

Original article

Olive oil: an effective emollient for lichen simplex chronicus

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Abstract *Background* Olive belongs to the family of *Oleaceae*. Olive oil is being used increasingly in different systemic diseases. In dermatology, it is primarily used as a vehicle but it can have many other potential uses.

Objectives We tested the efficacy of topical olive oil in the treatment of lichen simplex chronicus.

Patients and methods Forty male and female patients suffering from lichen simplex chronicus affecting nape of the neck, arms, back of the legs and ankle. Patients were followed up weekly for four weeks. Pruritus and dryness were scored on a 4 grade scale i.e. none, slight, moderate and severe at baseline and on each follow up visit.

Results Significant improvement in pruritus and dryness was noticed in all age groups and both sexes.

Conclusions Olive oil is effective in controlling dryness and pruritus in lichen simplex chronicus.

Key words Olive oil, emollient, lichen simplex chronicus.

Introduction

The plant Olive (*Zaitoon* in Arabic and Urdu) belongs the family *Oleaceae*. The olive oil is nutritive, emollient, demulcent, laxative, allays the irritation of digestive organs and alimentary canal. Olive oil is used for edible purpose, relieves general debility and weakness in all age groups. It relieves constipation and is beneficial when used in fistula and anal fissures. It is useful to relieve rheumatic pain, paralysis, sciatica. It softens the body when

massaged and it was considered remedy of haemorrhoids, skin diseases, according to Ibn-ul-Qim as mentioned by Ghaznavi.^{1,2} The olive oil produces freshness, keeps alertness, removes the worms from the gut, gives vigour in old age² It is known that Mediterranean diet represents a useful and effective mean for prevention of arteriosclerosis.³ Effect of olive oil on cardiovascular disease were evaluated and the findings suggested that polyphenolic compounds found in olive oil are endowed with several biologic activities that may contribute to lower incidence of coronary heart disease in Mediterranean area,⁴ It is useful in modifying disease activity in systemic lupus erythematosus⁵ and rheumatoid arthritis.⁶

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In dermatology, olive oil has many uses. Besides its use as a vehicle in different topical preparations,⁷ it is also effective in alopecia, seborrhoea capitis, lustreless hair, oral aphthae and burns.² The experimental work showed its potential benefits in psoriasis.⁸ Olive oil or fish oil supplementation was also found to improve the symptoms of pruritus in patient of chronic renal failure.⁹

Lichen simplex chronicus (LSC) is a dermatosis in which lichenification, the hallmark of disease, occurs without any known precipitating factor.¹⁰ The disease is common world-wide and it usually affects adults of both sexes. Nape and sides of neck, around ankles, lower legs, thighs, extensor aspects of arms, and genital regions are the usually affected sites. Topical steroids with and without occlusion, intradermal steroid injections are usually used to treat.

Considering the growing popularity of alternative medicine in dermatology world over, we aimed to test the efficacy and safety of olive oil in the treatment of this itchy disorder.

Patients and methods

Forty male and forty female patients, age = 10 years, suffering from lichen simplex chronicus (diagnosed clinically) were collected from authors' clinics and divided into different subgroups according to the age and sex as shown in **Table 1**. They were advised olive oil to apply on the affected parts (nape of the neck, arms, back of the legs and ankle) three times a day regularly. Dryness and pruritus were scored weekly for 4 weeks. The assessment score was assigned qualitatively as none, slight, moderate and severe. The pre- and post-treatment scores

Table 1 Subgroups of patients according to

Group	Age (years)	n
<i>Male patients (n=40)</i>		
1. A	10-20	10
2. A1	21-30	10
3. A2	31-40	10
4. A3	41-50	10
<i>Female patients (n=40)</i>		
5. B	10-20	10
6. B1	21-30	10
7. B2	31-40	10
8. B3	41-50	10

were compared for statistical significance.

Results

Tables 2-5 show the effect of olive oil therapy on dryness and pruritus in all subgroups.

Effect on dryness

Males

Group A In this group, before treatment dryness was scored as moderate in 40% of the patients and severe in 60%. After four weeks, 70% rated as slight and 30% as moderate dryness ($p < 0.05$).

Group A1 10% of the patients had moderate dryness while 90% had severe dryness before treatment. At week 4, 50% had slight and 50% had moderate dryness ($p < 0.05$).

Group A2 Before treatment 10% of the patients had slight, 40% moderate, and 50% scored severe dryness. After 4 weeks of treatment, 80% rated slight and 20% moderate dryness ($p < 0.05$).

Group A3 In 41-50 years group, before treatment 10% of the patients had slight, 40% had moderate and 50% had severe dryness. At the end of four weeks, 60% turned to slight while 40% turned to moderate ($p < 0.05$).

Table 2 Effect of olive oil treatment on dryness according to age group in male (n=40)

Age group and severity of clinical signs	Before therapy	After treatment				p value
	n (%)	One week n (%)	Two week n (%)	Three week n (%)	Four week n (%)	
<i>Group A 10-20 years n=10</i>						
None	-	-	-	-	-	
Slight	-	-	-	6 (60)	7 (70)	<0.05
Moderate	4 (40)	7 (70)	9 (90)	4 (40)	3 (30)	
Severe	6 (60)	3 (30)	1 (10)	-	-	
<i>Group A1 21-30 years n=10</i>						
None	-	-	-	-	-	
Slight	-	-	3 (30)	4 (40)	5 (50)	<0.05
Moderate	1 (10)	3 (30)	5 (50)	6 (60)	5 (50)	
Severe	9 (90)	7 (70)	2 (20)	-	-	
<i>Group A2 31-40 years n=10</i>						
None	-	-	-	-	-	
Slight	1 (10)	1 (10)	1 (40)	4 (60)	8 (80)	<0.05
Moderate	4 (40)	6 (60)	6 (50)	5 (40)	2 (20)	
Severe	5 (50)	3 (30)	3 (10)	1 (10)	-	
<i>Group A3 41-50 years n=10</i>						
None	-	-	-	-	-	
Slight	1 (10)	1 (10)	2 (20)	6 (60)	6 (60)	<0.05
Moderate	4 (40)	6 (60)	8 (80)	4 (40)	4 (40)	
Severe	5 (50)	3 (30)	-	-	-	

Table 3 Effect of olive oil treatment on dryness according to age group in females (n=40)

Age group and severity of clinical signs	Before treatment	After treatment				p value
	n (%)	One week n (%)	Two week n (%)	Three week n (%)	Four week n (%)	
<i>Group B 10-20 years n=10</i>						
None	-	-	-	-	-	
Slight	-	-	-	1 (10)	2 (20)	<0.05
Moderate	2 (20)	2 (20)	10 (100)	9 (90)	8 (80)	
Severe	8 (80)	8 (80)	-	-	-	
<i>Group B1 21-30 years n=10</i>						
None	-	-	-	-	-	
Slight	-	-	-	-	5 (20)	<0.05
Moderate	3 (30)	5 (50)	9 (90)	9 (90)	5 (70)	
Severe	7 (70)	5 (50)	1 (10)	1 (10)	-	
<i>Group B2 31-40 years n=10</i>						
None	-	-	-	-	-	
Slight	1 (10)	1 (10)	1 (10)	6 (60)	2 (20)	<0.05
Moderate	3 (30)	8 (80)	9 (90)	4 (40)	8 (80)	
Severe	6 (60)	1 (10)	-	-	-	
<i>Group B3 41-50 years n=10</i>						
None	-	-	-	-	-	
Slight	-	-	-	2 (20)	6 (60)	<0.05
Moderate	5 (50)	7 (70)	9 (90)	7 (70)	4 (40)	
Severe	5 (50)	3 (30)	1 (10)	1 (10)	-	

Females

Group B Before treatment, 20% of the patients had moderate and 80% had severe dryness. After four weeks of therapy, 20% had slight and 80% had moderate signs dryness ($p<0.05$).

Group B1 30% patients had moderate and 70% had severe dryness before treatment whereas at week 4, 20% had slight, 70% had moderate and 10% had severe dryness ($p<0.05$).

Group B2 In this group, at baseline 10% patients had slight, 30% moderate and 60% severe dryness. At week 4, 20% had slight while 80% had moderate signs ($p<0.05$).

Group B3 50% of the patients had moderate while 50% had severe dryness. After four weeks of treatment, 60% had slight while 40% remained with moderate dryness ($p<0.05$).

Effect on pruritus

Males

Group A At baseline, 40% of the patients suffered from moderate and 60% from severe pruritus. At the end of treatment, 70% complained slight and 30% moderate pruritus ($p<0.05$).

Group A1 (21-30 years) Before treatment, 10% had moderate and 90% had severe itching while at the end of 4 weeks, 50% of the patients had slight and, 50% had moderate pruritus ($p<0.05$).

Group A2 In this group, 10% patients had slight pruritus before treatment, 50% had moderate while 40% had severe symptom. At the end of 4 weeks, 10% of the patients were symptom free while 80% were having slight pruritus and 10% moderate symptom ($p<0.05$).

Group A3 10% of the patients had slight pruritus, 40% moderate and 50% had severe. At the end of 4 weeks, 20% patients were symptom-free, 70% were left with slight itching and 10% with moderate itching ($p<0.05$).

Females

Group B Before treatment, the pruritus was moderate in 20% of the patients, while 80% had severe symptoms. In contrast, at four weeks, 80% had slight symptom while 20% had moderate itching ($p<0.05$).

Group B1 The symptom of pruritus was moderate in 40% of patients and severe in 60%. At week 4, 60% of the patients had slight symptom while 40% had moderate ($p<0.05$).

Group B2 In 10% of the patients itching was slight, in 30% moderate and in 60% severe. With four weeks therapy, 10% had no pruritus, 80% left with slight symptoms and 10% with severe symptom ($p<0.05$).

Group B3 Before start of the treatment, 50% of patients had moderate pruritus while other 50% had severe symptom. After four weeks, 90% patients remained with slight itching and 10% remained with moderate symptom ($p<0.05$).

Safety profile

None of the patient developed any cutaneous adverse effect.

Discussion

Steroids, topical or intralesional, have been the mainstay of treatment of LSC. No doubt being highly effective, steroids have many inherent, cutaneous and systemic, adverse

Table 4 Effect of olive oil therapy on pruritus) according to age group in male (n=40)

Age group and severity of clinical signs	Before Treatment		After treatment			p value
	Treatment n (%)	One week n (%)	Two week n (%)	Three week n (%)	Four week n (%)	
<i>Group A 10-20 years n=10</i>						
None	-	-	-	-	-	<0.05
Slight	-	-	-	-	7 (70)	
Moderate	4 (40)	7 (70)	9 (90)	10 (100)	3 (30)	
Severe	6 (60)	3 (30)	1 (10)	-	-	
<i>Group A1 21-30 years n=10</i>						
None	-	-	-	-	-	<0.05
Slight	-	-	3 (30)	4 (40)	5 (50)	
Moderate	1 (10)	3 (30)	6 (60)	6 (60)	5 (50)	
Severe	9 (90)	7 (70)	1 (10)	-	-	
<i>Group A2 31-40 years n=10</i>						
None	-	-	-	-	1 (10)	<0.05
Slight	1 (10)	1 (10)	4 (40)	6 (60)	8 (80)	
Moderate	5 (50)	6 (60)	5 (50)	4 (40)	2 (10)	
Severe	4 (40)	3 (30)	1 (10)	-	-	
<i>Group A3 41-50 years n=10</i>						
None	-	-	-	1 (10)	2 (20)	<0.05
Slight	1 (10)	1 (10)	2 (20)	5 (50)	7 (70)	
Moderate	4 (40)	6 (60)	8 (80)	4 (40)	1 (10)	
Severe	5 (50)	3 (30)	-	-	-	

Table 5 Effect of olive oil therapy on pruritus of the skin according to age group in females (n=40)

Age group and severity of clinical signs	Before treatment		After treatment			p value
	n (%)	One week n (%)	Two week n (%)	Three week n (%)	Four week n (%)	
<i>Group B 10-20 years n=10</i>						
None	-	-	-	-	-	<0.05
Slight	-	-	4 (40)	7 (70)	8 (80)	
Moderate	2 (20)	2 (20)	6 (60)	3 (30)	2 (20)	
Severe	8 (80)	8 (80)	-	-	-	
<i>Group B1 21-30 years n=10</i>						
None	-	-	-	-	-	<0.05
Slight	-	2 (20)	2 (20)	5 (50)	6 (60)	
Moderate	4 (40)	4 (40)	8 (80)	5 (50)	4 (40)	
Severe	6 (60)	4 (40)	-	-	-	
<i>Group B2 31-40 years n=10</i>						
None	-	-	-	-	1 (10)	<0.05
Slight	1 (10)	1 (10)	5 (50)	9 (90)	8 (80)	
Moderate	3 (30)	9 (90)	5 (50)	1 (10)	1 (10)	
Severe	6 (60)	-	-	-	-	
<i>Group B3 41-50 years n=10</i>						
None	-	-	-	-	-	<0.05
Slight	-	1 (10)	5 (50)	7 (70)	9 (90)	
Moderate	5 (50)	6 (60)	5 (50)	3 (30)	1 (10)	
Severe	5 (50)	3 (30)	-	-	-	

effects, so not really an ideal therapy.¹⁰ There is need and vacuum to find an alternative drug and the present study is an attempt to address this topic.

Our results show that topical use of olive oil is effective in the treatment of lichen simplex chronicus. Scanty data are available on this subject. How does this improvement occur? In addition to the placebo effect, other mechanisms may be responsible. Olive oil is a good emollient which might help in breaking the itch-scratch-lichenification vicious cycle, the basic underlying pathophysiology in LSC. Different ingredients of olive oil may also be the other contributory factors. The major components of olive oil are monounsaturated oleic acid; squalene, tocopherols.¹¹ These possess anti-inflammatory, anti-oxidant and scavenger properties. How far these mechanisms are helpful in LSC needs to be searched for. Placebo-controlled, double-blind studies are required to determine the comparative efficacy of olive oil in LSC.

Olive oil was well-tolerated by our patients confirming that olive oil has low sensitizing potential.¹²

In conclusion, olive oil appears to be effective in the treatment of lichen simplex chronicus; however, further investigations are required to confirm this.

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