

Comparison of Topical Adapalene and Electrocautery in Treatment of Plane Warts

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ABSTRACT

Background: Warts are lesions that grow on the human skin due to infection named human papilloma-virus (HPV) type 1, 2, and 4. More than 100 types of HPV virus have been identified now.

Aim: To compare the efficacy of adapalene and electrocautery therapies in managing plane warts.

Study design: Randomized Control Trial.

Methodology: A total of 52 patients via non probability consecutive sampling technique with plane warts were enrolled and randomly divided into 2 equal groups. The patients of Group A were treated with 0.5% Adapalene gel (applied twice daily over the lesions for maximum 3 months or until resolution of warts) and patients in group B were treated with electro-cautery procedure fortnightly for maximum 3 months or until resolution of warts. Patients were assessed after every 2 weeks for initial 3 months and then these patients were followed monthly for another 3 months and final outcome was seen at 6 months. Data was evaluated by using SPSS version 23. Student-t test was applied with p-value than 0.05 taken as significant.

Results: The mean duration of wart resolution was observed as 45.92 ± 19.22 days in the adapalene group, while the electro-cautery procedure took 45 ± 17.81 days for wart clearance. There were no statistically significant differences in the complications between the two groups ($p=0.60$).

Practical Implication: Although successful outcomes have been achieved in many studies by using Adapalene and electrocautery separately for treating warts but none of the published research compares these two treatment modalities (Adapalene vs electrocautery) for treatment of plane warts as per our knowledge. Therefore to fill this gap, this study was designed to compare the efficacy of adapalene and electrocautery therapies.

Conclusion: It was concluded that Both Adapalene and electrocautery are effective in treatment of plane warts and there are no statistically significant differences in the complications/side effects of these two treatment modalities.

Keywords: Adapalene Gel 0.1%, Electrocautery, Plane Warts, Clinical Outcomes and Effectiveness.

INTRODUCTION

Warts are lesions that grow on the human skin due to infection named human papillomavirus (HPV) type 1, 2, and 4. More than 100 types of HPV virus have been identified now¹. There are various types of warts including common, plane, filiform, plantar, genital and periungual warts. Plane warts are flat topped slightly raised skin lesions which are smooth, commonly skin colored or grayish yellow but can be pigmented². Plane warts are round or polygonal, 1-5mm in size. These are caused by HPV 3 & 10 & mostly affect dorsum of hands and face³. Contiguous warts can coalesce to form linear arrangement in scratch marks⁴.

Treatment of warts is challenging for dermatologists. For the past couple of years, many procedures have been introduced in the market to treat different type of warts including cyto-destructive methods, antimetabolic therapy, antiviral therapy, chemotherapeutic compounds, adapalene gel and immunomodulators.⁵ However, not all treatments provide positive outcomes in the end. The recurrence rate for more therapies is still high because HPV virus can nourish and spread in clinically unaffected tissue surrounding the warts⁵. The selection of treatment is highly dependent on the patient's age, physician experience, duration, and location of warts⁶. Cyto-destructive methods are the most common procedure used for warts. The purpose of this method is to destroy the affected tissue by electrocautery method, cryosurgery, topical salicylic acid, lactic acid or podophyllotoxin. In the electrocautery procedure, an electric electrode is inserted into the skin for tissue destruction⁷. Studies show positive outcomes of single session electrocautery procedure for treating large warts on the torso⁸. Along with this, another method called adapalene, synthetic naphthoic acid is widely used for the treatment of mild to moderate acne^{9,10}. This synthetic acid is available as 0.1% aqueous gel with its ability to alter keratinization¹¹. Although successful outcomes have been achieved in many studies by using Adapalene and electrocautery separately for treating warts but none of the published research

compares these two treatment modalities (Adapalene vs electrocautery) for treatment of plane warts as per our knowledge.

Therefore to fill this gap, this study was designed to compare the efficacy of adapalene and electrocautery therapies. Furthermore, this study was aimed to compare the safety in terms of complications in both treatments.

METHODOLOGY

This randomized controlled trial was conducted in outpatient dermatology department Sheikh Zayed Hospital, Rahim Yar Khan for 06 months duration following the ethical approval by hospital. Plane warts were diagnosed on basis of clinical presentation. After obtaining written informed consent from the patients and explaining procedure and objectives of the study to them, a total of 52 patients of plane warts (fulfilling the inclusion and exclusion criteria) were enrolled in this study via non probability consecutive sampling technique. All patients having plan warts were randomly divided into 2 groups (Group A and B) via flipping a coin. Patients of group A were treated with topical Adapalene 0.5 % gel. The gel was applied twice a day until clearance of warts or for maximum 3 months. Patients of group B were treated with an electro-cautery procedure fortnightly until clearance of warts or for maximum 3 months. This procedure was done 30 minutes after application of topical lignocaine 2 % gel on the affected area. Patients were assessed after every 2 weeks for initial 3 months and then these patients were followed monthly for another 3 months and final outcome was seen at 6 months. Patients of either gender with age (10-60yrs) having plane warts anywhere on body were included without any other medical issue. Patients who were immune-compromised, allergic to Adapalene or already on treatment within last 4 weeks for plane warts were excluded. Cases that show the tendency for hypertrophic scar or keloids or pregnant females were also excluded.

Statistical analysis: Data will be entered and analyzed in SPSS version 23.0. For continuous variables mean and standard deviation was calculated. Categorical variables were presented as percentage and frequency. A student t-test was employed to

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compare the outcomes in both groups. A p-value less than 0.05 was considered significant.

RESULTS

Clinical presentation and comparison between the two groups were presented in table-1. There were no statistically significant differences between the groups in terms of age and sex. However, the electrocautery group had significantly fewer warts than the adapalene group (p=0.01). In terms of the location of plane warts, there were no statistically significant differences between the groups (p=0.7). The average duration of warts was statistically significant between the groups (p=0.01), but the average duration of wart resolution was almost identical (p=0.84) was shown in table-1.

Table-1: Clinical presentation and comparison between both groups

Variables	Group-A	Group-B	t-test	p-value
Age in years	28.57± 9.0	27.42± 9.25	-1.06	0.29
Gender				
Male	17 (65.3%)	16 (61.5%)	-0.18	0.86
Female	9 (34.6%)	10 (38.4%)		
Total warts	363	284	2.38	0.02*
Average duration of warts (months)	6.25 ± 7.63	5.13±4.39	2.90	0.01*
Average duration to clear warts	45.92±19.22	45.0±17.81	0.21	0.84
Location of plane warts				
Face	128 (49.7%)	150 (52.7%)	0.67	0.51
Neck	32 (11.8%)	24 (8.4%)	1.16	0.25
Knee	4 (1.5%)	3 (1.1%)	0.18	0.86
Wrist	13 (4.8%)	15 (5.3%)	0.28	0.78
Hands	38 (14.7%)	25 (8.8%)	2.16	0.03*

*Statistically Significant.

Table-2: Comparison of complications rate between both groups

Complications	Group A	Group B	P-value
Pain	0	3 (11.5%)	0.08
Scarring	0	2 (7.6%)	0.21
Post-inflammatory dis-pigmentation	0	3 (11.5%)	0.07
Recurrence	1 (3.8%)	1 (3.8%)	1.00
Dryness and irritation	1 (3.8%)	0	0.34
Erythema and Photosensitivity	1 (3.8%)	0	0.34

Figure-1: Success rate among different treatment options

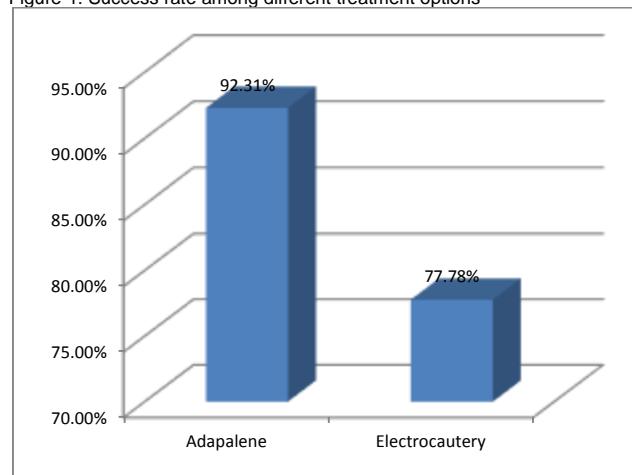


Table-2 showed comparison of complication rates between the two groups. Overall, 12 cases showed post-treatment complications in both groups. No case in the adapalene group reported pain or scarring; however, one case of dryness and irritation was observed. Meanwhile, one case of recurrence was reported in

each group. Three cases in the electrocautery group reported pain, 2 reported scarring, no cases were reported of dryness and irritation, and 3 cases reported postinflammatory dyspigmentation. Meanwhile, a single case of recurrence was reported in each group. There were no statistically significant differences in the complications between the two groups.

Higher success rate was seen in group-A (92.31%) who were treated with Adapalene while 77.78% success was seen in other group as shown in figure-1.

DISCUSSION

This study was conducted to compare the efficacy of adapalene and electrocautery procedure for plane warts. To our knowledge, this is the first study that compares the outcomes. We observed fewer post-treatment complications in the adapalene group. We allocated our participants to two groups. Both groups were comparable in terms of age, duration, and number of warts. According to recent studies, treatment of plane warts is challenging and they are often difficult to clear^{12,13}. There are multiple methods used for treating plane warts in published studies, so we decided to compare our treatment outcomes of plane warts with outcomes of other studies.

Comparing the results of the adapalene group with another study¹⁴ where the most common type of warts were plane warts (61.3%) in their study population. Age group of patients included in their study ranged from 3 to 18 years. We found that their results were in favor of adapalene, they observed (13.64%) complications overall and they observed complete clearance in 26 patients (59.09%) and partial resolution in (n=11 patients, 25%) after 3 months. Their study concluded that adapalene is an easy and effective treatment to clear warts. We observed an average of 45.92 ± 19.22 days were required for wart clearance in 26 patients thus our results were in line with above mentioned study.

Another study observed complete wart removal in 75% of cases treated with electrocautery within 6 weeks.⁷ They also observed that 96% wart clearance occurred in an average of 6 weeks.

Results of current study were comparable with the results of another study¹⁵, where they included 25 patients in the electrodesiccation group, which included patients with clinical cases of common and plane warts. Complete cure was witnessed in 73% patients and 90% of the patients were satisfied with their treatment outcome. However, few recent studies showed that clearance rate of warts after treatment with electro-cautery ranged from 74-77% respectively^{16,7}.

Their findings were similar to our results that showed 77.8% success with electro-cautery treatment. Another study included 30 patients in their electro-cautery group for treatment of recurrent warts found an increase in complications but faster and higher improvement, and higher recurrence rate in the electro-cautery group¹⁷. Similarly, higher cases were seen in group-B who reported complications. Comparing the rate of complications in both groups we observed that adapalene is safer than the electrocautery procedure. Only three complications were reported in the adapalene group including dryness and irritation 1 (3.8%), erythema and photosensitivity 1(3.8%) and 1(3.8%) case of recurrence. Meanwhile, the electrocautery group shows complications in 9 patients including pain in 3(11.5%) patients, scarring in 2(7.6%), post inflammatory dispygmentation in 3(11.5%) patients, and recurrence in 1(3.8%). There were no statistically significant differences in the complications between the two groups (p=0.60) and the recurrence rate was the same.

One study observed that resolution of plane warts in 77.78% of cases by using adapalene; however they also reported adverse effects of adapalene in 13.6% of cases¹⁸. Another study found (75.68%) efficacy of adapalene in treatment of plantar warts and their complete clearance¹⁹. The results were comparable to the current study, the difference was that our study focused on plane warts but the results are comparable.

Limitations of study: Single centre study with financial constrains, small sample size and limited resources.

CONCLUSIONS

It was concluded that Both Adapalene and electrocautery are effective in treatment of plane warts and there are no statistically significant differences in the complications/side effects of these two treatment modalities.

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