

COMPARISON OF EFFICACY OF 40% TOPOICAL SALICYLIC ACID AND CRYOTHERAPY IN PATIENTS WITH PALMOPLANTAR WARTS.

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Abstract;

Background; Palmoplantar warts (verrucae) are extremely common. Although many will spontaneously disappear without treatment, treatment may be sought for a variety of reasons such as discomfort. There are a number of different treatments for cutaneous warts, with salicylic acid and cryotherapy using liquid nitrogen being two of the most common forms of treatment. **Objective:** To evaluate the efficacy of 40% topical salicylic acid versus cryotherapy in the treatment of palmoplantar warts. **Study Setting;** Department of General Medicine, Nishtar Hospital, Multan, which is a tertiary care Hospital. **Study Design;** Randomized Controlled Trial (RCT). **Results;** Of these 102 study cases, 57 (55.9%) were males and 45 (44.1%) were females. Mean age of our study cases was 25.22 ± 6.03 years Mean weight of our study cases was 61.42 ± 10.39 kilograms. Mean weight in group A was 61.25 ± 10.44 kilograms while in Group B was 61.59 ± 10.46 kilograms ($p= 0.872$). Size of lesion was equally distributed as in 51 (50%) of our study cases it was less than 1 centimeters while in remaining 50 % was in the range of 1 to 1.5 centimeters. In 78 (76.5%) of our study cases, number of lesions was 1- 3 and mean no. of lesions was 2.48 ± 1.35 . Mean duration of disease was 4.72 ± 2.90 weeks (with minimum duration was 1 week while maximum duration was 10 weeks). In group A treated with salicylic acid, efficacy was noted in 34 (66.7%) of our study cases, while in group B treated with cryotherapy, efficacy was seen in 29 (56.9%) of our study cases.

Conclusion; Efficacy of 40 % topical salicylic acid is more than cryotherapy. It can be safely used for the treatment of plantar warts, as no serious side effects were observed in our study. Being cost effective, it provides cheaper treatment option compared with cryotherapy which is quite expensive. Early treatment can help patients to maintain routine daily lives and physical activities such as sports without any pain and side effects.

Keywords; Salicylic acid, Cryotherapy, warts.

Introduction;

Warts are firm papules with a rough surface, caused by human papillomavirus (HPV) infection. They range in size from less than 1mm to over 1 cm and by confluence can form large masses¹. Different clinical forms of warts include common warts, palmoplantar warts, flat warts, filiform warts and anogenital warts². HPV is a small DNA virus that infects squamous epithelium and causes cell proliferation¹. It has 29 genera formed by 189 genotypes of which 120 types are isolated from humans³. Palmoplantar warts and common warts are caused by types 1,2,4,27,29^{2,4}.

Different methods of treatment for warts include occlusion, topical salicylic acid, cryotherapy, electrocautery, laser, topical chemotherapeutic agents, topical retinoic acid and oral cimetidine². But no single therapy has been proven effective at achieving complete remission in every patient.

Cryotherapy is one of the most commonly used methods for treating warts. It involves freezing a wart with the use of a very cold substance, usually liquid nitrogen. The studies done previously on cryotherapy showed variable cure rates ranging from 39%⁵ to 76.5%⁶. One study showed 41.7%⁷ cure rate with cryotherapy.

Topical salicylic acid is another very common treatment for warts. Salicylic acid has keratolytic effect. It reduces the thickness of the warts¹ by causing mechanical removal of epidermal cells infected with virus. In one study the results of 6 trials were combined and it showed that topical salicylic acid had 75% cure rate⁸. Another study showed 69%⁹ cure rate.

The aim of this study was to compare two very common treatment modalities; the topical salicylic acid and cryotherapy in the treatment of warts. The rationale is:

- A study between topical salicylic acid and cryotherapy has never been done in this part of the world where the disease is quite common.

- Cryotherapy is considered a standard treatment for most warts². Many studies show that it is superior in efficacy when compared to other treatment option for warts. But a study combining the results of 6 trials⁸ showed that topical salicylic acid therapy is safe and effective and there is no clear evidence that other therapies are better than this.
- Salicylic acid, for topical use, is available over the counter and is very cheap. But cryotherapy is not available in all hospitals, in our country and is a lot more costly¹⁰. On an average 3 to 4 visits to a doctor's office are required for cryotherapy¹⁰. But topical salicylic acid can be applied at home. Also, cryotherapy is more painful than topical salicylic acid application^{10,11}.

Material and methods:

A total of 102 patients of palmoplantar warts were taken from OPD of department of Medicine, Nishtar Hospital Multan, Pakistan. Patients of both gender, aged between 15 to 40 years, having palmoplantar warts (equal or less than 5 warts with size less than 1.5 cm) who had not taken any prior treatment for warts were taken in our study. Periungual warts, pregnant and lactating women and patients with duration of disease more than 3 months were excluded from our study. Patients were randomly allocated into two groups by lottery method. Group A having 51 patients was given 40 % topical salicylic acid, in the ointment form, daily for maximum 6 weeks. Group B also having 51 patients was given cryotherapy at 2 weekly intervals for maximum 3 sessions. Patients were followed at 2 weeks, 4 weeks and 6 weeks. Those who cleared their warts on follow up visits would not be given further treatment. At the end of 6 weeks both the groups were evaluated for treatment efficacy. All data were entered using software SPSS version 15.

Results;

Our study included a total of 102 cases of palmoplantar warts who met inclusion criteria of our study. Of these 102 study cases, 57 (55.9%) were males and 45 (44.1%) were females. Mean age of our study cases was 25.22 ± 6.03 years (with minimum age was 16 years while maximum age was 37 years). Mean age of our study cases in group A was 25.80 ± 6.69 years while in group B was 24.63 ± 5.30 years ($p = 0.328$). Our study results have indicated that majority of our study cases, 85 (83.3%) were in the age group of 15 – 30 years. Mean weight of our study cases was 61.42 ± 10.39 kilograms (with minimum weight was 41 kilograms and maximum was 82 kilograms). Mean weight in group A was 61.25 ± 10.44 kilograms while in Group B was 61.59 ± 10.46 kilograms ($p= 0.872$). Majority of our study cases i.e. 53 (52%) were having weight over 60 kilograms. Size of lesion was equally distributed as in 51 (50%) of our study cases it was less than 1 centimeters while in remaining 50 % was in the range of 1 to 1.5 centimeters. In 78 (76.5%) of our study cases, number of lesions was 1- 3 (with minimum no. of lesions was 1 while maximum was 5). Mean no. of lesions was 2.48 ± 1.35 . Mean no. of lesions in group A was 2.49 ± 1.40 while in group B 2.47 ± 1.31 ($p=0.942$). Mean duration of disease was 4.72 ± 2.90 weeks (with minimum duration was 1 week while maximum duration was 10 weeks). Our study results have indicated that majority of our study cases i.e. 74 (72.5%) were having disease for less than or equal to 6 weeks. Mean duration of disease in group A 4.61 ± 2.94 weeks was while in group B was 4.82 ± 2.89 weeks ($p=0.710$). In group A efficacy was noted in 34 (66.7%) of our study cases, while in group B efficacy was seen in 29 (56.9%) of our study cases ($p=0.415$).

Table No. 1
Distribution of study cases by Efficacy.
(n = 102)

Efficacy (n=102)	Group A		Group B	
	Frequency	Percentage	Frequency	Percentage
Yes n=63 (61.8%)	34	66.7	29	56.9
No n=39 (38.2%)	17	33.3	22	43.1
Total	51	100	51	100

* p = 0.435, which is statistically insignificant.

Discussion;

Palmoplantar warts are common, being experienced by many people at some time during their lives. Studies that have examined the prevalence of warts or verrucae have reported a varying ranges of prevalence rates— ranging from 0.84% in the USA, 3.3% to 4.7% in the United Kingdom and up to 24% in 16–18 year olds in Australian population¹²⁻¹⁶. Although majority of palmoplantar warts spontaneously disappear without seeking any treatment, many patients seek treatment for a variety of reasons, including discomfort or because they are prevented from doing sports and other activities of daily living¹⁷.

Our study included a 57 (55.9%) males and 45 (44.1%) were females. Cockayne et al¹⁷ reported 59 % female patients in their study and 41 % male patients, these findings are different from our study results. Bruggink et al⁵ reported 56% female patients, while in our study male gender predominated over females.

Mean age of our study cases was 25.22 ± 6.03 years (with minimum age was 16 years while maximum age was 37 years). Mean age of our study cases in patients treated with salicylic acid was 25.80 ± 6.69 years while patients treated with cryotherapy was 24.63 ± 5.30 years. Cockayne et al¹⁷ reported 24.3 years and 23.2 years, these findings are similar to that of our study results.

Mean weight of our study cases was 61.42 ± 10.39 kilograms (with minimum weight was 41 kilograms and maximum was 82 kilograms). Mean weight in group A was 61.25 ± 10.44 kilograms while in Group B was 61.59 ± 10.46 kilograms (p= 0.872). Majority of our study cases i.e. 53 (52%) were having weight over 60 kilograms.

Size of lesion was equally distributed as in 51 (50%) of our study cases it was less than 1 centimeters while in remaining 50 % was in the range of 1 to 1.5 centimeters.

In 78 (76.5%) of our study cases, number of lesions was 1- 3 (with minimum no. of lesions was 1 while maximum was 5). Mean no. of lesions was 2.48 ± 1.35 . Mean no. of lesions in group A was 2.49 ± 1.40 while in group B 2.47 ± 1.31 . Cockayne et al¹⁷ reported mean value to be 4.0 ± 6.6 in patients treated with salicylic acid while 3.4 ± 3.6 in those treated with cryotherapy. This finding is bit high than our study results, the reason for this difference can be explained in the fact that we included only those with maximum no. of 5 lesions while Cockayne et al included as many as 55 lesions (maximum value). Bruggink et al⁵ reported median no. of lesions as 2 lesions in both groups which is close to our findings.

Mean duration of disease was 4.72 ± 2.90 weeks (with minimum duration was 1 week while maximum duration was 10 weeks). Our study results have indicated that majority of our study cases i.e. 74 (72.5%) were having disease for less than or equal to 6 weeks. Mean duration of disease in group A 4.61 ± 2.94 weeks was while in group B was 4.82 ± 2.89 weeks (p=0.710). Cockayne et al¹⁷ reported very high duration of disease, this

difference is also due to our inclusion criteria as we only included with 10 weeks maximum disease duration cases.

In group A efficacy was noted in 34 (66.7%) of our study cases, while in group B efficacy was seen in 29 (56.9%) of our study cases ($p=0.415$). Similar results ($p=0.64$) have been reported by Cockayne et al¹⁷. Bruggink et al⁵ reported 39 % cure rate with cryotherapy. Dhar et al⁶ reported 76.5 % cure rate with Cryotherapy. Our findings are in middle of these range values as reported by Bruggink et al⁵ and Dhar et al⁶.

Gibbs et al⁸ reported 75% cure rate with Salicylic acid, while Bart et al⁹ reported 69 % cure rate with that of Salicylic acid. These findings of Gibbs et al and Bart et al are close to our study results.

Conclusion;

Efficacy of 40 % topical salicylic acid is more than cryotherapy. It can be safely used for the treatment of plantar warts, as no serious side effects were observed in our study. Being cost effective, it provides cheaper treatment option compared with cryotherapy which is quite expensive. Early treatment can help patients to maintain routine daily lives and physical activities such as sports without any pain and side effects.

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