

Original Research: Open Access

Two Cases of Rosacea Treated with Topical Ozonate Olive Oil

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Received April 25, 2017; Accepted June 7, 2017; Published June 10, 2017

ABSTRACT

Rosacea is a chronic inflammatory disease of skin that causes redness and visible blood vessels in the face. Medicinal herbal remedies such as olive oil have been used to rosacea in some studies. Ozone with bactericidal action and modulating cell-mediated immunity may lead to improve the disease. So the aim of present study was to assay the effect of ozone therapy on rosacea improvement. In this study two female cases suffered from proven rosacea were treated with ozonate olive oil for 2 times daily during 1 month. To decrease face tissue swelling, redness, itching and flake were considered as a desired effect of method. Findings showed relative improvement of 1-case 7 days after treatment. In this way the frequency of treatment time was reduced 2 times as compared with traditional methods and any side effects was not observed after 6 months of follow-up. Generally it is proposed that ozonate olive oil can be used as adjunctive therapy in the treatment of patients suffering from rosacea. Further studies on greater population are needed to confirm this finding.

Keyword: Rosacea, Ozone therapy, Ozonate olive oil

INTRODUCTION

Rosacea is a chronic skin disorder that primarily affects the central part of the face and rarely affects the scalp, neck, chest or other areas. It is characterized by transient or persistent facial redness; visible blood vessels on facial skin, red bumps and pimples [1]. Symptoms usually begin between the ages of 30 & 50. Rosacea is almost three times more common in middle-aged females (especially menopausal) who have fair skin, although males generally have more severe disease [2]. Rosacea is mainly seen in Caucasians with light skin & hair. As such, it is incident in the U.S. and in the European Union. Approximately 4% of rosacea patients are of African, Latino, or Asian descent [3]. Rosacea has four broad subtypes: erythematotelangiectatic, papulopustular and phymatous that affect the skin and ocular that affects the eyes. The patient may have more than one subtype [4]. Erythematotelangiectatic rosacea exhibits erythema with a tendency to flush and blush. People with this type often have sensitive, dry and flaky skin [5].

The cause of rosacea remains unknown, although several hypotheses have been suggested that include vascular abnormalities, dermal matrix degeneration, environmental

factors (severe sunburn, stress, anxiety, alcohol, hot tea and coffee, spicy foods, ...) , and microorganisms such as *Demodex folliculorum* and *Helicobacter pylori* [6]. For the diagnosis of rosacea, clinical features such as flushing, nontransient erythema, papules and pustules, and telangiectasia, burning or stinging, edema, plaques, a dry appearance, ocular manifestations, peripheral locations, and phymatous changes are considered [7]. Medical common treatments for rosacea include laser therapy, antibiotics such as doxycycline, tetracycline, metronidazole and non steroidal drugs like Protopicoointment that can control and reduce the signs and symptoms.

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Citation: Aghaei M, Nilforoushzadeh M A, Aghaei S, Ahmad H A & Hejazi S H. (2017) Two Cases of Rosacea Treated with Topical Ozonate Olive Oil. *Dermatol Clin Res*, 3(1): 151-154.

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Lifelong treatment is often necessary, although some cases resolve after a while, other cases, left untreated, worsen over time [8].

In some studies medicinal herbal remedies were used to treat rosacea patients. Herbal oils such as Tee Tree , Hemp seed and oil of oregano, a flowering plant in the mint family (Lamiaceae) were used that be effective at killing the skin mite associated with rosacea and reducing the dermal inflammation and strengthening and making better able of skin to resist bacterial, viral and fungal infections [9].

The progress of today medical science is oriented to develop new technologies allowing not only highly effective treating diseases, but also preventing them. One of such progressive approaches is ozone therapy. Ozone or O_3 is a triatomic very reactive form of oxygen that easily can break off and combine with other molecules oxidize them. Ozone effects on toxins, bacteria, molds, mildew, fungus, cancer cells and viruses in a variety of ways [10]. The problem of rosacea is the internal state of the organism, therefore it should be treated not only from the outside, but also inside and this task can be successfully done by ozone producing a detoxication and increasing or modulating the body immunity. Ozone disrupts the integrity of the organism cell envelope such as *Demodex* through oxidation of the phospholipids and lipoproteins [11].

One of the medical applications of ozone in skin disorders such as rosacea is combining ozone with herbal oils like olive oil. As ozonate olive oil has antibacterial and antiviral

effect and by minimizing pathogen diffusion and enhancing microcirculation, reduces the swelling, destroys the pathogen and allows a rapid healing [12].

Whereas the high therapeutic efficiency of ozone therapy can be considered in dermatocosmetology, in this study the effect of ozonate olive oil was checked on two woman cases suffered from rosacea.

CASES HISTORY

Case-1 was a married Iranian woman in the age of 61 years presented with severe form of rosacea and signs such as sting, dryness, flake and red bumps of face skin. Other areas were uninvolved. Duration of rosacea skin rash was 6 years. Although she afflicted night blindness, her past medical history was not contributory. Also there was a history of autoimmune diseases such as hypothyroidism among her first-degree relative. Even though she had used antibiotic and cream of doxycycline , the lesions did not resolve. The patient was treated with ozonate olive oil for 1 month. The healing indication of rosacea was reduction in facial redness, itching, burning and the number of inflammatory lesions. About 2 weeks after treatment, the case showed relative clinical improvement with regress of intensity of erythema, itching and dryness and flake of facial skin. (**Figure 1**). The patient was followed up from May to September 2016 and any exacerbation of attenuated lesions was not observed during this time.



Figure 1. Left and right images are respectively before and after treatment with ozonate olive oil in case-1. The desired lesions were marked with arrow.

Case-2, a 55-year-old Iranian married woman, was admitted with facial redness, sting, dryness and flake during last 30 year. Her scalp and neck were normal. She had been treated with emollients and sunscreen of tiredness at last. Her personal history was significant for thyroid gland and uterus cancers, cardiac arrhythmia and minor depression. She stated history of liver and breast cancers among her first-degree

relatives. Her 27 year-old daughter also was suffered from rosacea. The patient was treated with ozonate olive oil for 1 month. The recovery index of rosacea was measured in terms of reduction in facial redness, itching, burning and the number of inflammatory lesions. There was slightly a reduction of mentioned signs in evolved areas during treatment (**Figure 2**).

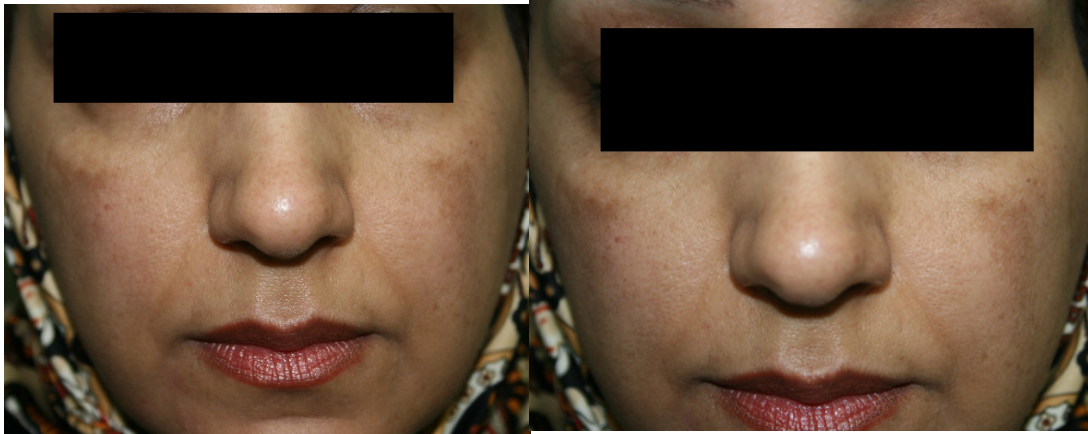


Figure 2. Left and right images are respectively before and after treatment with ozonate olive oil in case-2. The desired lesions were marked with arrows.

CONCLUSION

In this study the effect of ozonate olive oil was evaluated on two cases of females with proven rosacea and relative satisfaction with this therapeutic method was reported. In agreement with our findings, *S.L. Krivatkin and et al* found disappearance of clinical picture and considerable improvement - in 40% of 452 rosacea patients following ozone therapy [13]. Also *E.V. Krivatkina* treated 61 patients suffered from classic form of rosacea by ozone therapy. Their results showed disappearance of clinical picture in 5 cases (10%), considerable improvement in 15 cases (29%), improvement in 26 cases (50%) and no favorable effect in 6 cases (11%) [13]. More over Bitkina OA assayed oxidative stress level in eighty patients with different clinical types of rosacea and used an ozone-oxygen mixture in order to treat patients. Results showed the possible antioxidant imbalance in the pathogenesis of rosacea and treatment with an oxidative therapy options in particular ozone-oxygen mixture were proposed [14]. According to obtained data it is likely that ozonate olive oil plays a useful role as adjunctive therapy in the treatment of rosacea.

ACKNOWLEDGMENTS

Authors would like to Acknowledge Vice-chancellor of Skin Diseases and Leishmaniasis Research Centre, Isfahan University of Medical Sciences for approval of the present study.

REFERENCES

1. Crawford GH, Pelle MT, James WD, Rosacea I (2004) Etiology, pathogenesis, and subtype classification. *J Am Acad Dermatol* 51: 327-341.
2. Tüzün Y, Wolf R, Kutlubay Z, Karakuş Ö, Engin B (2014) Rosacea and rhinophyma. *Clinics Dermatol* 32: 35-46.
3. Halder RM, Brooks HL, Callender VD (2003) Acne in ethnic skin. *Dermatol Clinics* 21: 609-615.
4. Wollina U, Verma SB (2009) Rosacea and rhinophyma: not curse of the Celts but Indo Eurasians. *J Cosmet Dermatol* 8: 234-235.
5. James WD, Berger T, Elston D (2015) *Andrews' diseases of the skin: clinical dermatology*: Elsevier Health Sciences.
6. Del Rosso JQ (2014) Management of cutaneous rosacea: emphasis on new medical therapies. *Expert Opin Pharmacother* 15: 2029-2038.
7. Pray W, Pray J (2004) Differentiating between rosacea and acne. *US Pharmacist* 29.
8. Scheinfeld N, Berk T (2010) A review of the diagnosis and treatment of rosacea. *Postgraduate Med* 122: 139-143.
9. Wu J (2006) Treatment of rosacea with herbal ingredients. *Journal of drugs in dermatology: JDD* 5: 29-32.
10. Nogales CG, Ferrari PH, Kantorovich EO, Lage-Marques J (2008) Ozone therapy in medicine and dentistry. *J Contemp Dent Pract* 9: 75-84.
11. Maslennikov OV, Kontorshchikova CN, Gribkova ia (2008) Ozone therapy in Practice. *Health Manual Nizhny Novgorod, Russia*.
12. Shikov AN, Pozharitskaya ON, Makarov VG, Wagner H, Verpoorte R, et al. (2014) Medicinal plants of the Russian Pharmacopoeia; their history and applications. *J Ethnopharmacol* 154: 481-536.
13. Null G. Re: Ozone-The Angel of Air.
14. Bitkina O, Kopytova T, Kontorshchikova K, Bavrina A (2010) Oxidative stress level in patients

with rosacea and a rationale for the therapeutic use of an ozone-oxygen mixture. *Klinicheskaia laboratornaia diagnostika* 4: 13-16.