02	10.25	<0.05	Significant
FU 4	0.6±0.711	29	0.02	13.713	<0.05	Significant

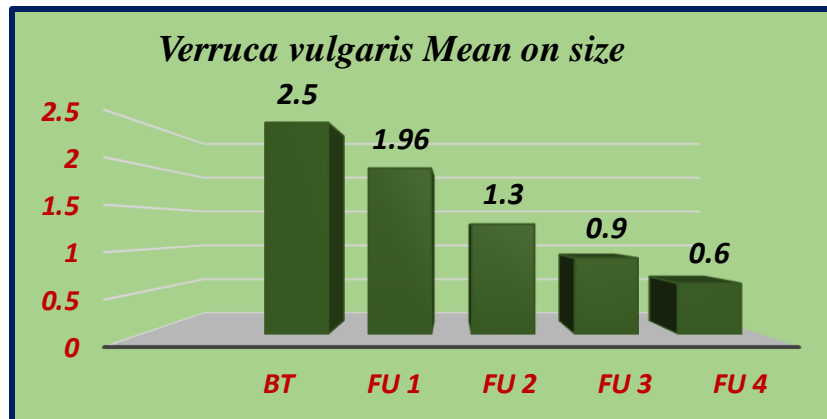


Figure 1: Verruca vulgaris Mean on size

Kadali Kshar Karma effect on the size of the lesion was calculated according to the grading score and observed before and after treatment. The mean and S.D. before treatment was 2.50 and 0.5. After treatment on the 30th day, it was 0.6 (mean) and 0.7118

(S.D) and the t-Value for Verruca is 13.713 with a p-Value <0.05 i.e. statistically significant. It signifies that Kshar Karma has a very good effect on decreasing the size of the lesion in the treatment of Verruca vulgaris.

Table 2: Effect of Kadali Pratisaraniya Tikshna Kshar on Colour of the lesion on Verruca vulgaris on 7th, 14th, 21st, and 30th day (n=30 Patients)

GROUP	Mean±S.D	df	S.E.	t value	p-value	Remark
BT	2.13±0.669	29	0.01	4.396	<0.05	Significant
FU 1	1.73±0.628					
FU 2	1.26±0.573	29	0.02	6.596	<0.05	Significant
FU 3	0.86±0.669	29	0.01	11.894	<0.05	Significant
FU 4	0.53±0.618	29	0.02	12.989	<0.05	Significant

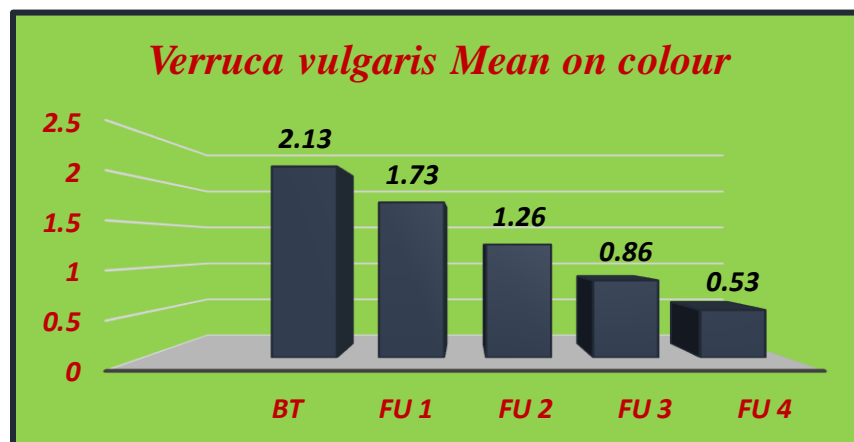


Figure 2: Verruca vulgaris Mean on colour

Kadali Kshar Karma effect on improving the colour of the lesion was calculated according to the grading

score and observed before and after treatment. The mean and S.D. before treatment was 2.13 and 0.669.

After treatment on the 30th day, it was 0.53 (mean) and 0.618 (S.D) and the t-Value is 12.989 with a p-Value <0.05 i.e., statistically significant. It signifies

that *Kshar Karma* has a very good effect on improving the colour of the lesion in the treatment of *Verruca vulgaris*.

Table 3: Effect of Kadali Pratisaraniya Tikshna Kshar on *Kandu* (itching) on *Verruca vulgaris* on 7th, 14th, 21st, and 30th day (n=30 Patients)

GROUP	Mean±S.D	df	S.E.	t value	p-value	Remark
BT	1.76±0.615	29	0.01	4.396	<0.05	Significant
AT1	1.36±0.546					
AT2	0.93±0.512	29	0	3.807	<0.05	Significant
AT3	0.6±0.553	29	0.01	1.795	<0.05	Significant
AT 4	0.5±0.562	29	0.01	10.8457	<0.05	Significant

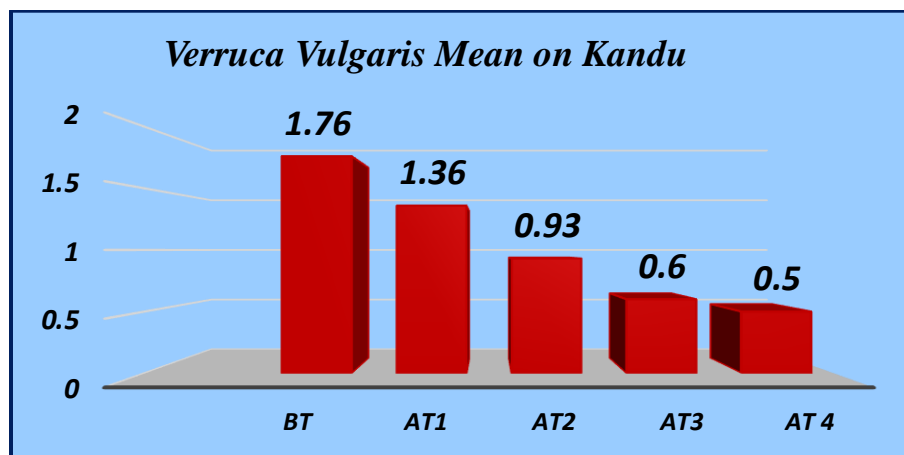


Figure 3: *Verruca Vulgaris Mean on Kandu*

Kadali Kshar Karma effect on *Kandu* was calculated according to the grading score and observed before and after treatment. The mean and S.D. before treatment was 1.76 and 0.615.

After treatment on the 30th day, it was 0.50 (mean) and 0.562(S. D) and the t-Value is 10.845 with a p-Value <0.0001 i.e., statistically significant. It signifies that *Kshar Karma* has a very good effect on treating *Kandu* in the treatment of *Verruca vulgaris*.

Table 4: Effect of Kadali Pratisaraniya Tikshna Kshar on *Vedana* (pain) on *Verruca vulgaris* on 7th, 14th, 21st, and 30th day (n=30 Patients)

GROUP	Mean± S. D	df	S.E.	t value	p-value	Remark
BT	2.4±0.611	29	0.01	6.595	<0.05	Significant
AT1	1.8±0.653					
AT2	1.23±0.495	29	0.01	10.79	<0.05	Significant
AT3	0.9±0.597	29	0.01	12.041	<0.05	Significant
AT4	0.5±0.619	29	0.01	19	<0.05	Significant

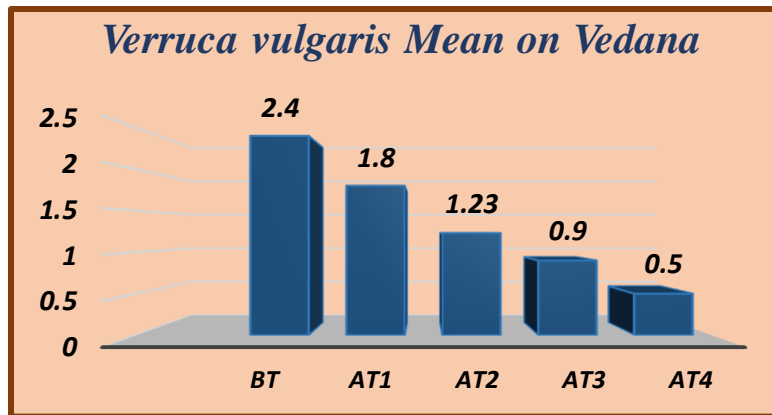


Figure 4: Verruca vulgaris Mean on Vedana

Kadali Kshar Karma effect on the Vedana of the lesion was calculated according to the grading score and observed before and after treatment. The mean and S.D. before treatment was 2.4 and 0.611. After treatment on the 30th day, it was 0.5 (mean) and 0.619

(S.D) and the t-Value is 19 with a p-Value <0.0001 i.e., statistically significant. It signifies that Kshar karma has a very good effect on decreasing the Vedana of the lesion in the treatment of Verruca vulgaris.



Picture : 1



Picture : 2



Picture : 3

DISCUSSION

Kshar has karmas like Dahana (burns away), Pachana (digests), Darana (bursts/breaks), Vilayana (liquefies), Shodhana (cleanses), Ropana (heals), Shoshana (dries), Stambhana (arrests/stops) and Lekhana (scraps). It also has gunas like Na atithikshna (not too strong), Na ati mridu (not too mild), Shukla (white in colour), Slakshna (smooth), Picchilla (slimy), Abhisyandi (does not produce exudation), Shiva (gentle/beneficial), Shigra (acts quickly). Kshar karma is also considered more important than Shastras and Anu-Shastras because it has qualities

like Chedan, Bhedan, Lekhan, And Tridosha Shaman and it can be used for special activities. Due to its Lekhana, Dahana, Pachana, Shodhana, Ropana, and Tridosha Shaman properties, it can be used in skin lesions like Verruca vulgaris.

CONCLUSION

1. Kshar Karma has a very good effect in removing the elevated lesion of the verruca vulgaris. shedding of the lesion starts from day 2 to 4 days.

Shedding of Lesion-(n=30 patients)

No. of patients	1 st day	2 nd day	3 rd day	4 th day
8 Patients	-	✓	-	-
9 Patients	-	-	✓	-
13 patients	-	-	-	✓

2. It is also effective in reducing pain, itching, and returning the normal colour of the skin after completion of the treatment. So, we can conclude that *Kadali Kshar Karma* can be used for the management of Verruca vulgaris if it is used with precaution.

CONSENT OF THE PATIENTS-

Written informed consent has been taken from the patients for the clinical trial as well as for the publication of data without disclosing their identity.

LIMITATION OF THE STUDY-

The study was conducted in a small sample and so a study in larger samples may help come to a concrete conclusion

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