Effect of clindamycin in acne among college students

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ABSTRACT

Acne is a chronic, self-limiting, inflammatory disease of adolescents and young adults. Acne and its associated problems affects as many as 80% of adolescents and young adults. Only one third affected teenagers could consult with their physician about acne. Clindamycin is a lincosamide antibiotic, developed in 1966 by chemically modifying the naturally occurring lincomycin.. Topical antibiotics such as erythromycin and clindamycin are the most popular in the management of acne. Side effects though minor includes erythema, peeling, dryness, and burning, pseudomembranous colitis which is rare, but has been reported itching, with clindamycin .The objective of the study is to evaluate efficacy of topical clindamycin in treating acne among students and to monitor the adverse effects encountered during the therapy. It was a cross-sectional questionnaire study carried out among 55 students of both sex group of age varying from 18 to 25 years suffering from acne. Knowledge of safe and effective use of clindamycin among students was to be assessed with a 17 pre-validated questionnaire and the data is analyzed using descriptive statistics. Among the respondents, about 79.6% had an outbreak of acne.71.4% believe that their acne is due their food habits. 87% are using clindamycin and was effective in 76.7%. Among them, about 61.9% use without prescription and 48.8% claimed to have no side effect and patients without recurrence is 55%.This study is to demonstrate the efficacy of clindamycin in the treatment of moderate to severe acne. The relevant data obtained through this study will help to aware about safe and effective use clindamycin in acne patients and provides information about the perception of acne among young adults with or without acne.

Keywords: Effective use; Acne; Awareness; Clindamycin; Antibiotic.

ISSN: 2582-0672

Research Article

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Article Info

Received on: 19-07-2019

Revised on: 26-07-2019

Accepted on: 30-07-2019

DOI: <https://doi.org/10.33974/ijrhcp.v1i4.133>

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INTRODUCTION

Acne vulgaris is a chronic, self-limiting, inflammatory disease of the pilosebaceous unit characterized by pleomorphic lesions like comedones, erythematous

papules, pustules, cysts and nodules^[1]. Although the course of acne may be self-limiting, the sequelae can be lifelong, with pitted or hypertrophic scar formation^[2]. It is more common and more severe in males than in females, relating it to androgen activity. It starts at puberty or a few months earlier. The peak incidence is between 14-17 years in women and 16-19 years in men. It seems to be familial, but owing to the high prevalence of the disease this has been extremely difficult to assess. Nodulocystic acne has been reported to be more common in white males than in black males, and one group of investigators has found that acne is more severe in patients with the XYY genotype. Depending on the severity and extent of involvement, treatment varies from application of topical medications to systemic therapy with antibiotics or retinoids^[3]. Various clinical presentations include seborrhoea, comedones, erythematous papules and pustules, less frequently nodules, deep pustules or pseudocysts, and ultimate scarring in few of them. Acne has four main pathogenetic mechanism increased sebum productions, follicular hyperkeratinization, *Propionibacterium acne* (*P. acne*) colonization, and the products of inflammation.^[4-7] In recent

years, due to better understanding of the pathogenesis of acne, new therapeutic modalities are designed^[5]. Topical acne therapies are widely used for the treatment of mild to moderately severe acne vulgaris. However, many available treatments have limitations associated with their use, including lengthy time to response, cosmetic acceptability and photosensitivity^[8]. Topical treatment is sufficient in most patients with acne, but systemic therapy is required inpatients who have deep acne with nodules and cysts. The major topical agents now in use are vitamin A derivatives and antimicrobials such as benzoyl peroxide and topical antibiotics. The topical retinoid class, which includes tretinoin, adapalene and tazarotene, and the topical antibacterials, clindamycin and erythromycin, are regulated by prescription in most countries. Topical clindamycin has no systemic toxicity except diarrhea rarely and there have been 2 cases of pseudo membranous colitis reported¹⁰. Though topical clindamycin is being used in many countries for the treatment of acne vulgaris but it was not being used in our country due to non-availability of the drug^[11].

METHODOLOGY

It was a cross-sectional type of descriptive study carried out among 55 suffering from acne vulgaris in college students. It was carried out for a period of 8 weeks. Knowledge of safe and effective use of clindamycin among students were to be assessed with a 17 pre-validated questionnaire and the data is analyzed using descriptive statistics and include questions of history of acne regarding duration, hormonal therapy, sun exposure, food habit and cosmetic use were taken. Patients were asked about previous use of clindamycin and any hypersensitivity to these agents. Family history of acne was also taken.

Inclusion criteria: Acne patient of both sex group of age varies from 18 to 25 years.

Exclusion criteria: Acne patient of both sex group of age below 18 and above 25 years. Patients those who refused to be included in the study.

Data collection: Data were collected during the 2018–2019 academic year. Questionnaires were distributed to 80 pharmacy students. Fifty five students completed the questionnaire, with a response rate of 79%. Among these individuals, males were 13 and females were 42. The participants from each course ranged between 23–96 students: 91 (38.3%) pharm D, 23 (9.7%) M pharm, 96 (40.5%) B pharm, 27 (11.3%) D pharm. All the participants were between the age group 18-25. Respondents completed the online structured questionnaire forms which composed of check box questions regarding socio-demographic data, food habits, skin types, cause of acne in their own perception, treatment, and duration of therapy etc. Self medication practice and various side effect of therapy were recorded.

Statistical analysis: All data collected were analyzed using both descriptive and inferential statistics. The data were analyzed using descriptive statistics for demographic characteristics, food habits, skin types, cause of acne in their own perception, treatment, duration of therapy. Self-medication practice and various side effect of therapy were analysed and the value of $P < 0.05$ was considered statistically significant

RESULTS

Among the total strength 450, Questionnaires were distributed randomly to 80 pharmacy students, about 55 students participated in the survey through google form, with a response rate of 92%. Within the respondents, All participants were between the age group 18-25. 13 were male and 42 were female. Among the respondents, about 79.6% had an outbreak of acne and those with duration of acne in 1-3 years was 38%. 71.4% believe that their acne is due their food habits. 87% are using clindamycin and was effective in 76.7% (Figure 1). Among them, about 61.9% use without prescription (Figure 2) and 48.8% claimed to have no side effect and patients without recurrence is 55%. The objective of the study is not only to find out the efficacy of clindamycin given orally, but also to find out if this efficacy is obtained without producing the adverse effects for which the administration of Clindamycin is hesitated the antimicrobial.

Figure 1: Treatment effectiveness

Figure 2: A) Self medication pattern.
B) Recurrence after the stoppage of the drug

**Figure 3: A) Cause of acne in your own perception
B) List of allopathic medicines
C) Possible side effects of clindamycin.**

Table 1: Duration of Acne of study population

Duration	Number	Percentage
<6 month	7	13%
1year	14	25%
1-3year	21	38%
>3year	2	3.6%

DISCUSSION

Acne vulgaris is a very common skin disease worldwide. It is associated with the high probability of adverse cosmetic and psychosocial effects. The most effective treatment options for acne is clindamycin therapy.

In this study overall response to topical clindamycin in the treatment of acne vulgaris has been observed. This 12 week study found Clindamycin to be effective in the treatment of acne, with reductions in the number of inflammatory and total acne lesions significantly. It is safe and effective topical therapy for acne vulgaris. Clindamycin is widely used to treat acne vulgaris. Patients using the 1% clindamycin lotion experienced reductions in number of pustules, papules, open comedones and nodulocystic lesions. However, two thirds of affected teenagers wish that they could speak with their physician about acne, but only one third actually do. Whereas in my study it seems that clindamycin alone was significantly effective in mild to moderate acne vulgaris. This variation may be because they have used combination therapy of clindamycin in their study while in my study clindamycin was used as monotherapy. In this study only one patient reported irritation and burning (3.33%). Similarly one patient developed pruritus (3.33%), one patient complained of erythema (3.33%), and one patient had peeling (3.33%). Oily skin was observed in two patients (6.67%). These side effects are minimum and insignificant. The clinical side effects of topical clindamycin described in the literature includes facial pruritus, irritation and burning, erythema, peeling, dryness, oily skin and diarrhoea rarely. Only 2 cases of pseudomembranous co-

litis reported. These symptoms were of mild intensity. Although diarrhoea was reported in some patients. No patients discontinued the protocol because of diarrhea. All other adverse events were mild or moderate. They also reported moderate facial pruritus that resolved without treatment and mild facial pruritus and irritation that cleared without treatment.

In this study overall response to topical clindamycin in the treatment of acne vulgaris has been observed. About 55 students were responded through Google forms. Among the respondents, about 79.6% had an outbreak of acne. 71.4% believe that their acne is due their food habits. 87% are using clindamycin and was effective in 76.7%. Among them, about 61.9% use without prescription and 48.8% claimed to have no side effect and patients without recurrence is 55%. The objective of the study is not only to find out the efficacy of clindamycin given orally, but also to find out this efficacy is obtained without producing the adverse effects

CONCLUSION

Significance of the study is to confirms that clindamycin is safe and effective topical therapy for mild to moderate acne vulgaris with minimum side effects that subside with continuation of the therapy. Proper selection of patients as well as appropriate topical use of the drug for adequate duration will often result in significant clinical improvement with infrequent and mild adverse effects that subside with continuation of the therapy. None of the reactions was severe, all were mild and well tolerated and most occurred within the first month of initiation of treatment and resolved with continued use of drug and completely cured after the treatment completed. No body had to discontinue the therapy for side effects. 80% of the total patients had no side effects. The relevant data obtained through this study will help to aware about safe and effective use clindamycin in acne patients and provides information about the perception of acne among young adults with or without acne.

ACKNOWLEDGEMENTS

Authors would like to express sincere gratitude and respectful thanks to Prof. Shaiju S Daran, Principal, Ezhuthachan College of pharmaceutical sciences, Neyyattinkara for providing necessary facilities to carry out research. Also would like to thanks to faculty members of Department of Pharmacy Practice, Ezhuthachan College of pharmaceutical sciences, Marayamuttom, Neyyattinkara for their constant support and help

CONFLICTS OF INTEREST

The author declares no conflict of interests.

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