

## Original Research Article

# Treatment outcome of acne vulgaris with topical application of clindamycin gel and benzoyl peroxide gel as supplementary files

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### ABSTRACT

**Background:** Acne vulgaris is one of the commonest inflammatory skin disorders. It also has a psychosocial impact on patients, specially known in adolescents and hence needs effective treatment. The objectives of the study was to find out and ascertain different clinical presentations of acne vulgaris in both sexes of various age groups and to find out the outcome of treatment with various topical modalities in various clinical types.

**Methods:** A total of 150 patients with acne vulgaris were studied with age group >10 years. Detailed history, thorough physical examination and relevant investigations were done. Patients were divided into 2 groups of 75 each and each group received different treatment and were followed up at 4th, 8th and 12th week.

**Results:** At the end of 12 weeks there was significant improvement in grade-II patients treated with cindamycin 1% gel.

**Conclusions:** The results of the study show that different grades of acne vulgaris respond with different regimens.

**Keywords:** Acne vulgaris, Adolescents, Cindamycin, Regimens

### INTRODUCTION

Acne vulgaris is a common, chronic skin disorder of sebaceous follicles characterized by the presence of non-inflammatory and/ or inflammatory lesions. Acne vulgaris is most common skin problem in adolescents, although lesions can appear as early as age 8.<sup>1</sup> The etiology of acne vulgaris is multifactorial. Acne vulgaris is a multifactorial disease affecting the pilosebaceous follicle characterized by comedones, papules, pustules, nodules, cysts and scars. Although acne is more common and more severe in boys than girls, it usually occurs in girls at an earlier age and tends to last longer, sometimes into adulthood.<sup>2</sup>

Research now centres on follicular occlusion, androgen stimulated sebum production and propionibacterium acne as possible primary causes. Many factors contribute to acne but theories regarding dietary influences appear to be groundless.<sup>3</sup> The major factors involved in pathogenesis are an increased sebum production, an abnormality of microbial flora, cornification of the pilosebaceous duct, production of inflammation and increased androgen levels.<sup>2,4</sup> Other precipitating factors include genetics, exposure to industrial compounds, trauma, rubbing from tight clothing, cosmetics, emotional stress and unfavourable climate. Commonly, acne is treated with numerous topical and systemic drugs. Although oral antibiotics continue to be the mainstay of

acne therapy, but topical therapy has been an essential part of dermatologists regimen for treating acne.<sup>5</sup>

Acne is the common problem and it is also putting psychological impact on patients. Topical therapy is one of the effective modes of treating acne. It is necessary to explore the burden of the disease in hospitals with clinical profile and treatment pattern from time to time.<sup>6</sup> Hence the present study was planned to evaluate the clinico-epidemiological study and their outcome with various topical modalities of treatment in Acne Vulgaris.

**METHODS**

The present study was undertaken at the department of Dermatology, Gujarat Adani Institute of Medical Science, Bhuj, Kutch, Gujarat from May 2015 to June 2017. A total of 150 patients were included in the study. All the patients were explained in detail about the study and written inform consent was obtained from them.

The grading system used was: Grade-I (mild): Comedones, occasional papules Grade-II (moderate): Papules, comedones, few pustules Grade-III (severe): Predominant pustules, nodules, sinuses Grade-IV (cystic): Mainly cysts, abscesses, wide spread scarring.

Patients who were below 10 years, having any other infectious diseases on face and grade IV acne patients were excluded from the study. Patients were informed that they would be excluded from the study if at follow-up the disease progression necessitated the use of systemic therapy. Pregnant and lactating patients were excluded.

Various topical agents used in the study were:

- Regimen-1: Clindamycin 1% gel applied twice daily.
- Regimen-2: Benzoyl peroxide 2.5% gel applied twice daily.

Baseline lesion counts as well as lesion count at the end of 3 months were recorded. The clinical response was assessed by the percentage reduction of the total lesion count.

It was graded as: excellent: 75% reduction in total lesion count, good: 50-74% reduction in total lesion count, fair: 25-49% reduction in total lesion count, poor: <25% reduction in total lesion count, stationary: no change in total lesion count, worse: if increase in lesion count. P<0.05 was considered for statistical significance.

**RESULTS**

The present study included total of 150 patients in the study which accounts for 10.2% of the total patients in the medical college in the period of two years. Maximum patients affected were in the age group of 15-20 years, followed by the patients in age of 10-14 years. Total of

46.66% patients were males and rest 53.33% were females (Table 1).

**Table 1: Sex and age distribution of the patients.**

Age (years)	Males	Females	Total	Percentage (%)
10-14	15	14	29	19
15-20	34	44	78	52
21-24	15	14	29	19
>25	6	8	14	10
<b>Total</b>	<b>70</b>	<b>80</b>	<b>150</b>	<b>100</b>

In the present study, 43 patients had duration of lesions <1 years, 54 patients had duration between 1-2 years, 30 patients had duration of 3-4 years and 23 patients had duration of more than 4 years. Out of 150 patients in the present study, 125 patients had oily skin and 25 had dry skin.

In the present study of 150 patients, 107 patients had lesions only on the face, 22 patients had lesions on face, back and chest, 16 patients had lesions on face and back, 6 patients had lesions on face and chest and 4 patients had lesions on back, chest and arm.

In the present study, 64 patients had duration of lesions <1 years, 48 patients had duration between 1-2 years, 21 patients had duration of 3-4 years and 17 patients had duration more than 4 years.

Owing to the texture of skin out of 150 patients in the present study, 126 patients had oily skin and 24 had dry skin.

Among 150 patients, 79 patients had grade-I Acne vulgaris, 61 patients had grade-II Acne vulgaris, 10 patients had grade-III vulgaris. Patients were equally divided into two groups. Group A received the regimen 1 were as group B received the regimen 2.

**Table 2: Efficacy of regimen-1 in group A (clindamycin 1% gel).**

Grades	No. of patients	Response		P value
		Excellent	Fair	
Grade I	39	10	29	0.05*
Grade II	30	22	8	
Grade III	6	3	3	
<b>Total</b>	<b>75</b>	<b>35</b>	<b>40</b>	

For the group A in regimen-1, out of 39 patients of grade-I acne, 10 patients showed excellent to good response and 29 showed fair responses. In grade-II acne, of 30 patients, 22 patients showed excellent to good response, 8 showed fair response. None of the patients in study showed poor, stationary or worse response. Out of 6 patients of grade-III acne, 3 showed excellent to good response and 3

showed fair responses. Differences between grades were significant statically ( $p \leq 0.05$ ) (Table 2).

For the group B in regimen-2, out of 40 patients of grade-I acne, 14 patients showed excellent to good response and 26 showed fair responses. In grade-II acne, of 31 patients, 12 patients showed excellent to good response, 19 showed fair response. None of the patients in study showed poor, stationary or worse response. Out of 4 patients of grade-III acne, 2 showed excellent to good response and 2 showed fair responses. Statically significant difference was observed between all groups. ( $p \leq 0.05$ ) (Table 3).

**Table 3: Efficacy of regimen-2 for group B (benzoyl peroxide 2.5% gel).**

Grades	No. of patients	Response		P value
		Excellent	Fair	
Grade I	40	14	26	0.01*
Grade II	31	12	19	
Grade III	4	2	2	
Total	75	35	40	

## DISCUSSION

The ancient Greek physicians certainly recognized acne which they knew as 'Ionthoi', a condition which Aristotle describes in sufficient detail for there to be little doubt of the identification. Roman physicians recognized familial tendency in acne.<sup>7</sup>

International group of epidemiologists, community medicine specialists and anthropologists aver that acne vulgaris is a nearly universal skin disease afflicting 79-95% of the adolescent population. Acne occurs most commonly during adolescence. Adolescent acne usually begins with the onset of puberty, when the gonads begin to produce and release more androgen hormones. Acne vulgaris was found to be more common in urban boys than their rural counterparts. Increased chances of exposure to the pollutants of industrialization may be a factor.<sup>8</sup>

In the present study maximum number of patients belonged to the age group 16-20 years with, followed by 11-15 years, the third common group affected was 21-25 years with patients. Michalun et al reported the peak age of acne as between 14-17 years in females and 16-19 years in males.<sup>5</sup> Adityan et al reported most common age group involved was 16 to 20 years.<sup>9</sup>

In the present study, out of 120 patients maximum patients had oily skin and hardly few had dry skin. This compares well with the observation that oily skin is usually associated feature. Vaswani reported that out of 400 patients, the majority had acne only on face, while face along with other areas such as chest and shoulder

comprised the second largest group which is similar in the present study.<sup>10</sup>

For the group A in regimen-1,  $p < 0.05$  was found to be significant. Vaswani in his study of 12 patients, observed good to excellent reduction in 9 (75%) of the patients in the inflammatory acne lesion count whereas only 3 (25%) of the patients showed good to excellent reduction in the non-inflammatory acne lesion count.<sup>10</sup>

For the group B in regimen-2,  $p < 0.05$  was found to be significant. Similar results were obtained by Lookingbill et al, in their study of 92 patients. This study showed reduction in mean inflammatory and non-inflammatory counts respectively.<sup>11</sup> There was significant improvement in grade-I acne with clindamycin 1% gel. Considerable improvement was seen in other regimens also.

## CONCLUSION

It indicates that acne is a common disease. Commonly seen in urban people and aggravates on using cosmetics, due to stress and also has seasonal variation too. The condition has variable type of response to different modalities.

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