



Research Article

Novel Approach in the Management of Cutaneous Viral Wart through a Poly Herbo-mineral Topical Medication

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DOI: <https://doi.org/10.24321/0019.5138.202245>

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How to cite this article:

Bari ABA, Dhas SI. Novel Approach in the Management of Cutaneous Viral Wart through a Poly Herbo-mineral Topical Medication. J Commun Dis. 2022;54(1):25-30.

Date of Submission: 2021-10-29

Date of Acceptance: 2022-01-24

A B S T R A C T

Background: Clinicians used to treat cutaneous viral warts - *Verruca vulgaris* and *Verruca filiformis* by means of either topical application of medicines or through minimal intervention. However, there is no single standard treatment protocol that can be applied to all patients suffering from the above conditions. Hence, there is a need for a single novel drug for the management of viral warts.

Aim: A novel poly herbo-mineral topical medicine (PHMTM) was prepared based on the Siddha system of medicine's literature and this study was done to evaluate its efficacy against *Verruca vulgaris* and *Verruca filiformis* on various body sites.

Method: Patients diagnosed with *Verruca vulgaris* and *Verruca filiformis* were divided into two groups. PHMTM was applied on the lesion area as a topical application. Depending on the site and severity of the viral wart, the duration and days of application were decided and the drug was applied daily till automatic fall or till suitability for mild pluck and its response was noted.

Result: *Verruca vulgaris* that was present on the face, abdomen, and lower limb was cleared 100% when compared to the upper limb, for which the success rate was only 83%. Further, patients who exhibited complete clearance for *Verruca filiformis* were 100% in all the sites studied. The efficacy of the drug for *Verruca filiformis* is better when compared to the response for *Verruca vulgaris*.

Conclusion: PHMTM is found to offer a better success rate in the clearance of warts studied.

Keywords: Siddha Medicine, Herbo-mineral, *Verruca Vulgaris*, *Verruca Filiformis*



Introduction

Verruca commonly known as warts includes several subtypes like *Verruca vulgaris* (common wart), *Verruca filiformis*, *Verruca plantaris*, *Verruca genital warts* etc. These warts are cutaneous growths generally caused by human papillomavirus (HPV) infection.¹ According to the Siddha philosophy, warts are referred to as “unni” or “marul,” and their clinical characteristics are determined by the dominance of three doshas/ kutram: vatha, pitha, and kapha, and imbalance in their levels causes cutaneous projections.² Available literature indicates that at least 10% of the world’s population is affected by the common wart and there are more than 100 subtypes of HPV virus causing viral warts in various areas/ locations of the body. The majority of HPV strains are resistant to heat and most disinfectants.³ Even though there are several types of HPV viruses, HPV strains 2 and 4 are associated with common warts and adding to these strains 1, 27, and 29 are linked with filiform warts.¹ Cutaneous viral warts are generally benign and they may resolve naturally within a few years without any specific treatment.⁴ However, they are highly contagious and can be transmitted either by direct skin to skin contact or indirectly through contaminated surfaces like sharing a common bathroom, towels etc.⁵ Common warts can create discomfort aesthetically when it is present on the face, limbs, and other exposed areas. Viral warts which are present in the genital area are linked to various types of cancer like cervical cancer, oral cancer etc.⁶ Further, individuals with compromised immunity may develop clusters of warts in and around the site of existing warts if proper medical management is not done.⁷

Dermatologists around the world recommended several treatment options like topical application of cantharidin, cryotherapy, excision, electrosurgery, photodynamic therapy etc.⁸ Further, HPV vaccines are being suggested for the prevention of cutaneous warts when they are present in the genital region.⁹ However, the mentioned therapies are expensive or may cause pain around the lesion site at the time of intervention. Moreover, several therapies mentioned above also exhibit the tendency to recurrence either on the same site or on the nearby site.¹⁰ Additionally, traditional Chinese medicine like YIKEER is also suggested by the traditional healers of China, but it does not show uniformity in the healing process of the said cutaneous lesion.¹¹ Hence there is a need for an alternate therapeutic drug in the treatment of Verruca wart. One such therapeutic choice is a poly herbo-mineral topical medicine (PHMTM), a formulation prepared based on the Siddha system of medicine, an ancient traditional Indian system of medicine that is being practised in south India and South Asian countries.¹² Siddha system of medicine contains several therapeutic drugs for various

dermatological disorders ranging from corn and vitiligo to leprosy.² Siddha dermatological preparations exhibit an almost 100% of success rate in various skin diseases like psoriasis, eczema, scars etc.¹³ Hence considering the importance of Siddha drugs in the management of various skin related disorders, this study was done to evaluate the efficacy of a novel PHMTM against *Verruca vulgaris* (common wart) and *Verruca filiformis* lesions which are present in face, abdomen, and limbs.

Method

The study is a retrospective study that was carried out at the Siddha Heal Centre in the Kanyakumari district of Tamil Nadu, India. The period of study was from January 2021 to June 2021. The total number of study subjects was 20. Both male and female patients were included in the study. The sample size considered in this study was the total number of patients who attended the Siddha Heal Centre for the Siddha management of cutaneous warts. Ethical clearance (No: IHEC - II/ CHRI/ 0150/ 21) was obtained from the Institutional Human Ethics Committee. Further, informed consent was obtained from the study population. The inclusion criteria of the study were diagnosed patients of *Verruca vulgaris* and *Verruca filiformis*. A single lesion at a single site or multiple lesions at a single site were included in the study. Exclusion criteria were individuals with a history of alcohol intake, patients with known comorbidities like diabetes, pregnancy, and lactating mothers, known allergic patients to any component(s) of study medication, and patients with other dermatological disorders.

PHMTM Formulation

The PHMTM formulation was prepared by a group of authenticated Siddha pharmacists under the supervision of an authorised Siddha clinician based on the recommended Siddha pharmacopoeia, literature on the Siddha system of Medicine.¹³ Being a Siddha shastric preparation, it can be used directly for the benefit of humans as per the regulatory guidelines of the Drugs and Cosmetic Act, Government of India. The components of the PHMTM formulation primarily contain purified calcium carbonate - 60 mg, purified copper sulphate - 10 mg, purified curcumin powder - 10 mg mixed with 10 ml of *Calotropis procera* milky latex and another 10 ml of raw whole plant extracts from *Euphorbia hirta*, prepared with water as a base based on the Siddha medical literature. Further, Mathan thailam, a known evidence-based medicinal oil was used as a healing agent post removal of the wart.¹⁴

PHMTM Topical Application

Patients attending the outpatient department with *Verruca vulgaris* or *Verruca filiformis* were explained the treatment protocol. The patients were divided into two groups; Group 1: Patients (N = 12) with diagnosed *Verruca vulgaris* skin

lesions on the exposed surface of the body, and Group 2: Patients (N = 08) with diagnosed Verruca filiformis skin lesions on the exposed surface of the body (Table 1). In both groups, before PHMTM application, the lesion area i.e., the wart was cleaned with 10% povidone-iodine solution and the surrounding area of the wart was covered with medical/surgical tape in order to prevent the PHMTM application/interaction with the normal skin areas. Later, the PHMTM topical drug was applied on the lesion area as a topical application with a wooden spatula like a drug application stick. After each day of application, the wart along with the topical drug was covered with the normal medical gauze bandage. Depending on the site and severity of the viral lesion, the duration and days of application were decided (Figure 1). PHMTM was applied daily till automatic fall or till suitability for mild pluck and response (removal of the wart) to the PHMTM formulation was noted. After removal of the wart, a known Siddha wound healing agent was applied on the site till the scar tissues returned to normal skin condition.

Results

The number of patients who achieved complete clearance for Verruca vulgaris was 100% on the face, abdomen, and lower limb. However, in the upper limb, the complete clearance of Verruca vulgaris was only 83%. Further, patients

who exhibited complete clearance for Verruca filiformis were 100% in all the sites. The efficacy of PHMTM for Verruca filiformis is better when compared to the response for Verruca vulgaris (Table 2). PHMTM therapy responded between 3 and 6 days in the case of face and abdomen, 3-8 days in the case of upper limb, and 20-28 days in the case of lower limb (multiple warts) for Verruca vulgaris. However, it responded between 1 and 3 days in the case of face and upper limb, and 6-8 days in the case of lower limb (multiple warts) for Verruca filiformis (Table 3). During the course of PHMTM application, the adverse effects noted were crusting and later the wart fell automatically/ was easily plucked. Further, post-fall of both types of warts, the wounded sites responded well to the Mathan thailam (Copper sulfate-350 gm was dissolved in Datura. metel leaf juice of 3.500 L and coconut oil 1.400 L and prepared as per the recommended guidelines)¹⁴ during their healing process. Scars vary depending on the type, area, etc. Further, the majority of single wart scars disappeared in approximately 1 to 2 months.

In a few cases, it took more than 4 months to reach normal or near-normal state. No allergic reactions or pain occurred during the course of the treatment protocol in any of the patients. Further, all patients were observed for follow-up either directly or through e-medicine interaction and no recurrence was reported.

Table 1. Details of the Patients with Verruca Vulgaris and Verruca Filiformis

	Verruca Vulgaris	Verruca Filiformis
Number of patients	12	8
Gender - male	7	5
Gender - female	5	3
Mean age (years)	28 (6-50)	30 (8-52)
Site of wart lesion - patient count	Face - 2 Upper limb - 6 Abdomen - 2 Lower limb - 2	Face - 6 Upper limb - 1 Abdomen - 0 Lower limb - 1
Number of lesion/ sites	Single - 10 (face, upper limb and abdomen) Multiple - 2 (lower limb)	Single - 7 (face and upper limb) Multiple - 1 (lower limb)
Minimum duration of PHMTM topical application	1 day (one session/day)	1 day (one session/day)
Maximum duration of PHMTM topical application duration	28 days (one session/day)	8 days (one session/day)

Numerals indicate the number of cases (except in duration)

Table 2. PHMTM Therapeutic Response Rate over Verruca Vulgaris and Verruca Filiformis

	Verruca Vulgaris			Verruca Filiformis		
	Complete n (%)	Partial n (%)	Nil n (%)	Complete n (%)	Partial n (%)	Nil n (%)
PHMTM therapeutic response rate						
Face	2 (100)	0 (0)	0 (0)	6 (100)	0 (0)	0 (0)
Upper limb	5 (83)	1 (17)	0 (0)	1 (100)	0 (0)	0 (0)
Abdomen	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Lower limb	1 (50)	1 (50)	0 (0)	1 (100)	0 (0)	0 (0)
Total success rate	10 (83)	2 (17)	0 (0)	8 (100)	0 (0)	0 (0)
Complete response - 100% success rate, Partial response - 25-99% success rate, and Nil response - below 25% success rate						

Complete response - 100% success rate, Partial response - 25-99% success rate, and Nil response - below 25% success rate

Table 3. PHMTM Therapeutic Response Duration over Verruca Vulgaris and Verruca Filiformis

	Verruca Vulgaris (Days)	Verruca Filiformis (Days)
PHMTM therapeutic response duration		
Face	3-6	1-3
Upper limb	3-8	1-3
Abdomen	3-6	0
Lower limb	20-28 (multiple warts)	6-8 (multiple warts)

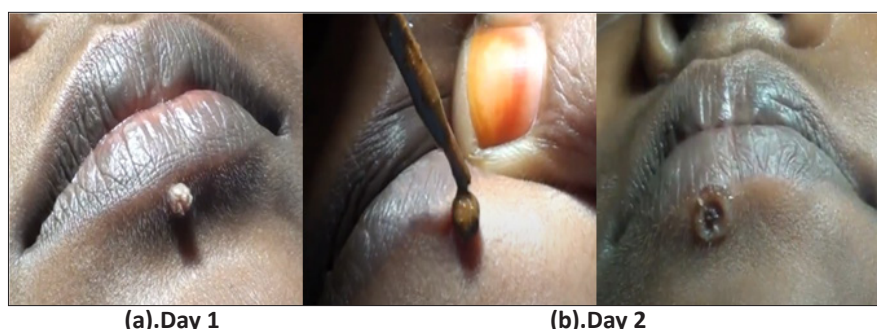
Single Wart of Verruca Vulgaris on Face (Medial to Upper Eyelid)



Multiple Warts of Verruca Vulgaris on Lower Limb above Ankle Joint



Single Wart of Verruca Vulgaris below the Lower Lip



Single wart (Verruca vulgaris) just above the eyelid at (a) Presentation, (b) After PHMTM tropical application, and (c) Complete clearance of treated warts at day 6 of PHMTM application.

Multiple viral warts (Verruca vulgaris) above ankle joint at (a) Presentation, (b) Good response at day 2, and (c) Complete clearance of treated warts at day 25 of PHMTM application.

Filliform viral wart (Verruca filiformis) below lower lip at (a) Presentation, (b) After PHMTM tropical application, and (c) Complete clearance (fall) of treated warts after 1 hour of PHMTM application.

Figure I. Few Photographs Illustrating the Outcome of PHMTM Application

Discussion

Viral warts are skin lesions that are generally caused by HPV. Their medical management is done by topical application of drugs or by minimal interventional medical procedures.¹⁵ Among the available drugs, one of the common over-the-counter warts clearance topical medications is salicylic acid and its success rate is quite promising. However, salicylic acid has to be used for a longer duration in order to get the best results in removing the wart and further there is a high possibility of recurrence at the same site or at a nearby site of the original wart. Further, salicylic acid application is prone to cause allergic dermatitis.¹⁶ If the patients opted for cryotherapy, adding to the beneficial effects, they may have to undergo side effects like scarring and nerve damage in the lesion site. Further, it will take a long time for recovery.¹⁷ The next suggestive treatment method is interventional surgery, again in that, there are similar types of pros and cons. Even though several procedures are currently available for wart removal, none of them can give a 100% positive response to all patients. Hence there is a need for a customised and effective treatment protocol for all or at least majority of the population.

The current study results were based on the rate and duration of response of PHMTM. The patients treated with PHMTM showed a 100% success rate for *Verruca filiformis* and at least 50% for *Verruca vulgaris*. The current study was found to be cost-effective, pain-free and highly efficient when compared to the currently available therapies in the management of viral warts. The wart clearance effect could be due to the presence of the active compounds that are present in PHMTM formulation. Among the components of PHMTM, calcium carbonate is found to have water-absorbing properties and it can dry up the wart upon topical application of PHMTM. Further, copper can act as an antiviral agent and copper sulphate is also documented for its wound-healing effects.¹⁸ Next, if we move on to herbal components, the probable wart clearing effect could be due to the active herbal ingredients that are present in the preparation of PHMTM formulation. Among them, the first is curcumin in *Curcumin longa* (turmeric), a known antiviral compound against HPV and other viruses. Additionally, scientists had documented that curcumin showed a strong positive effect in clearing tough warts.¹⁹ Secondly, *Calotropis procera* milky latex has a strong caustic effect.²⁰ Finally, plenty of evidence-based studies strongly support that the juice of *Euphorbia hirta* has significant wound healing, antiviral, and wart removal effects.²¹⁻²³ Hence each and every ingredient of the PHMTM formulation is found to have wart removal properties either directly or indirectly. Thus, from the current study, it is observed that PHMTM is found to be a painless wart removal method with a high success rate. Finally, after clearance of the wart, a well-documented

Siddha wound healing agent, Mathan thailam, was applied over the scar tissue which promotes the cutaneous site to revert to its normal physiology. However, the limitations of this study are that the study population was very minimal and further mechanism of action of PHMTM formulation is yet to be studied.

Conclusion

PHMTM formulation is found to be highly effective in the clearance of cutaneous viral warts. However, further studies have to be done in a larger population as well as in other types of skin disorders. Further, molecular level studies have to be done for PHMTM in order to convince the scientific community of its global acceptance.

Ethical Approval

All procedures performed in the study were in accordance with the ethical standards of the IHEC.

Conflicts of Interest: None

Source of Funding: None

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