

Analytical study of treatment outcome of various topical modalities in Acne Vulgaris

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Abstract

Acne vulgaris is a multifactorial disease affecting the pilosebaceous follicle characterized by comedones, papules, pustules, nodules, cysts and scars. This study constituted 120 patients and was conducted at Department of Dermatology, Venereology & Leprology at Basaveshwar Teaching & General Hospital, attached to Mahadevappa Rampure Medical College, Gulbarga during the period from September 2010 to August 2012. It was aimed to find out the outcome of treatment with various topical modalities in various clinical types of Acne Vulgaris. There was significant improvement in grade-I acne with tretinoin 0.025% gel and in grade-II acne with clindamycin 1% gel. Considerable improvement was seen in other regimens also.

Keywords: Acne Vulgaris, local treatment, clinical outcome.

1. Introduction

Acne vulgaris is a multifactorial disease affecting the pilosebaceous follicle characterized by comedones, papules, pustules, nodules, cysts and scars. Acne vulgaris is most common skin problem in adolescents, although lesions can appear as early as age 8. 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. The etiology of acne vulgaris is multifactorial. Precipitating factors include genetics, exposure to industrial compounds, trauma, rubbing from tight clothing, cosmetics, emotional stress and unfavourable climate. 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. 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. Topical therapy is one of the effective mode of treating acne and therapeutic efficacy is also good.

Acne is the common problem and it is also putting psychological impact on patients. It is

necessary to explore the burden of the disease in hospitals with clinical profile and treatment pattern from time to time. So, as to evaluate the treatment modalities and their outcome of Acne Vulgaris and to reduce adverse consequences like scars, the study is required. Hence, this study was aimed to find out the outcome of treatment with various topical modalities in various clinical types of Acne Vulgaris in both the sexes of various age groups.

2. Materials and methods

This study was conducted at Department of Dermatology, Venereology & Leprology at Basaveshwar Teaching & General Hospital, attached to Mahadevappa Rampure Medical College, Gulbarga during the period from September 2010 to August 2012. Study was started after approval from Institutional Ethical Committee, Gulbarga. 120 patients of acne vulgaris attending to the outpatient department were taken for study. Individuals aged above 10 years and of both the sexes were included in the study. Grade-IV and other variants of acne - chloracne, oil acne, gram negative folliculitis, tropical acne, mechanical acne, steroid induced acne, severe variants like acne conglobata and acne

fulminans were excluded. Patients with other systemic illness were excluded.

The various topical agents used in this study were:

Regimen-A: Clindamycin 1% gel applied twice daily

Regimen-B: Tretinoin 0.025% gel applied at night

Regimen-C: Adapalene 0.1% applied at night

Regimen-D: Benzoyl peroxide 2.5% gel applied twice daily.

3. Results

120 cases were analysed in this study. Among 120 patients, 59 (49.16%) patients had grade-I Acne vulgaris, 56 (46.67%) patients had grade-II Acne vulgaris, 5 (4.17%) patients had grade-III vulgaris. (Table 1) In Regimen-A, out of 15 patients of grade-I Acne, 4 (13.3%) patients showed excellent to good response and 11 (36.6%) showed fair

response. None of the patients in study showed poor, stationary or worse response. (Table 2) In regimen B, out of 15 patients, 12 (40%) patients showed excellent to good response, 3 (10%) showed fair response of grade-I. In grade-II acne, of 14 patients, 7 (23.3%) patients showed excellent to good response, 7 (23.3%) showed fair response. (Table 3) In regimen C, out of 14 patients of grade-I acne, 8 (26.7%) patients showed excellent to good response and 6 (20%) showed fair response. In grade-II acne, of 15 patients, 9 (20%) showed excellent to good response and 6 (20%) patients showed fair response. (Table 4) In the regimen-D, out of 15 patients of grade-I Acne, 5 (15.7%) patients showed excellent to good response, 10 (33.3%) patients showed fair response. (Table 5)

Table 1: Regimen Wise & Grading Wise Distribution of Cases

Regimen	Grade-I		Grade-II		Grade-III		Total	
	No. of patients	%	No. of patients	%	No. of patients	%	No. of patients	%
A	15	26.8	13	23.2	2	40.0	30	25.00
B	15	26.8	14	25.0	1	20.0	30	25.00
C	14	23.6	15	26.8	1	20.0	30	25.0
D	15	26.8	14	25.0	1	20.0	30	25.0
Total	59	49.16	56	46.6	5	4.17	120	100.0

Table 2: Efficacy of Regimen-A (Clindamycin 1% gel)

Grades	No. of patients	Response			
		Excellent to good	Percentage	Fair	Percentage
Grade-I	15	4	13.3	11	36.6
Grade-II	13	10	33.3	3	10.0
Grade-III	2	1	3.4	1	3.4
Total	30	15	50.0	15	50.0

$X^2 = 6.53$ $p < 0.05$ (Significant)

Table 3: Efficacy of Regimen-B (Tretinoin 0.025% gel)

Grades	No. of patients	Response			
		Excellent to good	Percentage	Fair	Percentage
Grade-I	15	12	40.00	3	10.00
Grade-II	14	7	23.30	7	23.30
Grade-III	1	0	0.00	1	3.30
Total	30	19	63.30	11	36.60

$X^2 = 3.92$ $p < 0.05$ (Significant)

Table 4: Efficacy of Regimen-C (Adapalene 0.1% gel)

Grades	No. of patients	Response			
		Excellent to good	Percentage	Fair	Percentage
Grade-I	14	8	26.7	6	20.0
Grade-II	15	9	30.0	6	20.0
Grade-III	1	0	0.00	1	3.30
Total	30	17	56.70	13	43.30

$X^2 = 0.0024$ $p > 0.05$ (Not significant)

Table 5: Efficacy of Regimen-D (Benzoyl Peroxide 2.5% gel)

Grades	No. of patients	Response			
		Excellent to good	Percentage	Fair	Percentage
Grade-I	15	5	15.7	10	33.3
Grade-II	14	11	36.6	3	10.0
Grade-III	1	00	0.00	1	3.40
Total	30	16	53.3	14	46.7

$X^2 = 4.82$ $p < 0.05$ (Significant)

4. Discussion

Acne vulgaris accounted for 7.1% of the total dermatology out patients during the period from September 2010 to August 2012 in Basaveshwar Teaching & General Hospital attached to M.R.Medical College, Gulbarga. 120 cases of Acne Vulgaris were evaluated in this study. Treatment regimens and response of patients to various regimens are analysed and compared with literature.

In the present study, response to topical clindamycin 1% gel, out of 15 patients of grade-I acne, 4 (13.3%) patients showed excellent to good response. In grade-II acne, of 13 patients, 10 (33.3%) patients showed excellent to good response, 3 (10%) showed fair response. Vaswani[1] 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. Thus results of present study are concurrent with the above study.

In Regimen-B, out of 15 patients, 12 (40%) patients showed excellent to good response, 3 (10%) showed fair response of grade-I. In grade-II acne, of 14 patients, 7 (23.3%) patients showed excellent to good response, 7 (23.3%) patients showed fair response. Weiss and Shavin[2] in their study of 24 patients, showed 83%, 50% and 75% reduction in non-inflammatory, inflammatory and total lesions count respectively. Shalita *et al*[3] in their study of 139 patients, noticed 33%, 38% and 37% reduction in non-inflammatory, inflammatory and total lesions count respectively.

In the present study, response to topical adapalene 0.1% gel, out of 14 patients of grade-I acne, 8 (26.7%) patients showed excellent to good response and 6 (20%) showed fair response. In grade-II acne, of 15 patients, 9 (30%) showed excellent to good response and 6 (20%) showed fair response. Ellis *et al*[4] in their study of 297 patients, showed 47% and 57% reduction in the mean inflammatory and non-inflammatory lesions respectively.

In the present study, response to Benzoyl peroxide 2.5% gel, out of 15 patients of grade-I acne, 5 (15.7%) patients showed excellent to good response, 10 (33.3%) patients showed fair response. In grade-II acne, among 14 patients, 11 (36.6%) patients showed excellent to good response and 3 (10%) patients showed fair response. In grade-III, 1 (3.4%) patient showed fair response. Lookingbill *et al*[5] in their study of 92 patients, observed 39% and

30% reduction in the mean inflammatory and non-inflammatory lesions respectively. In all 41% patients showed excellent to good response. Swinyer *et al*[6] in their study of 30 patients, showed 52.2% and 62.9% reduction in mean inflammatory and non-inflammatory counts respectively.

5. Conclusion

Following were conclusions of this study:

1. In regimen-A, excellent to good response was seen in grade-II (33.3%)
2. In regimen-B, excellent to good response was seen in grade-I (40%)
3. In regimen-C, excellent to good response was seen in grade-II (30%)
4. In regimen-D, excellent to good response was seen in grade-II (36.6%).

There was significant improvement in grade-I acne with tretinoin 0.025% gel and in grade-II acne with clindamycin 1% gel. Considerable improvement was seen in other regimens also. However, more studies on treatment modalities are required in Indian community for furtherance of the conclusions.

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