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Research Article

**THE EFFECTIVENESS OF TOPICAL ZINC OXIDE OINTMENT
IN THE TREATMENT OF CUTANEOUS PATHOLOGICAL
WARTS**Dr. Imtiaz Ahmad¹, Dr. Zaffar Iqbal², Dr. Niaz Ahmad³¹Nishtar Medical University, Multan^{2,3}Jinggangshan University, China**Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:**

Objective: The aim of our study was to find out the effectiveness of Topical Zinc Oxide 20 % Ointment in the treatment of cutaneous warts on hands and feet.

Study Design: A prospective descriptive study.

Place and Duration: This study was conducted at the Outpatient Department (OPDs) of Dermatology, Nishtar Hospital, Multan for the duration of three months starting from June, 2020 to September, 2020.

Methodology: In our study we enrolled 255 and instructed patients to apply topical 20% Zinc Oxide Ointment twice a day. The enrolled patients follow the instruction to applying topical 20% Zinc Oxide Ointment for 3 months or till complete the treatment. We calculate the percentage decrease from baseline as: Total number of warts decrease from baseline at 3 Months multiply by 100, divided by total number of warts at baseline. SPSS v. 20 was used for the analysis of data.

Results: In our present study we enrolled 255 patients in which according to gender 82 patients (32.2%) out of 255 were male and 173 patients (67.8%) out of 255 were female. 17.55±4.48 years was mean age of patients. At the end of 3 months of treatment we observed complete cure in 127 patients (49.8%), moderate response was saw in 41 patients (16.1%), no response was saw in 35 patients (13.7%), mild response was saw in 10 patients (3.9%), significant response was saw in 32 patients (12.6%) and the excellent response was saw in 10 patients (3.9%).

Conclusion: At the end of study, we conclude that safe and effective treatment for warts of feet and hands may be Topical Zinc Oxide (20%) Ointment.

Keywords: Ointment, Outcome, Cutaneous Warts, Zinc Oxide

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INTRODUCTION:

Viral warts (verrucae) are benign proliferations of skin and mucous membranes that result from different types of human papilloma viruses (HPVs) [1]. At least 189 human papilloma viruses' genotypes have been described [2]. Warts may occur at any age but they are more common in children and adolescents [3]. Some studies report that up to 10% of young population has warts [4]. They may progress spontaneously and increase in number and size according to the immune status of the patient. Warts spread via person to person contact or indirectly by fomites [5]. Incubation period is variable, ranging from few weeks to more than one year. Warts may be painful depending on their location and psychological effects or negative social perception [6]. Treatment of warts is aimed at relieving the patient physical and psychological discomfort and preventing the spread of infection by autoinoculation [7].

Various modalities are used to treat warts, such as electrocoagulation, liquid nitrogen, hot nitric acid, flexible collodion, intralesional bleomycin, fluorouracil, intralesional interferon, photodynamic therapy and many others but none are uniformly effective and treatment often includes destructive measures, which carry a risk of scarring and are painful [8,9]. Zinc is an important trace element which is present in all organs, tissues and fluids of the body. The skin and its appendages are rich in zinc. Historically, for more than 3000 years, zinc salts, such as zinc oxide or calamine, are applied topically to facilitate wound healing [10]. Zinc is used in the treatment of many dermatological disorders in which it acts either as antiviral, immunomodulator, antioxidant or cytotoxic. Zinc acts as immunomodulating agent in the treatment of warts and modulates DNA-RNA related enzymes [11].

Topical zinc may initiate a cascade of immunologic events. It acts by inducing inflammation and activating Tlymphocytes to release interferons thereby leading to action of macrophages against wart-derived keratinocytes [12]. Topical zinc oxide application is considered cheap, easy to apply and is painless and safe. Due to the differences in skin types and papilloma virus types, there might be differences in response to topical zinc oxide in different populations and in Pakistan, no concrete data is available in this regard. This study was planned to find out the outcome of zinc oxide (20%) ointment in the treatment of viral warts of hands and feet.

METHODOLOGY:

This prospective study was conducted at the Outpatient Department (OPDs) of Dermatology, Nishtar Hospital, Multan for the duration of three

months starting from June, 2020 to September, 2020. Patients of either sex, 12-29 years of age, having common warts on the dorsal aspect of hands and feet, were included in the study. Patients who had taken treatment for warts during the last 3 months, immunocompromised patients, pregnancy, lactation, diabetes mellitus, critically ill patients, having warts for more than 1-year duration and known hypersensitivity to zinc oxide in topical form, were excluded from the study. Total of 255 patients, fulfilling the inclusion criteria, were enrolled. Informed consent was taken, and demographic data were recorded on a predesigned proforma. The number of lesions ranged from 1-15. All patients were instructed to apply 20% zinc oxide ointment twice daily on the warts, wait for the medication to dry and then rub the wart with an emery stone before the next application.

Patients were followed up fortnightly for a period of 3 months or till complete cure, whichever came first. Size and number of warts were recorded at first visit and fortnightly and photographs were taken at the start and at each visit to see the progress. Outcome was assessed in terms of no response to complete cure on the basis of percentage decrease in number of warts from baseline and was graded as follows: Grade 0= no response Grade 1= mild response (1-25% reduction in wart numbers) Grade 2= moderate response (26-50% reduction in wart numbers) Grade 3= significant response (51-75% reduction in wart numbers) Grade 4= excellent response (76-99% reduction in wart numbers) Grade 5= complete cure (100% reduction in wart numbers). Percentage decrease from baseline was calculated as: Total decrease in number of warts from baseline at 3 Months x 100/Total number of warts at baseline. Data was entered into SPSS version 21. Numerical variable i.e., age was presented by Mean±S.D and range. Categorical variables i.e., gender, outcome (no, mild, moderate, significant, excellent response and complete cure) was presented as frequency and percentage.

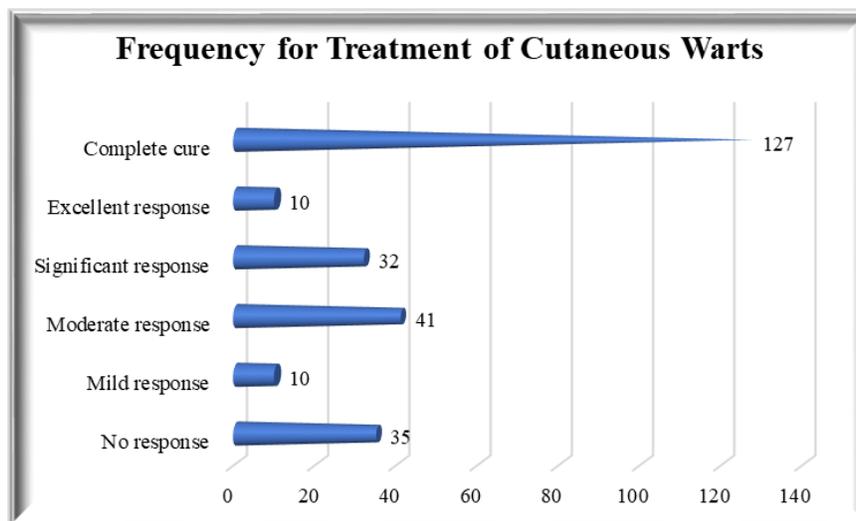
RESULTS:

Out of 255 patients, at the end of 3 months of treatment we observed complete cure in 127 patients (49.8%), moderate response was saw in 41 patients (16.1%), no response was saw in 35 patients (13.7%), mild response was saw in 10 patients (3.9%), significant response was saw in 32 patients (12.6%) and the excellent response was saw in 10 patients (3.9%) as summarized in Table 01. Patients with mild to moderate response were advised to prolong treatment till cure and patients with no response were switched to another treatment modality. None of the patients

reported serious side effects necessitating stoppage of the treatment.

Table No 01: Frequency for Outcome Of 20% Topical Zinc Oxide Ointment in The Treatment of Cutaneous Warts of Hands and Feet

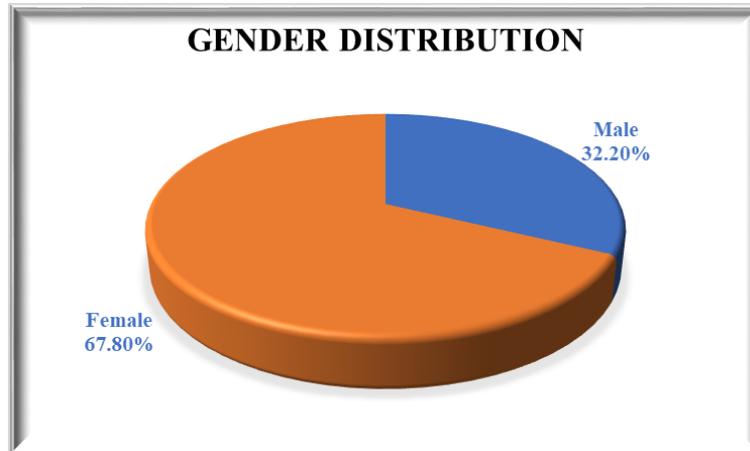
Response to treatment	Qty	%age
No response	35	13.7%
Mild response	10	3.9%
Moderate response	41	16.1%
Significant response	32	12.6%
Excellent response	10	3.9%
Complete cure	127	49.8%
Total	255	100%



In our present study we enrolled 255 patients in which according to gender 82 patients (32.2%) out of 255 were male and 173 patients (67.8%) out of 255 were female. 17.55 ± 4.48 years is mean age of patients.

Table No 02: Gender Distribution

Gender	Qty	%age
Male	82	32.2%
Female	173	67.8%
Total	255	100%



DISCUSSION:

This study aimed at evaluating the effectiveness of topical zinc oxide in local population where the response may have varied due to differences in skin types and papilloma virus types. Viral warts (verrucae) are benign proliferations of skin and mucosa that result from different types of human papilloma viruses (HPV). Warts may occur at any age, but they are more common in children and adolescents. Various treatment modalities are available for warts, but none is uniformly effective. Ultimate treatment often includes destructive measures, which are usually painful and carry risk of scarring. Male to female ratio was 1:2.1. Almost similar findings were seen in the study conducted by Rezai MS *et al* in 2019 [13]. The mean age of patients in this study was 17.55 ± 4.48 years which closely correlates with of Antaya and group who presented that warts are most common between 14-20 years of age [14].

In this study, 49.8% patients had complete cure at the end of 3 months of treatment which is well within the figures quoted in previous reports. Mun and coworker documented 50% cure rate in patients with cutaneous warts after 2 months of treatment with oral zinc sulphate. Similar results were achieved later by Hassan and colleagues, where 60.97% patients achieved complete cure at the end of 6 weeks of treatment with oral zinc sulphate [15]. In another study, effectiveness of topical zinc oxide was compared with salicylic acid-lactic acid combination in the treatment of warts on 44 patients. Out of 22 patients in the zinc oxide group, six patients (27.27%) dropped out. Out of sixteen patients who completed the study, eight (50%) achieved complete cure (grade 5), one (6.25%) improved up to 75% (grade 3), four (25%) improved up to 50% (grade 2) while three (18.75%) showed no improvement (grade 0). Results of current study demonstrate the efficacy of topical zinc oxide (20%) ointment in local population.

CONCLUSION:

At the end of study, we concluded that safe and effective treatment for warts of feet and hands may be Topical Zinc Oxide (20%) Ointment.

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