



SUMMARY OF INTERNATIONAL CLINICAL TRIALS OF OZONE ADJUVANT THERAPY FOR THE TREATMENT OF COVID-19

July 17, 2020 Report collated by Texas Right To Know, Sheila Hemphill, CEO, Brady, TX

Note on Summary Arrangement. Originally this summary report was organized by date, of the specific event newest to oldest.

As of 05/15/20 – the reports are grouped by entity's clinical reports by date, newest to oldest, followed by news articles by date, newest to oldest.

Note: Spanish version is translated from Italian into English and then into Spanish.

MEDICAL NEWS HIGHLIGHTS:

International clinical trials on the use of ozone as an adjuvant therapy for the treatment of COVID-19.

SCIENTIFIC SOCIETY OF OXYGEN OZONE THERAPY (SIOOT):

051520-Italy-SIOOT-5th Report - 80 patients Efficacy of Ozone therapy for COVID 19

050720-Italy-SIOOT-4th Report - 73 patients - 100% on phase I and II pts 71% survival of ICU pts

041420-Italy-SIOOT-3rd Report - Ozone immunocellular therapy in COVID-19 outbreak, facts and figures

040920-Italy-SIOOT-2nd Report - 46 patients 84% improved

040120-Italy-SIOOT-1st Report -11 patients - 10 recovered - 1 died organ damage

SPAIN:

070620-Spain-Madrid Hospital Viamed Virgen de la Paloma Ozonized Saline in patient hospitalized for COVID-19

042720–Spain-Polyclinic publishes “Two known therapies could be useful as adjuvant therapy in critical patients infected by COVID-19.” (Vitamin C and Ozone) Published in NIH 4/14/20.

CHINA:

040620 - Medical College of the University of Tianjin (China) –

UNITED STATES:

071020-USA Brownstein Treating Nutritional and Oxidative Therapies ozone, Vit A, C, D, Iodine hydrogen peroxide

061020-USA Thorp - Ozonated Saline on O2 Saturation



OZONE PROTOCOLS:

063020-Italy-SIOOT Franzini Appeal We can use ozone to eradicate Covid

042720–Spain-Polyclinic publishes “Two known therapies could be useful as adjuvant therapy in critical patients infected by COVID-19.” (Vitamin C and Ozone) Published in NIH 4/14/20. Page 8

040520, (Spain-WFOOT) Protocol for Ozone treatment of Covid-19

NEWS ARTICLE HIGHLIGHTS:

070620-Spain-Madrid Hospital Viamed Virgen de la Paloma Ozonized Saline in patient hospitalized for COVID-19

Very positive and rapid results obtained with Ozonized Saline Solution in patients hospitalized for COVID-19

According to results obtained at the Viamed Virgen de la Paloma Hospital in Madrid (Spain)

- Within 24 hours, the PCR (parameter that measures inflammation) curves plummeted. The same occurred with other biochemical parameters and clinical symptoms. Fever rapidly normalized, while dyspnea and fatigue subsided significantly.
- At 72 hours the oxygen saturation in all of them had improved remarkably (towards 96-98%).
- On the fifth day of treatment, the basic medication was reduced in most of them and discharges began.
- **On the tenth day, the entire COVID-19 floor of the hospital had been discharged. The medical team observed no side effects and no deaths were recorded.**
- No one of the hospital health personnel exposed to the virus became ill, when treated with Ozonized Saline Solution, as a prophylactic.
- Strictly medical work carried out at the Viamed Virgen de la Paloma Hospital in Madrid (Spain)

https://aepromo.org/coronavirus/7comunicado_ingles.pdf

050420-Italy-Orbisphaera Oxygen-ozonotherapy is a Valuable Tool

“Oxygen-ozonotherapy is a Valuable Tool Especially If Used at an Early Stage of Disease”

043020-Romania-Spain-Orbisphaera Ozone therapy against coronavirus in Romania and Spain

"We, in Romania - he said - have been practicing ozone therapy for over 12 years. We administer ozone against Covid-19 because it has an anti-inflammatory, antibacterial, disinfectant and viral function".

Spain – Polyclinic - "Ozone - explained Dr. Alberto Hernández - is a very effective therapy and we immediately incorporated it into the treatment of coronavirus patients... According to Dr. Hernández, the administration of ozone can help coronavirus patients to significantly improve their prognosis after only two or three treatment sessions. Thanks to ozone therapy, patients who were about to be intubated



have not only avoided the use of mechanical ventilation, but have improved to such an extent that they no longer need oxygen support.”

042920-Italy-SIOOT Orbisphaera Results of 73 Patients Treated with Ozone Oxygen at Policlinico San Matteo di Pavia, the San Carlo Clinic Paderno Dugnano Fidenza

“The third Report with results on the use of ozone oxygen to treat Covid-19 patients confirms that ozone therapy is proving effective in eradicating the coronavirus”

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“According to Prof. Luigi Valdenassi, president of SIOOT and co-signatory of the Report with Prof. Marianno Franzini, “the immediately detectable data is that ozone oxygen therapy, applied with the SIOOT protocol, is 100% efficient on Covid patients in phase 1 and 2, i.e. before intubation.”

040920 – Italy Scientific Society of Oxygen Ozone Therapy 2nd Report on 46 patients in 2nd report and 11 in 1st report.

“The application of the therapeutic protocol prepared by SIOOT (Scientific Society of Oxygen Ozone Therapy) for the treatment of Covid-19 is underway in several Italian hospitals. On March 24th the association had obtained the approval of the ISS (Istituto Superiore di Sanità) for the use of ozone oxygen therapy in the treatment of Covid-19. According to the second SIOOT report on the therapy applied to 46 patients suffering from Coronavirus, over 84% showed a significant improvement in clinical conditions. What clearly emerges is that ozone oxygen therapy is more effective especially before intubation.”

040820 – Spain Policlínica Nuestra Señora del Rosario in Ibiza -

“In Spain we have started to administer it, after authorization from the hospital's Quality Committee, and the results have been spectacular”, says Alberto Hernández, assistant doctor of Anaesthesia and Resuscitation at the Polyclinic Nuestra Señora del Rosario, of the Polyclinic Group.

“We have registered a clinical trial, and we have proven that ozone is a very effective and beneficial therapy in these patients and that we should immediately incorporate it into the treatment of COVID-19,”

*“Dr. Alberto Hernández argues that **there are two key elements in this disease that are unfortunately leading to the death of many patients: a brutal inflammatory effect or 'cytokine storm', and an affection of the microcirculation with formation of microthrombi.** According to this specialist, there are several ways to counteract this cytokine storm caused by the coronavirus. On the one hand, there is the traditional way, administering steroids at high doses, and with the disadvantage of depressing the immune system, which weakens the body. **And on the other hand, by administering vitamin C at high doses intravenously or, even simpler, by***



administering ozone, since both are capable of counteracting the cytokine storm and both have viricidal power. Ozone also, thanks to its action on red blood cells, improves the transport of oxygen to tissues and consequently the microcirculation by making the blood more fluid and promoting normal values of blood pressure.”

040620 - Medical College of the University of Tianjin (China) –

“Regarding the results, Prof. Ming specified that “four Covid-19 positive patients, one critical case, one severe case and two normal cases, were treated with Oxygen Ozone Therapy”. After the ozone oxygen treatment, symptoms of dyspnea, severe coughing, chest distress and asthenia were alleviated until they disappeared.

In particular, the patient in critical condition was recovered without using invasive mechanical ventilation or intensive care treatment.

All four patients recovered and were discharged without any problems after verifying the viral clearance of Covid-19.”

040520 – Italy Santa Maria dell Misericordia

“Against the Coronavirus, the hospital Santa Maria della Misericordia in Udine is experimenting with ozone therapy that has drastically reduced the number of admissions to intensive care from 15 to 3%. At the moment only one patient out of 36 undergoing this treatment has been intubated entering the intensive care unit. The other 35 cases, although Covid-19 had caused pneumonia and severe breathing difficulties, are recovering and will soon return home.”

Click here to skip to [Ozone in News](#) summary section.

ABOUT THIS SUMMARY REPORT:

Below is a collection of news articles and medical reports regarding the use of ozone as an adjuvant therapy for the treatment of COVID-19. The articles are in descending date order with most current to the top. The articles are link together in one PDF to enable word searches to determine how many articles or reports reference that same topic such as cytokine, thrombosis, thrombi, Interleukin 6, PaO₂, etc. Items of particular interest of consensus are highlighted in red font.

BRIEF ON OZONE:

Ozone is a naturally occurring gas that is created when lightening interacts with oxygen to break the O₂ atoms apart. Ozone can be generated using medical oxygen and an ozone generator that replicates this natural phenomenon. Ozone can best be described as ozonated-oxygen since the predominate concentration of gas from an ozone generation is oxygen. Ozone should not be breathed at high concentrations. Use of ozone for therapeutic purposes dates back to the late 1800s.



CLINICAL TRIALS OF OZONE THERAPY FOR COVID-19:

International news outlets are reporting that clinical trials with ozone treatment for COVID-19 are being conducted in China, Italy, Portugal, Brazil, Spain, Romania and Turkey. **The trials being conducted in other countries are by approval of hospital ethics committees and through patient informed consent**

in the US, there are numerous physicians, primarily sole practitioners, who offer ozone as an adjuvant therapy for supportive care but these physicians do not have hospital privileges. These practitioner's facilities are not designed to provide services for positive COVID-19 patients that exist, nor do they have access to treat patients in hospitals. Several physicians have offered ozone services for ICU patients but currently there has not been a communication network established between ozone physicians and hospitals.

CURRENT CDC AND WOLRD MEDICAL ASSOCIATION STATEMENTS:

As of April 7, 2020, Centers for Disease Control (CDC) "Situation Summary" page states that there is no treatment for COVID-19. According the World Medical Association's Ethic Principals, #37 [Unproven Interventions in Clinical Practice State](#), "In the treatment of an individual patient, **where proven interventions do not exist** or other known interventions have been ineffective, **the physician**, after seeking expert advice, **with informed consent from the patient** or a legally authorized representative, **may use an unproven intervention if in the physician's judgement it offers hope of saving life, re-establishing health or alleviating suffering.** This intervention should subsequently be made the object of research, designed to evaluate its safety and efficacy. In all cases, new information must be recorded and, where appropriate, made publicly available."

BACKGROUND:

As documented in the International Scientific Committee on Ozonotherapy (ISCO3), the first mention of medical ozone was made by the Dutch physicist Martin van Marum in 1785. Ozone is a gas made up of three (3) atoms of oxygen: $O + O + O = O_3$ and oxygen (we breathe) is made up of two (2) atoms of oxygen: $O + O = O_2$. The atoms in O_2 are stable – each atom "holds on" to the other. The atoms in O_3 consist of a stable pair (O_2) and a third, unstable atom. It is the unstable atom that gives ozone its power. Ozone is generated when energy "splits" the stable O_2 bond either by lightening in the atmosphere or through ozone generators. Medical uses of ozone should not be confused with ozone as reported in pollution reports. Ozone is toxic to breath at high concentration levels that can exist during high temperature days in heavily polluted urban air.

METHODS OF OZONE USE:

Ozone is created by the use of medical oxygen that is processed by an ozone generator. The resulting gas is primarily oxygen with ozone. Example: 20 ug/ml aka 20 gamma is less than 1% ozone. This ozone gas is not to be confused with air that we breath which is 78% nitrogen. Ozone does not create an "air" embolism like a potential "air" bubble in an IV.

Ozone can be used medically in the following areas by insufflation via highly vascularized body orifices such as the ears, sinus, eyes, rectum, vagina, skin (sauna exposure and topically with ozonated olive oil).

Ozone can be bubbled through very cold water which absorbs the ozone and is beneficial for hydration and can last for 2-3 days if kept very cold.

Another ozone protocol is referred to as major autohemotherapy (MAH) where 60cc – 250 cc of blood to be withdrawn from the patient into a heparin or saline bag. The ozone gas is bubbled into the blood bag and then reinfused back into the patient. There are several modifications to this protocol, which vary on the quantity of blood drawn and saline combinations and the ug/ml concentrations of ozone that are adjusted based upon the patient's condition. Clinical methods for ozone medical treatment include: 1) one-pass blood exchange – 15-30 minutes, 2) five-pass blood exchange – 1 hour, 3) ten-pass blood exchange (aka Zotzmann)– 2 hours. The MAH protocol is the method showing promise for COVID-19 treatment via reports from physicians in Texas and in reports from Italy and China.

Another ozone protocol is referred to as direct IV ozone. This technique has been championed by Robert Rowen, MD and Howard Robins, DPM who have used direct IV ozone on thousands of patients. This method is also being reported to be effective on COVID-19 positive patients. This technique only requires a butterfly needle and a syringe of 20 cc of ozone gas that is slowly injected by IV directly intravenously. If delivered too quickly, potential side effects may include tightness of chest and a cough which subsides in a few minutes.

Another protocol is referred to as extracorporeal blood ozone oxygenation which is similar to dialysis using ozone.

SAFETY OF OZONE:

In a 1980 study done by the German Medical Society for Ozone Therapy, 644 therapists were polled regarding their 384,775 patients, comprising a total of 5,579,238 ozone treatments administered. There were only 40 cases of side effects noted out of this number which represents the incredibly low rate of .000007%, and only four fatalities.

Ozone has thus been proven to be one of the safest medical therapies ever devised.

Jacobs M (1982) Zwischenfalle und typische Komplikationen in der Ozone-Sauerstoff-Therapie. OzoNachrichten 1: 5

OUR BODIES PRODUCE OZONE:

“The Scripps Research Institute (TSRI) President Richard A. Lerner, Associate Professor Paul Wentworth, Jr., Ph.D., and a team of investigators at TSRI is reporting that antibodies can destroy bacteria, playing a hitherto unknown role in immune protection. Furthermore, the team found that when antibodies do this, they appear to produce the reactive gas ozone,” from an article published in November of 2002.

“Ozone is naturally produced in the body, catalyzed by singlet oxygen which the body makes into antibodies, ozone is produced, therefore ozone is part of what the body does in the manufacture of pro-oxidants in its defense against invasion. Ozone therapy is augmenting this immune response,” said [Robert Rowen](#), MD ozone practitioner for 30 plus years using ozone therapies that were successful during the 2014 Ebola virus outbreak in Sierra Leone.



LEGAL OPINION:

According to the legal opinion of Tommy Swate, MD, JD from Houston, he states, “*Treatment of COVID-19 with medical ozone offers low risk and high potential benefit as an economical adjuvant therapy to provide supportive care* and potential infection control*.*” The terms “supportive care and potential infection control” correspond to communications regarding standard of care for COVID-19 from the Texas Medical Board Executive Director, Brint Carlton, “*The currently recognized standard of care includes infection prevention and control measures and supportive care, including supplementary oxygen and mechanical ventilatory support when indicated.*”

OZONE IN THE NEWS:

- **042920-Italy-SIOOT Orbisphaera Results of 73 Patients Treated with Ozone Oxygen at Policlinico San Matteo di Pavia, the San Carlo Clinic Paderno Dugnano Fidenza.**

“The third Report with results on the use of ozone oxygen to treat Covid-19 patients confirms that ozone therapy is proving effective in eradicating the coronavirus”

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“According to Prof. Luigi Valdenassi, president of SIOOT and co-signatory of the Report with Prof. Marianno Franzini, “the immediately detectable data is that ozone oxygen therapy, applied with the SIOOT protocol, is 100% efficient on Covid patients in phase 1 and 2, i.e. before intubation.”

- **042720 – Spain-Polyclinic publishes Two known therapies could be useful as adjuvant therapy in critical patients infected by COVID-19. (Vitamin C and Ozone) Published in NIH 4/14/20.**

The potential effect of vitamin C in reducing inflammation in the lungs could play a key role in lung injury caused by coronavirus infection. Another potential effective therapy is ozone: it has been extensively studied and used for many years and its effectiveness has been demonstrated so far in multiples studies. Nevertheless, our goal is not to make an exhaustive review of these therapies but spread the beneficial effects themselves. Obviously clinical trials are necessities, but due to the potential benefit of these two therapies we highly recommended to add to the therapeutic arsenal.

- April 24, 2020 (Italy- Foggia – Orbisphaera) Clinical trial slated for Foggia using SIOOT protocol.
 - April 20, 2020 (Italy-Orbisphaera) **Italian Member of Parliament cured of COVID-19 with ozone asks the Government to use oxygen-ozone in all Italian hospitals**
“Oxygen ozone therapy is an instrument used for many years in Italy and recognized as antiviral. We therefore ask the Government that the treatment with ozone oxygen of patients affected by Covid-19 be implemented and made available in several public facilities.”
This was said by Claudio Pedrazzini, the first Member of Parliament (MP) who tested positive for Covid-19 and was cured of the coronavirus thanks to ozone therapy
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- April 20, 2020 (Italy-Orbisphera) **My brother was dying, the oxygen ozone saved him**
 - April 14, 2020 (Italy-SIOOT Bergamo) **European Review Medical Pharmacological Sciences - potential mechanisms of ozone for COVID-19**
 - April 13, 2020 (Italy - SIOOT Bergamo) **More and more hospitals use ozone therapy against the virus**
 - April 11, 2020 (China – Tianjin – Haihe Hospital) **Haihe Positive and Rapid Results**
“Based on preliminary reports on ozone autohemotherapy, at Haihe Hospital in Tianjin, the clinical effects are positive and rapid. Especially for the critically ill patient whose lung tissue damage was effectively alleviated.”
 - April 10, 2020 (Italy-Udine -Sanita Informazione) **Ozone therapy could stop the coronavirus.**
 - April 10, 2020 (Spain – The Olive Press) **NO NEW COVID-19 DEATHS IN BALEARIC ISLANDS AS IBIZA CLINIC BECOMES FIRST IN SPAIN TO USE PIONEERING OZONE THERAPY**
 - April 10, 2020 (Italy - Orbisphera.org): **THE MEDICAL COLLEGE OF THE TIANJIN UNIVERSITY CONFIRMS THE EFFICACY OF THE OXYGEN-OZONE THERAPY AS POTENTIAL TREATMENT AGAINST COVID19**
 - April 10, 2020 (Italy - Orbisphera.org) : **Claudio Pedrazzini: Member of the Chamber of Deputies “The Covid-19 hit me, thanks to the ozone I am healed”**
 - April 9, 2020 (Italy - SIOOT – Bergamo, Italy): **PHYSIOPATOLOGICAL MECHANISMS OF OZONE IN THE TREATMENT OF COVID-19 ACTIVITIES**
 - April 9, 2020 (Italy - SIOOT – Bergamo, Italy): **Oxygen Ozone Therapy SIOOT: Number of Healed Cases Increases, Deaths Decrease**
A second report from SIOOT showed 84% improved in 46 patients from six hospitals who were treated with five sessions of ozone therapy. There is a rapid and evident improvement in all patients treated. Of the 11 patients intubated and in intensive care, 6 were extubated after treatment with ozone, one improved, while four died before they could practice the entire ozone therapy cycle. Prof. Franzini explained that the conditions of the four deceased patients were very serious. Those who died suffered from bacterial overinfection, septic shock, pulmonary embolism and myocarditis.
“The biochemical and pharmacological characteristics lead to consider ozone important in the treatment of COVID-19. In fact, by reacting with biological substrates, it induces the synthesis of 4ldrossinonenale, signal transducer that determines a greater resistance to prooxidant agents and an important response to oxidative stress.
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*The 4-HNE causes the release of Nrf2, transcription factor inducer in turn of several antioxidant enzymes including: SOD, CAT, HO-1. While SOD is involved in counteracting some neurodegenerative aspects, HO1 modulates NF-KB, resulting in **reduced expression of pro-inflammatory cytokines and induction of antiinflammatory cytokines**. The dual role of antioxidant and anti-inflammatory allows ozone to modulate IL-6 preventing the occurrence of the "cytokine storm", a critical event in COVID-19 infection."*

- April 8, 2020 (Spain-Theibizan): **The Nuestra Señora del Rosario Polyclinica in Ibiza is the first in Spain to use the Ozone technique in treating Covid-19 patients, with success.**
- April 8, 2020 (Spain - Polyclinic Group): **Success of the first Spanish clinical trial with ozone therapy for COVID-19 patients in Polyclinic Group**
Dr. Alberto Hernández argues that **there are two key elements in this disease that are unfortunately leading to the death of many patients: a brutal inflammatory effect or 'cytokine storm', and an affectation of the microcirculation with formation of microthrombi**. According to this specialist, there are several ways to counteract this cytokine storm caused by the coronavirus. On the one hand, there is the traditional way, administering steroids at high doses, and with the disadvantage of depressing the immune system, which weakens the body. **And on the other hand, by administering vitamin C at high doses intravenously or, even simpler, by administering ozone, since both are capable of counteracting the cytokine storm and both have viricidal power. Ozone also, thanks to its action on red blood cells, improves the transport of oxygen to tissues and consequently the microcirculation by making the blood more fluid and promoting normal values of blood pressure.**
- April 6, 2020, (Spain-WFOOT) **Protocol for Ozone treatment of Covid-19**
- April 7, 2020, (China – Renmin Hospital of Wuhan University – report not shareable)
Professor Ke Hu: Department of Respiratory and Critical Care Medicine, Renmin Hospital of Wuhan University sent two patient's clinical summary that showed one patient who received 4 ozone treatments over 5 days and tested negative and another patient received 7 ozone treatments over 18 days and tested negative. Labs showed a dramatic change.
- April 6, 2020 (Italy – Orbisphera): **To stop Covid-19, more and more hospitals are using Oxygen-Ozone**
- April 6, 2020 (Italy – Orbisphera.org – China-Tianjin) **The Medical College of the University of Tianjin confirms that Oxygen Ozone Therapy is effective against Covid-19**
- 05 April 2020 (Spain - ILFRIULI.IT) **Coronavirus, a Hope from the Ozone Cure Ongoing experimentation at the Santa Maria della Misericordia Hospital in Udine**
Ozone therapy as an adjuvant treatment has *"drastically reduced hospitalizations in intensive care from 15% to 3%. At the moment only one patient out of 36 undergoing this treatment has required intensive care for intubation. The other 35 cases, despite the fact that Covid-19 patient had developed pneumonia and severe breathing difficulties, are recovering, so much so that they will*



soon return home.”

- April 3, 2020 (Italy- Orbisphera.org) **Covid-19 patients improved with Oxygen-Ozone therapy**
- April 2, 2020 (US 0 [Texas Right To Know](#)) **Texas Right To Know Calls on US to Consider COVID-19 Ozone Therapy After It Shows Promise in Italy**
TRTK issues press release reporting on the preliminary data coming from 17 hospitals in Italy who are using MAH for the treatment of COVID-19. On April 1, 2020, a zoom conference hosted by Sheila Rice Hemphill with TRTK interviewed Dr. Rowen along with Italian physicians Dr. Marianno Franzini, International President and Dr. Luigi Valdenassi, National President of the Italian Scientific Society of Oxygen-Ozone Therapy International (SIOOT).
- April 1, 2020 (Italy – SIOOT) [preliminary report](#) from the [SIOOT](#) on 11 patients from one Italian hospital where 10 of the 11 showed positive . All but one critically ill patient showed improvement in clinical outcomes. **Autopsies on some patients showed death from thrombosis.**
- March 27, 2020 (Italy-Orbisphera) **How Oxygen Ozone Therapy Counteracts Covid-19 Virus**

ABOUT TEXAS RIGHT TO KNOW (TRTK) is a coalition of various advocacy groups with services designed to inform and connect people in a community regarding local and state legislative issues.

Sheila Hemphill, CEO holds a degree in Computer Science and was a founder of one of the first HIPAA compliant healthcare internet applications in 1998. She developed patient assessment software for the home healthcare industry which integrated with state reporting systems, insurance billing systems and physician orders. She is a certified nutrition consultant and trained in frequency therapeutics. She is also the Executive Director of the Texas Hemp Industries Association and lobbies on hemp, healthcare and health for the benefit and from the perspective of the people. www.texasrighttoknow.com

Very positive and rapid results obtained with Ozonized Saline Solution in patients hospitalized for COVID-19

- **Within 24 hours**, the PCR (parameter that measures inflammation) curves plummeted. The same occurred with other biochemical parameters and clinical symptoms. Fever rapidly normalized, while dyspnea and fatigue subsided significantly.
- **At 72 hours** the oxygen saturation in all of them had improved remarkably (towards 96-98%).
- **On the fifth day** of treatment, the basic medication was reduced in most of them and discharges began.
- **On the tenth day**, the entire COVID-19 floor of the hospital had been discharged. The medical team observed no side effects and no deaths were recorded.
- **No one of the hospital health personnel exposed to the virus became ill**, when treated with Ozonized Saline Solution, as a prophylactic.
- **Strictly medical work** carried out at the Viamed Virgen de la Paloma Hospital in Madrid (Spain)

Ozonized Saline Solution (O₃SS) could be an effective supplement in the management of patients with COVID-19

July 6, 2020

Ozone therapy treatment with ozonized saline solution (O₃SS) could be an effective complement in the management of patients with COVID-19, according to the results obtained last April by a medical team under the direction of Dr. Adriana Schwartz, president of Aepromo (Spanish Association of Medical Professionals in Ozone Therapy).

The results indicate that ozonized saline (O₃SS) is a "cheap, safe and effective" complementary treatment to combat COVID-19, explains the medical team. Among other positive effects on the body of patients, O₃SS "improves oxygen metabolism and acts as an anti-inflammatory."

According to Dr. Schwartz, "the idea of trying this complementary therapy came from the official confirmation from the WHO that there were no specific vaccines or pharmaceutical treatments available for COVID-19. Given the severity and lethality of the complications with which the infection occurs, we believe that our efforts should be directed preferably and urgently to improve microcirculation, hypoxia and inflammation from scratch, in hospitalized patients."

The results obtained indicate that O₃SS improves oxygen metabolism; decreases

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oxidative stress, inducing the synthesis of endogenous antioxidants; it acts as a powerful anti-inflammatory and anti-platelet agent, thus preventing thrombus formation.

Ozonized saline is a medical act

Dr. Schwartz indicates that “the administration of ozonized saline solution (O₃SS) is a medical act that must be carried out by physicians. The O₃SS is a route of application ozone therapy that has broad support from scientific studies”.

600 treatments were administered and no deceased

The application of ozonized saline solution as a complementary therapy was carried out in one of the most critical periods of the pandemic, at the Madrid Hospital Viamed Virgen de la Paloma. About 600 treatments of ozonized saline solution were administered to patients who had been hospitalized for between fifteen days and one month, on an adjuvant basis within the framework of the hospital protocol. In other words, no medication was withdrawn, since O₃SS was applied as a complementary therapy.

The condition of the hospitalized patients ranged from moderate to severe. All of them were assisted with oxygen support, the vast majority were face down (prone) to breathe better and were emotionally very stressed.

Very fast and positive response

According to the collected results, the response of patients to the treatment was very fast. **Within 24 hours**, the PCR (parameter that measures inflammation) curves plummeted. The same occurred with other biochemical parameters and clinical symptoms. Fever rapidly normalized, while dyspnea and fatigue subsided significantly. At 72 hours the oxygen saturation in all of them had improved remarkably (towards 96-98%).

On the fifth day of treatment, the basic medication was reduced in most of them and discharges began. **On the tenth day**, the entire COVID-19 floor of the hospital had been discharged. The medical team observed no side effects and no deaths were recorded. The results obtained have been duly compiled and analyzed in order to form part of a scientific article in the process of publication.

The draft of the scientific paper indicates that O₃SS as a complementary therapy should be recommended for patients with mild to severe disease due to COVID-19, since it accelerates the recovery of the patient, stabilizes the biochemical indexes, prevents thrombus formation and reduces the need for oxygen support.

Prophylaxis for healthcare personnel

The ozonized saline solution was also used as a prophylactic for exposed health personnel of the hospital and other centers, with the result that none of the professionals



But what are you still waiting for? We can use ozone to eradicate Covid!

https://www.orbisphera.org/Pages/Articoli/2514/Ma_cosa_aspettate_ancora?_Usiamo_l%e2%80%99ozono_per_debellare_il_Covid!

"Resurgent Covid in the United States and Brazil, outbreaks still active in Italy, China, Germany, Korea, India, Iran... Every day Covid continues to claim victims. I cannot understand why the World Health Organization and the national health authorities do not call for the use of ozone oxygen therapy, which has proven so effective and safe in treating the sick and sanitizing the environments...".

This is what Prof. Marianno Franzini, international president of SIOOT (Scientific Society of Oxygen Ozone Therapy), a pioneer of medical research and practice that is at the center of intense global debate has to say. Franzini is back from six months in which he has been at the forefront of the fight against Covid. At his Comunian Clinic in Bergamo he worked every day to treat and assist colleagues and health workers working in environments with a very high concentration of viruses. He has treated and assisted in the treatment of patients with oxygen ozone therapy in Italy and around the world.

Together with the SIOOT Scientific Committee in early February he had provided a protocol of treatment with ozone oxygen to treat the sick from Covid. They found a way to provide hospitals with the right machinery to produce ozone. He held video conferences with doctors from the United States, Brazil, Romania, Serbia, Peru, Ecuador, Mexico, South Africa. He consulted daily with colleagues to tell them how best to apply ozone oxygen care.

He also gave lectures for the two masters of Oxygen Ozone Therapy that took place at the University of Pavia and the Unicamillus in Rome. On 3 June he was called to a hearing at the 12th Committee on Social Affairs of the Chamber of Deputies, where he detailed the results of the use of oxygen ozone therapy on 100 patients treated in 15 different hospitals.

"The results," he told us, "speak for themselves. The ozone oxygen therapy has a huge effectiveness in the care of patients from Covid. For patients in phase one, that is, less serious, it has a 100% efficiency. Everyone gets better and heals quickly. For covid patients in phase two and three, ozone oxygen has shown a 94% improvement and healing efficiency. For patients in intensive care, with comorbidities and very compromised situations, efficiency was 84%. In five cases ozone oxygen was practiced on people who were about to die. Amid the disbelief of the doctors, friends and relatives, these five people survived, now they are well and have returned home healed also from the damage that the Covid had caused."

In this regard, Franzini collected on behalf of SIOOT the clinical data of all patients treated with ozone oxygen, before, during and after treatment, compared them with patients treated only with traditional drug therapy and communicated this data to national health authorities. And now, together with a group of colleagues, he is working to publish it all in international scientific journals.



Based on this work, which involved a large and qualified group of doctors, researchers, health professionals and patients, Franzini reiterated: "Never before have we been able to verify how effective ozone is in eradicating viruses. We have broadened our knowledge of the mechanisms of action that make ozone a very powerful virucide. We can also confirm that ozone is a safe and natural product that leaves no residues, that it does not trigger any side effects, which avoids risks of any kind. It is environmentally friendly, economical, easy to use and very fast in healing action. That is why I ask the national and international health authorities: "But why are you waiting to use ozone oxygen therapy everywhere?"

"Oxygen ozone therapy, supported by an important scientific bibliography, has been known for its antibacterial and antiviral effect for over eighty years. Why not use it?"

"A massive and generalized use of oxygen ozone therapy – said Franzini – would quickly heal the positive Covid patients, extinguish every outbreak, sanitize every environment and put us in a position to be effective and rapid even in the event of a new wave of viruses from the autumn period. With oxygen ozone therapy we will be able to eradicate any outbreak and we can safely avoid any measures of closure and social distance."

"In this regard," concluded Professor. Franzini – while the central authorities decide what to do, we at SIOOT are providing information and assistance to local communities so that in each municipality there can be a health district, a health care residence (RSA), a medical center or a clinic that can offer an oxygen ozone therapy service in order to be able to deal effectively and safely with the Covid or other viruses that should appear on the horizon."

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ASOCIACIÓN ESPAÑOLA DE PROFESIONALES MÉDICOS EN
OZONOTERAPIA

who received it fell ill. The same applied to the medical team that was in charge of this work as well as to their families. None of them got sick.

Participating entities

The medical work of application of O₃SS in hospitalized patients at the Viamed Virgen de la Paloma Hospital was carried out in collaboration with the Hospital, Aepromo (Spanish Association of Medical Professionals in Ozone Therapy), Sesmi (Spanish Society of Integrative Medicine and Health), and Sedecal (Spanish Society of Electro medicine and Quality) which provided the CE-marked medical ozone generators and donated the disposable devices for the administration of the ozonized saline solution. The doctors who carried out the medical work were Adriana Schwartz, President of Aepromo, and Alejandra Menassa, President of Sesmi. The two professionals did it in a totally altruistic way, without receiving any financial compensation, and without conflict of interest.

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A Novel Approach to Treating COVID-19 Using Nutritional and Oxidative Therapies

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Abstract

Objective: This report is a case series of consecutive patients diagnosed with COVID-19 treated with a nutritional and oxidative medical approach. We describe the treatment program and report the response of the 107 COVID-19 patients.

Study Design: Observational case series consecutive.

Setting: A family practice office in a suburb of Detroit, Michigan.

Patients: All patients seen in the office from February through May 2020 diagnosed with COVID-19 were included in the study. COVID-19 was either diagnosed via PCR or antibody testing as well as those not tested diagnosed via symptomology.

Interventions: Oral Vitamins A, C, D, and iodine were given to 107 subjects (99%). Intravenous solutions of hydrogen peroxide and Vitamin C were given to 32 (30%) and 37 (35%) subjects. Thirty-seven (35%) of the cohort was treated with intramuscular ozone. A dilute, nebulized hydrogen peroxide/saline mixture, with Lugol's iodine, was used by 91 (85%).

Main Outcome Measures: History and physical exam were reviewed for COVID-19 symptoms including cough, fever, shortness of breath, and gastrointestinal complaints. Laboratory reports were examined for SARS-CoV-2 results. Symptomatic improvement after treatment was reported for each patient consisting of *first improvement*, *mostly better*, and *completely better*.

continued on next page

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Keywords

SARS-CoV-2, COVID-19, ozone therapy, hydrogen peroxide therapy, Vitamin A, iodine, Vitamin C, Vitamin D, immune system, antiviral.

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Abstract (Continued from page 1)

Results: There were a total of 107 patients diagnosed with **COVID-19**. Thirty-four were tested for SARS-CoV-2(32%) and twenty-seven (25%) tested positive. Three were hospitalized (3%) with two of the three hospitalized before instituting treatment and only one requiring hospitalization after beginning treatment. There were no deaths. The most common symptoms in the cohort were fever (81%), shortness of breath (68%), URI which included cough (69%), and gastrointestinal distress symptoms (27%). For the entire cohort, first improvement was noted in 2.4 days. The cohort reported symptoms mostly better after 4.4 days and completely better 6.9 days after starting the program. For the **SARS-CoV-2** test positive patients, fever was present in 25 (93%), shortness of breath in 20 (74%) and upper respiratory symptoms including cough in 21 (78%) while gastrointestinal symptoms were present in 9 (33%). The time to improvement in the **SARS-CoV-2** test positive group was slightly longer than the entire cohort.

Conclusion: At present, there is no published cure, treatment, or preventive for **COVID-19** except for a recent report on dexamethasone for seriously ill patients. A novel treatment program combining nutritional and oxidative therapies was shown to successfully treat the signs and symptoms of 100% of 107 patients diagnosed with **COVID-19**. Each patient was treated with an individualized plan consisting of a combination of oral, IV, IM, and nebulized nutritional and oxidative therapies which resulted in zero deaths and recovery from **COVID-19**. Keywords: **SARS-CoV-2**, COVID-19, ozone therapy, hydrogen peroxide therapy, Vitamin A, iodine, Vitamin C, Vitamin D, immune system, antiviral.

1. Introduction

SARS-CoV-2 is the strain of coronavirus that causes coronavirus disease 2019 known as **COVID-19**. To date, **COVID-19** has infected 7,669,872 cases worldwide and 2,090,553 cases in the US with 116,347 reported fatalities (as of 6.13.2020).[1] **COVID-19** is a pandemic that is unparalleled in the modern world and the global response to **SARS-CoV-2** has no parallel in history. Coronaviruses are found in many bat and bird species, which are believed to be natural hosts.[2] It is estimated that coronaviruses have been around from 10,000 to millions of years. Coronaviruses are pathogenic viruses native to birds and mammals. They are classified into four subspecies: alpha-, beta-, gamma-, and delta- coronavirus.[3] Alpha- and beta- coronaviruses are found exclusively in mammals and gamma- and delta-coronavirus primarily infect birds. [4] Coronaviruses include a family of viruses that contain an RNA genome. Some of these viruses have been shown to cause illness in animals and humans.

SARS (severe acute respiratory syndrome) was discovered in 2003.[5] It was described as an outbreak of atypical pneumonia in Guangdong Province, Peoples Republic of China. SARS, which occurred during 2002-2003 infected approximately 8,098 and resulted in 774 deaths. The outbreak was primarily concentrated in Southeast Asia and Toronto, Canada although the outbreak spread to more than 24 countries. SARS was found to be caused by a strain of coronavirus that infects the epithelial lining within the lungs.[6] Prior to the SARS outbreak, coronaviruses were only thought to cause mild influenza-like illnesses in humans.

The second major human outbreak of coronavirus was in 2012 in Saudi Arabia. It was referred to as MERS (Middle East Respiratory Syndrome). It spread to several countries including the US. Most people infected with MERS suffered with respiratory problems including cough and shortness of breath. The World Health Organization confirmed 2,519 cases of MERS as of January, 2020.[7]

SARS-CoV-2 is a new strain of coronavirus that has not been known to previously infect humans.

COVID-19 was first identified in Wuhan, China in December 2019. China informed the WHO that a novel strain of coronavirus was causing severe illness. It was named **SARS-CoV-2** as the cause of **COVID-19**. The virus was sequenced and found to most resemble viruses found in bats and pangolins.[8] **SARS-CoV-2** was found to be highly transmissible between humans. **SARS-CoV-2** can be diagnosed via nasal swab PCR testing. According to the Centers for Disease Control and Prevention, people with **COVID-19** have a wide range of symptoms reported from mild symptoms to severe illness.[9] People with these symptoms may have **COVID-19**:

- Cough
- Shortness of Breath or difficulty breathing

Or at least two of these symptoms:

- Fever
- Chills
- Repeated shaking with chills
- Muscle pain
- Headache
- Sore throat
- New loss of taste or smell

The CDC further states, that this list is not inclusive. According to the CDC, the signs and symptoms of **COVID-19** present at illness vary, but over the course of the disease, most persons with **COVID-19** will experience the following:[10]

- Fever (83-99%)
- Cough (59-82%)
- Shortness of breath (31-40%)
- Sputum production (28-33%)

Our patients' symptomology correlated well with the percentages reported by the CDC.

We will present data on clinical presentation and treatment provided to help patients recover from **COVID-19** symptoms. This treatment program has been utilized for over 20 years (with some variations) in treating patients suffering from viral illnesses such as influenza-like disease. This treatment program was not designed to cure a viral illness rather its purpose is to provide a therapeutic regimen designed to support the immune system when it is challenged with a viral infection.

2. Methods

The setting for this retrospective review is an outpatient medical office (referred to as CHM) consisting of five practitioners. The office is in the metropolitan Detroit area, which was one of the hot spots for **COVID-19**. The practitioners include three medical doctors as well as a nurse practitioner and a physician's assistant. For the calendar year of 2020, charts were retrospectively reviewed for the presence of **COVID-19** diagnosis occurring from February 2020 through May 2020. The charts were analyzed for clinical symptoms, physical findings, imaging and coronavirus testing results. Additionally, the charts were analyzed for interventions provided and duration to relief of symptoms. Three endpoints were taken from the charts – hospitalization, death, and time to improvement.

All patients gave fully informed consent for integrative medical management of their condition. Historical information from the charts included age, sex, birthdate, initial date of service, care provider, past medical history, medications, and nutritional supplements. The number of days of illness prior to being seen by a provider was documented as well.

For x-ray imaging we used the report provided by the radiologist. Coronavirus testing was done through outpatient and inpatient laboratories. Coronavirus was diagnosed by PCR nasal swab testing.

The interventions provided at the outpatient medical office included oral supplementation of iodine, Vitamins A, C and D, intravenous hydrogen peroxide and Vitamin C, intramuscular ozone injec-

tions, and a nebulized solution of dilute hydrogen peroxide and iodine.

Oral dosing consisted of taking the following supplements for four days at the first sign of symptoms or at the direction of the practitioner. The supplements consisted of:

- Vitamin A: 100,000 IU/day*** in the form of emulsified Vitamin A palmitate
- Vitamin C: 1,000 mg/hour while awake in the form of ascorbic acid until bowel tolerance (loose stools) was reached
- Vitamin D3: 50,000 IU/day in an emulsified form
- Iodine: 25 mg/day in the form of Lugol's solution or tableted Lugol's solution

Most patients were instructed to nebulize a dilute solution of 0.04% hydrogen peroxide in normal saline. The solution was mixed for the patient in the office. A sterile 250 cc bag of normal saline was injected with 3 cc of 3% food grade hydrogen peroxide and 1 cc of magnesium sulfate. The patient was instructed to draw off 3 cc of the dilute solution and nebulize it hourly until symptoms improve. Additionally, the patient was instructed to add in one drop of 5% Lugol's solution to the dilute hydrogen peroxide mixture. As the symptoms improved, the frequency of nebulizing could be reduced by the patient.

If symptoms worsened or there was a concern that the patient was suffering from a more severe case, the patient was advised to come to the office and receive intravenous injections of Vitamin C and hydrogen peroxide along with intramuscular injections of ozone. The dosing of these items is shown below:

- Vitamin C: 2.5 grams of sodium ascorbate (5 cc of a 500 mg/cc ascorbic acid solution) mixed with an equal amount of sterile water given as an intravenous push over 2-3 minutes.

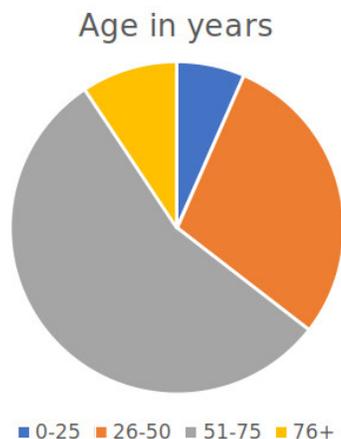


Figure 1. Patient Age distribution

- Hydrogen peroxide: 30 cc of a 0.03% solution of dilute hydrogen peroxide given as an intravenous push over 2-3 minutes
- Ozone: 20 cc of 18 mcg/cc ozone (as an oxygen/ozone gas mixture) given in each buttock as an intramuscular injection

3. Results

There were 107 patients identified in our chart review among five practitioners. **Table I** outlines the patient characteristics of the sample. The age of patients ranges from 2-85 years old with an average age of 54.2 and median age of 56.5. 80 patients were female (75%) and 27 were male (25%). The major comorbid conditions of the sample include hypothyroidism (18%), hypertension (10%), asthma (8%), Lyme disease (6%), Hashimoto’s disease (5%), cigarette smoking (3%), Grave’s disease (2%), chronic sinusitis (2%), diabetes (2%) and cancer (2%).

Figure 1 exemplifies the age distribution of the 107-patient population at the practice. The majority of the patients were between 51-75 years old (59%). The second highest cohort was between 26-50 years old (31%). Followed by those 76 years old and older (10%) and those aged 2-25 (7%).

Table II illustrates the patient symptoms of the total cohort. The most common patient symptom was fever (81%), shortness of breath (68%), URI (69%) and GI symptoms (27%).

Table 1. Patient Characteristics

	N (%)
Total patients	107(100)
Age	
Range	2-85
Average	54.2
Median	56.5
Sex	
Male	27 (25)
Female	80 (75)
Comorbid Conditions	
Hypothyroidism	19 (18)
Hypertension	11 (10)
Asthma	9 (8)
Lyme Disease	6 (6)
Hashimoto’s disease	5 (5)
Smokers	3 (3)
Grave’s disease	2 (2)
Chronic sinusitis	2 (2)
Diabetes	2 (2)
Cancer	2 (2)

Table 2. Patient Symptoms 'Total Cohort'

	N (%)
Fever	87 (81)
Shortness of breath	73 (68)
URI (symptoms including cough)	74 (69)
GI (diarrhea, loose stools, pain)	29 (27)
Total patients	107 (100)**

Table 3 demonstrates the interventions that the patients received from CHM (total cohort). The most common intervention was a protocol of oral supplements, including Vitamin A, Vitamin D, Vitamin C, and iodine. 106 patients of the 107 total patients were taking oral supplements (99%). The other interventions at CHM include 32 patients receiving IV hydrogen peroxide (30%), 37 patients receiving IV Vitamin C (35%), 37 patients receiving intramuscular ozone injections (35%), 91 patients receiving a nebulized solution of normal saline and dilute hydrogen peroxide (85%), and 91 patients receiving nebulized iodine (85%).

Figure 2 shows the average number of days that patient reported symptomatic improvement after CHM interventions (for total cohort). On average, patients reported their first improvement by 2.4 days following CHM interventions. Patients reported feeling mostly better by 4.4 days following interventions. Patients reported feeling completely better after 6.9 days following CHM interventions.

Table 4 illustrates the disease course in the total cohort. 34 of the 107 total patients (32%) were tested for COVID-19. Of those 34 tested, 27 patients tested positive for COVID-19 (79%). Therefore, 25% of the entire cohort (107 patients) had tested positive for COVID-19.¹ Of the total 107 patients, 0 died (0%).

Table 5 illustrates the symptoms of the COVID-19 cohort which was similar to **Table 2** for the entire cohort.² **Figure 3** shows the symptomatic improvement after intervention in the **SARS-CoV-2** laboratory positive cohort. Compared to the entire cohort (**Figure 2**), there was approximately a one day longer time period to feeling *mostly better* and *completely better* for those who tested positive for **SARS-CoV-2** as reported by the patients.

¹Of the 107 total patients, three were hospitalized (3%) with two of the three hospitalized before beginning treatment.

²Two patients in the SARS-CoV-2 positive cohort reported a return of mild symptoms after reporting a resolution of major symptoms. One patient reported feeling foggy in his head and another reported a fast heart (90-100 bpm) along with mild shortness of breath with any mild exertional activity. A workup on both failed to find a cause for the symptoms.

Table 3. Patient Interventions

INTERVENTION	total (cohort) N (%)
Total patients	107 (100)**
Oral supplements	106 (99)
IV H2O2	32 (30)
IV Vitamin C	37 (35)
IM Ozone	37 (35)
Nebulized NS/H2O2	91 (85)
Nebulized Iodine	91 (85)

Table 4. Disease Course

	N (%)
Total cohort	107 (100)
Tested for COVID-19	34 (32)
Tested positive for COVID-19	27 (25)
Hospitalized	3 (3) *
Death	0 (0)

* Of the three patients hospitalized, two were hospitalized before instituting treatment. One was hospitalized on the oral Vitamin regimen of Vitamins A, C, D, and iodine. All three made a full recovery and were treated with nebulized hydrogen peroxide and iodine.

Table 5. Symptoms of COVID-19 Positive Cohort

	N (%)
COVID positive patients	27 (100)**
Fever	25 (93)
Shortness of breath	20 (74)
URI (includes cough)	21 (78)
GI	9 (33)

**Two patients in the SARS-CoV-2 positive cohort reported a return of mild symptoms after reporting a resolution of major symptoms. One patient reported feeling foggy in his head and another reported a fast heart (90-100 bpm) along with mild shortness of breath with any mild exertional activity. A workup on both failed to find a cause for the symptoms.

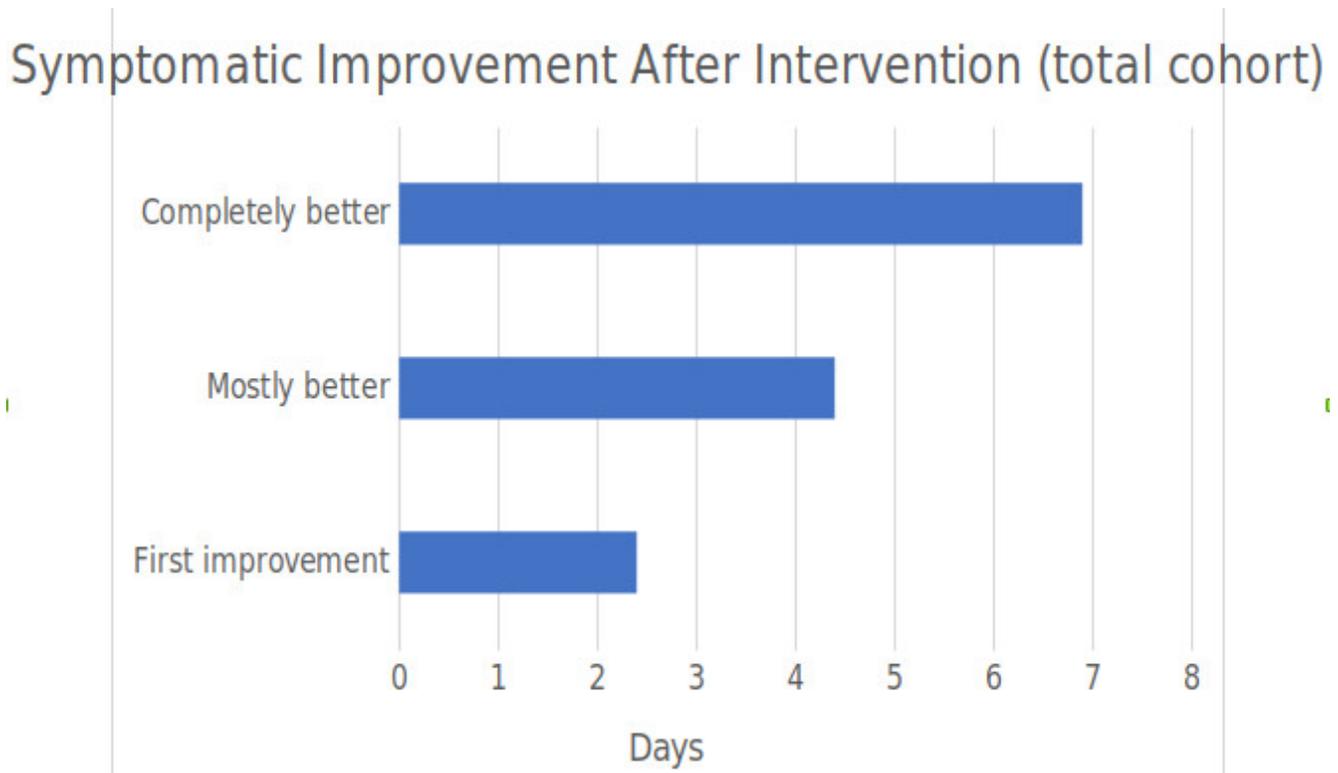


Figure 2. Intervention Results

4. Discussion

COVID-19 is a worldwide pandemic caused by coronavirus. Currently, there is no vaccine or cure for **COVID-19**. Dexamethasone has been reported to reduce hospitalized case mortality.[11] Those who have recovered from **COVID-19** have done so because their immune system was successful in fighting off the illness. Therefore, a successful treatment for **COVID-19** will have to either have viricidal activity or work by aiding the immune system’s response in fighting the pathogen. Many feel **COVID-19** will come back during the next flu season—fall/winter of 2020-2021. Therefore, there is an urgent need for any therapy that supports the host’s immune system and allows for an uneventful recovery from the illness.

This cohort study consisted of a retrospective review of 107 patients who were either diagnosed as **COVID-19** positive by PCR nasal swab testing or presumed to have **COVID-19** due to symptomatology. The most common symptom in our cohort was fever. The fever was reported as fluctuating varying between 99-102 degrees Fahrenheit for most sub-

jects. The next most common symptom included upper respiratory symptoms which included a rhinorrhea, drippy eyes, cough, and congestion. Shortness of breath was the third most common complaint. Gastrointestinal distress, though common, was lower on the symptom list. Although symptoms varied between patients, all patients exhibited symptoms that could be consistent with a viral pathology.

Treatments of the cohort consisted of first using oral nutrient therapies. The vast majority—91 (88%) started taking vitamins A, C, D3 and iodine at the first sign of a viral illness such as a cough, runny nose, sore throat, etc., All subjects (100%) took vitamin C in suggested doses of at least 3-5,000 mg/day of ascorbic acid. Three patients took vitamins C and D only.

There were three hospitalizations in the cohort group. One patient was taking the oral protocol of vitamins A, C, D and iodine when he became ill with a cough and fever. His condition worsened over the next seven days and was admitted to the hospital where he was diagnosed with pneumonia. He was treated with antibiotics. He phoned the

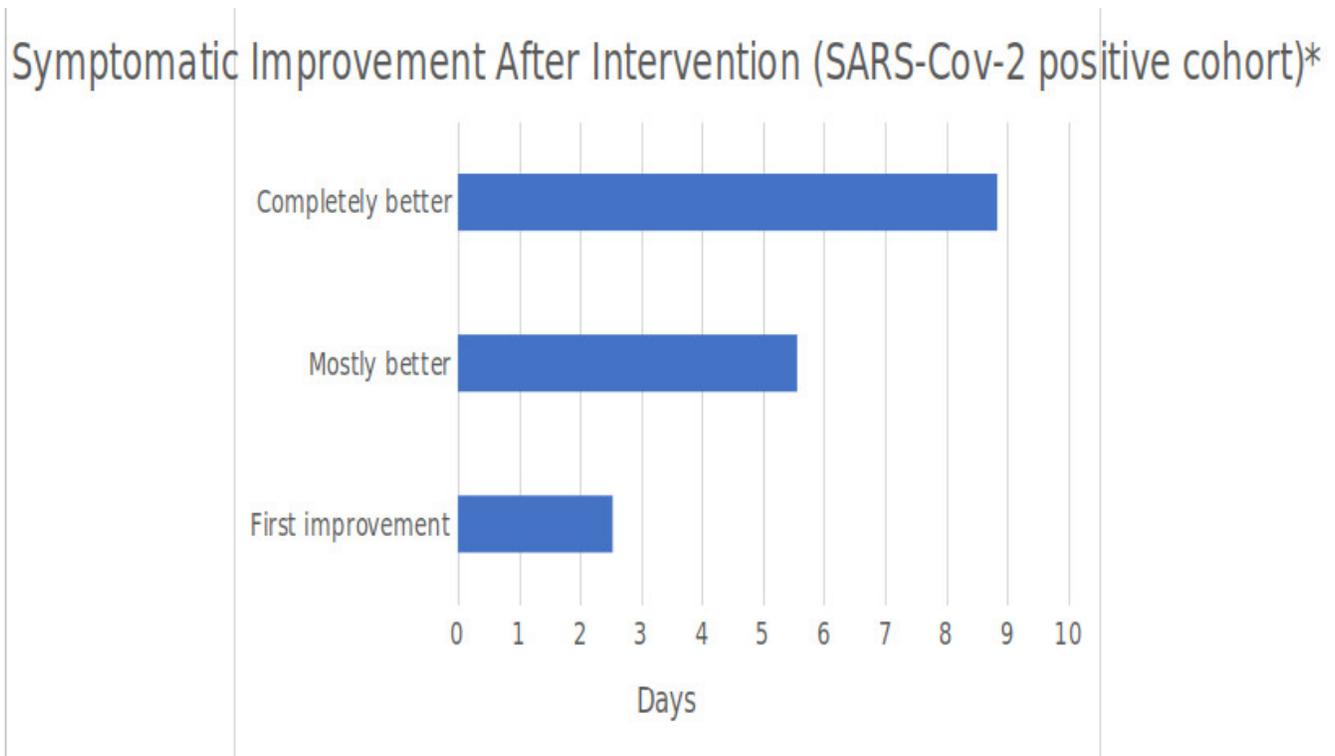


Figure 3. *Two patients in the SARS-CoV-2 positive cohort reported a return of mild symptoms after reporting a resolution of major symptoms. One patient reported feeling foggy in his head and another reported a fast heart (90-100 bpm) along with mild shortness of breath with any mild exertional activity. A workup on both failed to find a cause for the symptoms.

office after he was discharged from the hospital because he was having breathing difficulties. He started nebulizing hydrogen peroxide and felt an immediate improvement in his breathing difficulties from this therapy. By the third nebulized therapy he reported to being 80% improved. He stated his breathing difficulties began to return to normal after day two of nebulizing every 2 hours while awake. The other two patients started our protocol after

being hospitalized for COVID-19. One of the two was recently diagnosed with acute myelogenous leukemia and recently received chemotherapy. Both were discharged still symptomatic with breathing difficulties and a severe cough. Both patients were treated with nebulized hydrogen peroxide and iodine as well as the oral protocol of vitamins A, C, D, and iodine. All three patients fully recovered.

4.1 Vitamin A

Vitamin A consists of a group of retinoid compounds that have a wide range of physiological effects including the support of immune system functioning. Vitamin A deficiency is a worldwide problem affecting 250 million preschool children and half of all countries.[12] In children, vitamin A supplementation has been shown to dramatically decrease the mortality from the viral illnesses such as measles and diarrheal infections.[13]

Over 100 years ago, — before the chemical structure was elucidated — studies of vitamin A pointed to its important role in immune system functioning. Fat in butter, a good source of vitamin A, improved the outcome of infections in malnourished animals and humans.[14] Rats were shown to be more susceptible to infections when they were vitamin A deficient.[15] Vitamin A is fundamental in maintaining the integrity of the epithelium.[16] Vitamin A deficiency has been associated with dis-

ruptions in normal epithelium of the respiratory tract[17][18] and gastrointestinal tissue.[19][20] Vitamin A has been shown to be an important regulator of monocyte differentiation and function.[21]

COVID-19 is characterized by cytokine storm in the severely ill.[22] Therapies that lower cytokine formation are being investigated. Retinoic acid, when added to monocytic, myelomonocytic, or dendritic cell line cultures promotes cellular differentiation and influences the secretion of key cytokines produced by macrophages including TNF- α , IL-1 β , Il-6, and IL-12. It has been hypothesized that supplementation with preformed vitamin A may down-regulate the secretion of specific proinflammatory cytokines such as TNF- α and Il-6 by macrophages.[23]

Acute respiratory distress syndrome (ARDS) accompanied by respiratory failure is a major cause of death from **COVID-19**. [24][25] Treatments to combat respiratory failure are urgently needed.

In vitro and *in vivo* studies have found that IgA antibodies can neutralize intracellular pathogens including viruses by inhibiting or blocking their attachment to epithelial cells.[26][27][28] Researchers studying the acute humoral response to **SARS-CoV-2** in serum and bronchoalveolar fluid of 145 patients with **COVID-19** reported that early **SARS-CoV-2** specific humoral responses were found to be typically dominated by antibodies of the IgA isotype.[29] Furthermore, the subjects who had the highest levels of IgA against the spike protein for **SARS-CoV-2** were the ones who had the greatest ability to neutralize the virus. Vitamin A deficiency has been shown to inhibit the production of influenza-specific IgA in mice.[30] Furthermore, vitamin A supplementation has been shown to increase IgA levels.[31]

4.2 Vitamin C (Ascorbate)

A Chinese report of intravenous vitamin C (IVC) infusion for 50 moderate to severe **COVID-19** subjects found all patients eventually recovered and discharged from the hospital. The subjects were given between 10 and 20 g of IVC per day over a period of 8-10 hours.[32] In 2017, Paul Marik, M.D. developed a protocol for treating septic patients

with IV vitamin C, thiamine, and hydrocortisone. The early use of vitamin C along with thiamine and hydrocortisone were found to be effective at preventing progressive organ dysfunction including kidney injury and in reducing mortality of patients with severe sepsis and septic shock. In CITRIS-ALI researchers reported a trial where ARDS patients were randomized to receive IV ascorbic acid or placebo every six hours for 4 days. Patients had to develop ARDS within 24 hours of ICU admission. The authors reported a reduction in 28-day all-cause mortality rate in those receiving IV vitamin C: 29.8% mortality in the treatment group versus 46.3% mortality in the placebo group.[33]

COVID-19 patients are characterized by elevated levels of inflammatory markers and oxidative stress such as hsCRP.[34] Vitamin C is known to have anti-oxidant and anti-inflammatory effects. Erythrocytes (red blood cells) can deliver oxygen to bodily tissues because they carry iron-containing hemoglobin which reversibly binds oxygen. Oxidative damage to red blood cells can impair the ability to deliver oxygen to tissues.[35] The management (and possibly the prevention of) oxidative stress in **COVID-19** may be addressed with the use of anti-oxidant therapies. High-dose IV vitamin C was found to have an antioxidant effect for lung epithelial cells.[36] Vitamin C has also been shown to prevent the oxidation of iron from its reduced ferrous state to the oxidized ferric form.[37] Intravenous (but not oral) ascorbate has been shown to act as a pro-drug for hydrogen peroxide creation in interstitial fluids in animal studies (see hydrogen peroxide discussion below).[38]

4.3 Vitamin D

Vitamin D is being researched as an effective treatment option for **COVID-19** patients. Researchers used 25-hydroxyvitamin D [25(OH)D] levels as a marker to predict clinical outcomes of **COVID-19** subjects.[39] Of 212 cases of **COVID-19**, serum 25(OH)D level was lowest in critical cases but highest in mild cases. The authors reported vitamin D is significantly associated with clinical outcomes. A logistic regression analysis reported that for each standard deviation increase in serum 25(OH)D, the

odds of having a mild clinical outcome rather than a severe outcome were approximately 7.94 times (OR=0.126, $p<0.001$) while interestingly, the odds of having a mild clinical outcome rather than a critical outcome were approximately 19.61 times (OR=0.051, $p<0.001$). The results suggest that an increase in serum 25(OH)D level in the body could either improve clinical outcomes or mitigate worst (severe to critical) outcomes, while a decrease in serum 25(OH)D level in the body could worsen clinical outcomes of **COVID-2019** patients.

There are several mechanisms by which vitamin D could reduce the risk of influenza-like infections and death. Viral infections have been shown to disrupt airway epithelial cell junctions.[40] Vitamin D has been shown to maintain tight epithelial junctions and adherens junctions.[41]

Vitamin D has been shown to modulate cellular immunity and reduce cytokine storm by reducing the production of proinflammatory cytokines including TNF- α and interferon- γ as well as increasing the anti-inflammatory cytokines produced by macrophages.[42] A study comparing deceased rates for patients with **COVID-19** from countries with a large number of confirmed patients (including Germany, S. Korea, China, Switzerland, Iran, UK, US, France, Spain, and Italy) found a risk of severe **COVID-19** cases among patients with very low vitamin D levels is 17.3%, while the equivalent figure for patients with normal vitamin D levels is 14.6%—a reduction of 15.6%.

The authors hypothesized that vitamin D may reduce symptoms of **COVID-19** by suppressing cytokine storm in **COVID-19** patients.[43]

Vitamin D is produced in the bone, skin, lungs, colon, parathyroid glands, and immune system cells. Activation of vitamin D in response to viral infection has been described.[44] A deficiency of vitamin D could impair this response in the lung.[45]

4.4 Iodine

Iodine is an essential element; therefore it must be obtained from the diet or via supplementation. For over 40 years, US iodine levels have fallen in the National Health and Nutrition Examination Survey (NHANES).[46] Nearly 60% of women

of childbearing age are deficient in iodine.[47] In fact, the mean urinary iodine concentration among pregnant US women is 134 ug/L which signifies deficiency.[48] We have tested over 6,000 patients and found the vast majority—over 97%—are deficient in iodine.

Iodine is needed for proper immune system functioning. Iodine supplementation has been shown to increase IgG synthesis in human lymphocytes.[49] Iodine deficiency is associated with decreased phagocytic activity of blood neutrophils.[50] This was associated with a decrease in peroxidases in neutrophils. Iodine has been shown to increase the ability of granulocytes to kill infectious organisms.[51] Iodine is used as an antiseptic throughout the US because it has antiviral and antibacterial properties. Two of us (DB and RN) have used iodine successfully as an antimicrobial agent for over two decades.

In order to reduce transmission of viruses, antiseptics of human and non-human surfaces must be identified. Researchers reported an *in-vitro* study where **SARS-2-CoV** was exposed to iodine (povidone-iodine) at 1-5% concentrations as a nasal antiseptic formulation and an oral rinse. The iodine solutions effectively inactivated **SARS-CoV-2** after exposure times of 60 seconds.[52] *In vitro* studies of 0.23% PVP-I mouthwash (1:30 dilution) was shown to inactivate both **SARS-CoV** and **MERS-CoV** following a 15-second exposure.[53]

Japan has one of the lowest rates of **COVID-19** illnesses in the Western world even in a crowded city such as Tokyo. Furthermore, Japan has not gone on a total lockdown. The Japanese are known to have a much higher iodine intake through their diet when compared to other Western countries. It is estimated that the Mainland Japanese ingest over 100x the RDA as compared to US citizens.[54] Perhaps Tokyo and Japan itself has had less serious **COVID-19** illness because of their iodine intake.

The full oral supplementation regimen (vitamins A, C, D, and iodine) in **COVID-19** subjects was used in 91 out of 104 subjects in the cohort. The subjects were instructed to take the supplements for four days. Some were treated with vitamin C (1), vitamins C and D (2) and vitamins C, D, and io-

dine (1). All of these patients recovered without sequelae.

4.5 Nebulized Hydrogen Peroxide

If there were more serious problems or the oral supplementation regimen failed to fully help alleviate the symptoms of **COVID-19**, the next step was to initiate the use of a combination of nebulized hydrogen peroxide and iodine. A solution of 250 cc of normal saline was mixed with 3 cc of 3% hydrogen peroxide providing a final concentration of 0.04% hydrogen peroxide. (Note, the hydrogen peroxide used was initially a 35% food grade source then diluted to 3% using a 10:1 mixture of sterile water to 35% hydrogen peroxide.) Additionally, 1 cc of magnesium chloride (200 mg/ml) was added to the 250 cc saline/hydrogen peroxide bag. (This was mixed in the office for the patients.)

Patients were instructed to nebulize 3 cc of the mixture three times per day or more often if there were breathing problems. Usually one or two nebulizer treatments were reported to improve breathing problems.

A total of 91 **COVID-19** subjects (85%) utilized the nebulized solution. They reported no adverse effects. One We have been using nebulized saline/hydrogen peroxide at this concentration for over two decades in his practice.

Hydrogen peroxide is continually produced in the human body with substantial amounts produced in the mitochondria.[55] Every cell in the body is exposed to some level of hydrogen peroxide.[56] The lungs are known to produce hydrogen peroxide.[57] Nebulized hydrogen peroxide has been shown to have antiviral activities.[58] Hydrogen peroxide can activate lymphocytes[59] which are known to be depleted in **COVID-19**.

4.6 Intravenous and Intramuscular Therapies

If **COVID-19** patients continued to have symptoms such as shortness of breath, fever, or cough, they were offered intravenous injections of hydrogen peroxide, Vitamin C and intramuscular injections of ozone.

4.7 IV Hydrogen Peroxide

A dilute IV solution of hydrogen peroxide was given in either an IV drip over 30 minutes or a rapid infusion as an IV push over 2-3 minutes. One of the earliest known uses of hydrogen peroxide was used by Dr. T.H. Oliver in 1920. Dr. Oliver used IV hydrogen peroxide to treat Indian troops who were suffering from an influenza and pneumonia epidemic. The death rate was reported to be over 80% at that time. Dr. Oliver's results showed his IV hydrogen peroxide-treated cohort of 24 soldiers had a mortality rate of 48% compared to the 80% death rate from those treated with the usual care at that time.[60] In the article published by Dr. Oliver, he stated that the low oxygen symptoms his patients suffered from were markedly benefited by the use of intravenous hydrogen peroxide. Furthermore, he reported that the 'toxemia' (spread of bacterial products in the blood stream) appears to be overcome in many cases. Poor oxygenation and sepsis are both conditions experienced by **COVID-19** subjects.

When H_2O_2 is produced extracellularly or added to a cell culture system, a gradient of H_2O_2 is quickly established across the plasma membrane.[61] Researchers reported that the gradient is the result of H_2O_2 -scavenging enzymes including catalase and GSH-peroxidase that maintains a steady-state intracellular H_2O_2 concentration being 10x less than the extracellular concentration.[62] As Bocci states, "This result is important because the intravenous (IV) infusion of a low and calculated concentration of H_2O_2 results in a marked dilution in the plasma pool with partial inactivation and in intracellular levels able to exert biological effects on blood and endothelial cells without aggravating the concomitant oxidative stress." [63] **COVID-19** is known to cause oxidative stress which may be the cause of multi organ failure and hypoxemia.[64][65][66] H_2O_2 is known to activate glycolysis, ATP and 2,3-DPG in red blood cells which can lead to improved oxygen delivery to ischemic tissues.[67][68] H_2O_2 has also been shown to increase the production of NO which can aid in vasodilation and tissue oxygenation.[69][70]

Researchers studying the effects of intravenous H_2O_2 therapy reported that it barely increases the

plasma level of peroxidation end-products (lipid oxygenation products). This stimulates the production of antioxidants which act as reducing agents. The scientists report similar effects with ozone therapy. This results in an up-regulation of antioxidant enzymes (SOD, GSH-peroxidase, G-6PD) in erythrocytes which has been demonstrated *in-vivo*.^[71] Coronaviruses have been shown to be sensitive to oxidizing disinfectants such as a 0.5% hydrogen peroxide solution used as a surface disinfectant.^[72] It is well accepted that the response of the immune system is the production of pro-oxidants which are known to disinfect pathogens.^[73]

4.8 IV Vitamin C (Ascorbate)

Intravenous use of vitamin C has been used in hospitals and outpatient settings for **COVID-19** patients after a report from China showed improvement in those treated with it.^[74] IV ascorbic acid was introduced to moderately to severely sick **COVID-19** patients in Chinese hospitals. The researchers reported that intravenous ascorbic acid provided safe and effective adjunctive care of hospitalized **COVID-19** patients. There was no mortality, no reported side effects and shorter hospital stays universally. The Shanghai expert group recommends intravenous ascorbic acid use in extremely critical settings within **COVID-19** patients. In the US, multiple hospital centers utilized IV vitamin C to treat **COVID-19** patients.

We have been successfully utilizing IV vitamin C therapies for over two decades in order to aid the immune system in its ability to fight pathogens. For this study, we administered 2.5 gm of sodium ascorbate mixed with 5 cc of sterile water as an intravenous push over 1-2 minutes. There were no adverse effects from this regimen.

4.9 Intramuscular Ozone

Ozone is a colorless gas with a pungent odor. It is a natural molecule made up of three atoms of oxygen. Ozone is produced by an ozone generator where oxygen (O₂) gas is exposed to an electrical discharge combining O₂ molecules into a mixture of up to 5% O₃ and 95% O₂. Ozone therapy has been used for over 100 years and is widely used in

Europe and Cuba and in outpatient offices in the United States. Ozone has been used to treat infections and wounds as well as other illnesses over this time period. Ozone therapy can be administered by many different methods including intravenously and intramuscularly. Intramuscular ozone was given in these cases to reduce transmission risk. Since we were only treating **COVID-19** patients outside the office in the parking lot, intramuscular injections of ozone were deemed the easiest and safest modality.

IM ozone was provided to 37 patients (35%). Of these, a single ozone injection was given to 31 (82%). Seven (18%) required more than one IM injection. Five received two ozone shots, one patient had four and another had six. The patients who required four and six injections had been ill for a longer time period (over 10 days) before instituting therapy. Both recovered uneventfully. In viral infections, ozone has been shown to improve both the innate and adaptive immune systems while also reducing cytokine storm. Ozone improves neutrophil counts in children with compromised phagocyte cell-mediated immunity.^[75] Antibodies have been shown to kill pathogens by producing ozone gas.^[76] Ozone has been shown to have direct viricidal effects by disrupting the lipid envelope of a virus at sites of double bonds. When the lipid envelope is fragmented, its DNA or RNA cannot survive. **SARS-CoV-2** is an enveloped virus which would make it an excellent candidate for treatment with ozone.^[77] Furthermore, **SARS-CoV-2**, as well as other coronaviruses, have abundant cysteine—a thiol containing amino acid—in their spike proteins. Rowen has hypothesized that ozone is the ideal therapy for viruses.^[78] In order to successfully penetrate cell membranes, many viruses require membrane glycoproteins to be in the R-S-H reduced form as opposed to the oxidized—R-S-S-R— form. If virus thiol groups are oxidized they lose infectivity.^[79] Rowen states, “Creating a more “oxidized” environment may allow ozone therapy... to assist the body in inactivating thiols in viruses in blood and tissues.” **SARS-CoV-2** cell entry spike proteins are particularly rich in both cysteine and tryptophan the two most vulnerable

amino acids to alteration by ozone.[80][81] The thiol group of cysteine is easily oxidized reversibly to disulfide which is widely accepted to neutralize the function of its protein/enzyme. Effectively, it is an “on-off” switch. Potent oxidants, such as hydrogen peroxide or ozone, can irreversibly oxidize the thiol. Regardless, viruses have no means to self-repair even when in the disulfide oxidation state. Regarding tryptophan, its electron rich indole group is very vulnerable to irreversible oxidation, even by hydrogen peroxide.[82] Ozone, like ascorbate, has been shown to increase the production of hydrogen peroxide.[83][84] This viral redox vulnerability theory was verified with the use of ozone rapidly remitting 100% of 5 cases of Ebola in 2014. The Ebola virus similarly has a large quantity of cysteine in its membrane glycoproteins.⁵⁷ **COVID-19** is associated with microthrombotic events and, often, a cytokine storm of inflammation. Ozone could be particularly useful as it improves the prostacyclin:thromboxane ratio and enhances nitric oxide production.[85] Ozone has been shown to reduce production of TNF- α [86] as effectively as steroids do and increases the production of the anti-inflammatory enzyme heme oxygenase-1.[87] Ozone treatment also induces *Nrf 2* phosphorylation, which has been reported to reduce oxidative stress and proinflammatory cytokines in multiple sclerosis patients, and, in low doses.[88] *Nrf 2* is a regulator of genes related to antioxidant responses.[89] The limitations of this study include that most patients were taking nutritional supplements before they became ill. Therefore, they may have had fewer nutritional deficiencies compared to the average American. Furthermore, the majority of the subjects in this study, which mirrored the practice, were women. As compared to women, more men die of **COVID-19**.⁹⁰ Hypertension, diabetes, and obesity are known co-morbidities with **COVID-19**.⁹¹ Our patient population had lower rates of these illnesses when compared to US averages. Since this was not a randomized, double-blind, placebo-controlled study, the therapies provided here cannot be proven to cure the symptoms of **COVID-19**. The observations of the positive outcomes are supported by this consecutive case

series even without a control group. During the **COVID-19** pandemic, we felt that it was not ethical to use a control group and withhold treatment from ill **COVID-19** patients.

Case control series have been shown to play an important role in evidence generation and in clinical practice.[92] The author of the fore worded report, Cynthia Jackevicius states, “Who better than clinicians—who are the first to see how new therapies are being used and how patients respond to the new therapies—to share their valuable insights and experience in the medical literature through the use of case reports? A fundamental tenet of evidence-based clinical practice is to use the best available clinical evidence, and at times, a case report or case series is the best available evidence to guide decision-making.”

Additionally, the results of this study offer a new consideration for the current medical study paradigm, which generally evaluates a single agent (or occasionally more) against a disease or pathogen. Considering the very favorable outcome of our consecutive case cohort (no deaths, only one hospitalization in patients treated prior to admission, and rapid recovery), this work supports an alternate paradigm for infection and medical challenges: providing support of the body’s biochemical/nutritional needs and augmenting its innate physiological defense responses. Every substance used in our cohort is either an essential nutrient or an oxidant mediator actually manufactured by the body. Nothing foreign to the body was used, nor anything patentable. The disparity in the health outcomes under our treatment protocol and the outcomes in the rates of serious and critical illness and death under other protocols is stark and demands further investigation.

5. Conclusion

In summary, we treated 107 COVID-19 patients, solely with biological therapies, who all recovered. Only three were hospitalized. Of the three hospitalizations, two were hospitalized before beginning our treatment and sought our care post hospitalization. One was hospitalized while solely taking the oral regimen of Vitamins A, C, D, and iodine, and

not the oxidative therapies. All recovered uneventfully. There were no deaths.

In the state of Michigan, as of 6/21/20, the case fatality rate was 9.0% (6,067 deaths and 67,097 positive cases of SARS-CoV-2). [92] Therefore, out of our 107 COVID-19 patients, 10 deaths could be predicted. At the very least, with 25 patients testing positive for the virus, we should have expected two deaths, but in reality, we should have seen significantly more morbidity considering we only had 33 tests performed on the 107 patients (all symptomatic), a median age of 56, and comorbid conditions. Of the 107 patients total, we should have experienced at least eight hospitalizations considering the median age, according to a published analysis. [93]

As of this publication, no cure, treatment, or preventive for SARS-CoV-2 has yet been proven effective in a randomized study, except for dexamethasone (a potent steroid) use in severely ill, hospitalized patients. In this study a novel treatment program, which is hypothesized to aid and support the immune system, was highly effective in the re-recovery of 100% of 107 patients. This case review points out that specific and relatively inexpensive nutritional support along with oxidative intravenous as well as intramuscular, and nebulized oxidative solutions may be helpful for COVID-19 patients. Future, randomized studies are needed to elucidate the effectiveness of this or similar regimens.

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*****Editor's Erratum Note, 7/9/2020, 8:20PM**
Due to a typographical error, the amount of Vitamin A in the protocol was originally reported as 10,000 IU/day. The correct value should have been 100,000 IU/day.



CLINICAL GROUP

Research Article

Novel therapy for COVID-19 does intravenous ozonated-saline affect blood and tissue oxygenation?

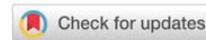
Thorp JA*, Hollonbeck SA, Viglione DD, Green PC, Hodge JR, Tamburro JA, Tran TN and Glassman DS

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Abstract

Introduction: Adjuvantive ozone therapy for COVID-19 is being used successfully in China, Spain, Italy, and South America. One proposed mechanism is by improving blood / tissue oxygenation thus averting multiorgan system failure due to hypoxia. The purpose of this study was to determine if ozonated-saline administered intravenously affects the oxygenation and duration of time spent in a hypoxia chamber.

Methods: This was a prospective pilot study that used one volunteer who underwent seven experiments. Each included two runs in a hypoxia chamber that resulted in symptomatic oxygen desaturation. One subject was used as his own control in the hypoxia chamber before and after infusion of intravenous ozonated-saline in four paired experiments. Another 3 experiments were performed identically except ozone was not administered. The primary outcome was to test the null hypothesis that ozonated-saline infusion does not affect oxygenation.

Results: In four experiments, ozone was associated with a significant increase in time the subject could remain in the hypoxia chamber ($P < 0.05$). In three control experiments without ozone, there was a significant decrease in time in the hypoxia chamber in the second run compared to the first ($P < 0.001$). Compared to the first run there was a 32.4% increase in the proportion of time in the second run (after ozone) compared to the first run ($P < 0.0001$). In contrast, in the three control experiments without ozone, there was significant decrease in proportion of time the subject could remain in the hypoxia chamber with an average decrease of -43.1% ($P < 0.0001$). Ozone therapy was associated with a significant delay in lowest oxygen desaturation ($P < 0.05$). In contrast, in the three experimental runs without ozone there was a significant reduction in time to reach the nadir of the desaturation curve in the second run compared to that of the first ($P < 0.05$).

Conclusions: Infusion of intravenous ozonated-saline significantly increases the duration of time that a subject can remain in hypoxia and delays the nadir of the oxygen de-saturation curve.

Introduction

Ozone therapy has been used in medicine for over a century after it was discovered in the mid-1800's. It is extensively used in the USA, especially in the pre-antibiotic era for infectious diseases including combat injuries. Most recently reports from China, Italy, Spain and South America report the beneficial use of ozone therapy in extremely ill patients with COVID-19 associated acute respiratory insufficiency [1-8]. Despite the extensive use of ozone among Integrative / Wellness providers in the US and world wide there are very few prospective

studies [9-11]. There are multiple proposed mechanisms by which adjuvant ozone therapy for COVID-19 could possibly improve outcomes: 1) Ozone is virucidal; 2) Ozone increases oxygenation of blood and tissues; 3) Ozone stimulates immune function via nuclear factor erythroid 2-related factor 2 (NRF2); 4) Ozone inhibits inflammatory mediators (interleukins, cytokines, and tumor necrosis factors); 5) Ozone activates endogenous antioxidant immune defenses; 6) Ozone inhibits viral replication; 7) Ozone inhibits micro thrombus formation; 8) Ozone up-regulates HO-1 in endothelial cells and; 9) Ozone stimulates the 2-3 diphosphoglycerate that shifts the oxygen



saturation curve to the right, thus delivering more oxygen to the tissues [12]. The purpose of this investigation is to determine if ozone-gas infused saline administered intravenously affects oxygen desaturation and recovery in a hypoxia chamber.

Materials and methods

One volunteer (author JAT) consented to undergo serial testing in a reproducible hypoxia model. The subject was continuously monitored with oxygen saturations and vital signs. All experiments were supervised by physicians and health care providers. The subject himself is extensively trained in aggressive aerobic exercise and thus was well acquainted with exercise induced hypoxia. The hypoxia model was accomplished by a closed, hermetically sealed hypoxia chamber that was instilled with approximately 8 liters of air (at sea level) thus constituting about 1.6 liters of oxygen. The air inserted into the hermetically sealed hypoxia chamber was measured by a standard air pump. The subject has an oxygen consumption of approximately 375 ml per minute thus it was estimated that the oxygen would be consumed in about 4.27 minutes. Ozone was generated by a high quality medical cold plasma technology generator.

The subject was placed in the hypoxia model for the first run of each of the seven experiments. In three of the experiments after the first run in the hypoxia chamber, the subject waited for the exact same time period of 30 minutes and then underwent the second run in the hypoxia chamber. In four of the experiments after the first run in the hypoxia chamber, the subject was infused intravenously with 500 ml of ozonated normal saline. The normal saline was ozonated by infusion of 600 ml of ozone gas infused into a liter bag of only 500 ml of normal saline at a concentration of 100 microgram/ml (gamma). It was shaken vigorously then immediately administered intravenously to the subject. Upon completion of the 30 minutes of ozonated-saline infusion, the subject was again placed in an identical hypoxia model. In each of the seven experiments the amount of time (seconds) before and after the intravenous ozonated saline infusion (or control) was compared using one-way ANOVA. In a similar fashion the percent of time gained or lost in the second hypoxia run was calculated using the first run as a reference in seven experiments before and after ozone (or control). The percent change was tested by comparison of proportions assuming the null hypothesis that ozone / control did not affect these proportions.

Continuous hemoglobin saturations were obtained using a standard pulse oximeter. The oxygen saturation curves were analyzed using standard statistical measurements to compare the time to the lowest value (nadir in seconds). Based upon a 10% improvement in the primary outcomes and a power of 80% , we calculated that seven experiments would be required (alpha <0.05, beta <0.2). All observers were trained and aware of the signs and behavioral symptoms of hypoxia, specifically anxiety, agitation, excessive movement of limbs, changing position, fidgeting, tremors, tachypnea with increased inspirational tidal volumes. Standard statistical methods were used MedCalc.org statistical package using the serial measurements time to reach minimum oxygen saturation

(nadir) and comparison of one proportion compared to the null hypothesis.

Results

Vital signs remained stable before, during and after the two sequential hypoxia runs. There was a significant increase in duration of time the subject could stay in the hypoxia model after receiving ozone compared with that prior to the ozone therapy (ANOVA; $P < 0.05$, $F = 7.8$, Figure 1). In contrast, three experiments using control demonstrate a significant reduction in time that the subject could remain in the hypoxia chamber in the second run compared to the first and (ANOVA; $P = 0.001$, $F=109$, Figure 2). The percent change of time in the hypoxia chamber after ozone was calculated using the pre-ozone time in the hypoxia chamber as a reference. The null hypothesis was rejected as there was as substantial increase in the percent of time the subject could stay in the hypoxia chamber. (increase by 31%, $P < 0.0001$, Figure 3). Likewise, in the three control

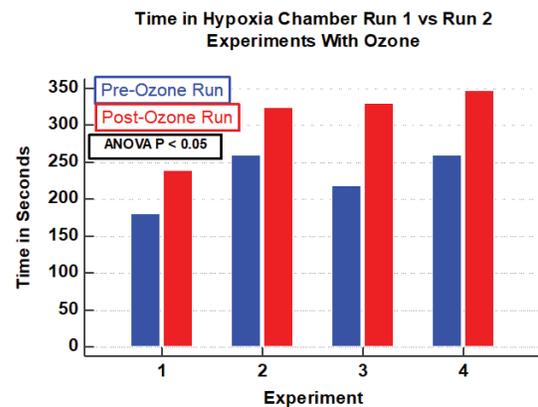


Figure 1: The amount of time that the subject could tolerate the hypoxia chamber before and after intravenous ozonated-saline therapy in four experiment each with two runs in the hypoxia model. There was a substantial increase in time that the subject could remain in the hypoxia chamber after ozone therapy (ANOVA, $F = 6.9$, $P < 0.05$).

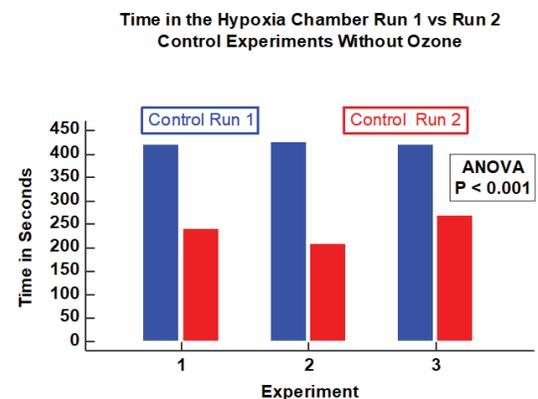


Figure 2: The amount of time that the subject could tolerate the hypoxia chamber in 3 sets of experiments without ozone as a control. There was a substantial and significant reduction in the amount of time the subject could tolerate the hypoxia chamber as compared to the first run (ANOVA, $F = 109$, $P < 0.001$).



experiments there was a substantial reduction in the proportion of time in the hypoxia chamber in the second run compared with the first run (decrease by 43%, $P < 0.0001$, Figure 4).

The hemoglobin oxygen saturation curve was also analyzed in the four experiments using ozone and the three control experiments without ozone. In the four experiments using ozonated-saline there was a substantially longer time to the lowest point of oxygen desaturation compared with the run immediately prior to the ozone therapy (Figure 5, $P < 0.05$). In contrast, in the three control experiments there was a significantly shorter time to reach the nadir of oxygen desaturation compared to the first runs (Figure 6, $P < 0.05$). All observers noted a substantially more rapid appearance of hypoxia signs / symptoms in the four pre-ozone experiments compared to the post ozone hypoxia run. In contrast, in the three identical experiments without ozone, there was a substantially shorter time in onset of hypoxia signs/symptoms of tachypnea, agitation, motor restlessness, deeper breathing

Proportion of Time in Hypoxia Chamber Run 1 vs Run 2 Experiments with Ozone

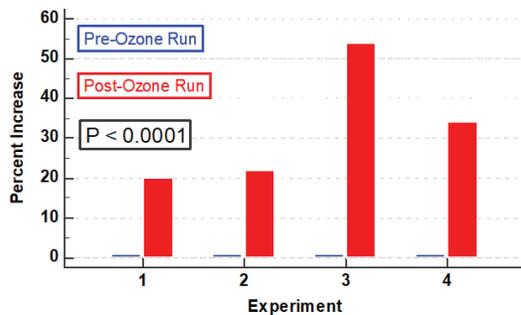


Figure 3: The proportionate increase of time in the hypoxia chamber after ozone was calculated using the pre-ozone time as a reference. The null hypothesis was rejected as there was a substantial increase in the percent of time the subject could stay in the hypoxia chamber. (31% increase, $P < 0.0001$).

Proportion of Time in Hypoxia Chamber Run 1 vs Run 2 Control Experiments Without Ozone

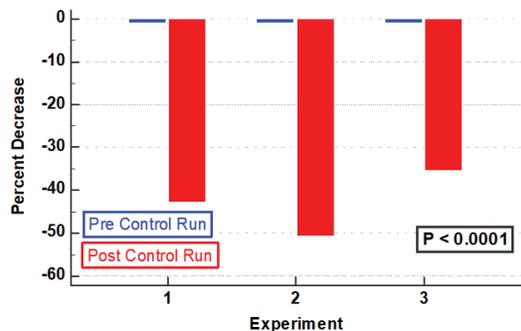


Figure 4: The proportionate decrease of time in the hypoxia chamber after the first run without ozone was calculated using the first run in the hypoxia chamber as a reference. The null hypothesis was rejected as there was a substantial decrease in the percent of time the subject could stay in the hypoxia chamber relative to the first run. (43% decrease, $P < 0.0001$).

Time to Lowest Oxygen Saturation Run 1 vs Run 2 Experiments with Ozone

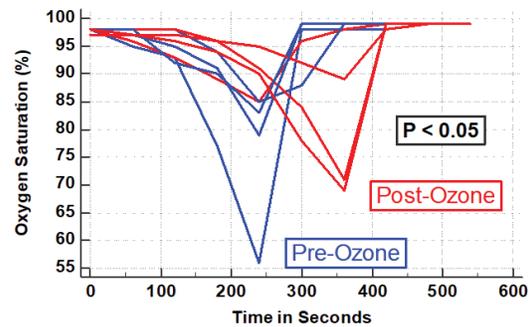


Figure 5: The effect of ozone on the time to the lowest oxygen saturation (nadir) was compared in the run before and after ozone. There was a substantially longer time to reach the oxygen desaturation nadir in the post-ozone run compared to that of the first run before ozone administration. ($P < 0.02$).

Time to Lowest Oxygen Saturation Run 1 vs Run 2 Control Experiments Without Ozone

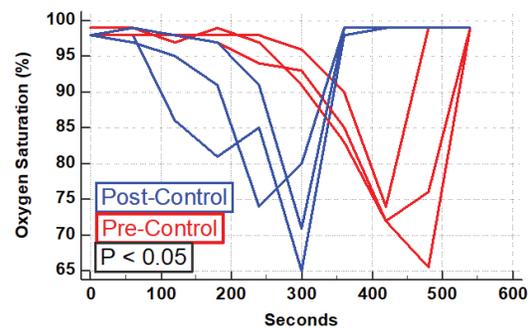


Figure 6: The three control experiments consisted of two runs of the subject in the hypoxia chamber separated by 30 minutes of time without OZONE was administered between the two runs. The pre-control and post-control time to the lowest oxygen saturation (nadir) was compared. There was a substantially shorter time to the nadir in the second run compared with that of the first. ($P < 0.05$).

and discomfort of air hunger in the hypoxia run compared to that of the first run of the experiment.

Discussion

Intravenous ozonated-saline was associated with clinically and statistically significant improvements in oxygenation. This was evidenced by the duration of time in the hypoxia chamber and by the delay of the lowest oxygen saturation (Figures 1-4). There was a substantial increase in the duration of time in seconds that the subject could remain in the hypoxia chamber after receiving ozone compared with that of the pre-ozone run (ANOVA; $P < 0.05$, $F = 7.8$, Figure 1). Remarkably the exact opposite occurred in the three experiments that were performed without ozone, that being a significant decrease in the duration of time in seconds that the subject could remain in the hypoxia chamber in the post-control run compared with that of the pre-control run (ANOVA; $P = 0.001$, $F = 109$, Figure 2). Similarly, in the 4 experiments using ozone, the proportion of time in the hypoxia model in the post-ozone runs were compared using



the pre-ozone runs as the reference and there was an average 31% increase ($P < 0.0001$ Figure 3). In striking contrast, in the three experiments using the exact same technique without ozone, there was an average 43% reduction in the proportion of time that the subject could stay in the hypoxia chamber in the second compared to the first run ($P < 0.0001$, Figure 4). Of great interest to corroborate the findings outlined above there was dramatic improvement in oxygenation measured by the continuous oxygen saturation monitor associated with the four experiments with the runs before and after ozone. There was a striking and consistent increase in time to achieve the lowest oxygen saturation level (nadir) measured by pulse oximetry in the post ozone run compared to that of the pre ozone run (Figure 5, $P < 0.05$). Consistent with the patterns observed above, there was a complete opposite effect in the three control experiments in which ozone was not used. Instead of having a longer time to reach the oxygen desaturation nadir in the post ozone run, there was a striking reversal of that pattern in the post control run (without ozone). In the post-control run there was a significant reduction in time to achieve the lowest level of oxygen saturation as measured by pulse oximetry compared to that of the pre control run (Figure 6, $P < 0.05$).

Independent observers unanimously observed a lessening and delay in hypoxia symptoms observed in the post-ozone run compared with that of the pre-ozone run. To our knowledge this is the first documentation of intravenous ozonated-saline improving the ability to remain in hypoxia with the same endpoint, that is, severely symptomatic hemoglobin desaturation documented by pulse oximetry. This study did NOT address the efficacy of adjuvant ozone therapy on COVID-19. However, it does support one of the mechanisms postulated to improve outcomes, that is, the improvement in oxygenation of blood and tissues.

Like oxygen and water, high concentrations of ozone can be hazardous to the lungs if directly inhaled for extended periods of time. There are a variety of modalities of ozone administration that have been extensively utilized [12]. Although controversial, direct ozone gas infusion into the venous blood is the most simple and efficient ozonation method and is widely used as the route of choice by some experts. In contrast to air, ozone gas infusion intravenously does not pose the same risk since it is not composed of 80% nitrogen and ozone is highly soluble in blood & plasma. Ozone is about 10 to 13-fold more soluble in water than is oxygen [12]. Depending upon the temperature and pressure, about 50 ml of ozone gas dissolves in 100 ml of water compared to only about 4 ml of oxygen. [12]. Many experts prefer the use of extracorporeally ozonated autologous blood transfusion of 100 ml to 200 ml, widely known as “major autohemotherapy” (also referred to as “MAH”) [12]. Various protocols for MAH typically use volumes of only 100–200 ml of blood. The drawbacks are that it requires bloodletting, heparinization, and ozonation of the blood followed by autologous transfusion. This process is further complicated by the necessity of heparin with its attendant significant side effects (allergic reactions and heparin induced thrombocytopenia) and also by care providers requiring personal protective equipment for COVID-19. Additionally, MAH could not be “blinded” in future studies.

Infusion of intravenous ozonated-saline has been utilized by many clinicians as avoids the concerns and inconveniences of extracorporeal blood ozonation and heparin. There are multiple other safe routes of administration of ozone gas including insufflation into the external ear canal, vagina, rectum, and bladder as well as direct ozone gas injection into muscle, joint spaces, facets and discs for back pain relief [12]. Drinking ozonated water is safe and allows absorption through the GI tract [12]. The World Federation of Ozone Therapy Scientific Advisory Committee in 2015 published an extensive 117-page review on evidence-based ozone therapy [12]. In a sample of over a million treatments they quoted a complication rate of only 0.0007% which the authors claim is one of the lowest in all of medicine [12]. They discuss four associated deaths attributed to the uses by non-qualified personnel injecting large volumes of intravenous ozone gas [12]. In contrast Rowen states that intravenous ozone gas therapy is exceptionally safe and has extensive personal use with a reported complication rate of only 0.7 per 100,000 treatments, most all of which he attributed to improper administration [13].

Singh, et al. provided an excellent detailed review of the three different coronaviruses in the past two decades delineating their differences in viral dynamics and clinical features [14]. As these authors point out the treatment is primarily supportive therapy and they conclude that there is no anti-viral therapy proven to be effective against COVID-19 [14]. A few small-scale studies have claimed benefit with chloroquine, hydroxychloroquine and other drugs including lopinavir/ritonavir, remdesivir, favipiravir, oseltamivir, ribavirin, interferon beta, tocilizumab and abidol [14]. In a separate publication, Singh et al review innovative technologies that may provide more effective screening and treatments for COVID-19 in the outpatient setting [15].

The limitations of this study are that the experiments were performed in just one subject, using himself as the control. Another limitation is that the subject was not blinded to the intervention. A rather unique consideration is whether the impressive oxygen desaturations that this subject achieved in the hypoxia chamber were physiologic or pathophysiologic. The subject has underlying chronic lung disease from a 17-segment spinal fusion for severe scoliosis earlier in life. Whether or not this contributed to the impressive oxygen desaturations that were achieved is unknown but regardless, this study convincingly demonstrated that ozone therapy was associated with dramatic improvements in oxygenation. Whether or not young healthy subjects will desaturate as easily will be determined by the follow up phase two study. Our future planned study will evaluate the use of ozone with a more sophisticated hypoxia “altitude simulator” device in 30 young healthy adults with ozonated-saline administered in a double blinded fashion.

The study supports that intravenous ozonated-saline improves oxygenation of blood and tissues and prolongs the ability of an individual to remain in a hypoxic environment. This study supports the potential benefit of adjuvant ozone therapy for COVID-19 as observed in China, Spain, Italy, and South



America [1-8]. Based upon the findings of this study a large randomized controlled prospective trial should be conducted in the United States. Ultimately a multicenter randomized controlled clinical trial will be necessary to prove whether adjuvant ozone therapy can improve outcomes in COVID-19 patients as purported by observational studies from China, South America, Spain and Italy [18]. Based upon a reduction in the progression of disease to require mechanical ventilation by 50% (from 10% to 5%), a sample size of approximately 1000 patients would achieve a power of greater than 80% to demonstrate this difference ($\alpha < 0.05$, $\beta < 0.20$). We are attempting to organize and fund this trial.

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HAEMATOCLINICAL DATA DEMONSTRATE THE EFFECTIVENESS OF OXYGEN OZONE THERAPY WITH SIOOT PROTOCOL IN THE TREATMENT OF COVID19, ALSO AS A POTENTIATOR OF PHARMACOLOGICAL THERAPY

SIOOT HAS GIVEN GREAT DEMONSTRATION OF ITSELF IN THE WORLD

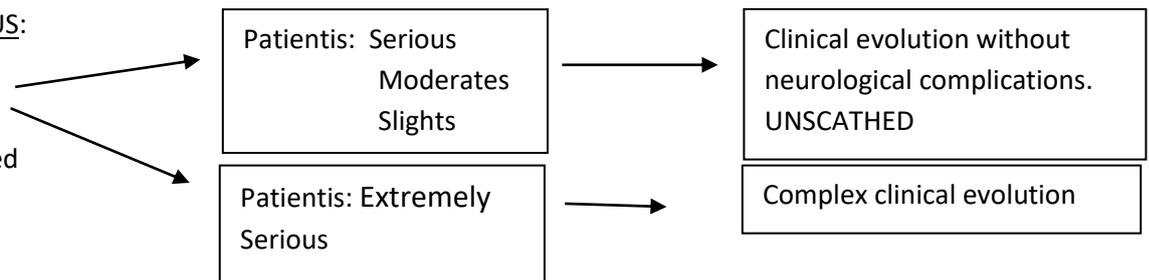
	Initial average value	After 4-6 treatments with O2O3
Body Temperature	37,7° - 38,7°	36° - 36,5°
Heart rate	90 -100	70 - 75
O2 sats: intubated	<70	intubated intubated + tracheotomy + dialysis
Body Temperature	80 - 85	92 - 95
Blood sugar	200 – 300	90 -150
Transaminase	90 – 250	40 - 50
Creatinine	1,5 – 5	1 – 1,3
Electrolyte: Na – K –Ca	< to the norm	Normal
Leukocyte	3.000 – 4.000	>5.500
Lymphocytes	Extremely serious <3	Extremely serious < 7
	Serious <10	Serious 10 - 20
	Moderate 10 - 15	Moderate 15 - 20
	Slight 15 - 20	Slight 25 - 30
PCR	10 – 350	<20
LDH	300 - 750	<500
D-dimer	600 - 6000	<800
D-dimer > 3.000	8.000 - 20.000	Risk for thromboembolism i
Procalcitonin	< 0,5 ng/ml	<0,05
Procalcitonin	> 2 ng/ml	Overmoulding

Adjunctive therapy: in the judgment of the attending physician

Observations: Patients not treated with associated ozone therapy had a slower recovery. Out of 100 patients treated, the number of deaths is 8% and all have had 1-2 sessions.

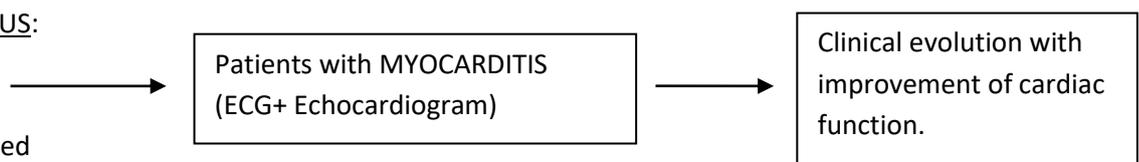
MATH PRECOCIOUS:

(1°-6° hospital days)
COVID19 confirmed



MATH PRECOCIOUS:

(1°-6° hospital days)
COVID19 confirmed



Protocol O2O3: Method according to the provisions of SIOOT in the 5 phases.

Materials O2O3: Equipment with ozonation tubes with a minimum length of 60 cm, A.T. transformers producing at least 16,000 volts, oxygen flow variable from 1 to 10 lt. SANO3 bag, specially certified without phthalates

Special thanks to Prof. L. Valdenassi, , Prof. M. Franzini, Dr. T. Laddomada, Dr. G. Masiello, Dr. L. Marziani, Dr. E. Agosteo, Dr. A. Procopio, Dr. M. Carrubba Cacciola, Prof. G. Cinnella, Dr. E. Cosolo, Dr. S. Gozzo

HAEMATOCLINICAL DATA DEMONSTRATE THE EFFECTIVENESS OF OXYGEN OZONE THERAPY WITH SIOOT PROTOCOL IN THE TREATMENT OF COVID19, ALSO AS A POTENTIATOR OF PHARMACOLOGICAL THERAPY SIOOT HAS GIVEN GREAT DEMONSTRATION OF ITSELF IN THE WORLD

	Patients number: 60			Patients number: 60		
	PATIENTS TREATED WITH THERAPY STANDARD + OXYGEN OZONE SIOOT			PATIENTS TREATED ONLY WITH STANDARD THERAPY		
	Initial average value	After 4-6 treatments O2O3	Initial average value	After 3-4 treatments O2O3	Initial average value	After 3-4 treatments O2O3
Body Temperature	38,7	36,5	-5%	38,6	37,9	-2%
Blood sugar	300	120	-60%	300	180	-40%
Creatinine	4	1,2	-70%	3	1,5	-50%
Leukocyte	3500	6500	+85%	3500	5500	+57%
Lymphocytes 1	10	30	+200%	10	20	+100%
PCR	30	<5	-84%	30	<15	-50%
D-dimer2	5000	<750	-85%	3000	<1500	-50%

¹ More lymphocytes means immune response / capacity

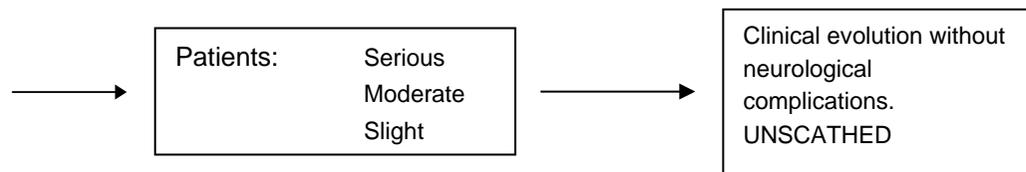
² High D-dimer levels> TEP (pulmonary embolism / microthrombosis) risk> death risk

Associated therapy: in the judgment of the attending physician

Observation: Patients not treated with Oxygen Ozone Therapy had a slower recovery *1

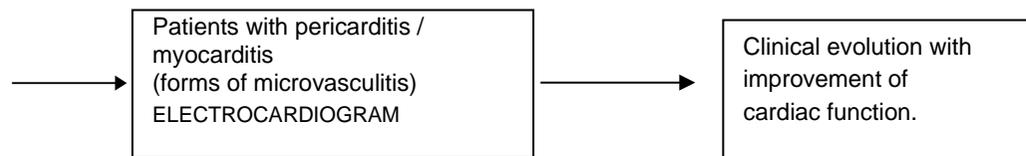
MATH PRECOCIOUS:

(1°-6°hospital day)
COVID19 confirmed



MATH PRECOCIOUS:

(1°-6°hospital day)
COVID19 confirmed



Protocol O2O3:
Method according to the provisions of SIOOT in the 5 phases.

Materials O2O3:
Equipment with ozonation tubes with a minimum length of 60 cm, A.T. transformers producing at least 16,000 volts, oxygen flow variable from 1 to 10 lt.
SANO3 bag, specially certified without phthalates

*1 Slower response and> late complication with metabolic syndrome (renal failure, microthrombosis, fever)

ANOTHER IMPORTANT CONFIRMATION OF THE OXYGEN OZONE THERAPY SIOOT EFFECTIVENESS, ARISING FROM FURTHER HEMATOCLINIC DATA

ID	Name	Gender	Age	Hospitalization date	Weight	Height	Phenotype
1	Nicola	M	66	19.04.2020	90	175	3
2	Ernesto	M	59	23.04.2020	85	180	3
3	Sebastiano	M	73	26.04.2020	92	170	3
4	Maria	F	65	02.05.2020	58	160	2
5	Carmela	F	75	09.05.2020	61	160	2
6	Carmela	F	77	10.05.2020	81	163	3
7	Walter	M	65	14.05.2020	80	171	3

ID	Treatment day	Ventilation	Peep	PS	Tidal Volume	FiO2	RR	PO2	PCO2	pH	P/F	A-aDO2	PAO2/paO2	pAO2	SpO2	Hb
1	Basic – NO O3	HFNC		60l/m		60	15	61	37	7,44	122	320,55	0,16	381,55	99	13,9
1	1 - O3	HFNC		60l/m		40	15	60	39	7,43	150	176,45	0,25	236,45	100	14
1	2 - O3	HFNC		50l/m		30	22	83	36	7,45	277	85,9	0,49	168,9	99	13,7
1	3 - O3	Venturi				60	20	244	41	7,41	402	132,55	0,65	376,55	100	12,3
2	Basic – NO O3	Cpap	8		500	50	22	133	39	7,45	268	174,75	0,43	307,65	99	11,3
2	1 - O3	BiPap	8	4	580	60	16	86	41	7,47	172	290,55	0,23	376,55	98	14
2	2 - O3	HFNC		60l/m		50	20	77	39	7,47	154	230,75	0,25	307,75	99	13,5
2	3 - O3	Cpap	8		500	55	25	99	40	7,48	180	243,15	0,29	342,15	98	11,3
2	4 - O3	BiPap	6	8	600	50	22	76	42	7,46	152	228	0,25	304	100	12
2	5 - O3	Cpap	10	5	450	50	30	74	41	7,53	148	231,25	0,24	305,25	98	11,8
2	6 - O3	HFNC		50l/m		50	26	60	42	7,51	120	244	0,2	304	98	11,5
2	7 - O3	HFNC		50l/m		60	22	62	42	7,48	103	313,3	0,17	375,3	99	10,2
2	8 - O3	HFNC		60l/m		60	30	120	40	7,48	197	315,6	0,15	365,8	100	10,5

ID	Treatment day	Ventilation	Peep	PS	Tidal Volume	FiO2	RR	PO2	PCO2	pH	P/F	A-aDO2	PAO2/paO2	pAO2	SpO2	Hb
3	Basic – NO O3	BiPap	10	15	600	60	18	79	49	7,54	132	287,55	0,22	366,55	98	9,2
3	1 - O3	BiPap	8	15	650	60	14	64	51	7,51	110	300,05	0,18	364,05	95	10,4
3	2 - O3	HFNC		60l/m		70	20	84	53	7,5	120	298,76	0,16	356,7	94	8,7
3	3 - O3	BiPap	6	8	570	70	24	63	49	7,49	106	303,55	0,17	366,55	97	11,8
4	Basic – NO O3	Cpap	10		350	45	25	136	40	7,5	302	134,85	0,50	270,85	97	12,3
4	1 - O3	HFNC		60l/m		40	27	59	31	7,57	148	187,45	0,24	246,45	96	13,4
4	2 - O3	HFNC		60l/m		40	23	115	42	7,53	288	117,7	0,49	232,7	99	12,5
4	3 - O3	HFNC		50l/m		30	20	76	39	7,53	253	89,15	0,46	165,15	98	12,4
5	Basic - NO O3	HFNC		50l/m		55	18	118	38	7,34	193	226,65	0,34	344,65	99	14,5
5	1 - O3	HFNC		60l/m		45	16	88	45	7,52	151	176,6	0,33	264,6	99	12,1
5	2 - O3	HFNC		60l/m		60	16	169	40	7,52	282	208,8	0,45	377,8	99	11,2
5	3 - O3	HFNC		50l/m		45	18	96	40	7,49	213	175	0,35	271	100	9,9
6	Basic - NO O3	BiPap	10	16	350	90	20	62	38	7,46	78	532,2	0,1	594,3	97	12,8
6	1 - O3	BiPap	10	16	350	80	21	68	36	7,48	85	457	0,12	525	98	12,4
6	2 - O3	BiPap	6	16	350	100	20	103	33	7,36	103	568,75	0,15	671	98	11,7
6	3 - O3	IOT	8	20	450	50	13	75	39	7,45	150	232,75	0,24	307,75	99	9,6
6	4 - O3	IOT	5	20	430	50	15	91	50	7,33	182	203	0,31	294	97	9,2
6	5 - O3	IOT	3	20	400	60	16	139	60	7,37	232	213,8	0,39	352,8	97	8,2
7	Basic - NO O3	BiPap	8	10	450	80	22	69	35	7,45	66	457,65	0,13	526,65	96	15,4
7	1 - O3	BiPap	8	14	450	75	22	244	38	7,45	350	243,25	0,5	487,25	97	15
7	2 - O3	BiPap	8	14	500	50	20	68	43	7,46	136	234,75	0,22	302,75	96	15,9
7	3 - O3	HFNC		60l/m		60	20	52	40	7,53	87	325,8	0,14	377,8	99	15,7
7	4 - O3	HFNC		60l/m		60	18	136	49	7,53	181	337,5	0,29	473,5	95	16,1
7	5 - O3	BiPap	8	14	520	500	18	147	53	7,56	245	143,25	0,51	290,25	97	13,6

ID	Treatment	D-dimer	Pcr	Pct	Wbc	Lymphocytes	Lymphocytes (%)	IL-6	C3	C4
1	Basic - NO O3	520		neg	18,99	1,21	6,4	492,54	198	50
1	1 - O3	660	2,1	neg	14,22	1,9	13,4	546,54	110	17
1	2 - O3	716	1,5	neg	16,55	2,01	12,1			
1	3 - O3	552	1	neg	12,13	2,28	18,8			
2	Basic - NO O3	1163		neg	3,51	0,22	6,3	165,93	119	23
2	1 - O3	827	3,1	neg	2,81	0,19	0,19			
2	2 - O3	645	1,7	neg	2,61	0,25	0,25	236,68		
2	3 - O3	555	1,2	neg	3,05	0,36	0,36			
2	4 - O3	433	0,6	neg	3,17	0,47	0,47			
2	5 - O3	660	1,3	neg	6,99	0,63	0,63	528,15		
2	6 - O3	568	4	neg	5,32	0,52	0,52			
2	7 - O3	713	1	neg	3	0,53	0,53	133,96		
2	8 - O3	721	0,6	neg	3,53	0,49	0,49	65,41		
3	Basic - NO O3	1622		0,46	2,15	0,51	0,51	238,32	144	45
3	1 - O3	1602	24,4	0,21	1,39	0,38	0,38			
3	2 - O3	1563	11,3	0,11	1,17	0,49	41,9			
3	3 - O3	3412	6,1	0,11	1,62	0,74	45,7			
4	Basic - NO O3	20759	23,9	neg	3,23	0,38	11,8	132,3		
4	1 - O3	581	14,6	neg	3,6	0,39	10,8	62,36		
4	2 - O3	467	5,3		4,43	0,48	10,8	68,81		
4	3 - O3	414	3,5	0,29	4,02	0,41	10,2	15,91		
5	Basic - NO O3	512	3,7	neg	9,29	1,45	15,6	4,78	142	44
5	1 - O3	417	7,5	neg	8,07	1,92	23,8			
5	2 - O3	316		neg	8,07	1,53	19	49,09		
5	3 - O3	588	82,8	neg	6,73	1,54	22,9	47,79		

ID	Treatment	D-dimer	Pcr	Pct	Wbc	Lymphocytes	Lymphocytes (%)	IL-6	C3	C4
6	Basic - NO O3	803	118,6	0,35	12,9	0,52	4	26,91		
6	1 - O3	925	30,4	0,11	11,17	0,96	8,6	24,91		
6	2 - O3	1067	73,8	0,11	12,31	0,7	5,7	36,32		
6	3 - O3	611	34,5	0,18	21,48	1,18	5,5	36,32		
6	4 - O3	480	121,6		20,16	0,61	3	20		
6	5 - O3	662	73,4	0,26	10,75	0,49	4,6	155,35		
7	Basic - NO O3	1710		0,06	4,26	0,66	8,5	435,4	127	32
7	1 - O3	7127	13,3	neg	5,71	0,36	6,3	418,06		
7	2 - O3	13185	1,7	beg	9,86	0,48	4,9	418,06		
7	3 - O3	1084	1,3	0,04	12,88	0,44	3,4	361,87		
7	4 - O3	637	0,7	neg	13,17	0,64	4,9	218,56		
7	5 - O3	725	0,7	neg	7,89	1,12	14,2	324,5		

We consider more appropriate to publish and comment on some data received from cared patients with Ozone therapy at Policlinico of Foggia. By thanking doctors who, in addition to treating patients and literally saving their lives, have applied scientific criteria by reporting and evaluating clinical cases with precise parameters.

Patients are divided and treated with standard protocol and standard protocol plus SIOOT Oxygen Ozone Therapy protocol, proposed by Prof. M. Franzini.

We make clear that SIOOT protocol was the first in the world to be practiced after regular presentation to an Institutional Body, such as Istituto Superiore di Sanità (ISS).

Patients were divided by age and gender. The following parameters were recorded:

- Height
- Weight
- Hospitalization date
- Disease stage for which they were hospitalized
- Comorbidity Coexistence

The ventilation systems to which they were subjected were also reported:

HFNC - High-flow nasal cannula High flow oxygen

CPAP - Continuous Positive Airway Pressure

BPAP - Bilevel positive airway pressure

PEEP - Positive end-expiratory pressure

PO₂ - Partial pressure of Oxygen

FiO₂- Fraction of inspired oxygen

PAO₂- is reduced when the parenchyma is damaged

SPO₂ - Normal Blood Oxygen Level

RR – Respiratory Rate

PCO₂ - Partial Pressure of Carbon Dioxide

PCT - procalcitonin marker of sepsis and septic shock

D-dimer - value indicating predisposition to thrombosis

PCR - Polymerase Chain Reaction

WBC - White blood cell

Lymphocytes

Blood PH

IL-6

C3 C4- Complement proteins

Values showed a reduction in inflammation markers, a levels restoration of white blood cells and lymphocytes, a reduction of clinical symptoms in significantly shorter times than those presented by patients treated with standard therapy.

All values are now subject to statistical analysis to scientifically validate what has been obtained.

Prof. Marianno Franzini

Prof. Luigi Valdenassi

Prof. Giuseppe Masiello

THE CLINICAL BLOODWORK DEMONSTRATES THE EFFICACY OF OXYGEN OZONE THERAPY WITH SIOOT'S PROTOCOL FOR THE TREATMENT OF COVID 19.

	Number of patients: 40			Number of patients: 40		
	PATIENTS TREATED WITH STANDARD THERAPY AND OXYGEN OZONE THERAPY			PATIENTS TREATED ONLY STANDARD THERAPY		
	Av. Initial value	After 3 to 4 Treatments	% Diff	Av. Initial value	Final value	% Diff
Body temp	38.7	36.5	-5%	38.6	37.9	-2%
Glucose	300	150	-50%	171	134	-25%
Creatinine	3.5	1.3	-60%	1.27	1.50	+15%
Leucocytes	3000	5500	+80%	6379	8354	+31%
Lymphocytes	15	30	+100%	15.48	21.38	+40%
C Reactive protein	10	<10	-50%	7.46	5.97	-20%
D Dimer	1300	500	-54%	1020	939	-10%

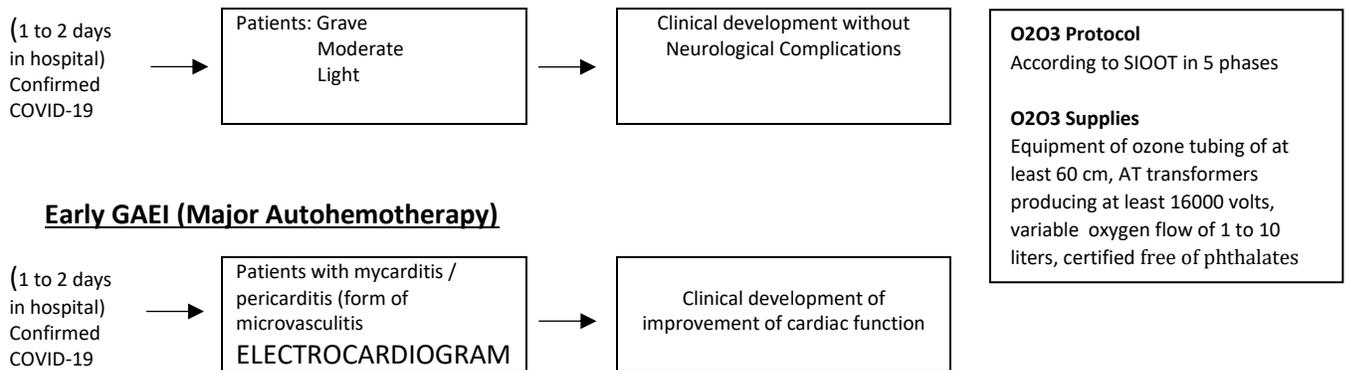
¹ More lymphocytes signify increased immune response

² Elevated Level of D Dimer > risk of pulmonary emboli/ microthrombi > risk of death

Associated therapies: according to judgment of treating physician

Observation: The patients who were not treated with oxygen ozone had a slower recovery^{*1}.

Early GAEI (Major Autohemotherapy)



^{*1} Slower recovery with greater chance of later complications of metabolic syndrome (renal insufficiency, microthrombi, low grade fever)



I DATI EMATOCLINICI DIMOSTRANO L'EFFICACIA DELL'OSSIGENO OZONO TERAPIA CON PROTOCOLLO SIOOT NEL TRATTAMENTO DEL COVID19

	Numero pazienti: 40			Numero pazienti: 40		
	PAZIENTI TRATTATI CON TERAPIA STANDARD + OSSIGENO OZONO SIOOT			PAZIENTI TRATTATI UNICAMENTE CON TERAPIA STANDARD		
	Valore medio iniziale	Dopo 3-4 trattamenti O2O3	Media %	Valore medio iniziale	Valore finale Dopo 15 giorni	Media %
Temperatura corporea	38,7	36,5	-5%	38,6	37,9	-2%
Glicemia	300	150	-50%	171	134	-25%
Creatinina	3,5	1,3	-60%	1,27	1,50	+15%
Leucociti	3000	5500	+80%	6379	8354	+31%
Linfociti ¹	15	30	+100%	15,48	21,38	+40%
PCR	10	<10	-50%	7,46	5,97	-20%
D-didimero ²	1300	500	-54%	1020	939	-10%

¹Più linfociti significa risposta /capacità immunitaria

²Livelli di D-dimero elevati > Rischio TEP (Embolia polmonare/Microtrombosi) > Rischio morte

Terapia associata: a giudizio del medico curante

Osservazione: I pazienti non trattati con Ossigeno Ozono Terapia hanno avuto una ripresa più lenta*¹

GAEI PRECOCE:

(1°-2°giorno di ricovero)
Confermato COVID19

Pazienti: Gravi
Moderati
Lievi

Evoluzione clinica senza complicazioni neurologiche. ILLESI

GAEI PRECOCE:

(1°-2°giorno di ricovero)
Confermato COVID19

Pazienti con PERICARDITE/
MIOCARDITE
(forme di microvasculite)
ELETTRICARDIOGRAMMA

Evoluzione clinica con miglioramento della funzione cardiaca.

Protocollo O2O3:
Metodo secondo quanto previsto da SIOOT nelle 5 fasi

Materiali O2O3:
Apparecchiatura con tubi di ozonizzazione di lunghezza minimo di 60 cm, trasformatori A.T. produttori almeno 16.000 volt, flusso ossigeno variabile da 1 a 10 lt.
Sacca SANO3, appositamente certificata priva di ftalati

* ¹ Risposta più lenta e > complicazione tardive con sindrome metabolica (insufficienza renale, microtrombosi, febricola)

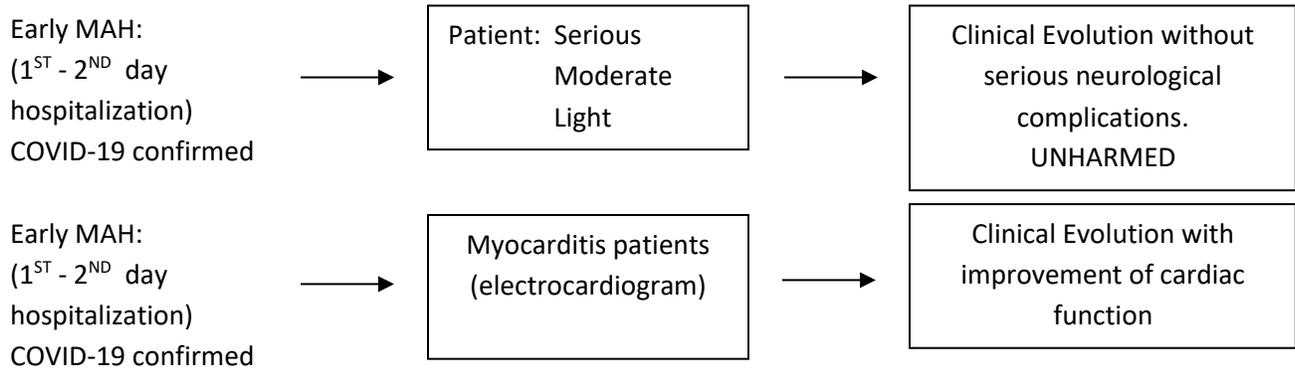
May 7, 2020-Italy-SIOOT 4th Report Scientific Society of Oxygen Ozone Therapy

Number of Patients - 73	MAH – Major Autohemo	28-Apr-20
	Initial average value	After 3-4 treatments with MAH*
Body temperature	99.86 - 101.66	96.8 - 97.7
Heart Rate	90 - 100	70 - 75
Sat. O2: Intubates	<70	intubated
Sat. O2: Non-intubated	80 - 85	92 - 95
Blood glucose	200 - 300	90 - 150
Transaminase	90 - 25	40 - 50
Creatinine	1.5 - 3.5	1.0 - 1.3
Electrolytes: Na - K - Ca	< below normal	normal
Leukocytes	3,000 - 4,000	> 5.500
Lymphocytes	Severe <3	Severe < 7
	Serious < 10	Serious < 10 - 20
	Moderate 10 - 15	Moderate 15 - 20
	Light 15 - 20	Light 25-30
C-Reactive Protein	10 - 200	< 10
LDH	300 - 350	< 250
D-Dimer	600 - 2000	400 - 500
D-Dimer > 3,000	8,000 - 15,000	Thromboemboli
Procalcitonin	< 0.5 ng/ml	< 0.05
Procalcitonin > 5	> 5 ng/ml	Super infection

Associated therapy: in the opinion of the treating physician.

Observation: Patients untreated with associated ozone therapy had a slower recovery.

We observed that patients with seasonal flu vaccination had significant symptoms.



Protocol O2O3: method according to SIOOT in 5

Materials O2O3: - Multioxygen Medical 95 CPS - SANO3 certified bag

Translated with www.DeepL.com/Translator with Dr. Jerilyn Pecotte

Oxygen-ozone immunocutaneous therapy in COVID-19 outbreak: facts and figures

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The problems related to the approach to the outbreak of COVID-19 in the world require that all possible effective treatment options be explored. The clinical criterion of the researcher is not to refuse a priori, but to verify and evaluate the proposals that are made. Italian Society of Oxygen Ozone Therapy (SIOOT) proposed to the Italian ISS (Italian Institute of Health) to use oxygen ozone therapy (O₂O₃) in patients with COVID-19. The ISS has said on 24 March 2020 that it is possible to use it in the light of scientific considerations:

Although the proposal is supported by a certain rational basis, the data actually available in relation to the proposed indication consist essentially in demonstrating the effectiveness of ozone in killing SARS virus in monkey cells, and clinical experience of the benefit in patients with bronchopulmonia. However, as the proposal appears to be shared and supported by clinical centers experienced in the treatment of viral pneumonia, treatment could, if deemed appropriate, be carried out under the responsibility of the physician, after obtaining the informed consent of the patient. Considering the "experimental" character of the use this indication, which also requires specific medical experience and the availability of appropriate instruments, it is considered appropriate to acquire also the opinion of the Ethics Committee.

Some hospitals in Lombardy, the region most affected by COVID-19 in Italy, have already started its use with initial positive results.

As little is known about O₂O₃ in the world, although there is a lot of scientific evidence published in the recent years on the anti-inflammatory, immunomodulatory and organ-protective

validity of O₂O₃ therapy, we consider useful to follow the suggestions of the article *Activating Immunity to Fight a Foe - A New path*, by Richard S. Hotchkiss and Steven M. Opal,¹ and proposing the O₂O₃ therapy as immunocutaneous therapy according to the indications of the article. The O₂O₃ therapy has many biological effects, but the most relevant is its ability to modulate the activation of Nrf2 (an important nuclear message transducer), the downregulation of NFκB, and it also modulates the NLRP3 inflammasome.²⁻⁴

In this letter, I wish to present this therapeutic opportunity, outline the important activities of the Oxygen Ozone Therapy (O₂O₃) and explain the rationale for this treatment in COVID-19 patients.

Spike protein and Angiotensin-Converting Enzyme 2 (ACE2) cell receptors have been identified as putative receptors for SARS-CoV-2; they could promote the proliferation of COVID-19 (Figure 1). It is known that these receptors can be blocked with some specific monoclonals but also through the control of Nrf2 that regulates and blocks the activity of Spike and ACE2. Because O₂O₃ acts directly on Nrf2, stimulating them, it seems very likely that this is the most important physiological mechanism to block endogenous COVID-19 reduplication by preventing contact with putative receptors of SARS-CoV-19.

Oxygen-ozone has a high solubility in plasma and induces formation of two second messengers, H₂O₂ and ozonoids and alkenals (Figure 2).⁵ These are the ones who are mainly competent, interacts with the membrane proteins and receptors of the cells, especially the immunocompetent ones, and enter the cells and interact with signal transduction proteins on the nucleus and mitochondria level.⁶⁻⁹ The key action mechanism of O₂O₃ therapy is its action on proteasome and inflammation cascade, to control inflammatory process, by stimulating the nuclear factor Nrf2 and by inhibiting nuclear factor NFκB (Figure 3).^{10,11}

The O₂O₃ therapy can restore the right immune response by stimulating signal transduction molecules via Nrf2 and thus stimulating the nuclear transduction via specific microRNAs restoring the normal antioxidant and immunostimulating reaction.¹² The action mechanism of O₂O₃ therapy has very well summarized by Noel L. Smith *et al.* in 2017:¹³ *By reacting with Polyunsaturated Fatty Acids (PUFA) and water, O₃ creates hydrogen peroxide (H₂O₂), a Reactive Oxygen Species (ROS). Simultaneously, O₃ forms a mixture of Lipid Ozonation Products (LOP).*

The LOPs created after O₃ exposure include lipoperoxyl radicals, hydroperoxides, malonyldialdehyde, isoprostanes, the ozonide and alkenals, and 4-Hydroxynonenal (4-HNE). Moderate oxidative stress caused by O₃ increases activation of the transcriptional factor mediating nuclear factor-erythroid 2-related factor 2 (Nrf2). Nrf2's domain is responsible for activat-

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ing the transcription of Antioxidant Response Elements (ARE). Upon induction of ARE transcription, an assortment of antioxidant enzymes gains increased concentration levels in response to the transient oxidative stress of O₃. The antioxidants created include, but are not limited to, Superoxide Dismutase (SOD), Glutathione Peroxidase (GPx), Glutathione S-Transferase (GST), Catalase (CAT), Heme Oxygenase-1 (HO-1), NADPHquinone-Oxidoreductase (NQO-1), Heat Shock Proteins (HSP), and phase II enzymes of drug metabolism. Many of these enzymes act as free radical scavengers clinically relevant to a wide variety of diseases.

Masaru Sagai *et al.* in 2011¹⁴ described the biological responses induced via the activation of Nrf2/ARE with mild oxidative stress (O₂O₃ therapy) that can be summarized in:

- i) Increasing the levels of direct antioxidants, such as GSH, CO, and bilirubin;
- ii) Stimulating GSH regeneration via glutathione and thioredoxin reductase;
- iii) Increasing the levels of enzymes that detoxify oxidants and electrophils (*i.e.* catalase, SOD, GPx, GSTr, NADPH-Quinone Oxidoreductase (NQO1), HO-1, HSP70, *etc*);
- iv) Increasing the levels of phase II enzymes;
- v) Inhibiting cytokine-mediated inflammation via the induction of leukotriene B4 reductase;
- vi) Reducing iron overload, and subsequent oxidative stress induced via elevated ferritin;

- vii) Recognizing, repairing, and removing damaged proteins;
- viii) Protection from apoptosis induced via oxidative stress;
- ix) Increasing DNA repair activity.

In addition, Jacqueline Diaz-Luis *et al.* in 2015¹⁵ demonstrated that ozone was able to modulate the phagocytic cells in peripheral blood and the mechanisms on how messengers can activate immunological response leading to the therapeutic biological effects. Furthermore, it was demonstrated that there is a range of ozone concentrations where we can obtain the highest positive results, while lower doses are ineffective and higher doses can produce lower effects. Accordingly, ozone, in a dose-dependent behavior, may stimulate the phagocytic function of the peripheral blood cells.

Another important effect of O₂O₃ therapy than can explain its effects in improving the therapeutic approach to COVID-19 infected patients is its important action on NLRP3 inflammasome that is recognized to play a crucial part in the initiation and continuance of inflammation in various diseases. Gang Yu *et al.* in 2016 demonstrated that the protective effect of ozone therapy was achieved by its anti-inflammatory property through the modulation of the NLRP3 inflammasome. Ozone-oxygen mixture at low concentration could effectively improve organ ischemia-reperfusion that is what happens in the lungs of patients affected by COVID-19 infection.¹⁶

Ischemia-Reperfusion Injury (IRI) is a major cause of lung dysfunction during many pathological diseases. Zhiwen Wang *et al.* in

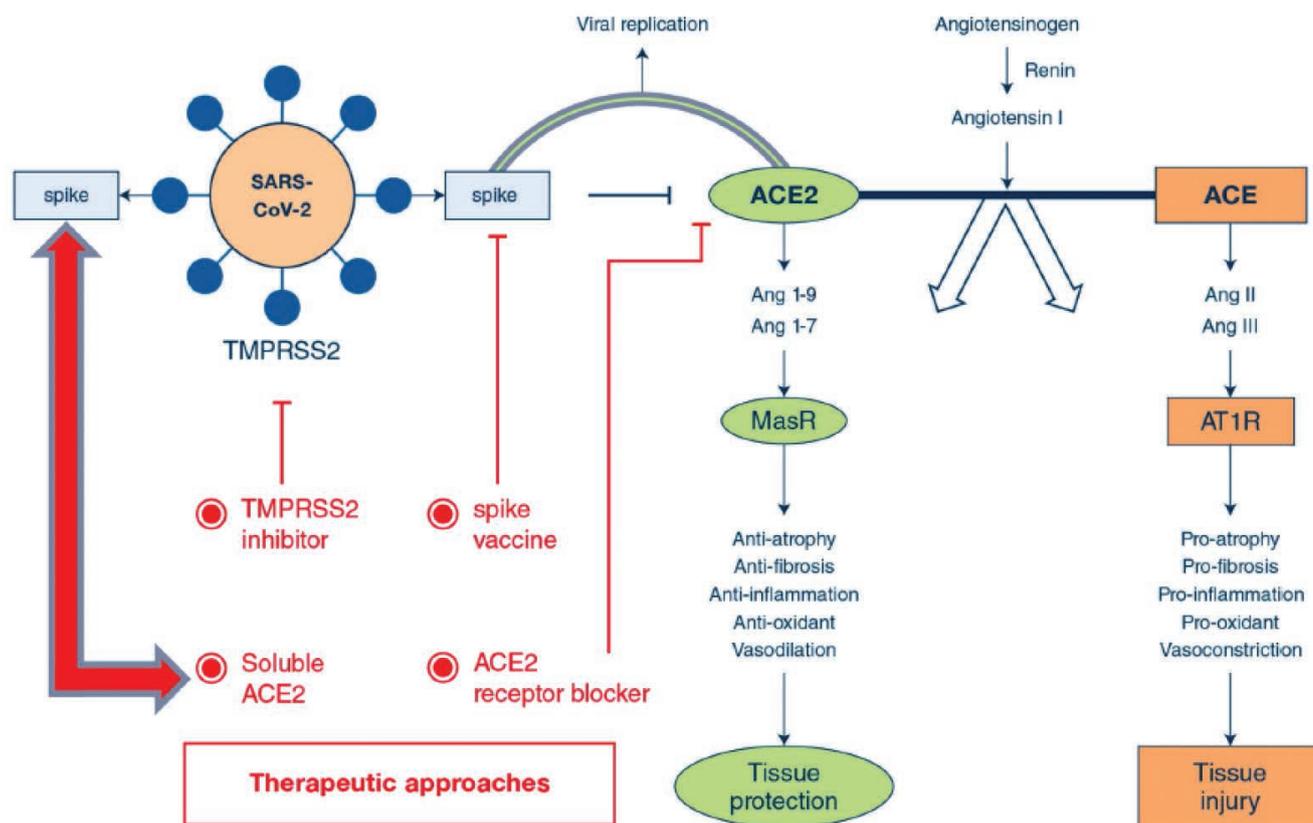


Figure 1. Potential approaches to address ACE2-mediated COVID-19 following SARS-CoV-2 infection. *Intensive Care Med* 2020;46:586-90. doi: 10.1007/s00134-020-05985-9. Creative Commons licence (<http://creativecommons.org/licenses/by-nc/4.0/>).

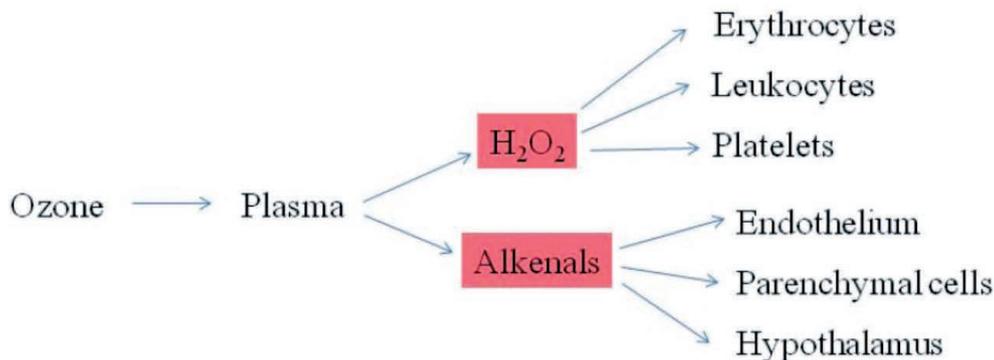


Figure 2. A scheme showing the reaction of ozone with plasma. The generated hydrogen peroxide triggers biochemical pathways in blood cells, while alkenals, after the infusion of ozonated blood into the donor, act on a variety of cells, upregulating the synthesis of many antioxidant proteins. *Med Gas Res* 2011;1:29. doi: 10.1186/2045-9912-1-29. Creative Commons licence (<http://creativecommons.org/licenses/by-nc/4.0/>).

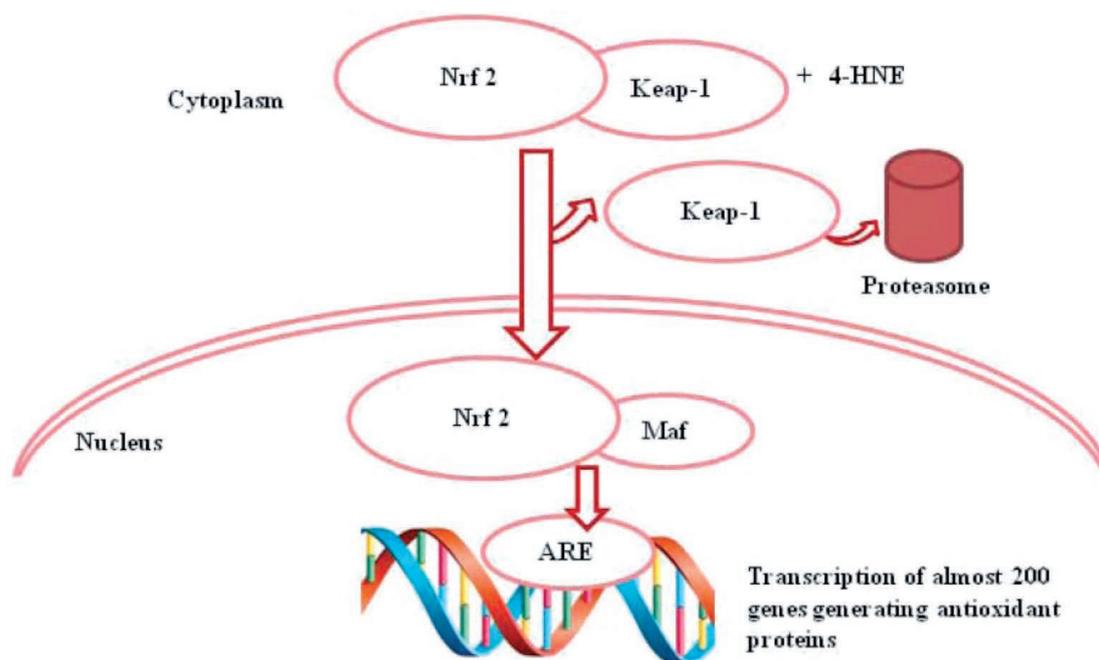


Figure 3. The transcription factor Nrf2 bound to Keap-1 activated by alkenals. The released Nrf2 translocates into the nucleus and, after binding to Maf, docks on ARE and activates a number of genes leading to the synthesis of antioxidant proteins. *Med Gas Res* 2011;1:29. doi: 10.1186/2045-9912-1-29. Creative Commons licence (<http://creativecommons.org/licenses/by-nc/4.0/>).

2018 demonstrated that ozone oxidative treatment protects the lung from IRI by attenuating nucleotide-binding oligomerization domain-like receptor containing pyrin domain 3 (NLRP3)-mediated inflammation, enhancing the antioxidant activity of Nrf2 and inhibiting apoptosis.¹⁷

In conclusion, as systemic oxygen therapy has all these positive effects: control of inflammation, stimulation of immunity, antiviral ability, protection from ischemia-reperfusion damage, action on proteasome and inflammation.^{7,9} Oxygen-ozone therapy can be said to be a new method of immunocutaneous therapy and therefore its use in combination with other treatments in COVID-19 positive patients may be justified, helpful and synergistic.

Further studies and tests are needed, but we hope to soon have confirmation that O₂O₃ therapy is synergistic and effective in controlling COVID-19-infection.

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Potential mechanisms by which the oxygen-ozone (O₂-O₃) therapy could contribute to the treatment against the coronavirus COVID-19

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On 31 December, at the end of 2019, some cases of pneumonia of unknown etiology were notified to the World Health Organization (WHO) Country Office in China, regarding Wuhan, a city of Hubei province¹. This unknown agent, a few weeks later, was identified as part of the coronavirus family and named 2019 novel coronavirus. Since then, the epidemic of 2019 novel coronavirus (currently renamed SARS-CoV-2) and causing the disease Covid-19 has expanded from Wuhan throughout China and is being exported to a growing number of countries, with an increasing number of other cases with different rate of transmission².

Biochemical and pharmacological characteristics of ozone provide reasons for considering this molecule useful in the treatment of several viral infections¹, specifically in the treatment of COVID-19.

Ozone is an oxidant which shows a paradoxical activity when in contact with organic molecules, thus causing a powerful antioxidant response³.

In fact, reacting with target substrates in biological fluids (PUFA and GSH), leads to the creation of hydroperoxides and aldehydes. Among them, 4-HNE (4 hydroxyl - nonenal) is a key element in signal transduction, involved in upregulation of glutathione and also in enhancing the resistance to apoptosis resulting from pro-oxidant agents.

It causes a significant adaptive stress response, by stimulating anti-oxidizing and detoxifying enzymes expression.

The 4-HNE partially excreted by the liver and the kidneys, is mostly attached to Cys 34 albumin molecule, GSH and cysteine⁴.

These molecules through circulation easily transfer 4-HNE into the cytoplasm of many cells.

Cells cytoplasm contains an inactive transcription factor called Nrf2, bounded to a larger inactive factor containing SH groups called Keap-1, rich in cysteine.

When attached to Cys 273 or Cys 288 of Keap-1, 4-HNE releases the key molecule Nrf 2 (Nuclear Factor Erythroid 2-Related Factor2). This leads to several anti-oxidizing enzymes expression: SOD, GPx, GST, CAT, HO-1, NQO-1, HSP and phase II drug metabolism enzymes⁴.

HO-1 catalyzes the degradation of heme to carbon monoxide (CO), which modulates NF-KB determining a decreased pro-inflammatory cytokines expression and anti-inflammatory cytokines direct induction.

Ozone shows an anti-oxidizing and anti-inflammatory action, being NF-KB and Nrf2 transcription agents which modulate gene expression of pro-inflammatory and anti-inflammatory cytokines.

The accumulation of LOPs and 4-HNE during oxidative stress and in the presence of disease, generates a feedback mechanism which transmits signals and stimulates networks capable of stopping critical oxidation events, common to several conditions.

By reacting with PUFA and aldehydes, ozone generates hydroperoxides and particularly H₂O₂, it rapidly spreads through cells of the immune system. It also bioregulates signal transduction thus promoting immune responses, modulating interferon and interleukins through the activation of NF-KB, thus increasing the release of cytokines.

This process is part of an endogenic system. In 2002 Lerner and Wentworth have underlined the fact that the human body is able to produce ozone in order to protect itself from infectious agents. This happens by involving neutrophils and antibodies of the immune system which by producing ozone, use its oxidizing power in order to destroy bacteria and viruses present on cell walls⁵⁻⁷.

Tanaka has shown how flu viruses can be inactivated by low concentrations of ozone in the environment and on smooth surfaces.

Other studies have shown that ozone can play a determining role against bacteria, viruses and fungi diseases³⁻⁸.

Byron K. Murray and others have highlighted a decrease of viral infectivity after exposure to ozone. This causes lipidic peroxidation of virus capsid, thus interrupting its reproductive cycle, preventing the necessary contact between the virus and the receptor.

Other studies have shown how ozone can inactivate virus strains with or without envelope⁸.

Some strains like HSV-1 (Herpes Simplex type 1 Mc Intyre) and VSV (Vesicular Stomatitis Virus Indiana) after being ozonized have shown a 6 LOG 10 reduction of infectious particles in 15 minutes.

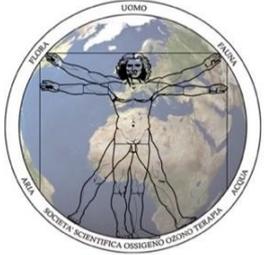
VAC strains (Elstree strain) and H1 N1 (Influenza A), have shown a reduction up to 5 LOG 10 respectively in 40 and 30 minutes. These results show important changes in different virus strains morphology⁸.

In addition to the anti-oxidizing, anti-inflammatory and anti-viral action we can consider the relevant activity of stimulation and immune response linked to NFAT, transcription factor linked to different cytokines (IL-2, IL-6, TNF-Alfa e IFN-Gamma) with its support to lymphocytes and macrophages, forming the first line of defense.

Another important characteristic of ozone therapy against COVID-19 infection is shown by the contrast ability toward severe hypoxemia, typical of this virus¹⁷.

Tests carried out using NIRS spectroscopy, led to increased oxygenation (in the given case, cerebral) shown by an increase of oxygenated hemoglobin and constant values of the non-oxygenated one¹⁸.

Ozone is a molecule which acts on different levels and in different physiopathological fields. Therefore we believe that it would be useful to propose this method as a support to the drug therapy currently in treatment against viral infections in general and particularly against COVID-19 and within a integrative medicine approach¹⁰⁻¹¹.



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AI SENSI DELLA L. 8 MARZO 2017, N.24

ASSOCIATA FISM - FEDERAZIONE DELLE SOCIETÀ MEDICO-SCIENTIFICHE ITALIANE



SECOND REPORT ON OXYGEN OZONE SIOOT USE IN 46 PATIENTS, FROM THE LEAST SERIOUS TO THE MOST SERIOUS WITH COVID-19. OF THOSE, 39 PATIENTS HAVE BEEN IMPROVED

PATIENTS TREATED	46
INTUBATED PATIENTS	11
NON-INTUBATED PATIENTS	35
AVERAGE OF 5 OXYGEN OZONE THERAPY TREATMENTS	
EXTUBATED PATIENTS	6
INTUBATED PATIENTS CURRENTLY	3
PATIENTS WHO DID NOT NEED TO BE INTUBATED	28
DEAD INTUBATED PATIENTS FOR BACTERIAL OVERINFECTION, SEPTIC SHOCK, PULMONARY EMBOLIA AND MYOCARDITIS (2 TREATMENTS)	4
HEALED PATIENTS WITH TWO NEGATIVE SWABS	5

PLEASE NOTE: The immediately detectable datum is that Oxygen Ozone Therapy SIOOT is mainly indicated in patients before intubation.

We confirm that:

1. General improvement of clinical conditions
2. Normalization of body temperature
3. PCR reduction (C-reactive protein)
4. Normalization of heart rate
5. Saturation improvement and reduction of oxygen support
6. Normalization of renal function (creatinine)
7. Leukocytes Increase

**Please share clinical trial data is in everyone's interest: PATIENTS,
CLINICS, REGULATORY AUTHORITIES**

Prof. Luigi Valdenassi
Presidente SIOOT

Prof. Marianno Franzini
Presidente SIOOT International



FIRST REPORT ON THE USE OF SIOOT OZONE OXYGEN IN PATIENTS HOSPITALIZED WITH COVID-19

Bergamo, April 1,2020

**PATIENTS TREATED 11
PATIENTS INTUBATED
5 TREATMENTS
PERFORMED PER
PATIENT 1 TIME PER
DAY FOR 5 DAYS 5**



SIOOT

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**PRIMO REPORT SULL'UTILIZZO DELL'OSSIGENO OZONO
SIOOT IN PAZIENTI RICOVERATI CON COVID-19**

Bergamo, 1 Aprile 2020

PAZIENTI TRATTATI	11
PAZIENTI INTUBATI	4
PAZIENTI NON INTUBATI	7
5 GIORNI DI TRATTAMENTO - 1 GAEE AL GIORNO	
PAZIENTI ESTUBATI	1
PAZIENTI ATTUALMENTE INTUBATI	2
PAZIENTI NON INTUBATI CON OSSIGENO TERAPIA NON INVASIVA	6
PAZIENTI INTUBATI E DECEDUTI PER SOVRAINFEZIONE BATTERICA E SHOCK SEPTICO	1
PAZIENTI GUARITI CON DUE TAMPONI NEGATIVI	1

Dopo i 5 trattamenti con Ossigeno Ozono Terapia SIOOT, escluso l'unico deceduto, abbiamo osservato che:

1. Miglioramento generale delle condizioni cliniche
2. Normalizzazione della temperatura corporea (sfiebrati)
3. Riduzione della PCR (Proteina C reattiva)
4. Normalizzazione della frequenza cardiaca
5. Miglioramento della saturazione e riduzione del supporto di ossigeno
6. Normalizzazione della funzione renale (creatinina)

Dopo i 5 trattamenti effettuati raccomandiamo:

- Proseguire trattamento di Ossigeno Ozono Terapia rispettando con attenzione il protocollo SIOOT.
- Esami raccomandati per il follow-up di ogni paziente (PCD, LDH, INTERLEUCHINE- per quanto possibile, CREATININA, ELETTROLITI, GLICEMIA)
- Proseguire con la terapia farmacologica già impostata.

[http://www.ossigenoozono.it/IT/Notizie%20e%20Attivit%c3%a0/3506/PRIMO_REPORT -
_OSSIGENO_OZONO_SIOOT_NEI_PAZIENTI_RICOVERATI_CON_COVID-19](http://www.ossigenoozono.it/IT/Notizie%20e%20Attivit%c3%a0/3506/PRIMO_REPORT_-_OSSIGENO_OZONO_SIOOT_NEI_PAZIENTI_RICOVERATI_CON_COVID-19)
via Deeple.com Translator.

PATIENTS INTUBATED AND DECEASED DUE TO BACTERIAL OVERINFECTION AND SEPTIC SHOCK	1
PATIENT EXTUBATED	1
PATIENT CURRENTLY INTUBATED	2
OTHER PATIENTS NOT INTUBATED WITH NON-INVASIVE OXYGEN THERAPY	6
CURED WITH NEGATIVE SWAB	1

After the 5 SIOOT Oxygen Ozone Therapy treatments, excluding the only deceased, we observed that:

1. General improvement of clinical conditions
2. Normalization of body temperature (sfiebrati)
3. Reduction of PCR (Reactive Protein C)
4. Normalization of heart rate
5. Improvement of saturation and reduction of oxygen support
6. Normalization of renal function (creatinine)

After the 5 treatments we recommend:

- Continue treatment of Oxygen Ozone Therapy carefully respecting the SIOOT protocol. -
Recommended examinations for the follow-up of each patient (PCD, LDH, INTERLEUCHINE as far as possible, CREATINININ, ELECTROLITES, GLICEMIA) - Continue with the pharmacological therapy already set up.

PLEASE SEND WEEKLY, BY MONDAY



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SPECIAL ARTICLE

TWO KNOWN THERAPIES COULD BE USEFUL AS ADJUVANT THERAPY IN CRITICAL PATIENTS INFECTED BY COVID-19

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Keywords

COVID-19
Vitamina C
Ozono therapy
SARS-CoV-2)

Abstract

Pneumonia caused by coronavirus, which originated in Wuhan, China, in late 2019, has been spread around the world becoming a pandemic. Unfortunately, there is not yet a specific vaccine or effective antiviral drug for treating Covid-19. Many of these patients deteriorate rapidly and require intubation and are mechanically ventilated, which is causing the collapse of the health system in many countries due to lack of ventilators and intensive care beds. In this document we review two simple adjuvant therapies to administer, without side effects, and low cost that could be useful for the treatment of acute severe coronavirus infection associated with acute respiratory syndrome (SARS-CoV-2). Vitamin C, a potent antioxidant, has emerged as a relevant therapy due to its potential benefits when administered intravenous (IV). The potential effect of vitamin C in reducing inflammation in the lungs could play a key role in lung injury caused by coronavirus infection. Another potential effective therapy is Ozone, It has been extensively studied and used for many years and its effectiveness has been demonstrated so far in multiples studies. Nevertheless, our goal is not to make an exhaustive review of these therapies but spread the beneficial effects themselves. Obviously clinical trials are necessary but due to the potential benefit of these two therapies we highly recommend adding to the therapeutic arsenal.

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Introduction

The SARS virus belongs to the viral family *Coronaviridae*. which includes two genera, coronavirus and togavirus, each showing similar replication mechanisms and genomic organization but distinct genome lengths and viral architecture. First identified in the 60's, this family identifies itself by large, enveloped, positive-stranded RNA virions. Their appearance is characteristically distinct, with envelopes endowed with host cell membrane-tropic petal shaped spikes (peplomers). The large, amply spaced peplomers on the virion surface suggests a coronal (crown-like) appearance. Once cell entry is achieved, the virion sheds its envelope to commence its replication in the host cell cytoplasm. It binds to cellular ribosomes and released viral polymerase begins the RNA replication cycle. Newly formed nucleocapsids continue their assembly with the acquisition of new envelopes by means of budding through membranes of the cell's endoplasmic reticulum. Virions are then

released into the general blood and lymphatic circulation, ready to infect new cells, other organ systems, and new hosts. The syndrome progresses to severe disease with respiratory distress and oxygen desaturation requiring ventilatory support in over a third of patients, approximately 8 days after symptom onset. Mortality has been noted to vary according to transmission clusters, ranging from 3 to 20%. This suggests that the etiology of SARS depends upon a heterogeneous population of viral quasispecies with variable degrees of virulence.

Features of severe systemic inflammatory insults

Clinical features

The initial symptoms are usually fever, generally high, chills, headaches, myalgias and dry cough, which may progress to shortness of breath, appearing dyspnea and respiratory distress. Respiratory deterioration is fast, requiring intubation in the first 48 hours after the onset of respiratory symptoms.

Laboratory hallmarks

In the early stage of the disease, the total number of white blood cells in the peripheral blood is normal or decreased, and the lymphocyte count reduced. Some patients may have abnormal liver function, and the levels of lactate dehydrogenase, muscle enzyme, and myoglobin increased; Most patients had elevated CRP and ESR levels and normal procalcitonin levels. In severe cases, D-dimer levels are elevated, other coagulation indicators are abnormal, lactic acid levels are elevated, peripheral blood lymphocytes and CD4 + T lymphocytes are progressively reduced, and electrolyte disorders and acid-base imbalances are caused by metabolic alkalosis. Elevated levels of inflammatory cytokines (such as IL-6, IL-8, etc.) can occur during the disease progression stage.

Radiology examination; The early CT examination show multiple small patches or ground glass shadows. A few days later, the lesions increase showing extensive lungs, multiple ground glass shadows, or infiltrating lesions, some of which showed consolidation of the lungs, often with bronchial inflation signs, and pleural effusions are rare. A small number of patients progressed rapidly, with imaging changes reaching a peak on days 7 to 10 of the course. Typical "white lung" performance is rare. After entering the recovery period, the lesions are reduced, the exudative lesions are absorbed, and some patients' lesions can be completely absorbed.

Treatment

Multiple therapeutics scheme have been used but still not successfully. Different combinations as hydroxychloroquine sulfate or chloroquine phosphate with Azithromycin seems to work on

coronavirus. Interferon atomization and inhalation, (interferon κ is preferred) and Tocilizumab a humanized antihuman IL-6 receptor antibody are being used. A cocktail of antiviral drugs is usually being administered in most of the patients, but the efficacy of all antiviral drugs remains to be evaluated in further clinical studies. As a result, we are still doing a support therapy in these patients because not a curative treatment has been found yet.

POTENTIAL ADJUVANT THERAPIES

I. INTRAVENOUS VITAMIN C

Introduction

Vitamin C (ascorbic acid or ascorbate), is a water-soluble vitamin which play a role as a cofactor in many enzymatic reactions, that mediate a variety of essential biological functions. It is considered a powerful antioxidant with antimicrobial properties. Linus Pauling, biochemist and Nobel Prize winner claimed that vitamin C has beneficial effects on cardiovascular health, improves the body's immune function to overcome infections and even aids treatment against cancer [1].

The severity of SARS-CoV-2 infection is being found in lung deterioration. Although the reason for this rapid deterioration remains to be elucidated, we believe that its clinical course is similar to macrophage activation syndrome, a form of secondary hemophagocytic lymphohistiocytosis, which cause hypersecretion of proinflammatory cytokines that damage the lungs, hence the IV administration of vitamin C may be effective given its anti-inflammatory activity [2].

Pharmacokinetics

Vitamin C exerts most of its biological functions intracellularly and is acquired by cells with the participation of specific membrane transporters. The absorption, distribution and retainment of vitamin C is primarily governed by the family of saturable sodium-dependent vitamin C transporters (SVCT). The diverse expression and concentration dependency of these transporters throughout the body has resulted in the highly complex, compartmentalized and non-linear pharmacokinetics of vitamin C at physiological levels. However, the pharmacokinetics of vitamin C appear to change from zero to first order, displaying a constant and dose-independent half-life when administered IV infusion. Following a dose, Vitamin C circulate in the plasma, is freely filtered by the renal glomerulus, and reabsorbed in the proximal tubule through the first sodium-dependent vitamin C transporter (SVCT1). While SVCT1 regulates vitamin C homeostasis throughout the body, a high-affinity, low-capacity sodium-dependent vitamin C transporter SVCT2 protects metabolically active cells against oxidative stress, facilitating accumulation of vitamin C where it is needed [3]. On the other hand, dehydroascorbic acid (the oxidized form of vitamin C) is transported

via glucose transporters family (GLUT) where it is reduced to avoid the irreversible decomposition. In situations like sepsis, there is a diminished absorption into the cells by increased release of cytokines.

Biological effects

Vitamin C is an electron donor and therefore a reducing agent. All known physiological and biochemical actions of vitamin C are due to its action as an electron donor. Vitamin C has immunostimulatory effects, antioxidant properties and possible antimutagenic effects [4,5]. Vitamin C has been shown to enhance neutrophil chemotaxis, phagocytosis, and therefore microbial clearance [6,7]. In addition, it promotes the proliferation of T cells and natural killer cells modulating their functions [8]. Vitamin C is also necessary for the catecholamine synthesis (formation of epinephrine from dopamine by dopamine beta-hydroxylase enzyme [9,10], and adrenal steroidogenesis [11]. Vitamin C improves the synthesis of norepinephrine both by recycling tetrahydrobiopterin, a critical cofactor in catecholamine synthesis, and by increasing tyrosine hydroxylase expression [12]. Furthermore, it is also a cofactor for peptidyl-glycine alpha-amidating monooxygenase that is required for endogenous synthesis of vasopressin [13]. One study in cardiac surgical patients has suggested that preoperative administration of Vitamin C mitigates the adrenal suppression induced by the anesthetic Etomidate [14]. Thus, there has been significant interest in using vitamin C for the management of hemodynamically unstable patients because Vitamin C-dependent synthesis of the vasopressors norepinephrine and vasopressin may play an important role in supporting cardiovascular function during severe infections and septic shock [15]. In a recent article Nabzdyk et al. has reviewed the use of vitamin C in critical care management and its biological effects [16].

Experience with Critical Burns Patients

Traditionally, vitamin C has been used with burn patients. Increased capillary leakage, with an important extravasation of fluid and proteins, and free radical generation are feature of burn injuries. Free radicals have emerged as important mediators for burn injury at the cellular level. Continuous vitamin C infusion appears to be a useful adjunct in minimizing the effects of free radical injury and reduces fluid resuscitation requirements among burn patients [17,18]. High doses of vitamin C appear to improve microvascular barrier dysfunction, without affecting leukocytes activation [19]. In a study with dogs suffering burn injuries, the administration of vitamin C (14 mg/kg/hour) decreased lipid peroxidation, and microvascular protein and fluids [20]. A randomized, double-blinded study in sheep demonstrated a significant reduction in net fluid balance and plasma lipid peroxidation among sheep sustaining a 40% total body surface area (TBSA) burned

who were resuscitated with fluid in conjunction with a high-dose infusion of ascorbic acid [21]. Another randomized, prospective study in this case in burn patients with greater than 30% TBSA burn, investigators found that administration of vitamin C (1,584 mg/kg/day) was well tolerated, and reduced fluid volume requirements along with an overall improvement in pulmonary function, demonstrated by a significant reduction in mechanical ventilation days [22].

Sepsis

Recently there has been an increase in interest with the use of vitamin C as an adjuvant treatment for sepsis. This was due to the results of the study by Marik et al [23] in which they administered a cocktail of vitamin C (1.5 g IV every 6 h), hydrocortisone (50 mg IV every 6 h) and thiamine (200 mg IV every 12 h) to 47 with sepsis admitted to the ICU. Patients treated with this regimen had an absolute reduction of 30% in mortality despite similar comorbidities and mortality risk prior to treatment. Currently, there are multiple ongoing randomized controlled trials including VICTAS, ACTS and HYVCTTSSS, which aim to confirm the beneficial effects of vitamin C and supplements in critically ill patients with sepsis [24-26].

Pneumonia and Acute Respiratory Syndrome (ARDS)

ARDS is usually accompanied by uncontrolled inflammation, oxidative injury, and the damage to the alveolar-capillary barrier. Unfortunately, there are very few studies in critically ill patients with ARDS who have reported the use of IV vitamin C as adjuvant therapy. In animal studies, Vitamin C has been shown to increase resistance to infection caused by coronavirus, also modifying the susceptibility to the infection [27]. In patients, Nathens et al. administered 1 gram of ascorbic acid every 8 hours combined with oral vitamin E for 28 days in 594 surgically critical patients and found an instances of significantly less acute lung injury and multiple organ failure [28]. In a clinical study described by Sawyer et al., large IV doses of ascorbic acid and others were used antioxidants (tocopherol, N-acetylcysteine and selenium), in patients with established ARDS and showed a 50% reduction in mortality [29]. Bharara et al, administered 50 mg/kg each 6 hours for 96 hours to treat recurrent ARDS with good results and no effect secondary [30]. Fowler et al. described the case of a 20-year-old woman with viral ARDS (Rhinovirus and enterovirus D68) who received IV vitamin C successfully [31]. In another study IV vitamin C was administered in patients with severe pneumonia, the treated patients had significantly less hospital mortality [32]. Prior preclinical and subsequent clinical research performed at Virginia Commonwealth University (VCU) have revealed that high plasma levels of vitamin C act in a “pleiotropic” fashion to attenuate systemic inflammation and correct sepsis-induced coagulation abnormalities, while simultaneously attenuating vascular injury [CITRIS-ALI; clinicaltrial identifier NCT02106975]. These critically ill

patients often have reduced concentration of antioxidants. Therefore a positive effect of vitamin C can be expected. IV vitamin C is already being employed in China against COVID-19 coronavirus. Peng Zhiyong Director of Intensive Care at Zhongnan Hospital of Wuhan University has registered a clinical trial to verify the efficacy of IV vitamin C in the treatment of severe 2019-nCoV infected pneumonia [identifier: NCT04264533], patients has receiving 24 g of IV vitamin C per day for 7 days, and the Shanghai Coronavirus Disease Clinical Treatment Expert Group has strongly recommended including high daily doses of vitamin C in critically ill patients affected by SARS-CoV-2, due to it is use appears to achieve a significant improvement in the oxygenation index [33]. Other hospitals are giving already IV vitamin C and Zinc (220 mg oral) in the treatment protocol plus azithromycin and hydroxychloroquine.

Administration Protocol (Table 1)

- Central venous catheter is preferred for administration, overall for high doses but peripheral access is acceptable but infusion has to be slower.
- Obtain previously: blood count, renal function, electrolytes, iron, ferritin and G6PD (glucose-6-phosphate dehydrogenase). Hemolysis can occur in patients with G6PD deficiency. Measurement of the serum ferritin level may be a useful indicator of therapy response, and prognosis.
- It is preferred to administer in its salt form; sodium ascorbate. The dose varies from 0.1 to 1 g/kg. Our recommendation is to start with a dose of 0.2 g/kg of vitamin C diluted in 250 or 500 mL of water solution sterile for injection or, alternatively in Plasmalyte or Ringer's Lactate. The solution bag should be covered with a black bag to prevent light-induced auto-oxidation.
- Osmolarity will depend on the administered dose. Doses of 100 g should be diluted in 1 L for infusion since the mOsm /L will thus be 1085 mOsm /L.
- Infusion rate; around 0.25-0.5 g/min, for example; 15 grams in 30 minutes, 25 grams in 1 hour, 50 grams in 2 hours, 75 grams in 2 hours and a half hours, and 100 grams in 4 hours.
- Monitor calcium and magnesium since the chelating effect of vitamin C can cause hypocalcemia and hypomagnesemia. Correct if develops.
- Frequency of administration: It will depend on the severity and response of the patient to treatment. We recommend starting daily and rest on the weekend. If very sick dosing could be twice daily.
- During rest days, it is recommended to administer by nasogastric tube, 4 to 6 grams per day of vitamin C.

- Vitamin C crosses the placenta and is distributed into breast milk so high doses of vitamin C is contraindicated in pregnancy.
- Cautions must be taken in patients with renal failure (creatinine >175 µmol/L (1,98 mg/dL)).

Table 1. Administration protocol

INTRAVENOUS VITAMIN C PROTOCOL FOR COVID-19 INFECTION
• Central venous access preferable for very high doses (> 50 g)
• Check: blood count, renal function* ¹ , electrolytes, and G6PD
• Check IL-6, ferritin levels may be a useful indicator of therapy response and prognosis
• Use sterile water, Plasmalyte or Lactated Ringer's for mixture or Dextrose 5%-10%
• Doses: 0.2-0.5 g/kg vitamin C* ²
• Administer daily until improvement, then every 2 days
• Infusion rate: adjust for 0.25-0.5 g/min (usually between 1 to 4 h according to the dose)
• Supplement with calcium and/or magnesium IV if necessary
• If possible add Zinc sulfate 220 mg/24h * ³ , thiamine (400 mg/d), vitamin D 1000-3000 IU/24h, vitamin E 1600 IU/48 h oral/NG

*¹ caution with doses and frequency of administration

*² if patient in critical condition we suggest administration dose recommended twice a day (every 12 hours)

*³ 220 mg of zinc sulfate contains 50 mg of elemental zinc.

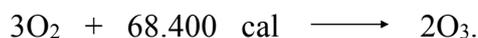
Conclusion

Vitamin C may be an effective therapy in the treatment of SARS-CoV-2 given its antioxidant and immune system enhancement, and antiviral properties. Furthermore, vitamin C can also help to eliminate alveolar fluid accumulate in the ARDS by preventing the activation and accumulation of neutrophils, and reducing alveolar epithelial water channel damage. Given the fact that its administration is safe by IV infusion to maximum doses of 1.5g/kg as long as the described precautions are taken, healthcare professionals should take a close look at this opportunity. Obviously, well-designed clinical studies are absolutely needed to develop standard protocols for bedside use.

OZONOTERAPIA:

Introduction

There is much scientific evidence on the clinical use of ozone, however ozone therapy has not yet been fully accepted. We cannot forget that ozone is a gas made up of three oxygen atoms of oxygen (O₃). Ozone generators produces it from pure oxygen passing through a high voltage gradient (5–13 mV) according to the reaction:



Ozone therapy (OT) utilizes 1-5% ozone in 95-99% oxygen as a gas. A medical ozone generator produces concentrations of ozone from 1 to 100 µg/mL but for medical purposes concentrations of 10 to 40 µg /mL are commonly used. Ozone therapy is characterized by the simplicity of its application, its great effectiveness, good tolerance, and by the virtual absence of side effects.

Russia, Cuba, Germany have recognized it in their legislation; In Spain it is regulated in more than 76% of the autonomous regions of Spain. Italy, China, and some South America have specific regulations

The effectiveness of ozone against pathogens is well recognized and ozone appears to be the best agent for sterilization of water. Due to its biological properties ozone therapy may play a possible role in the therapy of SARS, as an adjunct to standard treatment regimens. Owing to the excess energy contained within the O₃ molecule, it is theoretically likely that O₃, unlike organism-specific antiviral options available today, will show effectiveness across the entire genotype and subtype spectrum of SARS [34].

Pharmacokinetics

Ozone physically dissolves in pure water according to Henry's law regarding temperature, pressure and ozone concentration. Unlike oxygen, ozone reacts immediately as soon as it dissolves in any biological fluid. In the body, it has a half-life of milliseconds due to its high affinity for carbon double bonds. Ozone reacts rapidly with biomolecules possessing this double bond causing a rapid oxidation or breakdown reaction with consequent formation of secondary molecules which are the causes of its therapeutic action. The therapeutic efficacy of ozone therapy may be partly due the controlled and moderate oxidative stress produced by the reactions of ozone with several biological components.

Biological Effects

When blood is treated with ozone, ozone instantly reacts with electron rich bonds and creates longer living downstream metabolites called ozonides: reactive oxygen species and lipid oxidation products, inclusive of peroxides. These molecules appear to act as messengers for the key biochemical and immune modulating effects of the therapy.

Some viruses are more susceptible to ozone's action than others. It has been found that lipid-enveloped viruses are the most sensitive and coronavirus is one of them. Coronavirus is rich in cysteine, which residues must be intact for viral activity [35]. Cysteine is highly vulnerable to oxidation to disulfide or other residues, which effect will cripple its biochemical activity in proteins, altering their three-dimensional structure. Enzymes may become inactive when reduced thiols are oxidized, sulfhydryl groups are vulnerable to oxidation and ozone is one of the molecules with the highest oxidizing potential, capable of reacting with a large of organic and inorganic compounds [36].

The effects of ozone administered in infected blood for virus may recruit a variety of mechanisms.; ozone disrupts viral proteins, lipoproteins, lipids, glycolipids, or glycoproteins. Ozone proper, and the peroxide compounds it creates, may alter structures on the viral envelope that are necessary for attachment to host cells. Peroxides created by ozone administration show long-term antiviral effects that may serve to further reduce viral load. Deprived of an envelope, virions cannot sustain nor replicate themselves. The creation of dysfunctional viruses by ozone offers unique therapeutic possibilities. In leukocytes, ozone can enhance phagocytic activity of neutrophils. Within monocytes and lymphocytes, peroxide hydrogen obtained by ozone activates a tyrosine kinase with the consequent phosphorylation of the I κ B kinase, one of the resting trimeric components of the nuclear factor kappa-B (NF- κ B) with the consequent synthesis of different proteins [37]. NF- κ B plays a key role in regulating the immune response due to infection [38,39]. Of great importance is also that ozone-induced also release of cytokines (IFN γ , TNF α and IL-8 and IL-2) and several acute phase proteins [40], which may constitute an avenue for the reduction of circulating virions and an attenuation of lung inflammation.

Major Autohemotherapy

Major autohemotherapy (MAH) consists of drawing blood from the venous system, normally between 50 and 225 mL, which is mixed with a volume of oxygen-ozone at concentrations of 10 to 40 μ g/mL. It is then reinfused into the body intravenously to cause its effects. Administration must

be done very slowly for it to allow for rapid dissolution. The ways to express concentration and dose in ozone therapy are shown below and Table 2:

Concentration: $\mu\text{g} / \text{mL}$; (MAH) = $\mu\text{g}/\text{mL} / \text{mL}$ of blood

Dose: Ozone concentration by volume ($\mu\text{g}/\text{mL} \times \text{mL} = \mu\text{g} \text{O}_3$)

The total dose is simply calculated by multiplying the ozone concentration with the gas volume. As an example, if we ozonate a blood volume of 150 mL with 150 mL of gas (1:1 ratio) with an ozone concentration of 30 $\mu\text{g}/\text{mL}$, the total dose is equivalent to 4.5 mg of ozone.

Table 2. Concentration and doses of ozone for MAH

	Low	Medium	High
concentration*¹ ($\mu\text{g}/\text{mL}$)	5-10	15-35	40-70
Dose (mg)	0,25-1,0	1,12-3,5	4-8,75

*¹ Ozone concentrations for systemic uses range from 10 $\mu\text{g}/\text{mL}$ to 40 $\mu\text{g}/\text{mL}$, concentrations higher than 80 $\mu\text{g}/\text{mL}$, due to the increased risk of hemolysis, the reduction of 2.3 DPG should be avoided, and antioxidant values with consequent inability to activate cells immunocompetent.

The side effects that can be observed are minimal. It should be noted that given their beneficial effects may require adjustment of adjuvant medication, e.g., medication antidiabetic at lower doses, or antihypertensive medication at lower doses.

Critical Care experience

There are multiples articles about ozono therapy and its effectiveness against virus but it is not the aim to make a full review of the literature. Cespedes et al. treated patients with chronic hepatitis B for one year with MAH, patients showed negativization of the surface antigen, antibody positivity against the surface antigen, significant decrease of viral load to undetectable values and normal values of the transaminases demonstrating the functional recovery of the disease associated with favorable immunological response [41]. They also treated patients with HIV-AIDS for two years and it was a significant decrease in viral load to undetectable values and an increase of CD4 and CD8 [42].

When you administered ozone in blood, it will be an improvement of the oxygenation in vital organs and in ischemic areas, in addition to supporting respiratory, cardiac and kidney. If the patient's metabolic conditions do not deteriorate excessively, in 3-4 days of treatments with

ozonated autohemotherapy, increased enzyme synthesis antioxidants and hemoxygenase-1 induction can reduce oxidative stress caused simultaneously due to infection-inflammation-tissue necrosis and dysmetabolism. Bocci et al, reported a patient that in the postoperative period of an aortic dissection, development ARDS and was treated with ECMO, he reported improved after administration of MAH for 3 days, starting therapy at dose of 40 µg/mL with successive concentrations of 25 µg/mL in the following days [43].

Treatment frequency:

The number of treatment sessions and the ozone dose administered will depend on the general condition of the patient, age and the main disease. The treatment can be administered daily if necessary.

Administration Protocol (Table 3)

Venous access is required, a butterfly at least number 19 G, is preferred rather than a cannula. The MAH can be applied with variable intervals, from daily to weekly and even monthly. The total dose of ozone to be applied in each session will vary according to disease. Some groups advise that the concentration of ozone in the O₃/O₂ gas mixture does not exceed 80 µg/mL due to risk of hemolysis. Blood volume at use varies between 50 mL and 225 mL, since higher blood volumes can only cause hemodynamic changes so no higher volumes are required. For example, for collection safe blood we can apply a volume of 1.2 mL/kg to 1.3 mL/kg, so that for a 70 kg person should draw 84 mL of blood (1.2 x 70 = 84). The gas volume must always add in a 1: 1 volume ratio. We recommend using low doses when starting, with an initial concentration of 10-25 µg/mL per mL of blood, mix the gas with the blood for 1-5 minutes to prevent foaming is enough to complete the reaction to ozone before reinfusion of ozonated blood into the donor that can be reinfuse in about 10-15 minutes. In some cases, the use of up to 80 µg/mL which has been shown to be safe and with greater induction capacity of cytokines.

For anticoagulation use heparin sodium 20 IU/mL of blood. Sodium citrate 3.8% 10 mL per 100 mL of blood or failing citrate dextrose Solution A, USP (2.13% free citrate ion) from 7 mL -10 mL per 100 mL of blood are other alternatives. Frequency of application recommended is daily with up to 3 passes per day according to clinical state.

Once the treatment is done, we recommend administering 500 mg of N-Acetyl cysteine IV with 0.5-1 g of vitamin C to pass in 2 hours immediately after ozone therapy, and therefore 5-6 hours before the next session, given the oxidative stress state of these patients.

Table 3. Protocol for major autohemotherapy administration

MAJOR AUTOHEMOTHERAPY PROTOCOL FOR COVID-19 INFECTION
• Peripheral venous access is preferable
• Use a butterfly or cannula
• Blood removal: 1,3 mL/kg of blood
• Use of heparin sodium as an anticoagulant: heparin sodium 15-20 IU /mL of blood.
• Adjust ozone/oxygen mixture in 1: 1 ratio
• Initial dose: 25 µg/mL of ozone per mL of blood. Increase of dose is acceptable in following days (max: 80 µg/mL)
• Shake the bottle gently once ozone is mixture with the blood and during administration
• Number of sessions: daily until improvement
• Number of pass per session: up 3 daily
• After therapy: N-Acetyl cysteine 500 mg IV plus vitamin C 0.5-1 g is recommended, administer over 2 hours

Conclusion

Ozone has biological properties suggesting a possible role in the therapy of SARS-CoV2. Coronaviruses have abundant cysteine in their spike proteins that may be easily and safely exploited with ozone therapy. Cysteine residues are also abundant in viral membrane proteins and must be "conserved" for viral cell entry. Conserved cysteines seem functionally important for virus production. MAH has proven to be an effective and safe therapy in multiple patients, so in this situation where there is no cure for this terrible infection, we highly recommend adding it to the current treatment protocols.

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Dear Prof. Antonio Galoforo,

During COVID-19 outbreak in China, it was our pleasure to have a video conference with you. We sincerely appreciate that you and your colleague shared your experience in ozonated autohemotherapy. Inspired by your suggestions and experience in infectious disease, we did make some progress in treating COVID-19 patients with the ozonated autohemotherapy. I would like to express our heartfelt thanks to you on behalf of Tianjin University and the affiliated Haihe hospital.

Tianjin University medical college and medical treatment expert group of Tianjin had discussed the ozonated autohemotherapy over time, and eventually, the therapy was approved by the Haihe hospital ethic committee and also submitted to Chinese clinical trial registry. Up to now, 4 confirmed COVID-19 patients, including 1 critical, 1 severe and 2 normal cases, had been treated with this therapy. After treatments, the





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symptoms of dyspnea, severe cough, chest distress, and asthenia were significantly improved. Especially, the critically ill patient was recovered from ARDS without using either invasive mechanical ventilation or ECMO treatment. At present, all 4 patients have recovered and discharged smoothly after viral clearance.

At present, the COVID-19 has become pandemic, and the situation in Europe is getting serious, especially in Italy. We deeply concern with the current situation and attach sincere condolences to this letter. Based on the preliminary results of ozonated autohemotherapy at Haihe hospital in Tianjin, the clinical effects are positive and rapid. Especially for the critically ill patient, whose lung tissue damage was effectively alleviated.

We are willing to actively cooperate with relevant Italian institutions and experts to share the treatment information, and also would like to provide assistance, if necessary. Just like Seneca said, “we are waves of the same sea, leaves of the same





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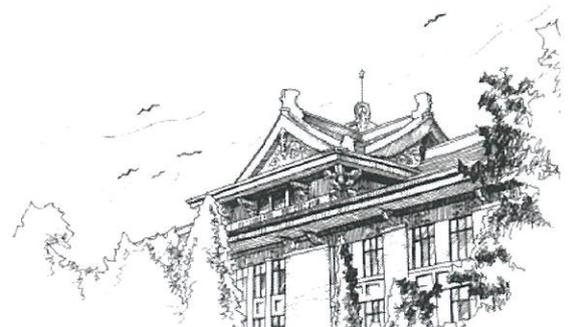
tree, flowers of the same garden.”

Again, we would like to thank you one more time for your help! Wish you good health, family happiness and all the best!

Best Regards,

Dong Ming, Prof. Ph.D

Executive dean of Medical College
Tianjin University



Valencia, April 6, 2020

To whom it may concern
And to the attention of
Mirza Aghei Vaihd

Object: COVID19 and ozone therapy under WFOT Protocols

Dear Dr Vaihd,

Following your exchange of information with Prof. Lamberto Re we accepted to share with you the WFOT protocols already submitted to Hospitals and other Centres treating patients suffering from COVID-19, and written by Prof. Silvia Menendez, Prof. Lamberto Re and me.

Following the most relevant papers published on international journals (references 1-24) our protocol described below was approved by some Ethic Committees including University of La Sapienza in Rome.

Furthermore, the first outcomes are indicative of positive effects either in the early or late phases of this infection, reducing the respiratory failure in a significant number of patients.

We confirm to you and to your co-workers our support in the case your Health Authorities will decide to start with a trial also in your Country.

Best regards,



Prof. Dr. José Baeza-Noci, MD, PhD, OS
Vice-President WFOT

Protocol: Ozone for systemic diseases should be used in a systemic way¹

Indirect Endovenous Administration (IEV). As ozone is a gas, it cannot be directly injected into the blood mainstream, to avoid gas embolism. Special medical devices allow ozone dissolve into the patients' blood risk free. For details on this technique, please read World Federation of Ozone Therapy - WFOT's book².

Based on the information from the three Chinese Hospitals ^{25,26,27} that are presently performing an official clinical trial and also on the protocol presented and pre-accepted in University Sapienza in Rome, the proposed treatment will be:

100-150 mL of blood and 100-150 mL of ozone gas at 30-35 µgr/mL concentration.

In-hospital patients: each 12 hours application for minimum 14 days.

Complementary treatments to ozone administration.

To help ozone effect, it is advisable although not mandatory, the administration during the ozone treatment of:

- Vitamin C: 3 gr each 12 hours, 6 hours after ozone administration. 1 gr each 12 hours is already standardized in Italy and Spain protocols for COVID19.
- Glutathione: 600 mg each 12 hours, 6 hours after ozone administration. This substance is administered because ozone effect is partially based on it and old patients may have a low blood glutathione level.

TRIAL DESIGN

Purpose:

1. Enhance respiratory function.
2. Stop the blood interleukin storm.
3. Limit patients needing ICU.
4. Shorten the time in hospital.

Inclusion criteria:

1. Confirmed patients (or legal guardian) sign a written informed consent form.
2. Aged from 18 to 80 years, male or female.
3. Patients with positive detection of 2019 Novel Coronavirus Pneumonia fluorescence RT-PCR in respiratory specimens or blood samples.
4. Mild ill and severe ill patients NOT IN ICU are grouped based on the "Handbook of COVID-19 prevention and Treatment"²⁸.

Exclusion criteria:

1. Patients who may be transferred to other hospitals that are not included in the trial within 72 hours.

2. G-6PD defect (Major Favism).
3. Pregnancy, especially early pregnancy.
4. Patients who continually use immune suppressant, or are organ transplant recipients within 6 months.
5. Patients who are receiving other clinical trials.

Interventions:

WE PROPOSE RANDOMIZING the patients going for control and IEV groups:

1. Control group. 30 patients. Conventional treatment.
2. Mild ill patients: 15 patients. Conventional treatment + ozone protocol.
3. Severe patients: 15 patients. Conventional treatment + ozone protocol.

Outcomes:

Primary:

1. Chest CT or Xray: interstitial pattern.
2. Whole blood cell analysis: leucocytes recount.
3. Oxygenation index: SpO₂.
4. Inflammation index: PCR, IL6. (optional: IL2, procalcitonin, ferritin, D-dimer)
5. Fever: axillary temperature.

Secondary:

1. Recovery rate.
2. Conversion rate of severe patients.
3. Mortality rate.

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OZONOTHERAPY for Covid19 in Hospital level IV in Lima-Peru. Hospital Protocol.

May 16, 2020- Peru Oxygen-Ozone Therapy Dr. Pérez Olmedo-Saturday, May 16, 2020-Reading time: 3 minutes

Dr. Carmen Cabrera, an anesthesiologist, is a great fighter and passionate about ozone therapy. "It took 1 month but with our results the heads of ICU, Emergency and Covid area were convinced and we managed to include it in the hospital treatment protocol".

The Alberto Sabogal Hospital is a level IV hospital and since 15 days ago it has become Hospital Covid, it is a reference for all Peru.

Dr. Carmen Cabrera, as a great colleague has informed us punctually and communicates to the group of AMOS, Ozone Therapy Solidarity, the results. Yesterday she had also communicated the results of Dr. Galloza, from Piura - Peru, on 30 outpatients with Covid19 performing OVO technique, today Dr. Cabrera brings her great news:

"Partial report: To date 22 mild cases, 6 moderate and 5 severe in WV treated with AHTM, mild cases with few symptoms: 19, 2 patients with mild pneumonia and 1 with moderate pneumonia who was hospitalized on day 2 of treatment, but we continue the application on the floor, 100% with good response

Group 2: 6 hospitalized patients with moderate pneumonia, 4 discharged to the 5th therapy, 2 continue in treatment but with good evolution and in discharge conditions.

Group 3: 05 patients in WV with reserved prognosis: 2 discharged from ICU, 2 died and 1 continues to struggle

Next week will arrive our order of material to start the study in patients with moderate covid, we will schedule 50 AHT major per day, I will inform you the results in a couple of weeks, greetings from Lima Peru. We have bought 1500 bags to perform ozone therapy with ATHM

The protocol is made for moderate cases, but we have also treated mild and severe cases for being health personnel. We administer AHT greater than 35 ucg in 150 cc of blood, daily frequency x 5 days, if the symptoms cease, if they continue, we continue to apply until they cease, usually we observe that after 1 week of treatment in patients covid moderate symptoms have improved almost entirely and patients are discharged, in patients in Mechanical Ventilation, depending on whether it is possible extraction of blood AHTM with 25 ug of ozone and 100ml, if not possible, because the pathways are clotted, we use rectal ozone at 30 ug 150 ml

You use a lab. AGA, PaFi, inflammation markers, hemogram, in moderate and severe as well as clinical evaluation. Mild ones have no laboratory, only clinical criteria. All have CT scans.

We managed to get it included in the hospital's treatment protocol

I already have 2 teams of 6 people each and 4 pneumology residents, on Monday we started with 60 patients in 2 environments that we have been given for hospitalization, because the ozone therapy is already in the covid protocol of the hospital



We managed to purchase 1500 transfusion bags

Meanwhile, the onion in the brain, which is also in the universities, publishes things like this:

[https://www.elcomercio.com/tendencias/puce-eficacia-tratamientos-alternativos-](https://www.elcomercio.com/tendencias/puce-eficacia-tratamientos-alternativos-covid19.html?fbclid=IwAR0J8Q2SntcDv8viFfM7tXn_7MK3K8dbTU5onrhky71YCL04ztx0xXtmFIY#.Xr7xfjp)

[covid19.html?fbclid=IwAR0J8Q2SntcDv8viFfM7tXn_7MK3K8dbTU5onrhky71YCL04ztx0xXtmFIY#.Xr7xfjp](https://www.elcomercio.com/tendencias/puce-eficacia-tratamientos-alternativos-covid19.html?fbclid=IwAR0J8Q2SntcDv8viFfM7tXn_7MK3K8dbTU5onrhky71YCL04ztx0xXtmFIY#.Xr7xfjp)

AcBI.facebook

The doctors that make Ozone Therapy already know that in spite of almost 150 years of successes of the Ozone Therapy in the treatment of diseases, waters, environments, foods, etc.. We have NEVER been taught neither ozone nor ozone therapy in the career of Medicine. It is incredible but it is true. SEE IF YOU CAN SEE WHY?

<https://www.facebook.com/notes/oxígeno-ozonoterapia-dr-pérez-olmedo/ozonoterapia-para-el-covid19-en-hospital-nivel-iv-en-lima-perú-protocolo-del-hos/3100341553359903/>

Oxygen-ozonotherapy is a Valuable Tool Especially If Used at an Early Stage of Disease

May 4, 2020 (Italy – Orbisphera.com)

"From our point of view, oxygen-ozonotherapy is a valuable tool the more useful it is in the early stages of illness".

This is what Dr. Luca Marziani, medical manager of the Complex Operating Unit of Anaesthesia, Resuscitation, Hyperbaric Oxygen Therapy and Antalgic Therapy of the Presidium Hospital of Vaio/Fidenza - ASL of Parma, says.

Dr. Luca Marziani was the contact person for oxygen-ozonotherapy treatments at the Vaio/Fidenza Hospital Presidium, as he is the one who performed the ozone therapy sessions and processed the data that were then sent to SIOOT (Scientific Society of Ozone Ozone Therapy).

"Orbisphera" interviewed him.

When did you get to know ozone therapy and what convinced you to use it to treat Covid-19 patients?

The relationship between this Hospital Presidium, in particular the Complex Anaesthesia and Resuscitation Unit, and the use of therapeutic oxygen is a story that is more than thirty years old. In fact, the first Hyperbaric Chamber of the Emilia Romagna Region was built in the then old hospital in Fidenza, which has now been extensively renovated and expanded and has been transferred to the current Presidium. Several thousand patients have been treated in it with the administration of high pressure oxygen to treat various types of pathologies, both acute and chronic.

For several years we have also known the benefits of mixing oxygen with ozone, so much so that in what is one of the activities managed by our UOC, i.e. Analgesic Therapy, this drug is commonly used by injection, especially with loco-regional administration (muscles, joints, etc.), mainly exploiting its anti-inflammatory, analgesic and immunomodulating properties.

In our hospital, until two months ago, we did not have the oxygen-ozone-generating device (used in other public hospitals in the Emilia Romagna Region, such as Piacenza, Fiorenzuola and Ravenna), but thanks to the farsightedness of SIOOT, which granted us the device on loan for free use, We thought to exploit the multiple properties of oxygen - and in particular, in this case, the oxygen-ozone mixture - to treat patients with Covid-19 pneumonia, since the use of Hyperbaric Oxygen Therapy was impractical

because oxygen administered by inhalation requires the anatomo-functional integrity of the lung, unfortunately absent in such patients.

When did you start using the SIOOT treatment protocol to treat Covid-19 positives? How many and which patients have you treated so far?

The first patient was treated on March 30. In total we have treated 11 patients to date. There have been 51 sessions of Grande AutoEmo Infusion (GAEI), which is the procedure recommended by the SIOOT protocols and which is carried out in the different centers that use this method, for an average of 5 sessions (precisely 4.6) for each patient. It ranges from a minimum of 1 single session (due to the death of the patient, treated at the beginning of our experience even if in serious conditions) to a maximum of 9 sessions for each patient.

10 of these 11 patients treated were in our Resuscitation Department due to serious respiratory problems related to Covid-19 and therefore underwent intubation and mechanical ventilation. Of these, 2 patients, already with very compromised conditions at the entrance, died after 1 and 2 GAEI sessions respectively.

Another 3 patients died during the months of March and April, while the other 5 had remission of the picture and discharge from Resuscitation; they are currently undergoing respiratory rehabilitation in hospital or in another contracted centre.

The last of the patients in chronological order, on the other hand, was "intercepted" in the Medical Operating Unit, before the worsening of his condition and the need for intensive care. This is due to a recent "change of course" in the strategy of choosing patients to undergo oxygen-ozonotherapy.

So what are your results? And why the "change of course" you mentioned?

It is precisely after the evaluation of the results of the first 10 patients that we decided, also considering what emerged from the experience of the other centres that use oxygen-ozonotherapy, to treat patients who present a worsening of their respiratory conditions (evaluated through the values of oxygen present in the arterial blood, the "quantity" of oxygen to be administered and some clinical parameters such as respiratory frequency) before the "derailment" of the system due to the exhaustion of the patient's "respiratory reserves", which then takes the patient to Resuscitation.

Without going into details that may be difficult to understand for most readers, we have seen that the use of oxygen-ozone does not change the mortality rate of patients admitted to the ICU but is all the more effective in improving the patient's condition the earlier it is used, i.e. before the "friendly fire" given by the abnormal immune response triggered by the viral infection significantly damages the lung itself.

In particular, we have seen in the patients treated a correspondence between clinical improvement, less "work" support required by the ventilator, less oxygen needed to maintain vital functions and variation of some tests, including increased concentration of lymphocytes in circulating blood - almost zeroed in the acute phase - and decreased values of Interleukin 6, one of the main proinflammatory cytokines, present in very high quantities in the blood of patients at the entrance.

And having verified the greater effectiveness that one has if the intervention with oxygen-ozone is done early, suggested the "change of course".

Based on your current experience, would you also advise others to use oxygen ozone to treat patients with Covid-19 respiratory complications?

In the literature, at present, there are no reliable data on this treatment related to Covid-19, but this basically applies to everything we have done so far to fight this pandemic: we have "borrowed" antiviral drugs used in the fight against HIV infection, antimalarial drugs, monoclonal antibodies used in rheumatoid arthritis and so on.

Certainly oxygen-ozonotherapy, from our point of view, is a valid tool, all the more useful the more it is used at an early stage of the disease. An example of this is the last patient treated who, although already in compromised conditions, had his first session while still in the OU of Medicine. It worsened during the night of the following day (in which - for technical reasons - it had not been possible to repeat the ozone therapy session), but intubation and subsequent mechanical ventilation immediately showed a clear improvement in ventilator indices and blood-chemical tests, therefore a diametrically opposite behaviour to the vast majority of intensive care patients, who normally see a clear worsening of the picture after the start of mechanical ventilation and require several days of use of the ventilator, often accompanied by the need for pronosupinations to maintain a minimum level of oxygen in the circulating blood.

This patient, before having to be transferred after 3 days for organisational reasons to another Intensive Care Unit in the region, was never pronated and had such conditions that he could attempt weaning off the ventilator and extubation after 4 days (compared to an average of 20 days).

Can you describe the history of any of the patients treated with oxygen-ozone?

This catastrophe has upset the existence of so many. But I am convinced that for those who "lived inside" us (and I am referring in particular to health workers) these events have irreversibly changed our lives: questions, sometimes unanswered, about the fragility of our existence, about suffering and pain, about time wasted for what does not matter, and not intensely lived for what really matters.

Ozone Therapy Against Coronavirus in Romania and Spain

April 29, 2020 (Italy – Orbisphera.com)

"Antenna 3", one of the most popular Romanian TV stations, reported that oxygen ozone therapy has been recognized by the National Medical Authority (Societatea Română de ATI) as a useful practice to treat patients suffering from Covid-19.

Dr. Gabriel Mogoș, vice-president of the Romanian Ozone Therapy Society, explained to "Antenna 3" that ozone therapy stimulates immune function and repair mechanisms of microcirculation damage caused by the virus.

"We, in Romania - he said - have been practicing ozone therapy for over 12 years. We administer ozone against Covid-19 because it has an anti-inflammatory, antibacterial, disinfectant and viral function".

"The results - he stressed - are extremely promising and offer confirmation of the improvements made by patients treated with ozone oxygen in Italy".

In Spain, Dr. Alberto Hernández, associate doctor of anaesthesia and resuscitation at the Policlinico Nuestra Señora del Rosario in Ibiza (Polyclinic Group), has published the first clinical study on the efficacy of ozone oxygen to treat Covid-19 positive patients.

"Ozone - explained Dr. Hernández - is a very effective therapy and we immediately incorporated it into the treatment of coronavirus patients".

The doctor at Ibiza Polyclinic explained that ozone reduces inflammation in coronavirus patients and has a potential virucidal effect. Italy and China - he added - already apply ozone therapy with satisfactory results.

For this reason, the Polyclinic Group has made the knowledge and application of this therapy available to all interested health centers.

According to Dr. Hernández, the administration of ozone can help coronavirus patients to significantly improve their prognosis after only two or three treatment sessions.

"Thanks to ozone therapy, patients who were about to be intubated have not only avoided the use of mechanical ventilation, but have improved to such an extent that they no longer need oxygen support.

This is what is written in the first clinical study on ozone therapy conducted in Spain at the Policlinico Nuestra Señora del Rosario in Ibiza.

The study states that ozone generates a widespread cascade of positive biological effects, including improved oxygenation at the tissue level and an immunomodulatory effect that reduces inflammation and attacks the virus.

Dr. Hernandez explained that although the clinical application of ozone therapy in Spain is not yet widespread, there are studies and results in Italy and China that confirm the therapeutic successes achieved at the Ibiza Polyclinic.

"In Spain - said Hernandez - we started to practice ozone therapy with the prior authorization of the Ethics Committee of the hospital, and the results have been spectacular".

In this regard, Dr. José Baeza, president of the Spanish Ozone Therapy Society and vice-president of the World Federation of Ozone Therapy, said that "in the context of the current global health emergency, given the absence of effective treatment or vaccine to combat the coronavirus, all hospitalized patients should be able to access ozone therapy as it generates a clear benefit without presenting side effects".

Ibiza Polyclinic Nuestra Señora del Rosario obtained permission to use ozone oxygen to treat a patient suffering from Covid-19 on 4 April. The authorization came after presenting the potential benefits of ozone therapy to a medical panel of experts committed to fighting the Covid-19 pandemic.

The group of experts consisted of the doctors: Montserrat Viñals and Asunción Pablos, from the internal medicine service, Adriana Martín, from the intensive care service, and María Victoria Velasco, from the emergency department.

The Commission has given its approval to the protocol for the administration of ozone oxygen by means of the therapeutic technique known as the 'great autoemo'.

As a result, Sergio Tonelli, a 49-year-old man positive for Covid-19, who was deteriorating to the point where he had to be intubated and admitted to intensive care, improved thanks to ozone therapy and no longer needed the oxygen mask.

"It was this first result - concluded Dr. Hernandez - that motivated the medical team to administer ozone oxygen to other patients, who are now improving, just as it did for Sergio Tonelli".

VIDEO "ANTENNA 3":



<https://www.antena3.ro/actualitate/sanatate/ozonoterapie-speranta-tratare-bolnavi-coronavirus-568354.html>

CLINICAL STUDY PUBLISHED IN SPAIN:

<https://www.grupopoliclinica.es/exito-del-primer-ensayo-clinico-espanol-con-ozonoterapia-para-pacientes-covid-19-en>

Translated with www.DeepL.com/Translator (free version)

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https://www.orbisphera.org/Pages/PrimoPiano/2084/Mio_fratello_stava_morendo_l'ossigeno_ozono_l_o_ha_salvato

Results of 73 Patients Treated with Ozone Oxygen

April 29, 2020 (Italy- Policlinico San Matteo di Pavia, the San Carlo Clinic in Paderno Dugnano and the Hospital of Fidenza- Orbisphera.org)

The third Report with results on the use of ozone oxygen to treat Covid-19 patients confirms that ozone therapy is proving effective in eradicating the coronavirus.

The Report was communicated by SIOOT (Scientific Society of Ozone Ozone Therapy) and refers to 73 patients treated with ozone oxygen hospitalized at the Policlinico San Matteo di Pavia, the San Carlo Clinic in Paderno Dugnano and the Hospital of Fidenza.

The hospitals in question practiced ozone oxygen according to the SIOOT treatment protocol, which was previously presented to the Istituto Superiore di Sanità.

This is the first medical protocol proposed in Italy for the treatment of patients affected by the Covid-19 virus.

There were 73 patients treated with ozone oxygen according to the SIOOT protocol, of whom 49 were intubated (less severe) and 24 intubated and in intensive care (and therefore in serious condition).

The 49 patients who were not intubated improved after five sessions of ozone oxygen therapy. 10 of them have healed completely and have already been discharged after two negative swabs.

Thus, 100% of the less severe patients treated with ozone oxygen reported beneficial effects. These are the medical parameters recorded:

- improvement in general condition;
- normalization of body temperature;
- reduction in C-reactive protein (PCR);
- improved saturation and reduced oxygen support;
- normalization of renal function (creatinine);
- increase in leukocytes;
- normalization of T lymphocyte levels, a sign of a significant immune response.

The 24 intubated patients (and therefore in serious conditions) presented the following clinical outcomes after treatment with ozone oxygen:

- 17 improved significantly (71%);
 - 15 have already been extubated (63%);
 - 2 have improved but are still intubated (8%);
-

The "Ospedali Riuniti" in Foggia Start Treating Covid-19 Patients with Oxygen Ozone Therapy

April 24, 2020 (Italy-Foggia – Orbisphera.org)

With a resolution signed on April 16, Dr. Vitangelo Dattoli, General Manager of the University Hospital "Ospedali Riuniti" of Foggia, announced the authorization of the non-profit clinical trial for the use of ozone as an adjuvant in the current emergency by Covid-19. The medical protocol used will be the one formulated by SIOOT (Scientific Society of Ozone Ozone Therapy).

The experimentation will be carried out in the Anaesthesia and Resuscitation Department with the assignment given to Professor Lucia Mirabella.

The resolution follows the decision of the Ethics Committee that expressed a favourable opinion on 14 April 2020.

The confirmation that the Ospedali Riuniti di Foggia will begin to use ozone oxygen to treat people positive for Covid-19 is good news, which confirms the practice of ozone therapy as a means to fight the coronavirus.

In an attempt to learn more about how these developments have come about, "Orbisphera" interviewed Dr. Giuseppe Masiello, a surgeon associated with SIOOT and an expert in pain therapy.

Dr. Masiello works at the Hospice "Villa Eden" in Turi and practices ozone therapy at the Polimedical IGEA in Capurso. Two medical facilities in the province of Bari.

Dr. Masiello's interest in ozone started about four years ago, when he was trying to find a cure for a painful fibromyalgia his wife suffered from.

Looking for information on the type of pathology and specialists able to propose treatment protocols, Masiello discovered the Scientific Society of Ozone Ozone Therapy (SIOOT) and met Prof. Marianno Franzini.

He then went to Gorle, where his wife started to treat fibromyalgia with ozone oxygen. The results were excellent. Hence the idea of introducing ozone therapy in Puglia as well.

For about three years Dr. Masiello has been using ozone therapy to treat hernias and disc protrusions, various pains from inflammation, viral infections such as labial and genital herpes, and shingles, better

known as St. Anthony's Fire. Thanks to ozone oxygen, it also treats ulcers and arteriopathies with great effectiveness.

"With 5 or 6 sessions of ozone oxygen - explained Masiello - it is possible to cure shingles in a certain and lasting way, eliminating the risk of pain or latent infections".

In March 2018, Dr. Masiello spoke at the International Congress on Ozone Oxygen which took place at the Pontifical Seraphicum Faculty in Rome, presenting work carried out on 15 cases of patients whose lower limbs had been amputated.

Ozone oxygen contributed to the resumption of blood circulation and the definitive closure of ulcers. Even the very infected sores have healed clearly.

These experiences enabled Dr Masiello to gain a thorough understanding of the viral action of ozone. For this reason, as soon as the number of cases of Covid-19 increased in Italy, he felt almost daily with Prof. Franzini to contribute to the study of a treatment protocol that would use ozone oxygen against the coronavirus.

Masiello spoke with several colleagues about the healing qualities of ozone. Among them also the General Director of the "Ospedali Riuniti" in Foggia, Dr. Vitangelo Dattoli, who took the opportunity and started the authorization procedure to use ozone oxygen as a cure for Covid-19 patients.

All interested parties, starting with Professor Lucia Mirabella who heads the Anaesthesia and Resuscitation Department, declared themselves available and attentive.

The intervention of Professor Gilda Cinella, who, as director of the Anaesthesia and Resuscitation Department of the "Ospedali Riuniti" of Foggia, on April 10th presented to the Interprovincial Ethics Committee the request for authorization to test ozone oxygen on Covid-19 positive patients.

The application specified that the project is "non-profit" and does not entail any financial burden for the Hospital. Ozone oxygen treatment services do not involve the purchase of medicines and are part of normal care services.

According to what Dr. Masiello says, it will take at least ten days to get the first results, and at that point the Director General himself will communicate them.

Meanwhile, a study entitled "Potential mechanisms by which the oxygen-ozone (O₂-O₃) therapy could contribute to the treatment against the coronavirus COVID-19" has been published in the European Review for Medical and Pharmacological Sciences.



The study presents the results of 46 Covid-19 positive patients treated with oxygen-ozone therapy. The authors are: Luigi Valdenassi, Marianno Franzini, Giovanni Ricevuti, Luca Rinaldi, Umberto Tirelli.

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[https://www.orbisphera.org/Pages/PrimoPiano/2109/Gli “Ospedali Riuniti” di Foggia iniziano a curare i malati di Covid-19 con l’ossigeno ozono terapia](https://www.orbisphera.org/Pages/PrimoPiano/2109/Gli%20%22Ospedali%20Riuniti%22%20di%20Foggia%20iniziano%20a%20cura%20re%20i%20malati%20di%20Covid-19%20con%20l%27ossigeno%20ozono%20terapia)



The Hon. Pedrazzini asks the Government to use oxygen-ozone in all Italian hospitals.

April 20, 2020 (Italy – Orbisphera.com)

"Oxygen ozone therapy is an instrument used for many years in Italy and recognized as antiviral. We therefore ask the Government that the treatment with ozone oxygen of patients affected by Covid-19 be implemented and made available in several public facilities".

This was said by Claudio Pedrazzini, the first MP who tested positive for Covid-19 and was cured of the coronavirus thanks to ozone therapy.

Pedrazzini said that "currently there are several health facilities that use ozone oxygen therapy to fight the coronavirus. From Milan to Brescia, from Vimercate to Parma, passing through Bergamo, Palermo, Naples, Foggia, Teramo, Lecco, Turin, Pavia, Rome".

He cited in particular: the Policlinico San Matteo in Pavia, Humanitas Gavazzeni in Bergamo, the Istituto Clinico Sant'Anna in Brescia, the San Carlo Clinic in Paderno Dugnano and the Hospital of Fidenza (Parma).

"They are also active - he added - some home services for ozone therapy in Pisa, Avellino, Alessandria, Vicenza and Giulianova".

In all these cases, the medical protocols applied are those proposed by the Scientific Society of Ozone Ozone Therapy (SIOOT), which are demonstrating that - when practiced early on patients who tested positive for the virus - ozone therapy is able to effectively counteract the serious effects produced by Covid-19.

"For this reason - concluded Pedrazzini - we hope that this therapeutic path will also be pursued without hesitation".

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https://www.orbisphera.org/Pages/PrimoPiano/2077/L'on_Pedrazzini_chiede_al_Governo_di_potere_utilizzare_l'ossigeno-ozono_in_tutti_gli_ospedali_italiani

My brother was dying, the oxygen ozone saved him...

April 20, 2020 (Italy – Orbisphera.com)

"Intubated and in intensive care for 12 days, my brother was dying. Then he was given ozone oxygen according to SIOOT (Scientific Society of Oxygen Ozone Therapy) protocol and now he is alive and healing".

Who talks like this is Sergio Maccarinelli, born in Treviglio in 1957, for many years working abroad as a company operator.

Maccarinelli has collaborated, among other things, in the management of humanitarian aid in Eastern Europe.

Back in Italy, he was amazed by the violence of the pandemic that is still raging especially in Bergamo.

We interviewed him and he told us an incredible story.

In mid-March the Covid-19 appeared in Sergio's family. His brother Cesare, born in 1961, tested positive for the virus.

Sergio started to assist him at home, with the drugs prescribed by his GP.

On March 19, Cesare had breathing difficulties and his oxygen saturation values were dropping rapidly.

On March 20, he was called 911 to hospitalize him. There were no beds available in the area, so Cesare was transported to a hospital in the province of Lecco.

Caesar's condition became more serious every day. First the oxygen mask was applied to him, then the Cpap helmet connected to a respirator, and finally it was necessary to admit him to the intensive care unit, where he was sedated and intubated.

Sergio Maccarinelli, to treat his brother, tried everything, found and made available all the experimental drugs available: Tocilizumab, Anakinra, as well as the antimalarial and retroviral drugs present in the treatment protocols.

On 29 and 30 March, Caesar's situation was rapidly plummeting towards an inauspicious outcome.

At that point Sergio remembered that, in 2016, he had practiced oxygen ozone therapy to combat an osteomyelitis contracted during orthopedic surgery to reduce a tibial plate fracture.

At that time he had heard several positive opinions about the use of ozone oxygen for the treatment of various diseases, including pneumonia. He decided to immediately contact Prof. Marianno Franzini, president of SIOOT International.

Franzini explained that SIOOT had formulated a medical protocol specifically for patients suffering from the Covid-19 virus.

Sergio decided, therefore, to propose the use of ozone oxygen in the hospital where his brother was hospitalized, but the doctors had neither the necessary equipment nor the necessary knowledge.

Since a patient in intensive care cannot easily be transported elsewhere, Sergio continued to press for permission to use ozone therapy.

But approval times were getting longer and longer, while Caesar was getting worse and worse as he approached the point of no return.

So, in consultation with Professor Franzini, Sergio rented a machine to produce ozone, bought the bags needed to practice the great self-emoinfusion (in accordance with the SIOOT protocol) and offered them free of charge to the hospital where Caesar was being hospitalized.

The hospital doctor, "in front of a dying intubated patient" (these are his exact words), agreed - as a "compassionate treatment" - to subject Caesar to daily ozone-enriched self-emoinfusions.

Applying the protocol indicated by SIOOT, the patient's condition gradually began to improve from the first day of ozone therapy. To the amazement of the doctor who was treating him.

To the point that on April 17th, after only 9 days of ozone therapy, Caesar was no longer in mortal danger and could be awakened and extubated.

At the beginning he was weak, still in need of respiratory physiotherapy, since they had intervened on him when he was already very serious, but, despite this, his improvements were called "impressive".

As confirmed by Prof. Franzini, on the basis of the experiences gained in other hospitals, it can be assumed that, if the first symptoms had been treated, the patient would probably not have needed to be intubated.



The patient would have been avoided a highly traumatic experience and there would have been a great saving for the healthcare facility in terms of costs and resources.

Extremely grateful for the collaboration received from Prof. Franzini, and grateful to the Good Lord for his brother's salvation, Sergio Maccarinelli offered to cover the cost of one month's rent of a car and equipment for the hospitals in the area that intend to practice ozone therapy on positive patients at Covid-19.

Sergio's hope is that "from this story a spark of hope can be born and, above all, that it can be done soon, because every day many patients suffer or even lose their lives".

If oxygen ozone was useful to save, or to facilitate the course, even of a single mother or a single family father, we would have obtained an important result.

According to Sergio, true angels intervened in this affair, who collaborated with San Leopoldo Mandic, to whom the hospital is named.

For what could be called an incredible "astral conjunction", Sergio has been devoted to San Leopoldo Mandic since the time he worked in Yugoslavia. And he still continues to frequent the Sanctuary of Padua dedicated to him, where the Friar Confessor St. Leopold worked for many years on behalf of the souls of the faithful.

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More and more Hospitals Use Ozone Therapy against the Virus

April 13, 2020 (Italy – SIOOT - Bergamo)

The ongoing trial in Italian hospitals for the oxygen-ozone treatment of the Covid-19 virus continues to provide very positive indications.

This has been reported by SIOOT (Scientific Society of Ozone Oxygen Therapy) which, for about forty years, has been studying and applying this medical practice and has been the first to focus on a specific therapeutic protocol for the treatment of Covid-19.

This protocol, aimed at treating coronavirus patients, is now applied in hospitals in Bergamo, Brescia, Carate Brianza (MB), Fidenza, Foggia, Naples, Paderno Dugnano (MI), Palermo, Pavia, Teramo, Turin.

SIOOT has now presented the second report on patients treated, which confirms the relevant results of the previous report. The positive trend already emerges from the first summary data: out of 46 patients treated, from the least serious to the most serious, 39 have definitely improved. That is a success rate of 85 percent!

Going into detail, it can be added that, of the 46 patients treated, 11 were already intubated (i.e. in very serious conditions), while 35 were not yet intubated. After five oxygen ozone therapy treatments, only 3 patients were still intubated, while 28 of the unintubated patients are better and have overcome the risk of being transferred to the resuscitation chamber. Five patients are fully recovered having already performed the two prescribed negative swabs. Unfortunately, 4 patients who had already been intubated died because the virus had compromised their vital organs to such an extent that ozone therapy was not appropriate.

According to professors Luigi Valdenassi (President of SIOOT) and Marianno Franzini (President of SIOOT International), the experience gained through the Covid-19 cases treated with ozone therapy so far suggests a change of strategy. The sooner the patient is treated, the faster he can heal. Therefore, SIOOT hopes that positive patients, or diagnosed as such, can also be treated immediately at home. This would result in less hospitalization, which would free up beds and relieve the current systemic stress in health care facilities.

"The characteristics of Covid-19 infection are expressed with different levels of severity," explained the two expert ozone therapists. "Levels ranging from asymptomatic positive to severe cases requiring intensive care and mechanical ventilation. It is a pathology that involves, in addition to the lungs, several other organs and districts: nervous axis, myocardium, vascular tree and enterohepatic tract, creating a metabolic syndrome".



"It therefore seemed useful to us - added Valdenassi and Franzini - to propose and practice ozone therapy because of its physiopathological characteristics that seem suitable and specific in the treatment of this serious pathology.

When news arrived of the first cases of infection in the city of Wuhan, a "Consensus conference" was urgently called among the members of the Scientific Committee of SIOOT, because, aware of the mechanisms of action of ozone, it seemed useful to us to verify its possible application also in this therapeutic field. This was the starting point for the presentation of our clinical protocols at the Istituto Superiore di Sanità (ISS) and their dissemination to the various hospital structures, offering the relevant Ethics Committees institutional collaboration from SIOOT.

The first data show a positive path in terms of symptomatological responses, supported by equally interesting haematochemical levels. To this is added the low cost of the therapy and the complete absence of collateral or secondary events".

For further information on the mechanisms of action of ozone oxygen against the Covid-19 virus, please refer to the SIOOT website:

http://www.ossigenoozono.it/IT/News/3508/SECONDO_REPORT_-_OSSIGENO_OZONO_SIOOT_NEI_PAZIENTI_RICOVERATI_CON_COVID-19

Massimo Nardi

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https://www.orbisphera.org/Pages/PrimoPiano/2040/Sempre_più_ospedali_usano_l'ozonoterapia_contro_il_virus

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THE MEDICAL COLLEGE OF THE TIANJIN UNIVERSITY CONFIRMS THE EFFICACY OF THE OXYGEN-OZONE THERAPY AS POTENTIAL TREATMENT AGAINST COVID19

April 10, 2020 (Italy - Orbisphera.org)

In an official letter from the Medical College of the Tianjin University (China), sent to Dr. Antonio Galoforo, the board member of the SIOOT (Scientific Society of Oxygen Ozone Therapy), the professor Dong Ming, Dean of the Medical College, wrote: «Inspired by your suggestions and your experience in infectious diseases, we have made some progress in the treatment of Covid-19 positive patients by treating them with Oxygen Ozone Therapy».

In this regard, the professor Dong Ming recalls that, as the Covid-19 epidemic raged in China, a video conference was organized in mid-February with Dr. Galoforo along with other 272 Chinese medical doctor and university staff.

«We sincerely appreciate – the letter continues – that you and your colleague have shared your experience in the field of ozone therapy with us».

The professor Dong Ming highlighted that the Medical College of the Tianjin University, in collaboration with a group of specialists from the Haihe Hospital, discussed the ozonated autohemotherapy scientific protocols, and after treatments, as indicated by the shared procedures, the therapy was approved by the Ethics Committee from the Hospital itself. The therapy was finally registered as “clinical trial” in the Chinese Clinical Trial Registry.

Concerning the results, the professor Dong Ming reported that «four Covid-19 positive patients, including one critical case, one serious case and two normal cases, have been treated with Oxygen Ozone Therapy».

After the treatments, the symptoms of dyspnea, severe cough, chest anguish and asthenia subsided until they disappeared. In particular, the critically ill patient was recovered without using invasive mechanical ventilation or intensive care treatment. All four patients recovered were discharged without problems after verifying the viral inactivation (“viral clearance”) of Covid-19.”

Based on these results, the clinical effects of ozonated autohemotherapy performed at Haihe Hospital in Tianjin have demonstrated to be rapid and effective. This was important mainly for a severely ill patient, whose lung tissue damage has been alleviated and overcome.

As the pandemic from the Covid-19 is affecting the whole Europe, particularly the Italian country, the professor Dong Ming expressed his concern and condolences for the victims.

The Dean of the Medical College also offered his availability to collaborate with Italian institutions and experts in order to share information and assistance regarding the practice of Oxygen Ozone Therapy.

The letter ends with a beautiful sentence from Seneca – «The earth is one country. We are waves of the same sea, leaves of the same tree, flowers of the same garden...» – along with the thanks and best wishes for good health and family happiness.

Interviewed by “Orbisphera”, Dr. Galoforo said that as early as the end of January, when the virus was still confined to the Wuhan area, he had proposed to the Chinese scientific community to use the Ozone Ozone Therapy to counter the spread of Covid-19.

In mid-February, supported by consolidated institutional relations already active for months with China, Dr. Galoforo welcomed a delegation of Chinese doctors in Italy and held a conference call with prof. Chen Qun, Secretary General of “China Life Science Security” in Beijing.

The conference call was attended by 272 executives from the Ministry of Health, primary from some Beijing hospitals and managers from Chinese research centers.

Dr Galoforo illustrated the scientific evidence of the protocol on the use of ozone, raising the interest of the participants in this type of approach to combat Coronavirus.

On February 21, when the Covid-19 virus began to spread in Italy, Dr. Antonio Galoforo and his team from the Fatebenefratelli of Brescia have published a research on the SIOOT website which highlights the important results obtained by ozone therapy in the treatment of pneumonia as well as in the contrast of other viruses similar to Covid-19, such as Sars and Ebola. All supported by an extensive scientific bibliography.

In the following weeks Dr. Galoforo has further activated itself at an international level by collecting important positive feedbacks through Dr. Li Peter of Guaghzuo, who reported the significant results of some Chinese hospitals that were successfully using ozone therapy (Tianji Haihe Hospital and The Second Hospital of Tanjin Medical University).

Equally important indications came from California by Dr. Robert Rowen, who has activated a specific department of his clinic to treat patients infected with Covid-19 with Oxygen Ozone Therapy.

Dr. Rowen, in recent days, has published a study in the scientific journal “Journal of Infectious Diseases and Epidemiology” entitled “A Plausible Penny costing effective treatment for Coronavirus-Ozone Therapy”.



In light of these additional international scientific evidences, Dr. Galoforo informed the competent institutions – first of all the Lombardy Region – underlining the validity of ozone therapy and in particular its low cost and the absence of side effects.

«Now – concluded Galoforo – I expect ozone oxygen to be used in all hospitals that treat patients with Covid-19».

For any further information:

Potential mechanisms by which Oxygen-Ozone Therapy (O2-O3) could contribute to the treatment against coronavirus Covid-19

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NO NEW COVID-19 DEATHS IN BALEARIC ISLANDS AS IBIZA CLINIC BECOMES FIRST IN SPAIN TO USE PIONEERING OZONE THERAPY

According to health officials, more than half of those infected with COVID-19 have won the battle against the virus

April 10, 2020 (Spain – The Olive Press)

FOR the first time since the state of alarm was enforced, there were no COVID-19 fatalities in the Balearic Islands yesterday.

In a further sign that the lockdown is working, the Ministry of Health also revealed that the number of ‘cured’ patients has overtaken active coronavirus cases in the region.

According to health officials, more than half of those infected with COVID-19 have recovered from the virus.

Yesterday, 80 patients were given the all-clear from healthcare professionals, bringing the total number of those cured to 696 and now leaving only 663 active cases.

The region also saw one of its ‘best’ days in regards to the number of new infections, with only 36 people testing positive for COVID-19.

Furthermore, for the first time in 21 days, Ibiza and Formentera did not register any new cases.

DEDICATION: Microbiologists testing samples at Mallorca’s Son Espases Hospital

In addition, the arrival of more than [10,000 rapid response COVID-19 tests](#) from China will help the Government of the Balearic Islands to get a better picture of the ongoing pandemic.

In recent weeks, the World Health Organisation (WHO) insisted that countries carried out as much testing as possible in order to stop the spread of coronavirus.

Announcing the latest figures, Dr Javier Arranz, who leads the Government's advisory committee on infectious diseases, expressed his optimism about the evolution of the virus in the autonomous region.

However, he warned that the Balearic Islands are in a critical moment, stressing the importance of citizens continuing to adhere to the nationwide lockdown to ensure there is not a resurgence in cases.

RESPONSE: Medical personnel dedicated to treating coronavirus patients

Asking the general public not to 'ignore the rules learned to continue the downward trend in infections', Arranz cited Singapore as an example.

The Asian country's relaxation of restrictions appears to have allowed the virus to reappear.

Meanwhile, the Nuestra Señora del Rosario Polyclinic Hospital in Ibiza has trialled ozone therapy to treat COVID-19 patients with success.

As the first medical centre in the country to use this alternative therapy for treatment, the clinic revealed that it had seen improvements in patients after just two or three sessions.

SUCCESS: Ozone therapy has been used with success at the Nuestra Señora del Rosario Polyclinic Hospital



In a press release the clinic said: “Many patients who were about to be intubated and connected to mechanical ventilation have, thanks to ozone therapy, not only avoided it but improved to the point of not requiring oxygen with just a few treatment sessions.”

Using ozone to disinfect and treat conditions, improve the body’s intake and use of oxygen, and activating the immune system, the therapy has already been trialled on coronavirus patients in Italy and China.

At the Santa María della Misericordia University Hospital in Udine, 36 people with pneumonia and respiratory failure were administered with ozone therapy.

Only 3% required intubation, compared to the usual 15%, with Dr. De Monte stating that the infusion of ozone helped to strengthen the patients’ response to the effects of the infection.

There are also four clinical trials underway in China and the provisional results have shown that ozone has been effective in preventing and controlling the virus.

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<https://www.theolivepress.es/spain-news/2020/04/10/no-new-covid-19-deaths-in-balearic-islands-as-ibiza-clinic-becomes-first-in-spain-to-use-pioneering-ozone-therapy/>

The Oxygen-ozone Therapy Could Stop Coronavirus. Apuzzo (AIRO): "Ready protocol to block infection without side effects"

April 10, 2020 (Italy – Sanita Informazione)

It could come from ozone therapy the most effective clinical response in patients with severe respiratory crises who have contracted Coronavirus. This is confirmed by the results obtained from the trial started in Udine: out of 36 serious patients with breathing difficulties, only one has been intubated, while for the other rapid recovery and discharge. A result that does not take by surprise the president of the International Academy of Research of Oxygen-Ozone Therapy, Professor Dario Apuzzo, who, comforted by the scientific data, explains why this practice can be successful.

"First of all, ozone is a very powerful antibacterial and antiviral," explains the professor in connection via Skype. Keep in mind that after 30 seconds of exposure to ozone of a virus on a slide, 99% is completely deactivated, so there is direct action on the virus. This means that the sooner you apply the intervention with oxygen-ozone therapy the better, because once the virus has nested inside the cells of the various organs, especially the lung, it becomes more complicated, because in a sense it is protected by the cell itself. But even then ozone works by modulating our body's immune system."

HOW IT WORKS: DIRECT AND INDIRECT ACTIONS

"We say that ozone can give direct and indirect actions," continues Professor Apuzzo. The first ones are on the casing, the so-called capsid: modifying it, prevents attachment to the target cell; but it can also penetrate the virus through an oxidation process and, by changing its genetic code, substantially inactivate it."

"If you make a circulating virus inactive— analyzes the president of the International Academy of Oxygen-Ozone Therapy Research – this could represent a real immunogenic vaccine, or it could stimulate an immune response. So, by putting together direct action on the virus, the indirect action, through a stimulation of all the mechanisms that allow the organism to defend itself from external attacks, and the anti-inflammatory action together with an action of greater oxidation of the tissue, basically we have in our hand a very powerful drug, which is not really a drug because it is only oxygen".

AUTO-HEMOTHERAPY

"The formula used is oxygen and ozone to the extent of fifty per thousand ozone compared to oxygen, so it is still a completely natural mixture. Through scientific studies, formula and efficacy on the body have been validated. Our protocol, adds Apuzzo, "is to use in a mode called great self-hemotherapy. It is an infusion of one's own blood that is basically first oxygenated and ozonized, then re-infused in a minimal amount. We talk about 200 ml that are ozoned in a closed-circuit machine, so there is no kind



of risk because the blood taken ends up in a bowl, the machine puts the ozone regulated by the doctor who performs the therapy and then re-infused it as a normal DR. What matters is the protocol, we have developed one that we want to test on as many patients as possible. The first results seem very encouraging. We are not asking for the suspension of basic antiviral therapy, but to add ozone therapy, because we believe it can completely speed up our body's defence processes," he concludes.

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Claudio Pedrazzini: Member of the Chamber of Deputies “The Covid-19 hit me, thanks to the ozonated-oxygen I am healed”

April 10, 2020 (Italy- Orbisphera.org)

The Honourable Claudio Pedrazzini, a member of the Mixed Group of the Chamber of Deputies, was the first Italian Member to be found positive at Covid-19.

Interviewed by "Orbisphera", he spoke about his experience:

"On Friday 6th and Saturday 7th March I had a small fever that came and went. On Monday, March 9th I had a temperature of 37.5 degrees Celsius which remained constant. So I decided to take the test immediately and the next day they told me I was positive. I immediately informed the Chamber of Deputies and went into quarantine.

During the next five days I had a high fever above 38 degrees (100.4 F) and I was feeling short of breath.

The Covid-19 virus was attacking my lungs.

I already knew the benefits of oxygen ozone therapy, which is why I immediately did two large auto-heminfusions (GAE) in a few days, consisting of taking a quantity of blood that is ozonized and reinfused.

Together with the GAE, I drank three or four glasses of ozonized water every day.

I also did respiratory exercises several times a day.

Within 9 days, after practicing four GAE, drinking the ozonized water and doing breathing exercises, the fever disappeared, as did the feeling of shortness of breath. And all medical parameters returned to normal.

On March 24 and 26 I took two consecutive swabs, the results of which confirmed my complete recovery. There is no more trace of the Covid-19 virus and the state of health is excellent.

I can say with certainty that the oxygen ozone has been instrumental in making me recover quickly.

I was already familiar with the properties of ozone therapy and I used it as a precautionary measure because I had a heart problem at the age of four.

When the Covid-19 infection occurred, I immediately thought of using ozone oxygen.



The virus attacks the microcirculation of the lungs, heart, liver and kidneys. I knew the studies and the good results of ozone oxygen to heal people with severe pneumonia.

I had listened with great interest to the report that Prof. Marianno Franzini, International President of SIOOT (Scientific Society of Ozone Oxygen Therapy), had given at the Social Affairs Commission of the Chamber on July 4, 2019.

On that occasion, Franzini had illustrated the results of oxygen ozone therapy to combat antibiotic resistance. One of the cases shown referred to a patient with very serious pneumonia.

For this reason, as soon as I tested positive, I immediately had a GAE performed.

Covid-19 is a virus that must be tackled as soon as possible with ozone oxygen, it must be neutralized immediately to avoid the harmful effects of the infection that lead people to worsen to the point where they need intensive therapy.

Oxygen ozone therapy has made a significant contribution to my recovery, and has done so much less quickly than expected.

For these reasons, I believe that it is necessary to make ozone therapy, as per the protocol of the Scientific Society of Ozone Ozone Therapy (SIOOT), known and practiced by as many doctors as possible.

Ozone therapy is highly effective, has very low costs, limits the disease course time and has no secondary or residual effects.

I know that many doctors are not familiar with oxygen ozone therapy, and that there are also prejudices. I believe that it is time to overcome them and practice ozone therapy in a broad and widespread way: in this way we can bring down Covid-19 effectively and quickly".

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Oxygen Ozone Therapy SIOOT: Number of Healed Cases Increases, Deaths Decrease

April 9, 2020 (Italy – SIOOT - Bergamo)

The application of the therapeutic protocol prepared by SIOOT (Scientific Society of Oxygen Ozone Therapy) for the treatment of Covid-19 is underway in several Italian hospitals. On March 24th the association had obtained the approval of the ISS (Istituto Superiore di Sanità) for the use of ozone oxygen therapy in the treatment of Covid-19. According to the second SIOOT report on the therapy applied to 46 patients suffering from Coronavirus, over 84% showed a significant improvement in clinical conditions. What clearly emerges is that ozone oxygen therapy is more effective especially before intubation.

These results also indicate the need for a change in therapeutic strategy aimed at a more timely intervention on patients who tested positive for the virus and the possibility of being treated in their own home, with less hospitalization. A choice that would make it possible to free up beds for normal therapeutic activities.

Prof. Valdenassi and Prof. Franzini of SIOOT say: "Covid-19 infection manifests itself with different levels of severity and involves not only the lungs but also different organs and districts, nerve axis, myocardium, vascular tree, entero-hepatic tract, creating a metabolic syndrome. We therefore considered it useful to propose and practice ozone therapy because of its physiopathological characteristics that seem suitable and specific in the treatment of this pathology. The first data show a positive path in terms of symptomatological responses supported by equally interesting haematochemical levels. The complete absence of collateral or secondary events is another favourable element, together with the low cost of therapy. With these considerations in mind, we hope that the institutional collaboration of SIOOT, which has developed from the approval of the ISS with respect to clinical protocols, to the dissemination of these protocols in hospitals and their presentation to the relevant ethical committees, can contribute in a useful and effective way to the resolution of this health emergency".

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PHYSIOPATOLOGICAL MECHANISMS OF OZONE IN THE TREATMENT OF COVID-19 ACTIVITIES

April 9, 2020 – (Italy – SIOOT - Bergamo)

The biochemical and pharmacological characteristics lead to consider ozone important in the treatment of COVID-19. In fact, by reacting with biological substrates, it induces the synthesis of 4-hydroxynonenal, signal transducer that determines a greater resistance to prooxidant agents and an important response to oxidative stress.

The 4-HNE causes the release of Nrf2, transcription factor inducer in turn of several antioxidant enzymes including: SOD, CAT, HO-1. While SOD is involved in counteracting some neurodegenerative aspects, HO1 modulates NF- κ B, resulting in reduced expression of pro-inflammatory cytokines and induction of anti-inflammatory cytokines. The dual role of antioxidant and anti-inflammatory allows ozone to modulate IL-6 preventing the occurrence of the "cytokine storm", a critical event in COVID-19 infection.

IMMUNITARY ACTIVITIES

Ozone reacting with PUFA, in addition to aldehydes, induces hydroperoxides which, spreading rapidly in the cells of the immune system, bioregulate the signal transduction, increasing the release of immunoactive cytokines. This is achieved by involving NFAT (Nuclear Factor of Activated Cells), a transcription factor linked to cytokines that support lymphocytes and macrophages that are fundamental constituents of the primary defense barrier. The bioregulation activity on the Immune System exerted by ozonized blood auto-haemifusion is well known.

ANTIVIRAL ACTIVITIES

Lerner and Wentworth, in 2002 showed that our body is able to produce ozone endogenously to protect itself from infectious agents, involving neutrophil cells and antibodies of the immune system that, by producing ozone, exploit its oxidizing power to destroy the cell walls of bacteria and viruses. The lipidic molecules components of the pericapsid that envelops the virus, represent an ideal target for ozone; in fact, Byron K. Murray et al have shown substantial reductions in viral infectivity determined by the lipid peroxidation of the capsid caused by exposure to ozone. This prevents the virus from attacking the cellular receptor and therefore its replication. It is interesting to remember that the Ministry of Health in 1993 confirmed the antiviral and antibacterial activity of ozone in the blood.

OXYGEN SATURATION

Another important characteristic of ozone in therapy against COVID-19 infection is the ability to counteract critical hypoxemia caused by this virus.



Experiments carried out with the collaboration of the University of Pavia and the Polytechnic of Turin using NIRS spectroscopy have shown an increase in oxygenation represented by an increase in the concentration of oxygenated haemoglobin and constant values of non-oxygenated haemoglobin. From a clinical point of view it translates into a powerful response to the dramatic drop in saturation values with relative recovery in para-physiological areas.

ANTITROMBOTIC ACTIVITY

The protection of the endothelium by ozone is well known. Several publications have highlighted how endothelial cells, in contact with ozonized blood, induce NO synthesis. The cells contain the constitutive Nitoxide synthetase, which can be stimulated by ozone to synthesize Nitroxide, useful in cases of increased demand on the part of the body. This characteristic, together with the greater deformability of erythrocytes, facilitates metabolic exchanges, reduces blood viscosity and platelet aggregability. Under the metabolic aspect there is a greater availability of ATP at mitochondrial synthesis, an increase in P50 st and a reduction in the affinity of HbO₂ with the following greater bioavailability of tissue oxygen. In COVID-19 the presence of diffuse thrombi is highlighted and the ozone characteristics described seem to be suitable to counteract this problem.

CONCLUSIONS

The characteristics of COVID-19 infection are expressed with different levels of severity, from the asymptomatic positive subject to the most serious cases requiring intensive care and mechanical ventilation. It is a pathology that involves in addition to the lungs different organs and districts, nervous axis, myocardium, vascular tree, hepatic entero tract, creating a metabolic syndrome. We therefore thought it was useful to propose and practice ozone therapy because of its physiopathological characteristics that seem suitable and specific in the treatment of this serious pathology. When news of the first cases of infection in the city of Wuhan, a Consensus Conference was urgently called among the members of the Scientific Committee of SIOOT because, aware of the mechanisms of action of ozone, it seemed useful to verify the possible intervention in this case. Translated with

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Success of the first Spanish clinical trial with ozone therapy for COVID-19 patients in Polyclinic Group

April 8, 2020 (Spain - Polyclinic Group)

Administering ozone can help patients with COVID-19 significantly improve their prognosis after only two or three treatment sessions. Patients who were about to be intubated and connected to mechanical ventilation have been able, thanks to ozone therapy, not only to avoid it but to improve to the point of not requiring oxygen. These are the results of the first clinical trial of ozone therapy carried out in Spain at the Policlínica Nuestra Señora del Rosario in Ibiza.

Ozone has a multitude of beneficial biological effects. Two of the main ones are the improvement of oxygenation at tissue level and its immunomodulatory effect, thus achieving a decrease in the inflammatory response suffered by these coronavirus patients. To this we must add its potential viricide effect.

Italy and China already apply the ozone therapy against COVID-19

Although its clinical application has not yet been extended in our country, there are international precedents with the same good results as those obtained at the Polyclinic in Ibiza. The University Hospital Santa Maria della Misericordia in Udine, Italy, has treated with ozone therapy 36 patients with COVID-19 pneumonia who presented respiratory failure and 97% of them have not required intubation. On the other hand, in China there are 4 clinical trials in progress and the provisional results are very encouraging.

"In Spain we have started to administer it, after authorization from the hospital's Quality Committee, and the results have been spectacular", says Alberto Hernández, assistant doctor of Anaesthesia and Resuscitation at the Polyclinic Nuestra Señora del Rosario, of the Polyclinic Group.

"We have registered a clinical trial, and we have proven that ozone is a very effective and beneficial therapy in these patients and that we should immediately incorporate it into the treatment of COVID-19," he insists.

The President of the Spanish Society of Ozone Therapy and Vice President of the World Federation of Ozone Therapy, José Baeza, not only agrees with Dr. Hernández, but through him coordinates the information of the application of ozone therapy worldwide against COVID-19. "Given the absence of an effective treatment or a vaccine and in the context of the current health emergency, all patients admitted should receive ozone therapy since a clear benefit is being demonstrated, and ozone therapy does not present significant side effects", assures Baeza, adding "the clear benefits that are being observed in the clinical trials that are underway".

First patient treated in Ibiza



The Polyclinic Nuestra Señora del Rosario in Ibiza obtained on April 4 the authorization to treat the first patient with ozone therapy. After presenting in a scientific medical session the potential benefits of the ozone therapy, the group of experts of the centre in the COVID-19 infection, formed by doctors Montserrat Viñals and Asunción Pablos, from the Internal Medicine Service, Adriana Martín, from the Intensive Medicine Service, and María Victoria Velasco, from the Emergency Service, gave their approval to the protocol of administration of the major autohemotherapy with ozone in patients with coronavirus.

A 49-year-old male who had already required admission to the ICU was deteriorating to the point that he required oxygen at maximum concentration and was still deficient in oxygen to his lungs. His intubation and connection to mechanical ventilation was planned, but surprisingly, after the first session of ozone therapy, the improvement was significant and the oxygen requirements could be decreased. Dr. Alberto Hernández explains that "the improvement after the first session of ozone treatment was spectacular, we were surprised, his breathing rate normalized, his oxygen levels increased and we were able to stop giving him so much oxygen, since the patient was capable of oxygenating himself", he explains.

"To our surprise, when we did an analytical control, we observed how the ferritin, a determination from the analysis that is being used as a prognostic marker in this disease, had dropped significantly and that downward trend continued in the following days". It was this first result that motivated the medical team to administer it to other patients who, as Hernández points out, "are following the same improvement as him".

The key: the double biological effect of ozone

Dr. Alberto Hernández argues that **there are two key elements in this disease that are unfortunately leading to the death of many patients: a brutal inflammatory effect or 'cytokine storm', and an affectation of the microcirculation with formation of microthrombi.** According to this specialist, there are several ways to counteract this cytokine storm caused by the coronavirus. On the one hand, there is the traditional way, administering steroids at high doses, and with the disadvantage of depressing the immune system, which weakens the body. **And on the other hand, by administering vitamin C at high doses intravenously or, even simpler, by administering ozone, since both are capable of counteracting the cytokine storm and both have viricidal power. Ozone also, thanks to its action on red blood cells, improves the transport of oxygen to tissues and consequently the microcirculation by making the blood more fluid and promoting normal values of blood pressure.**

Therefore, "ozone makes it possible to easily treat the two main physiopathological problems of COVID-19 patients", stresses Hernández, who has directed a publication on this subject in the Spanish Journal of Anaesthesiology and Resuscitation, under the title: "Two known therapies could be effective as adjuvants in critical patients infected with COVID-19". He has also recently published an opinion article in the Neurocritical Care Society of the USA.



Both Hernández and Baeza therefore call on all specialists interested in establishing the appropriate circuits and structure to be able to incorporate ozone therapy as soon as possible in the hospitals that wish to do so. Along the same lines, Dr. Francisco Vilás, CEO of the Polyclinic Group, said that "it will be very satisfying to be able to help any hospital in such exceptional circumstances as those we are experiencing, and we will make our human and technical resources and our experience with ozone therapy available to anyone who requests it".

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Coronavirus, Ozone Therapy Avoids Intensive Care

06 April 2020 (Italy-Udine – LAREPUBBLICA)

The hospital of Udine

Trial in Udine: out of 36 patients with pneumonia and breathing difficulties only one was intubated. The treatment, combined with antivirals, reduces lung damage and slows inflammation. Describes the protocol Amato De Monte, the doctor in the Englaro case of LUANA DE FRANCISCO

Ozone therapy may be the most effective clinical response in patients who have contracted Covid-19 and are struggling to avoid hospitalization in intensive care. Proof of this are the results obtained from the trial started at the hospital in Udine, where out of 36 patients with pneumonia and breathing difficulties, only one was intubated: the others have all improved and some have already been discharged from the hospital.

The development of the protocol and the request to AIFA.

The intuition to exploit ozone therapy against coronavirus bears the signature of the director of the Department of Anaesthesia and Resuscitation of the University Health Authority "Friuli Centrale", Amato De Monte. The same who, in 2009, accompanied Eluana Englaro, in a vegetative coma for 17 years, in the path of gradual suspension of nutrition and hydration. Together with the infectivologist Carlo Tascini, who runs the infectious diseases clinic, and a team of colleagues, he developed a protocol that could revolutionize the approach to treatment and which, not surprisingly, has already attracted the interest of specialists from all over Italy.

It is precisely from the data obtained so far that the request for authorization to the Italian Medicines Agency and the Ethics Committee of the Spallanzani Institute in Rome to proceed with a study on 200 Covid-19 patients started. In order to aim at its recognition from a methodological point of view at the level of the international scientific community.

How the procedure works

The treatment of patients with ozone therapy associated with antiviral drugs has therefore shown a slowdown in inflammation and a reduction in lung damage. The procedure requires 200 millilitres of blood to be taken from the patient, allowed to interact with ozone for about ten minutes and then reinjected. So for three or four times at the most. The ozone infusion, in other words, helps to strengthen the body's response to the effects of the infection.



Ozone therapy, after all, in the Friulian hospitals of Udine and Tolmezzo is nothing new at all. And in Italy, among those who have been practicing and teaching it for some time, not by chance, there is De Monte himself. "To be exact, since 1996", explains the head physician, who is also a lecturer at the ozone therapy course organized at the University of Siena by Professor Emma Borrelli, a student of Professor Velio Bocci, the first to bring the practice in our country. "Before the coronavirus broke out - reports De Monte - a study had already been approved at the hospital in Udine to use it on patients with vascular problems in the lower limbs. I know that in other hospitals it is being used in intensive care. We had started from there too, but we were wrong, because we realized that at that point it was too late for the importance of the damage caused to the lungs. It is so - he continues - that, together with my colleague Tascini, we decided to see how it worked if applied early, on patients who risked being intubated, because with a compromised breathing and already in ventilation with a helmet or CPAP".

Improvements in three sessions

The result is there for all to see. "After only three sessions - continues De Monte - we saw resounding improvements, with a decisive reduction in the need for oxygen support". In short, it's hard to imagine that, in the face of such feedback, it's not possible to achieve the same result even on a wider audience of patients. In any case, in the worst case scenario the therapy does not work: side effects do not exist. At this point, therefore, the time factor could make the difference. "The hope is to get an answer as soon as possible - concludes De Monte - because the more immediate its use, the more help we will be able to give".

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With Oxygen Ozone We Can Attack and Defeat Covid-19.

April 8, 2020 Orbisphera.org – Italy

"At first the danger of the Covid-19 virus was underestimated. Measures were taken to contain it by limiting contact, multiplying lung ventilators and increasing intensive care beds. But now it is time to go and attack the virus to deactivate it. We can do this with Oxygen Ozone Therapy".

Who speaks like this is Prof. Marianno Franzini, international president of the Scientific Society of Ozone Oxygen Ozone Therapy (SIOOT).

Together with Prof. Luigi Valdenassi, national president of SIOOT, Franzini is collecting and analyzing data from the 20 hospitals that are currently treating people affected by Covid-19 in Italy according to the medical protocol of ozone therapy formulated by SIOOT.

Yesterday data arrived from 46 patients, admitted to 6 different hospitals, who were treated with 5 sessions of Ozone Oxygen Ozone Therapy.

Analyzing the parameters it results that ozone oxygen is highly effective. There is a rapid and evident improvement in all patients treated.

Of the 11 patients intubated and in intensive care, 6 were extubated after treatment with ozone oxygen, 1 improved, while 4 died before they could practice the entire ozone therapy cycle.

Prof. Franzini explained that the conditions of the four deceased patients were very serious. They suffered from bacterial overinfection, septic shock, pulmonary embolism and myocarditis.

"Studying the medical records - Franzini pointed out - I was able to observe the lung X-rays and I swear I have never seen such compromised lungs".

Thanks to the treatment with ozone oxygen, 28 patients improved considerably and did not need to be intubated.

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Franzini pointed out that the cross comparison of the analyses confirms that ozone oxygen has succeeded in improving the health conditions of all patients undergoing therapy.



These are the clinical findings observed:

- improvement of the general conditions;
 - normalization of body temperature;
 - reduction of C reactive protein (PCR);
 - improvement of saturation and reduction of oxygen support;
- normalization of renal function (creatinine);
- increase in leukocytes.

Based on these findings, the International President of SIOOT argued that it is time to change the pace of the virus control strategy.

"Experience is telling us," he stressed, "that the Covid-19 virus should be attacked immediately when it is weaker, so people who test positive should be treated immediately. Starting with those who are at home in quarantine".

"We have understood - he added - that leaving people at home waiting for fever and other symptoms is very dangerous, because once the virus has attacked the lungs, circulatory and renal systems, it becomes more difficult to deactivate it.

"It's time to change strategy," Franzini reiterated, "let's go and attack the Covid-19 as soon as it manifests itself. With ozone oxygen we can defeat it quickly and effectively".

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Coronavirus, a hope from the ozone cure Ongoing experimentation at the Santa Maria della Misericordia Hospital in Udine

05 April 2020 (Spain - ILFRIULI.IT)

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**The Medical College of the University of Tianjin confirms that
Oxygen Ozone Therapy is effective against Covid-19**

April 6, 2020 (Italy – Orbisphera.org – China-Tianjin)

In an official letter of the Medical College of the University of Tianjin (China), sent to Dr. Antonio Galoforo, member of the board of SIOOT (Scientific Society of Ozone Oxygen Therapy), Prof. Dong Ming, Dean of the Medical College, wrote: "Inspired by your suggestions and experience in infectious diseases, we have made some progress in the treatment of Covid-19 positive patients by treating them with Oxygen Ozone Therapy".

In this regard, Prof. Dong Ming recalls that while the Covid-19 epidemic was raging in China, a videoconference with Dr. Galoforo and 272 other Chinese doctors was organized in mid-February.

"We sincerely appreciate - the letter continues - that you and your colleague have shared with us your experience in ozone therapy. Prof. Ming explained that the Medical College of the University, in collaboration with a group of experts from Haihe Hospital, discussed ozonized autohemotherapy, and in the end this therapy, as indicated by the shared protocol, was approved by the Ethics Committee of the Hospital itself. The therapy was then also presented to the Chinese Register of Clinical Trials.

Regarding the results, Prof. Ming specified that "four Covid-19 positive patients, one critical case, one severe case and two normal cases, were treated with Oxygen Ozone Therapy".

After the ozone oxygen treatment, symptoms of dyspnea, severe coughing, chest distress and asthenia were alleviated until they disappeared.

In particular, the patient in critical condition was recovered without using invasive mechanical ventilation or intensive care treatment.

All four patients recovered and were discharged without any problems after verifying the viral clearance of Covid-19.

Based on these results, the clinical effects of ozonized autohemotherapy performed at Haihe Hospital in Tianjin proved to be rapid and effective. Especially for the critically ill patient, whose lung tissue damage has been alleviated and overcome.

Considering that the Covid-19 pandemic is affecting Europe, and especially Italy, Prof. Ming expressed his concern and condolences for the victims.

The Dean of the Medical College also offered his willingness to collaborate with Italian institutions and experts in order to share information and assistance regarding the practice of Oxygen Ozone Therapy.

The letter concludes with a quote from Seneca - "The land is one country. We are waves of the same sea, leaves of the same tree, flowers of the same garden..." - and with thanks and best wishes for good health and family happiness.

Interviewed by "Orbisphera", Dr. Galoforo said that, already at the end of January, when the virus was still confined to the Wuhan area, he had proposed to the Chinese scientific community to use Ozone Oxygen Therapy to counter the spread of Covid-19.

In mid-February, supported by consolidated institutional relations already active for months with China, Dr. Galoforo welcomed a delegation of Chinese doctors to Italy and held a "conference call" with Prof. Chen Qun, Secretary General of "China Life Science Security" in Beijing.

The "conference call" was attended by 272 executives of the Ministry of Health, heads of some hospitals in Beijing and leaders of Chinese research centers.

Dr. Galoforo presented the scientific evidence of the protocol on the use of ozone, raising the participants' interest in this type of approach to combat the Coronavirus.

On 21 February, when the Covid-19 virus was also beginning to spread in Italy, Dr. Antonio Galoforo and his team at Fatebenefratelli in Brescia published on the SIOOT website a study highlighting the important results obtained by ozone therapy in the treatment of pneumonia as well as in the fight against other viruses similar to Covid-19, such as Sars and Ebola. All supported by an extensive scientific bibliography.

In the following weeks Dr. Galoforo was further active at international level collecting important positive feedback through Dr. Li Peter of Guaghzuo, who reported the significant results of some Chinese hospitals that were successfully using ozone therapy (Tianji Haihe Hospital and The Second Hospital of Tianjin Medical University).

Equally important indications came from California from Dr. Robert Rowen, who activated a specific department of his clinic to treat patients infected with the Covid-19 virus with Ozone Oxygen Therapy. Dr. Rowen, in the past few days, has published a study in the scientific journal "Journal of Infectious Diseases and Epidemiology" entitled "A Plausible Penny costing effective treatment for Coronavirus-Ozone Therapy".



In the light of this further international scientific evidence, Dr. Galoforo informed the competent institutions - first of all the Lombardy Region - stressing the validity of ozone therapy and in particular its low cost and absence of side effects.

"Now - concluded Galoforo - I expect ozone oxygen to be used in all hospitals treating patients suffering from Covid-19".

For any further investigation:

Potential mechanisms by which oxygen-ozone therapy (O₂-O₃) could contribute to the treatment of the covid-19 coronavirus.

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https://www.orbisphera.org/Pages/Articoli/1995/Il_Collegio_Medico_dell'Universita_di_Tianjin_conferma_che_l'Ossigeno_Ozono_Terapia_è_efficace_contro_il_Covid-19

To stop Covid-19, more and more hospitals are using Oxygen-Ozone

April 6, 2020 (Italy – Orbisphera)

In the last few days several media have talked about hospitals that are using ozone oxygen therapy to treat the sick and stop the contagion of Covid-19.

At the Policlinico di Roma, Prof. Francesco Pugliese, after receiving the favourable opinion of the Ethics Committee, announced the start of ozone therapy, with a protocol that - according to press sources - provides for the ozonization of 200 millilitres of blood which is then reinfused on 50 patients found positive for the virus.

At the Hospital of Udine, Dr. Amato De Monte, director of the anaesthesia and resuscitation department of Santa Maria della Misericordia, explained that, out of 36 Covid-19 positive patients treated with ozone therapy, 35 were discharged and one entered the intensive care unit.

In the television program "Petrolio" directed by Duilio Giammaria, aired on April 4, Dr. Francesco De Caro explained that ozone is highly effective against bacteria and viruses, so in the hospital where he works it has been used to fight antibiotic resistance, and now he suggests to use it also against Covid-19.

In this context, it is important to spread the knowledge that the Scientific Society of Oxygen Ozone Therapy (SIOOT) has drawn up a very detailed medical protocol to treat Covid-19 patients.

There are 17 Italian hospitals that are currently practicing this protocol.

A first report has already been published and distributed in English and Spanish. These are the results of 11 patients, seriously and very seriously affected by Covid-19. In just 5 days of oxygen ozone therapy, administered with the SIOOT protocol, they all improved significantly. Of the five intubates, one was extubated. Of the less serious patients, one was healed immediately and discharged. The only one who died was in very serious condition: the virus had already damaged several vital organs and it was impossible to save him.

In order to try to understand and know more about the progression of treatment, we asked some questions to Prof. Marianno Franzini, International President of SIOOT, who announced that, towards the end of the week, he will have the data of 15 hospitals that are using Ozone Oxygen Therapy to treat Covid-19 positive people.



According to Franzini, the results are very good and we could save many more people if ozone therapy was practiced on patients in intermediate conditions and not only on those in serious or very serious conditions.

"It would be necessary - he stressed - to practice oxygen ozone therapy immediately to people who are positive, in order to heal them quickly and prevent them from getting worse".

In order to radically stop the spread of the virus, Prof. Franzini proposed to change strategy and to go home to treat asymptomatic people, people who have the first symptoms and positive with a mild course.

For the International President of SIOOT, 4/6 ozone oxygen treatments over the course of 8/15 days are sufficient to cure patients treated at home.

This could radically reduce the number of hospitalizations and treatments in intensive care.

"In this way, together with ozone sanitization of the environment - concluded Franzini - we could defeat the pandemic in a short time".

For any in-depth study and to have the SIOOT protocol for the treatment with ozone oxygen of Covid-19:

Tel. and Fax: 035 19910105

Email: info@ossigenoozono.it

Website:

<http://www.ossigenoozono.it>

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Covid-19 patients improved with Oxygen-Ozone therapy

April 3, 2020 (Italy- Orbisphera.org)

We have the first data on the use of medical ozone therapy in patients affected by the Covid-19 virus.

Since the first report from one of the 17 hospitals where ozone therapy is performed according to the SIOOT (Italian Scientific Society of Oxygen-Ozone Therapy) protocol, 10 patients in severe or very severe conditions had a rapid and decisive improvement.

After only 5 treatment sessions, of the 5 intubated ones, one has improved to the point of being extubated and the others are improving significantly.

The patient in less severe conditions, after a few sessions of Oxygen Ozone Therapy, recovered and returned home.

The only deceased in the group was very serious and although ozone therapy was practiced as an extreme attempt, nothing could be done to save her.

In the technical report, the doctors described that after 5 treatments with Ozone Therapy according to the SIOOT protocol, the patients had found a clear improvement.

After practicing the oxygen and ozone therapy, the doctors found the following evidence

- an overall improvement in their clinical situation;
- a normalization of their body temperature;
- a reduction in the rate of C-reactive protein (CRP)
- a normalization of the heart rate;
- an improvement in oxygen saturation and reduced oxygen support;
- normalization of kidney function (creatinine).

To better understand the meaning of these data, we interviewed Professor Marianno Franzini, President of SIOOT International and promoter of the treatment protocol together with Prof. Luigi Valdenassi and SIOOT.

According to Franzini, the most relevant data is that the improvements, besides being significant, occurred in only 5 days of therapy.

For a more careful evaluation, Franzini requested the opinion of four colleagues directly involved in the care of patients with Covid-19, and all confirmed that these are very significant results because none of



the people affected by Covid-19 have had such a rapid and stable improvement as that experienced in patients treated with oxygen and ozone.

"A doctor who is treating patients with Covid-19 - said Franzini - revealed to me that no treatment protocol is giving the same results as ozone therapy".

When asked about the reasons why oxygen and ozone therapy was so effective, Franzini explained that, from autopsies of patients who died from Covid-19, it appeared that the virus immediately attacked the microcirculation causing a disseminated thrombosis. And that is precisely where, along with the antiviral effect, the oxygen-ozone is even more decisive precisely because it reactivates and strengthens the microcirculation.

Dr. Franzini emphasised: "Given the goodness of these initial data, it would be very important to ensure that oxygen-ozone therapy is carried out at the onset of symptoms, when the isopositive for infection, so that patients can be treated before their clinical situation worsens, thus avoiding hospitalisation".

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https://www.orbisphera.org/Pages/Articoli/1975/Pacientes_de_Covid-19_mejorados_con_Oxígeno-Ozonoterapia



Texas Right To Know Calls on US to Consider COVID-19 Ozone Therapy After It Shows Promise in Italy

April 2, 2020 - Texas Right To Know (TRTK), Brady, Texas:

With a coalition of state, national and international physicians and researchers, Sheila Hemphill, CEO of Texas Right to Know, is calling to action US state and federal agencies to consider the use of medical ozone as a safe adjuvant therapy option for the treatment of COVID-19.

“While physicians in other countries are using medical ozone for treatment of COVID-19, few physicians in the United States are using this safe, inexpensive, adjuvant therapy,” states Hemphill. On April 1, Hemphill conducted an on-line meeting featuring Italian physician, Marianno Franzini, President of the Scientific Society of Oxygen-Ozone Therapy (SIOOT) International, Robert Rowen, MD, RowenSu Clinic, Santa Rosa, California, several US physicians and researchers, and a university participant from Greece.

Professor Marianno Franzini stated, “On 24 March 2020, I received a letter from the ISS - Istituto Superiore di Sanità (Higher Institute of Health), stating, ‘since the proposal seems to be shared and supported by clinical centers experienced in the treatment of viral pneumonia, it was considered appropriate that the treatment could be carried out under the responsibility of the physician after obtaining the patient’s consent.’” He continued, “Medical ozone helps improve oxygenation and proved effective for SARS in 2002. Currently there are 17 hospitals using SIOOT oxygen ozone therapy to treat people affected by COVID-19. From preliminary reports from autopsies of those who died from COVID-19, it appears that the virus immediately attacks the microcirculation system causing widespread thrombosis. Several hospitals are using Major AutoHemo Therapy (MAHT), a protocol that extracts the patient’s blood, bubbles oxygen ozone through the blood in a saline or heparin bag, and is infused back into the patient. Patients showed clinical improvement in 1-2 days of receiving one infusion, one time a day. The earlier you treat the person the better the results you have.”

On the April 1, 2020, the SIOOT reports, “After practicing Oxygen Ozone Therapy, the doctors found the following evidence: a general improvement in clinical conditions, normalization of body temperature, a reduction in C Reactive Protein (PRC), normalization of heart rate, an improvement in saturation and reduction in oxygen support, normalization of renal function (creatinine).”



Professor Luigi Valdenassi, toxicologist, University of Pavia, explains, “I want to specify almost all these patients experience improvement in hypoxemia in a short period that stabilizes their breathing and the creatinine becomes normalized, which is important for function of the kidneys. Oxygen Ozone therapy could contribute to the prevention of intubation and acute renal failure, both complications of COVID-19, resulting in the need for ventilator support via a breathing tube and dialysis requiring Intensive care unit support.”

According to Tommy Swate, SM.hg, MD. JD, a graduate from Tulane School of Public Health and Tropical Medicine, “Based on the Italian reports, it is reasonable to believe that medical ozone may be an effective adjuvant to use in treating COVID-19. Medical ozone’s known and potential benefits when used as an adjuvant to standard COVID-19 treatment out weights the very small, if any potential risk of its use.”

“Ozone has been used to treat other viral infections with minimal complications and is being reported to be effective for COVID-19 treatment,” said Dr. Robert Rowen. On March 6, Dr. Rowen’s article, “A Plausible ‘Penny’ Costing Effective Treatment for Corona Virus – Ozone Therapy”, was published in the Journal of Infectious Disease and Epidemiology.

Peter Jovanovic, Executive Director, [Ozone Without Borders Society for the Advancement of Bio-Oxidative Therapy British Columbia Member Society](#) reports, “We now know of one Sierra Leone physician, COVID positive whose symptoms abated about 4 hours after ozone treatment and one American COVID positive patient who was essentially normal one day after a single direct intravenous gas treatment. A Spanish physician with high exposure risk and all the symptoms of COVID cleared his symptoms within a day or two of treatment.”

Dr. Lamberto Re, MD Chairman of the Scientific Committee Board of World Federation of Oxygen-Oxygen Therapy since 2015 emailed to Hemphill, “Following the approval of some Italian hospitals (<https://www.wfoot.org/wp-content/uploads/2020/03/App-5966.pdf.pdf>), use of medical ozone certainly should be considered as an adjuvant therapy for the treatment of COVID-19.”

About:

Texas Right To Know (TRTK) is a coalition of various advocacy groups with services designed to inform and connect people in a community regarding local and state legislative issues.

Publication and videos by Dr. Marianno Franzini, Dr. Robert Rowen, and other physicians regarding safety and efficacy of ozone treatment are located at www.texasrighttoknow.com.

Media Contact: Sheila Hemphill, info@texasrighttoknow.com



How Oxygen Ozone Therapy Counteracts Covid-19 Virus

Interviewed by Medical Excellence Tv, channel 86 of Digital Terrestrial Television, professors Luigi Valdenassi, president of the Scientific Society of Ozone Oxygen Ozone Therapy (SIOOT), Giovanni Ricevuti of the Department of Pharmaceutical Sciences of Pavia and Marianno Franzini, president of SIOOT International, explain in detail the reasons that allow ozone oxygen to fight the Covid-19 virus.

To view the videos, click on the links:

Oxygen Ozone Therapy, because it can work in the treatment of Covid-19

CONNECTION WITH PROFESSORS LUIGI VALDENASSI AND GIOVANNI RICEVUTI

<https://www.medicaexcellencetv.it/ossigeno-ozono-terapia-perche-puo-funzionare-nel-trattamento-del-covid-19/>

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LIAISON WITH PROFESSORS MARIANNO FRANZINI AND GIOVANNI RECEIVED

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