Efficacy of 80% phenol solution in comparison with cryotherapy in the treatment of common warts of hands

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ABSTRACT

Introduction: The common wart is a common infectious disease caused by human papilloma virus. A variety of therapeutic modalities are available. Cryotherapy (liquid nitrogen) is one of the most common treatment forms. It freezes the tissue and destroys warts. Phenol is a caustic agent. Our purpose was to evaluate and compare the efficacy of cryotherapy and 80 percent phenol solution on common warts of hands.

Methods: This single-blinded clinical trial study was performed on 60 patients with common warts referred to the dermatology clinic of Ghaem Hospital Mashhad, Iran, in 2002. Patients were randomly divided into two groups; 30 patients were treated with cryotherapy and 30 patients were treated with 80 percent phenol, on a once-weekly basis until complete clearance of the lesions or a maximum duration of six weeks.

Results: Complete clearance of warts after six weeks was observed in 70 percent of patients who were treated with cryotherapy, and 82.6 percent of patients in the 80 percent phenol group; there was no statistically significant difference between the two methods (p-value is 0.014).

Conclusion: Our data indicates that 80 percent phenol and cryotherapy are effective and simple treatments for common warts of hands, and patients do not experience any pain during the treatment.

Keywords: cryotherapy, human papilloma virus, liquid nitrogen, phenol, warts

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INTRODUCTION

Viral warts caused by human papilloma virus are one of the most common skin diseases, most frequently found on the hands and feet. The treatment aims to cure the patients' physical and psychological discomfort, and to prevent the spread of the infection.[1,2] There are several therapies for common warts; none of these therapies is uniformly effective in the elimination of the lesions.[3]

Cryotherapy, usually using liquid nitrogen, is one of the most effective treatments. It freezes tissues and destroys the warts. Chemical cauterisation materials, such as mono-, di- and trichloroacetic acid, and silver nitrate, have been used for treatment.[1,4] Phenol (carbolic acid) is also a caustic agent that produces a white eschar on the surface of the skin. It can penetrate deep into the tissue.[5] It has not been used for treatment of the common wart to date. This study was conducted to evaluate the clinical efficacy of 80% phenol solution in the treatment of common warts.

METHODS

This single-blinded clinical trial study was performed on 60 patients with common warts on the hands, and who were referred to the dermatology clinic in Ghaem Hospital, Mashhad, Iran, over a period of eight months from January 2002 to September 2002. Patients were randomly divided into two groups. 30 patients were treated with cryotherapy (group one) and 30 patients were treated with 80% phenol solution (group two). On a once-weekly basis, after three weeks, the patients were evaluated on the healing, and treatment was continued for a maximum of six weeks if the lesions were still present. Exclusion criteria was pregnancy, breast feeding, patients younger than seven years of age, immunodeficient patients, patients with periungual warts, patients who were sensitive to the cold, and warts with extensive area distribution.

In group one, cryotherapy was done with a cotton swab dipped into liquid nitrogen and then applied on the warts for 10–20 seconds every week. In group two, 80% phenol solution was applied on the dry lesions with a cotton swab every week. Both methods were done by a dermatologist, and treatment response was evaluated by another dermatologist. Cure was defined as total elimination

Table I. Distribution of age, gender and number of lesions.

Treatment	Cryotherapy	Phenol 80%	p-value
No. of patients	30	23	
Gender, no. (%)			
Female	17 (56.6)	8 (34.8)	0.58
Male	13 (43.4)	15 (65.2)	
Mean ± SD age (years)	15.63 ± 3.4	16.42 ± 6.2	0.47
Mean ± SD no. of warts	5.3 ± 4.7	5.5 ± 4.4	0.37

of the wart. Any possible side effects of treatment, such as erythema, itching, burning sensation, erosion, scar, hypo- or hyperpigmentation, infection and oedema, were recorded. Data was collected and analysed by chi-square and Fisher exact test using the Statistical Package for Social Sciences version 9.0 (SPSS Inc, Chicago, IL, USA).

RESULTS

60 subjects with warts on the hands were entered into the study, but 53 patients completed the trial; 30 patients in group one and 23 patients in group two (seven cases were omitted from this group: four cases did not complete the follow-up period and three could not tolerate the burning sensation). Distribution of age, gender and number of lesions are shown in Table I, and there was no significant difference between the two groups ($p > 0.05$).

After three weeks, cryotherapy cured 20% (6/30) of the patients, and 80% phenol cured 13% (3/23) of the patients. There was no statistically significant difference between the two groups after three weeks ($p = 0.094$). The treatment was continued for six weeks in the remaining non-healed patients. By the end of six weeks, complete regression of warts was seen in 70% (20/30) of patients in group one and 82.6% (19/23) in group two. However, a difference was found between the patients in response to treatment. The percentage of cure rate was higher in the 80% phenol group but this difference was not statistically significant ($p = 0.14$). Complications of treatment in group one was seen in 30% (9/30) and included pain, hyperpigmentation and hypopigmentation. Treatment complications in group two occurred in 34.7% (8/23), and included burning sensation, erythema and hypopigmentation. There was no statistically significant difference between the two groups ($p > 0.05$).

DISCUSSION

Vast ranges of medication have been used for the treatment of common warts, with different efficacy. These medications included keratolytic agents, such a salicylic acid with 67%, oral cimetidine with 32%–68%, formic acid puncture with 92%, glutaraldehyde with 72%, silver nitrate pencil with 43%, imiquimod with 70%–88%, and oral zinc sulphate with 86.9% efficacy.[4,6-14] Other forms of treatment, such as belomycion, 5FU, photodynamic therapy and laser, have also been used.[15] Cryotherapy has similar efficacy as salicylic acid, and this method is inexpensive and readily available.[1,6,7,16] The simplicity and speed of cryotherapy are advantageous, but it can easily be performed incorrectly and ineffectively. The correct technique and freeze times are required to produce results similar to those described in published studies.[2]

Phenol is a protoplasmic poison. A dilute solution (0.5%–2%) decreases itch by anaesthetising the cutaneous nerve endings. It has been used for treatment of ingrowing nail and molluscum contagiosum with efficacy. 0.5% phenol solution has also has been used for treatment of reactive perforating collagenosis.[17-19] It has not been used for warts to date. Phenol is readily available, simple to use, but it should not be diluted as this increases its absorption and potency, and it should not be used in pregnant women and in extensive areas.[20,21] Complications of phenol include burning sensation, pain, erythema, depigmentation, scar and infection.[20,21] If a large surface of skin is treated with phenol, the absorbed phenol may produce glomerulonephritis and arrhythmias.[5] Ochronosis may occur from prolonged absorption.

Clinical efficacy of cryotherapy in our study was relatively similar to other studies.[1,2,16,22] This study also showed that phenol was an effective form of treatment for warts. However, both methods must be used by a physician, but phenol needs more attention due to its toxicity and it should not be use in extensive areas. It can be used when cryotherapy is not available.

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