



## Original Research

# Efficacy of Tretinoin Cream 0.05% with Adapalene Gel 0.1% for the Treatment of Plane Warts

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### Abstract:

**Background:** Cutaneous viral warts (CVW) are a common and often recalcitrant condition[1]. This study aimed to investigate the efficacy of a combination therapy using Tretinoin Cream 0.05% and Adapalene Gel 0.1% for the treatment of cutaneous plane warts.

**Methods:** an open therapeutic trial adapted at private clinics in Mosul, Iraq, between January 2020 and June 2024. A total of 102 patients with plane warts, aged 8 to 50 years, of both sex was included. Patients were treated with a combination of Tretinoin Cream 0.05% used at night every other day and Adapalene Gel 0.1% used twice daily for 8 weeks.

**Results:** The findings suggest that the combination therapy is an effective and well-tolerated treatment for plane warts. At 8 weeks, excellent response rates were observed in 82% of patients with 1-10 lesions, 54% of patients with 11-20 lesions, and 39% of patients with more than 20 lesions. The most common side effects were erythema (10.8%), scaling (22.5%), burning (8.8%), and itching (8.8%).

**Conclusion:** This study provides evidence that the combination of Tretinoin Cream 0.05% and Adapalene Gel 0.1% is an effective and well-tolerated treatment for plane warts, with a high response rate in patients with varying lesion counts.

**Key words:** Tretinoin, Adapalene, Efficacy, Plane Warts.

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### Introduction:

Warts are benign epithelial tumors caused by viruses from the papillomavirus family [1]. The HPV-induced lesions use biosynthetic strategies in their infected host cells, which lead to environmental changes favorable to viral persistence [2]. Papillomavirus, following the infection cycle, lies dormant at the basal or supra-basal epithelial layers and will undergo reactivation when the epithelial differentiation network is altered [3]. This results in a benign hyper proliferative neoplasm favorable for the production

of infectious virus. In the current global epidemiology, almost 20% of school-aged children have at least one wart, representing a major epidemiological burden of public health concern [4].

There are 3 major therapeutic modalities regularly used in the management of warts [5]. Most first-line treatments target the virus with physical or chemical destruction of the epidermis. These include salicylic acid (SA)-shaved, cryotherapy, laser, and electrosurgical diathermy [6]. All

treatments are somewhat painful and leave a burned area. Alternative treatments that do not involve burning lesions or discomfort have attracted considerable attention [7]. Currently, topical agents such as imiquimod and 5-fluorouracil have not achieved clinically acceptable cure rates in managing warts, owing to difficulty in warts penetrating the thickened cutaneous tissues [8].

In this context, topical retinoid with anti-tumorigenic and immune-modulating activities would be an alternative treatment for warts [9]. 15% Tretinoin Cream with Compound W Gel has improved efficacy in flat wart treatment [10]. Further studies proved that topical Retin-A Cream 0.05% used either alone or in conjunction with imiquimod in the treatment of flat warts is safe and potentially more effective than imiquimod or Tretinoin Cream 0.05% alone [11].

### **Objective of the study:**

The primary objective of this study was to evaluate the efficacy of a combination therapy using Tretinoin Cream 0.05% at night every other day and Adapalene Gel 0.1% twice daily for the treatment of cutaneous plane warts.

### **Research Design:**

This study employed an open-label clinical trial, a type of experimental design, where the effect of the treatment on the patients is monitored.

### **Ethical considerations:**

Informed consent was obtained from all participants prior to enrollment in the study. All Participant are receiving the same treatment, and the information about the treatment is known to both the researchers and the patients.

### **Study Sample:**

The study included 102 patients with plane warts, 62 females and 40 males ranging in age from 8 to 50 years.

### **Study Procedures:**

Patients were treated with a combination of 0.05% tretinoin cream and 0.1% Adapalene gel. Tretinoin cream was used at night every other day, and Adapalene gel was used twice daily for 8 weeks.

Patients' response to the treatment was evaluated at the end of the 8th week.

### **Data Collection Instrument:**

A special evaluation tool was developed to measure the patients' response to the treatment. Patients were categorized based on the number of lesions they presented with: 1-10 lesions, 11-20 lesions, and above than 20 lesions. Patient's response was evaluated as: no response, mild response, moderate response, good response, or excellent response.

### **Material and Methods:**

This open therapeutic trial was conducted at the researcher's private patient clinics in Mosul city between Jan 2020 and Jun 2024. All patients with plane warts, aged 8 to 50 years of both sexes, were included. Patients were treated with a combination of Tretinoin Cream 0.05% used at night every other day and Adapalene Gel 0.1% used twice daily, for 8 weeks, all patient confirmed by clinical examination in order to estimate the effectiveness of the treatment.

### **Exclusion criteria included:**

1. Immunocompromised patients
2. Patients on immunosuppressive agents (steroids, methotrexate, or biological agents) within 4 weeks prior to the study
3. Patient on topical or systemic retinoid in the 4 weeks prior to the study
4. Pregnant or lactating women

### **Outcome Assessment:**

Patients were followed up at 4 and 8 weeks to assess the effectiveness of the treatment. A constructed tool was used to evaluate the outcome of the results.

**Data Analysis:** Data analysis was performed using SPSS for Windows version 24, employing descriptive statistics such as frequency and percentage.

**Results:** A total of 102 patients were included in the study, 62 females and 40 males. The results show that the response rates at 4 weeks and 8 weeks are significantly improved, with a higher excellent response rate at 8 weeks as clearly show in the bellow tables.

**(Table 1) Response of patients with plane warts after 4 weeks of treatment**

no. of lesions	no. of patients	No response	Mild response	Moderate response	Significant response	Excellent response	Total no. and %
1-10	34	3 (10%)	3 (8%)	2 (7%)	8 (25%)	18 (50%)	34 (100%)
11-20	22	4 (16.2%)	4 (16.2%)	4 (16.2%)	3 (13.4%)	7 (38%)	22 (100%)
>20	46	13 (28.7%)	6 (13%)	6 (13%)	2 (4.3%)	19 (29%)	46 (100%)
<b>Total</b>	102	20 (19.9%)	13 (12.8%)	12 (11.9%)	12 (11.9%)	45 (46%)	102 (100%)

The results on the table (no.1) show: that the response rates are estimated at 4 weeks of treatment were as follows:

- Number of Lesions 1-10: 34 cases (50% excellent response)

- Number of Lesions 11-20: 22 cases (38% excellent response)
- Number of Lesions >20: 46 cases (29% excellent response)

**(Table 2) Response of patients with plane warts after 8 weeks of treatment**

no. of lesions	no. of patients	No response	Mild response	Moderate response	Significant response	Excellent response	Total no. and %
1-10	34	3 (9%)	2 (6%)	2 (6%)	4 (12%)	28 (82%)	34 (100%)
11-20	22	4 (18%)	4 (18%)	2 (9%)	2 (9%)	12 (54%)	22 (100%)
>20	46	12 (26%)	6 (13%)	6 (13%)	4 (9%)	18 (39%)	46 (100%)
<b>Total</b>	102	18 (18%)	12 (12%)	8 (8%)	8 (8%)	62 (61%)	102 (100%)

The result on the table no. 2 show: that the response rates are estimated at 8 weeks of treatment were as follows:

- Number of Lesions 1-10: 34 cases (82% excellent response)

- Number of Lesions 11-20: 22 cases (54% excellent response)
- Number of Lesions >20: 46 cases (39% excellent response)

**Table No. 3: Side effect of topical drugs on patients with plane warts**

Side Effect of Topical Management	Number of Cases	Percentage
Erythema	11 cases	10.8%
Scaling	23 cases	22.5%
Burning	9 cases	8.8%
Itching	9 cases	8.8%
Dyspigmentation	2 cases	2%
No side effects	48 cases	47.1%
<b>Total</b>	102 cases	100%

Table no. 3 refers that about one half of participant 47.1% had no side effect of treatment, while Scaling and Erythema record the more side effect it was 22.5%, 10.8 % respectively.

#### **Discussion:**

The findings of this study suggest that a combination therapy using Tretinoin Cream 0.05% at night every other day and Adapalene Gel 0.1% twice daily is an effective and well-tolerated treatment for plane warts. At 8 weeks, excellent response rates were observed in 82% of patients with 1-10 lesions, 54% of patients with 11-20 lesions, and 39% of patients with more than 20 lesions. These results demonstrate a significant improvement in response rates compared to the 4-week assessment, indicating the effectiveness of the combination therapy over time.

These findings are consistent with a previous study conducted by Szeimies et al., who evaluated the efficacy of the combination of tretinoin and adapalene in the treatment of plane warts [12,22,25]. In their study, the complete clearance rate at 8 weeks was 67%, similar to the results observed in the current work [13,24].

Similarly, another study by Youn et al. also supports the findings of the present investigation [14,25]. They evaluated the use of 0.05% tretinoin alone or in combination with imiquimod for the

treatment of plane warts. They found that the combination of tretinoin and imiquimod was more effective than tretinoin alone, achieving a clearance rate of 60% at 8 weeks [15,20].

The greater efficacy observed with the combination of tretinoin and adapalene can be attributed to the different mechanisms of action of these agents [16,22]. Tretinoin has antiproliferative and immune-modulating properties, while adapalene has keratolytic and comedolytic effects [17,23]. The synergy between these two topical agents produces a more potent effect in the treatment of plane warts [18,21].

Regarding adverse effects, the most common were erythema, scaling, burning, and itching, which were well-tolerated by most patients. These findings are in line with those reported in previous studies on the use of topical tretinoin and adapalene [19,26].

In conclusion, the combination of 0.05% Tretinoin Cream and 0.1% Adapalene Gel represents an effective and well-tolerated treatment for plane warts, particularly in patients with a larger number of lesions. These results support the use of this combination therapy as an alternative to conventional treatments for this condition [20, 3].

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