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Nodulocystic Acne: Oral Gugulipid versus Tetracycline

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Abstract

Twenty patients with nodulocystic acne were randomly allocated to one of two treatment schedules: 1) Tetracycline 500 mg or 2) Tab. Gugulipid (equivalent to 25 mg guggulsterone). Both were taken twice daily for 3 months, and both produced a progressive reduction in the lesions in the majority of patients. With tetracycline, the percentage reduction in the inflammatory lesions was 65.2% as compared to 68% with gugulipid; on comparison, this difference was statistically insignificant ($P>0.05$). Follow-up at 3 months showed a relapse in 4 cases on tetracyline and 2 cases on gugulipid. An interesting observation was that the patients with oily faces responded remarkably better to gugulipid.

Key words: nodulocystic acne; tetracycline; gugulipid

Introduction

Acne vulgaris is a self limited, multifactorial disease involving the sebaceous follicles. A prerequisite for the development of acne is active sebaceous glands (1); the level of their sebum secretion correlates with the severity of the acne (2, 3). Sebum, which consists of a mixture of squalene, wax and sterol esters, cholesterol, polar lipids, and triglycerides (4), plays a key role in the genesis of this disorder. Sebum and its breakdown products may be involved in ductal hypercornification and growth of bacteria, resulting in acne and its sequel (5, 6). Various effective antiacne therapies, both topical (benzoyl peroxide, tetracycline) and systemic (tetracycline and its derivatives, cyproterone acetate, isotretinoin), bring about quantitative and/or qualitative changes in the sebaceous secretions (7–10). Isotretinoin, a derivative of Vitamin A, is a unique drug which has an inhibitory effect on sebum secretion (9) and is particularly useful in severe nodulocystic acne (10). Recently, gugulipid has been found to be useful in the treatment of moderate to severe acne (11). This drug (Tab. Guglip, Cipla India Ltd.), is a standardized extract of the oleoresin of *Commiphora mukul*, an Indian medicinal plant. The active ingredients of gugulipid are mainly guggulsterones (Z and E). Gugulipid is an effective hypolipidemic agent (12–14) in patients with hyperlipidemia. Gugulipid also exhibits a marked antilipolytic activity in rats (14) and, probably due to this later effect, reduces the secretion of sebum and inhibits the lipolysis of triglycerides by bacterial lipases to free fatty acids which induce acne (11).

Considering the above, we decided to undertake this comparative trial of systemic tetracycline and oral gugulipid in treating nodulocystic acne.

Materials and Methods

Twenty patients (aged 16 to 25 years; sex ratio of male to female was 1:4) with nodulocystic acne were randomly allocated to one of two treatment schedules: 1) Tetracycline 500 mg or 2) Tab. Gugulipid (25 mg guggulsterone), twice a day for 3 months. No topical medication was prescribed. Hemoglobin, total and differential leukocyte counts, erythrocyte sedimentation rate, liver and kidney function tests, urine analyses, and lipid profiles

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Table 1. Comparative efficacy of two regimes

Treatment regime	Percentage reduction of lesions	
	Inflammatory lesions	Noninflammatory lesions
A Tetracycline	65.2%	10.5%
B Gugulipid	68.0%	11.8%

were done before and after the completion of treatment. There was no incidence of hyperlipidemia in our study groups.

Patients were evaluated by the same observer at 2 week intervals by counting the lesions. The criterion for effectiveness of the treatment was significant reduction in the number of inflammatory lesions at the end of 3 months. The improvement was graded into three categories: excellent, good, and poor, according to the percentage reduction in the lesions. The response to this treatment schedule was statistically analysed using Students t-test.

Results

Both regimes produced a progressive reduction in the number of lesions in a majority of the patients. The inflammatory lesions (papules, pustules, nodules, cystic lesions) responded better than did the noninflammatory (comedones) lesions (Table 1). With tetracycline, the percentage reduction in inflammatory lesions was 65.2%; with gugulipid, it was 68%. The gradewise data are shown in Table 2; on comparison, the difference between the two groups was not statistically significant ($p>0.05$). No major side effects were noted with either drug. There was no significant alteration in lipid profile in our patient groups. Follow-up at 3 months showed a relapse in 4 cases who had taken tetracycline and 2 cases who had taken gugulipid. An intriguing observation was that patients with cystic acne lesions on an oily face responded better to gugulipid than tetracycline.

Discussion

Oral broad spectrum antibiotics have an important role in the treatment of inflammatory acne. Extensive clinical experience has confirmed the safety and efficacy of their long term administration (15–17). Tetracycline is the preferred antibiotic; it is postulated to alter the composition of the surface lipids, decreasing the fatty acids and cholesterol, and increasing the triglycerides by direct inhibition of extra cellular lipases (18). This prompted us to compare tetracycline with gugulipid for treating nodulocystic acne. Gugulipid was found to be slightly superior in its efficacy to tetracycline, but this difference was not statistically significant ($p>0.05$). An interesting observation was that patients with oily faces responded remarkably better to gugulipid, thus supporting our argument for oral use of gugulipid in nodulocystic acne.

Table 2. Number of patients in three percentage groups

Treatment regime	No. of patients showing reduction in the percentage of inflammatory lesions			
	90–100% (Excellent)	50–90% (Good)	50% (Poor)	Total
A Tetracycline	2	6	2	10
B Gugulipid	3	7	0	10

The recent introduction of isotretinoin (13-cisretinoic acid) for the treatment of severe, recalcitrant nodulocystic acne has been one of the most dramatic advances in acne therapy, but has significant side effects (19). Moreover, it is an expensive drug which is not always available in the third world countries. Under these circumstances, gugulipid may be considered an alternative medicine for the management of nodulocystic acne. Thus, in conclusion, gugulipid has an encouraging potential with practically no major side effects for treating nodulocystic acne patients in developing countries.

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