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Efficacy of Vitamin E to Prevent Dermal Complications of Isotretinoin

¹Farideh Goforoushan, ¹Hamideh Azimi and ²Mohamad Goldust

¹Department of Dermatology, Tabriz University of Medical Sciences, Tabriz, Iran

²Student Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran

Abstract: Acne treatment depends on whether patients have a mild, moderate, or severe type of acne. The aim of this study was to compare the using of Isotretinoin (Rokutan) with and without oral vitamin E in treating acne. This study was performed on 60 patients on 0.5 mg/kg/day isotretinoin treatment for 6 months. The first group received 800 IU day⁻¹ Vit E during treatment and the second group received 800 IU day⁻¹ cod liver oil capsules. All patients were observed for the complications at 1th, 4th and 6th weeks during treatment. Cheilitis was the most common side effect among these patients (69%). Epistaxis was the second side effect in both groups (22%). Other side effects were xerosis, pruritus, epigastric pain and nail fragility. The frequency and the severity of complications were less common at 4th and 6th weeks of treatment. Isotretinoin is a useful and effective drug in treating severe and treatment-resistance acne lesions.

Key words: Acne, Isotretinoin (Rokutan), Vit E

INTRODUCTION

Acne is a common skin disease of pilosebaceous unit affecting both genders during maturity and its activity often decreases through termination of this period. However, its severity and duration vary in different individuals (Vender and Vender, 2012). Lesions are more prevalent and severe in skin areas with more sebaceous glands (Gan *et al.*, 2012). Drugs effective in treating acne include vitamin A, benzoyl peroxide and antibiotics (Landis *et al.*, 2012). Isotretinoin is an oral vitamin A-based retinoid resulting in long-term recovery period. The drug affects all factors playing a role in acne creating but it has more side effects including teratogenic quality of the drug (Mehra *et al.*, 2012). The drug has indication in severe nodulocystic and phlogistic acne, moderate acne which does not respond to common treatments, patients suffering from acne scar, more sebum skin, negative gram folliculate, fulminate acne, pyoderma faciale and finally patients fearing deformity (Bergler-Czop and Brzezinska-Wcislo, 2012). The side effects are drug-dependent and they can be controlled by decreasing the drug dosage (Alonso-de-Celada *et al.*, 2012). The present study aims at comparative evaluation of Isotretinoin with and without oral vitamin E in treating acne.

MATERIALS AND METHODS

Sixty patients suffering from acne were selected during May 2011 to May 2012 according to the following

criteria: patients with more than moderate severity of face acne, patients with slight acne suffering from scar and pigmentation after inflammatory, patients with acne resisting against common treatments. The understudy patients were divided into two groups using simple and alternate random method. Group I was treated with 0.5 mg/kg/day of Rokutan and 800 unit of oral vitamin E. The group II (control group) was treated with 0.5 mg/kg/day of Rokutan and cod liver oil capsules which is free from vitamin E. After starting the treatment and during 1st, 4th and 6th weeks of the plan, the patients were visited by dermatologist considering dermal-mucous complications. At the end of the study, response-to-treatment evaluation was as very good (in case of decreasing more than 50% of size and number of lesions) and moderate (in case of decreasing less than 50% of size and number of lesions). The obtained data was analyzed using SPSS-16 software, statistical tests of T-test, Man Whitney and Chi square. Fischer test was used, if required. The results were stated as frequency percentage and mean and $p < 0.05$ values are regarded as meaningful.

RESULTS

There were totally 60 patients divided into two case and control groups. The case group was consisted of 30 cases (11 males and 19 females) and there were 30 cases (13 males and 17 females) in the control group. The mean age was 21.88 ± 8.65 (test group = 22.57 ± 9.12 and control group = 21.20 ± 8.82). There was no meaningful

Table 1: Frequency distribution of acne severity and gender of patients in two separate test and control groups

Disease Specifications	No. Test group	No. Control group	No. Total	p-value
Disease severity				0.59
Mild	6 (20)	5 (16.7)	11 (18.3)	
Moderate	12 (40)	12 (40)	24 (40)	
Moderate to severe	12 (40)	13 (43.3)	25 (41.7)	
Gender				0.93
Male	11 (36.7)	13 (43.3)	24 (40)	
Female	19 (63.3)	17 (56.7)	36 (60)	

Value in parameter are expressed as percentage

difference between these two groups considering mean age ($p = 0.497$). Considering acne severity, most patients suffered from mild or severe acne (Table 1). The lesions were observed on face of 24 subjects (9 males and 5 females), face and shoulders of 8 cases (3 males and 5 females) and face, shoulder, back and chest of 28 patients. Chelate was the most common dermal-mucous complication during 1st, 4th and 6th weeks after treatment in both groups. At the end of the study, response to treatment with Rokutan was very good and acceptable in 39 subjects (22 of the case and 17 of control groups) and was moderate in 21 subjects (including 8 of the case and 13 of the control group). Mean time of the symptoms outbreak was 4.05 and 3.33 years in patients of the test and control groups, respectively. There is no significant difference between two case and control groups considering gender ($p = 0.93$). During 1st and 4th weeks of treatment, meaningful difference was not observed in the case group in comparison with the control group considering prevalence of dermal-mucous complications of Rokutan. At the 6th week of treatment, chelate prevalence in the test group was meaningfully less than that of the control group ($p = 0.037$). Dermal-mucous complications were more prevalent in both groups during the 1st week of treatment in comparison with the 4th and 6th weeks.

DISCUSSION

Rokutan is a useful drug in treating severe and treatment-resistance acne (Erturan *et al.*, 2012). In about 65% of cases, treatment results with rokutan were very good and acceptable. In their study conducted on effects of rokutan in treating acne in Australia, Cooper *et al.* (2013) introduced the drug as a healthy and useful product in treating moderate to severe acne as well as treatment-resistance acne and suggested a significant difference between results of treating with rokutan and other therapeutic methods. Stein and Lebwohl (2001), from New York suggested that consumption of 800 units of vitamin E (alpha tocopherol) per day may decrease

Isotretinoin complications in treating acne or acitretin in treating psoriasis. According to the present study, in patients received vitamin E along with rokutan, chelate prevalence in the test group during 6th week after treatment was less than the control one. In other cases, there was no difference in results of both groups. Vitamin E effects in decreasing severity of rokutan side effects. There was no significant difference between two groups considering severity of created side effects (Strauss *et al.*, 2000). In our study, there was no meaningful difference regarding prevalence of side effects during 1st and 4th weeks after treatment. Dosage of the consumed rokutan is one of reasons of unchanged prevalence of the created side effects. It was the same in both groups. Rokutan is a useful and effective drug in treating severe and treatment-resistance acne lesions. It is also effective in treating moderate to severe as well as slight acne associated with scar. Cheilitis is the most prevalent side effect of rokutan. During 6th week of treatment, its prevalence significantly decreases via concurrent consumption of vitamin E.

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