

## **A Double-blind Comparison of Topical Clindamycin and Oral Minocycline in the Treatment of Acne Vulgaris**

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**Sixty-six patients with moderate to severe facial acne vulgaris were entered in a 12-week double-blind study to compare the efficacy of topical clindamycin phosphate 1% twice daily and oral minocycline 50 mg twice daily. Both treatments gave significant overall improvements from baseline observations in acne**

**grade and inflamed lesion counts, but not in non-inflamed lesion counts. There were no significant differences between the two treatment groups in respect of acne grade, inflamed or non-inflamed lesion counts. Both treatment regimes were well tolerated. This study has shown that topical clindamycin twice**

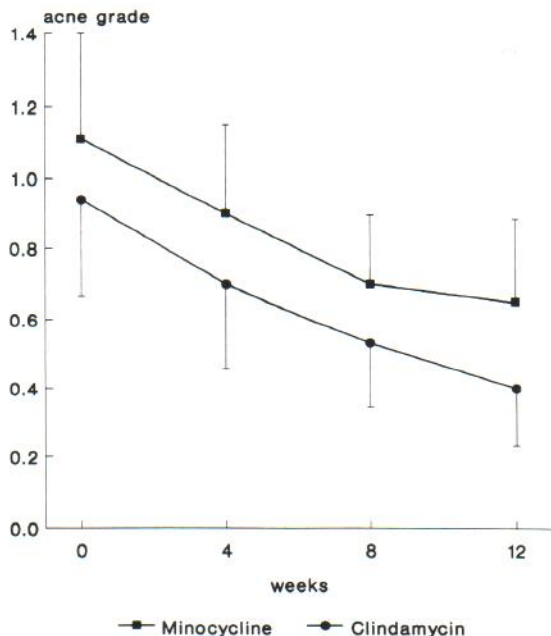


Fig. 1. Mean acne grade with 95% confidence intervals for topical clindamycin and oral minocycline treated patients over the 12-week treatment period.

**daily is an effective alternative to oral minocycline 50 mg twice daily in the treatment of moderate to severe facial acne vulgaris.**

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Orally administered antibiotics such as oxytetracycline, erythromycin and minocycline are established as effective therapy for acne vulgaris (1). Although generally very well tolerated, systemic administration of antibiotics, gives rise to a number of potential problems, such as diarrhoea and vaginal candidiasis. In addition, there is some reluctance by clinicians and patients to accept long-term use of this form of therapy. Several topical antibiotic preparations have been introduced as potential alternatives to systemic antibiotic therapy. Topical preparations of clindamycin (2-4), tetracycline (5) and erythromycin (6) have been shown to be of therapeutic value. However, the place of topical antibiotics in the treatment of acne is poorly defined and there have been few adequate comparisons with oral antibiotic regimes.

In this study we undertook a double-blind com-

parison of topical clindamycin and oral minocycline in patients with moderate to severe facial acne vulgaris.

## MATERIALS AND METHODS

Sixty-six out-patients in the age range 14-35 years, suffering from moderate to severe facial acne, were recruited to the study. Patients included had a minimum of 10 and a maximum of 120 inflamed lesions, but no more than six nodulo-cystic lesions on the face above the jaw line.

Exclusion criteria included any acne therapy, antibiotics, corticosteroids or androgens given within 30 days of the study, or patient who had commenced or stopped oral contraceptives within 90 days of the study. Also excluded were pregnant or nursing females, patients with known allergy to minocycline or clindamycin, and patients with a history of chronic bowel disease or diarrhoea.

Patients were sorted into matched pairs on the basis of age, sex, acne grade and numbers of inflamed and non-inflamed lesions. Matched pairs were randomly allocated, one to topical clindamycin phosphate 1% in an alcoholic solution (Dalacin-T, Upjohn Ltd, Great Britain) and the other to oral minocycline (Minocin, Lederle Laboratories, G.B.).

The study was double-blind and used a double-dummy technique. Subjects allocated topical clindamycin applied the lotion to the entire face twice daily and received placebo capsules with instructions to take one twice daily before meals. Subjects allocated minocycline received one 50 mg capsule twice daily before meals plus a placebo solution which was applied twice daily. The study was carried out during the winter months.

Patients were assessed prior to treatment and at 4, 8, and 12 weeks. Assessments included an overall facial acne grade on a scale of 0-10 and counts of inflamed and non-inflamed lesions using the method of Burke & Cunliffe (7). In addition, any adverse effects of treatment were noted.

As neither acne grades nor lesion counts are normally distributed, the data were converted by taking the natural logarithm of lesion counts and the natural logarithm of acne grades, multiplied by a factor of 10. Within-group differences in assessments at time 0, 4, 8 and 12 weeks were analysed for each treatment by analysis of variance and Newman-Keuls tests. Between-group differences were analysed by repeated measures analysis of variance.

## RESULTS

Sixty-five of the 66 patients recruited were evaluable: 42 males and 24 females. One female allocated minocycline was excluded from analysis because her age fell outside the age limits of the study. There were no significant differences between treatment groups at entry into the study in respect of age, sex, acne grade and lesion counts.

Of the patients allocated topical clindamycin, one

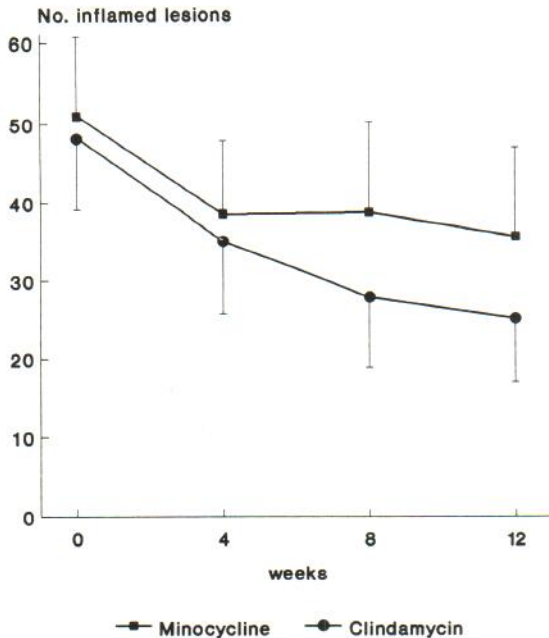


Fig. 2. Mean inflamed lesion counts with 95% confidence intervals for topical clindamycin and oral minocycline treated patients over the 12-week treatment period.

failed to attend at the 4-week assessment only, 3 at the 8-week assessment only and 2 at the 12-week assessment only. One patient allocated minocycline took another acne medication between the 4- and 8-week assessments. Data for this patient were only included for the 4-week assessment.

The mean changes in acne grade for the two treatment modalities are shown in Fig. 1, the mean changes in inflamed lesion counts are shown in Fig. 2, and non-inflamed lesion counts in Fig. 3.

The reductions from baseline in overall facial acne grade and inflamed lesion counts for topical clindamycin and minocycline treated patients were statistically significant ( $p < 0.05$ ). The differences in acne grade were significant at the 5% level at weeks 8 and 12 for both topical clindamycin and minocycline. The differences in inflamed lesion counts were significant at the 5% level at 4, 8, and 12 weeks for topical clindamycin, but only at 12 weeks for minocycline. The reductions in non-inflamed lesion counts at each assessment were not significantly different from baseline for either the topical clindamycin or minocycline groups.

The overall differences between topical clindamycin and minocycline were not significantly different

in respect of facial acne grade, inflamed and non-inflamed lesion counts.

The two regimes were generally well tolerated. One patient in the clindamycin group reported facial erythema and one patient from each group reported facial stinging. One patient from the minocycline group reported diarrhoea which was self-limiting. In none of the patients who reported side effects was withdrawal of therapy necessary.

## DISCUSSION

Several studies have attempted to compare the efficacy of topical and systemic antibiotic therapy for acne. Most have compared the topical antibiotic with oral tetracycline in a low dose of 250 mg twice daily for mild to moderate acne. The results have varied, with some studies reporting no significant difference between the topical and oral antibiotic (3,8-10) and others finding the topical preparation to be superior (11,12). There is evidence to suggest that the response to oral tetracycline is better at higher doses than the dose employed in these studies (13) and many clinicians now use a dose of 500 mg twice daily routinely (1). Only two studies have compared a topical antibiotic (in both cases clindamycin) with oral tetracycline in a higher dose. Katsambas et

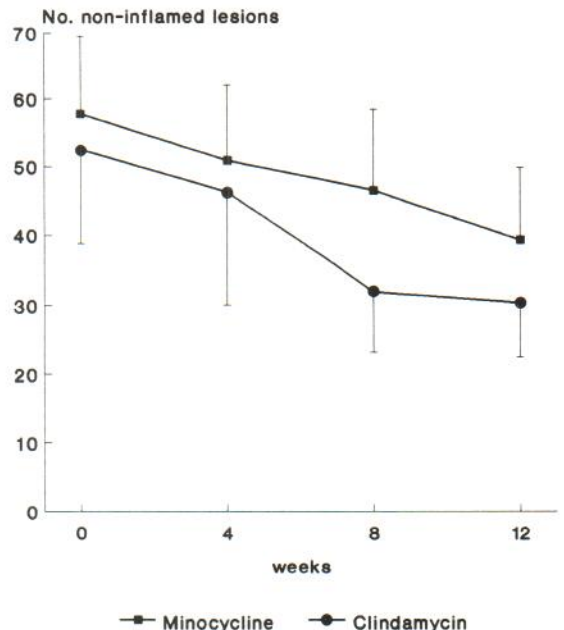


Fig. 3. Mean non-inflamed lesion counts with 95% confidence intervals for topical clindamycin and oral minocycline treated patients over the 12-week treatment period.



al. (14) compared topical clindamycin 1% with tetracycline 500 mg twice daily for only 3 weeks, reducing to 250 mg twice daily for a further 9 weeks in acne of moderate severity and found no significant difference between the two. Braathen (4) compared topical clindamycin with oral tetracycline 500 mg twice daily in moderate to severe acne and found clindamycin to be significantly more effective after 8 weeks.

Oral minocycline is widely used as an alternative to oxytetracycline and erythromycin and has been shown to be effective in the treatment of acne (15). It appears to be maximally effective in a dose of 50 mg twice daily and at this dose is as effective as tetracycline 500 mg twice daily (W. J. Cunliffe, unpublished observations). In this study we have shown that the efficacy of topical clindamycin 1% twice daily is similar to that of oral minocycline 50 mg twice daily in patients with moderate to severe facial acne up to 12 weeks.

The degree of improvement of acne at 3 months in this study was rather less than might be expected with oral minocycline (16). The reason for this is not clear. One possible cause of resistance to antibiotic therapy in the patients studied was the presence of resistant skin microflora (17) which may have resulted from treatment with antibiotics prior to entry into the study. However, no microbiological assessments were undertaken to investigate this possibility. Addition of a double placebo group would have perhaps been desirable, though both treatments have been shown previously to be effective acne treatments (2-4, 15). Conventional antibiotic treatment for acne is usually continued for 4-6 months and further study will be required to determine whether topical clindamycin and oral minocycline are equally efficacious with more prolonged therapy.

Our results indicate that topical clindamycin is an effective alternative to oral minocycline in the treatment of inflammatory acne vulgaris. Further comparative studies of clindamycin and other topical antibiotic preparations with conventional oral antibiotic regimes are required to determine the relative roles of these treatments in the management of acne.

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