

COMPARISON OF 0.1 % TOPICAL ADAPALENIN GEL VERSUS 0.05 % ISOTRETINOIN GEL IN PATIENTS WITH MILD TO MODERATE ACNE VULGARIS

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ABSTRACT:

Background; Acne Vulgaris leads to significant increase in psychological issues among patients and has negative impact on quality of life and their productivity. **Objective;** The objective of this study is to compare efficacy of 0.1 % topical adapalene gel versus 0.05 % isotretinoin gel in patients with mild to moderate acne vulgaris. **Material and Methods;** Group A, having 30 patients, was treated with 0.1 % adapalene gel in the morning and evening (twice a day) while Group B, also having 30 patients treated with 0.05 % isotretinoin gel twice a day for 6 weeks. The patients were followed weekly till 6 weeks from the beginning of therapy to observe efficacy. **Results;** Of these 60 study cases, 18 (30.0 %) were male patients while 42 (60.0 %) were female patients. Mean age of our study cases was 20.43 ± 3.37 years. Mean body mass index of our study cases was 25.12 ± 2.21 kg/m² and obesity was present in 13 (21.7 %) of our study cases. Of these 60 study cases, 30 (50%) had mild acne and 30 (50%) moderate acne Mean disease duration was 4.52 ± 2.68 months and 54 (90.0 %) had duration of illness up to 6 months. Of these 60 study cases, 17 (28.3 %) were illiterate and 43 (71.7 %) were literate. Efficacy was noted in 35 (58.3%), in group A efficacy was noted to be 23 (76.7%) and efficacy in group B was noted be 12 (40.0%). (P=0.008). **Conclusion;** Adapalene gel was found to be more effective, safe and reliable therapy for the treatment of mild to moderate acne as this therapy was significantly more efficacious as compared with 0.05 % isotretinoin gel. Our study results support the use of Adapalene gel for the treatment of mild to moderate acne as it provides desired outcomes which leads to improvement in quality of life these patients and also their productivity. This will also provide psychological relief to the patients having significant burden of psychological stress.

Keywords; Acne vulgaris, Adapalene, Isotretinoin gel, efficacy.

DOI: 10.7176/JMPB/61-05

Publication date: November 30th 2019

INTRODUCTION;

Acne is a chronic inflammatory disease of pilosebaceous units. It is characterized by seborrhea, the formation of open and closed comedones, erythematous papules and pustules and in more severe cases nodules, deep pustules and pseudocyst. It is a common dermatologic disease that is usually managed by application of topical preparations, systemic medications, or a combination of the two¹⁻⁴ And is commonest skin disease, mainly in young ages, which dermatologists have to encounter in their daily routine⁵. Antibiotics play a pivotal role in treatment. However, the emergence of new resistant strains or cross-resistance, development of various side effects, and poor tolerability are factors that sometimes limit their usefulness^{6,7}.

Acne vulgaris is a common condition extremely prevalent among teenagers and young adults under the age of 24 years. Nearly 85% of adolescents in this age group experience some degree of acne. Acne lasts for several years and thus may significantly influence in many ways the lives of those affected. For many teens, the disease could create cosmetic, physical, and psychological scarring fueling anxiety, depression, and other emotional trauma that threaten their quality of life⁸⁻¹¹. Therefore, early and effective treatment is needed to save these patients from all the possible complications. Successful treatment of acne is significantly affected by the level of knowledge of the patients¹².

Acne is usually diagnosed by the patient. The physician needs to determine if the condition is noninflammatory (open and closed comedones), inflammatory (papules or pustules) or a mixture of both (the most common situation). Many therapeutic options exist for treating acne including topical benzoyl peroxide, topical and oral antibiotics, topical and oral retinoids and oral contraceptives. Consensus guidelines advocate that the use of topical retinoids are primary treatment for most forms of acne treatment. However, all topical retinoids may be irritating which contribute to their underutilization. Topical adapalene has the advantage of causing less irritation and is more stable molecule than tretinoin¹³. A study conducted by Khan et al¹⁴ reported efficacy with Adapalene was 84.2 % while it was 39.6 % with tretinoin group.

This study was designed to document the efficacy of 0.1 % topical adapalene and 0.05 % tretinoin in the treatment of acne, as there is no such study done in our population previously but prevalence of acne is high in our population. Once the more effective treatment is documented in our population, the results will help to treat these patients more effectively which will relieve these patients from psychological and social problems which will improve quality of life as well as productivity of these young patients.

MATERIAL AND METHODS;

Total 60 patients with mild to moderate acne of either sex aged 18 – 40 years of age having duration more than 3 months were included in our study. Study was conducted in the OPD of Department of Medicine, Sheikh Zayed Medical College, Rahim Yar Khan. Patients taking anti-acne treatment within one month, having hirsutism, menstrual dysfunction, taking oral contraceptives, diabetes and hypertension were excluded from our study. Patients were randomly allocated in to two groups by lottery method. Group A, having 30 patients, was treated with 0.1 % adapalene gel (about half of pea size amount for full face) in the morning and evening (twice a day) while Group B, also having 30 patients treated with 0.05 % isotretinoin gel twice a day (about half of pea size amount for full face in morning and evening) for 6 weeks in patients with mild to moderate acne. The patients were followed weekly till 6 weeks from the beginning of therapy to observe efficacy. All the data was entered and analyzed using SPSS-20. Mean and standard deviation for the age, BMI of patient and duration of disease was calculated. Frequencies and percentage were calculated for the categorical variables like gender, disease severity (mild/moderate), age groups, efficacy (Present/Absent) and Obesity (Obese/Non-obese), family income, educational status. Efficacy was compared in both groups and chi-square test was applied for comparison of efficacy at level of significance of 0.05.

RESULTS;

Our study comprised of a total of 60 patients meeting inclusion criteria of our study. Of these 60 study cases, 18 (30.0 %) were male patients while 42 (60.0 %) were female patients. Mean age of our study cases was 20.43 ± 3.37 years (with minimum age of our study cases was 18 years while maximum age was 32 years). Mean age of the male patients was noted to be 19.28 ± 3.37 years while that female patients was 20.93 ± 3.29 years ($p=0.083$). Our study results have indicated that majority of our study cases i.e. 53 (88.3 %) were aged up to 30 years. Of these 60 study cases, 25 (41.7 %) belonged to rural areas and 35 (58.3 %) belonged to urban areas. Monthly family income up Rs. 30000 was noted in 19 (31.7%) and more than 30000 rupees was noted in 41 (68.3%). Mean body mass index of our study cases was 25.12 ± 2.21 kg/m² and obesity was present in 13 (21.7 %) of our study cases. Of these 60 study cases, 30 (50%) had mild acne and 30 (50%) moderate acne. Mean disease duration was 4.52 ± 2.68 months and 54 (90.0 %) had duration of illness up to 6 months. Of these 60 study cases, 17 (28.3 %) were illiterate and 43 (71.7 %) were literate. Efficacy was noted in 35 (58.3%), in group A efficacy was noted to be 23 (76.7%) and efficacy in group B was noted be 12 (40.0%) ($P=0.008$).

Table No. 9 Distribution of study cases by Efficacy.

(n = 60)				
Efficacy (n=60)	Group A		Group B	
	Frequency	Percentage	Frequency	Percentage
Yes n= 35 (58.3 %)	23	76.7	12	40.0
No n=25 (41.7 %)	07	23.3	18	60.0
Total	30	100	30	100

* $p = 0.008$, which is statistically significant.

DISCUSSION;

Acne is one of the most common disorders treated by dermatologists and other health care providers. According to the Global Burden of Disease (GBD) study, acne vulgaris affects ~85% of young adults aged 12–25 years. The choice of therapy should be principally based on the type of lesion and the severity of the acne, but psychosocial disability relating to the disease and the presence of scarring may also influence the approach to treatment.

Our study comprised of a total of 60 patients meeting inclusion criteria of our study. Of these 60 study cases, 18 (30.0 %) were male patients while 42 (60.0 %) were female patients. A study conducted by Batool et al¹⁵ from Rahim Yar Khan also documented 87 % female gender predominance which is in compliance with our study results. A study conducted by Ghafoor et al¹⁶ from Karak has also documented 0.82:1.11 female gender predominance which is in compliance with our study results. Shaukat et al¹⁷ from Lahore has also reported 80 % female gender predominance in acne patients which is close to our study results. A study conducted by Sohail et al¹⁸ from Karachi has also reported 65 % female gender predominance which is close to our study results. An Indian study conducted by Hazarika et al²⁰ has also documented 56 % female gender predominance which is close to our study results. However another study from India conducted by Gupta et al²¹ has reported 63 % male gender predominance which is different from our study results.

Mean age of our study cases was 20.43 ± 3.37 years (with minimum age of our study cases was 18 years while maximum age was 32 years). Mean age of the male patients was noted to be 19.28 ± 3.37 years while that female patients was 20.93 ± 3.29 years ($p=0.083$). Our study results have indicated that majority of our study cases i.e. 53 (88.3 %) were aged up to 30 years. A study conducted by Batool et al¹⁵ from Rahim Yar Khan also documented 18.8 ± 2.7 years mean age of the acne patients which is close to our study results. A study conducted by Ghafoor et al¹⁶ from Karak has also documented 18.45 ± 2.91 years mean age which is close to our study results. Shaukat et al¹⁷ from Lahore has also reported 20.45 ± 3.27 years mean age which is close to our study results. A study conducted by Sohail et al¹⁸ from Karachi has also reported 21.4 years mean age which is close to

our study results. another study from India conducted by Gupta et al ²¹ has reported 22.49 ± 5.38 years mean age which is close to our study results.

Of these 60 study cases, 25 (41.7 %) belonged to rural areas and 35 (58.3 %) belonged to urban areas. Monthly family income up Rs. 30000 was noted in 19 (31.7%) and more than 30000 rupees was noted in 41 (68.3%). A study conducted by Batool et al ¹⁵ from Rahim Yar Khan also documented 30.4 % patients of acne from rural areas which is in compliance with our study results.

Mean body mass index of our study cases was 25.12 ± 2.21 kg/m² and obesity was present in 13 (21.7 %) of our study cases. Of these 60 study cases, 30 (50%) had mild acne and 30 (50%) moderate acne. Mean disease duration was 4.52 ± 2.68 months and 54 (90.0 %) had duration of illness up to 6 months. Of these 60 study cases, 17 (28.3 %) were illiterate and 43 (71.7 %) were literate. A study conducted by Batool et al ¹⁵ from Rahim Yar Khan also reported similar results.

Efficacy was noted in 35 (58.3%), in group A efficacy was noted to be 23 (76.7%) and efficacy in group B was noted to be 12 (40.0%) (P=0.008). A study conducted by Khan et al¹⁴ reported efficacy with Adapalene was 84.2 % while it was 39.6 % with tretinoin group. These findings are close to our study results. Another study conducted by Loannides et al ²² in Greece also reported Adapalene being more effective than tretinoin group which is similar to that of our study results.

CONCLUSION:

Adapalene gel was found to be more effective, safe and reliable therapy for the treatment of mild to moderate acne as this therapy was significantly more efficacious as compared with 0.05 % isotretinoin gel. Our study results support the use of Adapalene gel for the treatment of mild to moderate acne as it provides desired outcomes which leads to improvement in quality of life these patients and also their productivity. This will also provide psychological relief to our patients as it is associated with significant burden of psychological stress.

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