FOLLOW UP OF PATIENTS OF ACNE VULGARIS TREATED WITH TETRACYCLINES

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Tetracyclines have been used extensively for the management of moderately severe to severe acne. In this study we studied the effect of withdrawal of tetracycline and minocycline on the course of acne. Ninety seven clinically controlled patients of acne vulgaris who had earlier taken tetracycline (1G daily) or minocycline (100 mg daily) were followed up at 4 weekly intervals for a period of 12 weeks after stopping all anti-acne therapy. At each visit the acne lesion score (ALS) was calculated. It was found that in the group of 48 patients who had previously received tetracyclines, 25% continued to improve at 12 weeks while 16.7% had relapsed. In the group of 49 patients who had earlier taken minocycline, 69.4% continued to improve and none had relapsed at 12 weeks. Similarly, when the mean acne lesion score of the 2 groups was compared at 12 weeks, it was found that response persisted in the group of acne patients who had been treated previously with minocycline and not in the group treated with tetracyclines.

Introduction

Tetracyclines have been universally recommended in the management of moderately severe and severe acne.[1] They act by reducing the population of Propionibacterium acnes (P acnes) as well as by altering the keratinisation in the pilosebaceous units. Levels of free fatty acids in the sebum are lowered. Inflammatory reactions are inhibited due to decreased complement activation, reduced polymorphonuclear leucocyte chemotaxis and macrophage phagocytosis and an inhibition of cell mediated immunity.[1]

Minocycline may have a therapeutic edge over other tetracyclines due to its more reliable absorption from the gut[2] and its greater penetration into the pilosebaceous units.[3] In a previous study, we found the response of acne was significantly faster with minocycline than with tetracyclines.[4] Though, tetracyclines including minocycline have been used extensively in the treatment of acne vulgaris, there is very little information about the effect of withdrawal of these drugs on the course of acne vulgaris.

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Materials and Methods

Ninety seven patients (aged 14-28 years, 60 men and 37 women), who had completed treatment with either minocycline or with tetracyclines (for periods varying from 6 weeks-20 weeks) for moderately severe or severe acne, were inducted into the study. All patients had an acne lesions score (ALS) of 30 or less. The ALS was calculated as described in a previous article.[4] Patients who were obsessed with presence of few lesions were excluded from the study. The patients were advised not to use any topical or systemic anti-acne therapy. They were, however, asked to wash their face with non-medicated soap and avoid using any creams/oil on their face and scalp.

The patients were followed up for 12 weeks at intervals of 4 weeks. The lesions, non-inflammatory and inflammatory, were counted and the ALS calculated at each visit. If at any time the ALS increased to 50 or more the patient was said to have relapsed and was started on appropriate specific anti-acne treatment. The relapse rate at 12 weeks in both the groups was compared. In addition the

mean ALS in the two groups was statistically compared at 12 weeks using Wilcoxan rank test.

Results

Table I shows improvement and the relapse rates of acne vulgaris following cessation of therapy with tetracycline and minocycline and this clearly shows that the lesions continued to respond even 12 weeks after stopping treatment and this improvement was better with patients who had taken minocycline.

Table I. Number of patients of acne vulgaris who continued to improve or relapsed at 12 weeks after stopping therapy

Drugs used (No. of patients)	12 weeks Improved (%)	12 weeks Relapsed (%)
Tetracycline (48)	12 (25)	8 (16.7)
Minocycline (49)	34 (69.4)	0 (0)
p value	p <0.01	p <.001

Table II shows the mean of ALS at different periods (0,4,8 and 12 weeks) after cessation of treatment. It was found that with minocycline the mean ALS values continued to decrease even at 8 weeks after treatment was stopped and this decrease was statistically significant (P<0.001). Even at 12 weeks, the mean ALS was lower than at the time of stopping treatment and this decrease was also statistically significant (P<0.05). However, with tetracycline the mean ALS started to increase as early as 4 weeks and at 12 weeks there was a statistically significant (P<0.05) increase in the mean ALS.

Table I. Mean acne lesion score at varying periods of time after stopping treatment with tetracyclines and minocycline.

Drugs used (No. of patients)	Mean ALS (±SD) 0 Weeks	4 Weeks	8 Weeks	12 Weeks
Tetracyclines (48)	20.3 (±7.9)	23.4 (±6.7)	27.43 (±11.8)	33.5 (±16.3)
Minocycline (49)	22.6 (±5.9)	19.9 (±5.7)	19.1 (±6.7)	20.8 (±8.9)

Discussion

The marginal superiority of minocycline over other tetracyclines in the treatment of acne vulgaris has been observed in several studies. Khanna[4] observed that the response was significantly faster with minocycline than with tetracycline. However, an assessment at 12 weeks showed the response of acne to be comparable in the minocycline and tetracycline groups. Similar observations have been made by Hubbell et al.[5]

There is however, paucity of data regarding the course of acne vulgaris after cessation of therapy. Leyden et al[6] noted that minocycline produced a significantly greater reduction in the P acnes counts that persisted even up to 3 weeks after discontinuation of minocycline therapy. In contrast, with tetracyclines the P acnes counts returned to baseline within 3 weeks after discontinuation of therapy. A similar persistence of effect for reduction of skin surface free fatty acid levels and clinical lesions was also seen with minocycline therapy.

In our study also, we found that in 69% of patients there was a continued improvement in the acne lesions after cessation of minocycline therapy as compared to 25% patients who continued to improve on stopping tetracycline. An equally important finding was that about 16% of patients who were previously on tetracyclines had a significant deterioration of their problem at 12 weeks; there were no relapses at 12 weeks.

Rabbosi et al[7] in an 8-week follow-up found that patients continued to improve after stopping minocycline. This could be because of the lipophilic nature of minocycline and its concentration in the sebaceous glands. However, the strongest point against the use of minocycline is its cost.

References

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