

EVALUATION OF RETINOIC ACID IN ACNE VULGARIS

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Summary

Fifty four patients of acne vulgaris were treated with retinoic acid 0.05% in propylene glycol base. The patients were interviewed before starting the treatment. They were advised not to use any cosmetic or other topical therapy. No systemic therapy was given for any ailment. They were advised to wash their face with non-medicated soap at bed time and apply lotion. Patients were examined weekly for comedone count, degree of erythema and peeling. On completion of 12 weeks treatment, the response was assessed and recorded on a 4 point scale.

Excellent response was seen in 72% and good response in 28% of cases. There was no treatment failure. No untoward effect was seen which warranted the stoppage of treatment.

Treatment of Acne Vulgaris is far from satisfactory. Most of the agents available in the market act as peeling agents, producing desquamation of the skin. Straumfjord¹ was the first to report beneficial effects of high doses of oral Vitamin A in the treatment of acne vulgaris. Vitamin A was given to acne patients in the hope of reducing the hyperkeratosis of the sebaceous follicles which is the main pathological change in acne. Vitamin A has an antikeratinizing effect². However, to obtain this effect, Vitamin A has to be given in very high concentrations which usually produce systemic toxicity.

In the hope of delivering a high dose of the drug to the target tissue, various

forms of Vitamin A were studied by Kligman et al.³ After clinical pilot studies with aldehyde, acetate, palmitate and acid — Retinoic acid was found the most suitable, because of its high efficacy in acne vulgaris.

Since then a large number of studies have demonstrated the effect of Retinoic acid in acne vulgaris⁴⁻⁸.

The following paper presents our experience with topical Vitamin A acid solution 0.05% in patients of acne vulgaris conducted at the Department of Dermatology, Medical College, the Banaras Hindu University.

Material and Method

54 patients were selected for the trial. At the first visit to the hospital, a detailed history was taken and examination carried out to note the type and distribution of the acne lesions. The acne was graded according to a modification of the Pillsbury Scale into Grades I — IV. A comedone, papule, pustule count was done and the data

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Received for publication on 5—11—1975

was recorded. Photographs were taken prior to treatment and subsequently. Patients were advised to apply Retinoic acid lotion at bedtime after washing the face with warm water and a non-medicated soap. At the start of the treatment it was explained to each patient that the lesion might cause some irritation, redness of skin and peeling. It was emphasized that the treatment should be persevered despite this effect. It was also explained that the acne might be exacerbated in the early stages of the treatment, but that this would be a temporary effect only. No other concurrent topical therapy referable to acne was to be used nor any systemic therapy. Diet was not altered apart from instructions to avoid food stuffs known by the patient to aggravate the condition.

Patients were asked to attend the hospital at weekly intervals for twelve weeks. At each visit, a comedone count was done and the degree of erythema and peeling observed. On completion of the trial, the overall response to treatment was assessed as the improvement scored on a four point scale based on percentage reduction of all countable lesions, as follows:

1. Excellent - Disappearance of 75-100% of the lesions
2. Good - Disappearance of 50-74% of the lesions
3. Fair - Disappearance of 25-49% of the lesions
4. Poor - Disappearance of 0-24% of the lesions

At the end of twelve weeks, patients continued the treatment with retinoic acid, if they wished.

Table 1 gives the age and sex distribution in the 54 patients included in the trial. The maximum incidence of acne was between the age group

TABLE I
Age incidence

Years	15-20	21-25	26-30
Males	25	6	—
Females	10	12	1
	35	18	1
Sex			
Males			31
Females			23
Total			54

15-20 years. In our series we had greater number of males (31) than females (23).

TABLE 2
Predisposing factors attributed by patients

	No. of Cases
1. Family susceptibility	28
2. Environmental exposure	—
3. Exposure drugs	2
4. High Carbohydrate diet	24
5. Spices	22
6. Cosmetics	10
7. Menstrual cycle	9
8. Stress	12
9. Infection	5
10. Constipation	11
11. Others	3

As seen from Table 2, diet and family susceptibility were the two most common predisposing factors. A high carbohydrate diet and spices were responsible for exacerbations of acne in 24 and 22 patients respectively.

Heredity does play a role in predisposing a patient to acne vulgaris by increasing the susceptibility of sebaceous glands to free fatty acids. In our series, 28 patients gave a history of acne in other members of their family.

Cosmetics and constipation were also rated high by the patients as one of the predisposing factors. The patients were advised to avoid cosmetics while on trial.

TABLE 3
Previous Therapy

	No. of Cases
Systemic	11
Local	47
No previous therapy taken	7

7 out of the 54 patients included in the series had no previous therapy. The rest had tried other forms of therapy either locally or systemically with unsatisfactory results. The local therapy was in the form of sulphur resorcinol ointment or medicated soaps or any of the various over-the-counter medications. The systemic therapy included hormones and vitamins.

Results

Table 4 shows the results in 54 cases of acne.

TABLE 4
Response to treatment in percentage

Excellent	—	72.22
Good	—	27.78
Fair	—	Nil
Poor	—	Nil

Excellent response was seen in 72% of cases and good response was seen in 27% of cases.

There were no failures in our series.

Conclusion and remarks

We observed remarkably good results with the use of topical retinoic acid. It appears to us that it is perhaps the most potent topical anti-acne drug. A 72% excellent and 28% good response speaks for its effectiveness. Other studies both in India^{5,6,7} and abroad^{3,4,8} have also reported good results with Retinoic acid therapy.

Our results appear to be superior to those observed by other workers. In addition to its effectiveness, the therapy was without any severe untoward effect warranting the stoppage of the treatment. During the course of treatment, we had been examining patients every

week. We also were not very regimented with regard to the application once every night. Seven patients who showed moderate degree of redness and peeling of skin after a few weeks of therapy, were advised to use the drug on alternate days. In fact the treatment with retinoic acid and perhaps with all topical applications requires an art and has to be individualised.

Based on the questionnaire it would seem that high carbohydrate diet was perhaps responsible for exacerbation of acne lesions in 24 out of 54 patients. There is a popular belief that sugar exacerbates skin diseases. The answer to the questionnaire with regard to the diet may be only a reflection of this belief. The report does not prove or disprove that sugar or other carbohydrates exacerbate the acne process. In fact the Indian food in any way is predominantly made up of carbohydrates.

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