

## Case report

# Clinical Improvement of Severe Chronic Acne Conglobata. Case Report.

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### Abstract

Chronic severe acne conglobata is a severe form of acne presenting with multiple deep abscesses. It is frequently a debilitating and painful condition. Treatment options include long-term systemic antibiotics, intralesional steroid injections, systemic retinoids, systemic steroids, adalimumab, electron beam radiation, and topical treatment.<sup>1</sup> These treatments frequently lack efficacy and may have risks of significant side effects. Ozone therapy has been used successfully in treating acne and cysts. A 34 year-old white male presented with chronic, large, numerous, painful draining cysts of the trunk, groin and neck of ten years duration. The patient reported excessive alcohol ingestion and suicidal thoughts due to the pain. Past treatments with antibiotics and steroids were unsuccessful. During a period of one year the patient was treated with ozone: topical ozonated oil, full-body bag topical ozone, intralesional ozone, and ozone minor autohemotherapy. The patient reports a reduction in the number of daily lesions, reduction in pain, reduction in lesion drainage, decreased lesion resolution, an optimistic life outlook, and reduction of alcohol intake. The success of ozone therapy in this case indicates ozone therapy is a safe and effective option for patients with severe debilitating chronic acne conglobata.

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## Introduction

Acne conglobata is a severe and rare form of acne presenting with deep abscesses. Lesions occur on the back, chest, arms, buttocks, face, and thighs. The acne cysts range in size from several millimeters to several centimeters. The lesions frequently contain purulent material that may require incision and drainage. Disfiguring scar formation with hyperpigmentation is a frequent complication.<sup>2</sup>

Ozone therapy has been used to treat different dermatological diseases, including acne and abscesses.<sup>3</sup> Ozone, ozonized water and ozonized oil have potent antibacterial and antiinflammatory properties.<sup>3</sup> The purpose of this care report was to describe the use of ozone as a complementary therapy in a case of refractory acne conglobata.

## Case Presentation

A 34 year-old white male presented March 2017 with a chief complaint of multiple, painful, draining acne lesions of ten years duration. Areas of involvement included the abdomen, chest, back, posterior neck, groin, and buttock. The patient reported an average of 10 to 12 red and swollen lesions per day, multiple daily lesions with purulent discharge, and an average pain level of 10 (on a scale of 1 to 10 in which 10 is the most severe).

The patient also reported depression and thoughts of suicide resulting from the chronic severe pain. He reported drinking 12-18 twelve-ounce beers per day to alleviate the pain.

Treatments prior to presentation included multiple courses of antibiotics such as Trimethoprim-Sulfa, doxycycline and corticoids. The patient was offered a course of isotretinoin and declined due to the potential side effects. The patient declined a past history of androgenic steroid ingestion, a reported cause in some cases, or treatment with systemic steroids.

The patient expressed his intentions to avoid medications with potentially severe side effects and his desire to be treated with more "natural" therapy.

Due to the past failure of conventional therapy, ozone therapy was initiated. During a period of one year the patient was treated with topical ozonated oil, full-body bag topical ozone, intralesional ozone, and minor autohemotherapy.

## Materials and Methods

### Course of treatment:

Treatment was initiated with oral Niacinamide 1 gr twice daily and intralesional triamcinalone 5 mg/mL with only slight improvement. One month after presentation ozone treatment was initiated. He was treated with topical ozonated oil, whole body bagging ozone, intra-lesional injections of ozone, and minor autohemotherapy as detailed below. The methodology followed the Madrid Declaration Guideline<sup>4</sup> and standard method in ozone therapy.

One month after presentation ozone treatment was initiated with full body bagging topical ozone at 10 µg/mL concentration for 20 min. The patient received 17 treatments, one/ two sessions per week, over a period of fifteen weeks. Topical Oxonid® oil 600 (peroxide index 600, Medizeus, Spain) was initiated one month after presentation and was continued throughout the treatment period.

Minor autohemotherapy<sup>5</sup> was initiated four months after presentation. The patient received thirty treatments, dose of 5 mL ozone 20 µg/mL in 5 mL of blood injected into the gluteus maximus once weekly. He received thirty treatments over seven months.

Intralesional ozone 10 µg/mL was initiated five months after presentation. It was injected into active lesions in eleven treatments over a four-month period with 4-12 mL injected per treatment session.

Written Informed Consent for treatment was obtained by the patient prior to the treatment.

Ozone was generated from medical grade oxygen by SEDECAL equipment (Spain), representing only about 3% of the gas mixture (O<sub>3</sub>/O<sub>2</sub>). The ozone concentration was controlled in real time, as recommended by the Standardization Committee of the International Ozone Association and the International Scientific Committee in Ozone Therapy ISCO<sub>3</sub>.<sup>6</sup>

This clinical study was carried out in accordance with the principles of the Declaration of Helsinki.<sup>7</sup>

Main variable was: number of daily lesions, pain intensity using visual analogue scale (VAS),<sup>8</sup> alcohol intake (number of beer per day) and depression index.

Values were expressed as median (minimum – maximum). Statistical analysis was performed with SPSS 12.0 software. For multiple comparisons, one-way ANOVA was used followed by Bonferroni post-hoc test. Values of  $p < 0.05$  were considered statistically significant.

## Results:

Six weeks after initiating ozone sauna treatment the patient developed a 4 cm very painful cyst on the scrotum. Treatment was administered analgesics and Trimethaprim-Sulfa for ten days. This was the only episode of antibiotic treatment during the one-year course of therapy.

After fifteen whole-body bagging topical ozone treatments and topical ozonated oil use the patient reported mild overall improvement, with decreased pain, inflammation, and the size and number of lesions.

Five months after the initiation of ozone therapy, and after seven minor autohemotherapy treatments and one ozone intralesional treatment, a marked improvement was noted. The patient reported fewer lesions, smaller lesions, and a decrease in pain and drainage. The findings of fewer and smaller lesions with less drainage was confirmed by physical exam. During the remainder of the one-year course of treatment the patient continued to improve both subjectively and clinically.

After one year of ozone therapy the patient reports a reduction in the number of daily lesions from an average of 10-12 to 1-2, a reduction in pain from 10 to 6-7, a cessation of suicidal thought to an optimistic life outlook, and reduction of alcohol intake from 12-18 beers per day to occasional alcohol intake.

Physical exam confirms the subjective report, showing fewer lesions, decrease in size of lesions that develop, decreased inflammation, decreased drainage and improvement in scarring.

**(Figure 1 and Figure 2 (photos)).**



**Fig 1.** Photo of the back of the patient 7 weeks after initiation of ozone therapy, June 15, 2017.

**Fig.2.** Photo of the back of the patient after one year of treatment with ozone, March 29, 2018.

## Discussion

Acne conglobata is a severe and debilitating form of acne. There is usually a refractory clinical course. Several treatment options exist. Systemic retinoids such as isotretinoin are expensive and carry the risk of potentially severe side effects. Systemic steroids may be used only for two to four weeks due to the potential long-term side effects. Antibiotics are effective in some cases and other cases are unresponsive. Additional reported treatments include dapsone, which may have neurologic side effects, and infliximab which carries the risk of other systemic side effects. Surgical excision may be impractical when dozens of lesions are present. Electron beam therapy has been reported for recalcitrant cases.<sup>9,10</sup>

Many of the treatments above are costly and have the risk of severe side effects. In contrast, ozone therapy is highly cost-effective and has no potentially adverse side effects.

**Differential diagnosis:** It may be speculated that clinical similarities between hidradenitis suppurativa (HS), and acne vulgaris and acne conglobata may lead to negative influences on quality of life. Several studies have identified both acne, acne conglobata, and HS as major sources of quality of life reduction in patients. Suicidal tendencies have been reported in these patients.<sup>10</sup> Control of the diseases process is important to improve the quality of life in these patients, many of whom are under age 30.

The germicide effect of ozone is unspecific, as consequence ozone is used to treat different infective diseases.<sup>11,12,13</sup> Ozone treatment should be practiced using the right device and method. Probably the use of a non-appropriate device was the consequence of the no disinfecting effect found when ozone vapour was used in acne.<sup>11</sup> However, the use of sauna, contributes to the complete decolonization of the germ from the skin. In addition, the use of ozonized oil at home permits the continuity of the treatment. Environmental and local factors, host immunity, and organism adherence and virulence are intricately related to cutaneous infection.<sup>14,15</sup> Host immunity has a crucial role in the resolution of the disease, this is the reason why the minor auto hemotherapy was included in the clinical protocol. Other forms of systemic administration of ozone have been used during the treatment of acne vulgaris, such as the administration of ozonized saline solution.<sup>16</sup> As a result an improvement of this condition was found. Consequently, local and systemic treatment can be applied together in order to get a successful resolution of these diseases.<sup>3</sup>

## Conclusions

Ozone therapy is an efficacious, safe, and cost-effective treatment option for chronic cystic acne conglobata with large abscesses of the trunk. Ozone therapy reduces the number of lesions, pain, drainage, and resolution time while reducing the associated pain. These improvements enhance the quality of life and decrease suicidal tendencies. Randomized control trials are indicated to compare this treatment to the conventional treatments of antibiotics and isotretinoin. With the availability of more data ozone therapy may be added to the current recommendations as an effective option for severe cystic acne, acne conglobata, chronic abscesses and furunculosis of the skin.

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