

Data from LA on Observational Study

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Hyperbaric oxygen therapy used in preventing mechanical ventilation in COVID-19 patients: a retrospective case series.

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Abstract

OBJECTIVE:

A pandemic afflicts the entire world. The highly contagious SARS-CoV-2 virus originated in Wuhan, China in late 2019 and rapidly spread across the entire globe. According to the World Health Organization (WHO), the novel Coronavirus (COVID-19) has infected more than two million people worldwide, causing over 160,000 deaths. [Deaths in US as of 5/18/2020 are 88,556, reported cases 1,480,151].

Patients with COVID-19 disease present with a wide array of symptoms, ranging from mild flu-like complaints to life threatening pulmonary and cardiac complications. Older people and patients with underlying disease have an increased risk of developing severe acute respiratory syndrome (SARS) requiring mechanical ventilation. Once intubated, mortality increases exponentially. A number of pharmacologic regimens, including hydroxychloroquine-azithromycin, antiviral therapy (eg, remdesivir), and anti-IL-6 agents (e.g., tocilizumab), have been highlighted by investigators over the course of the pandemic, based on the therapy's potential to interrupt the viral life-cycle of SARS-CoV-2 or preventing cytokine storm. At present, there have been no conclusive series of reproducible randomised clinical trials demonstrating the efficacy of any one drug or therapy for COVID-19.

CASES:

COVID-19 positive patients (n=5) at a single institution received hyperbaric oxygen therapy (HBOT) between 13 and 20 April 2020. All the patients had tachypnoea and low oxygen saturation despite receiving high FiO₂. Ventilation recommended. HBOT was used to prevent the need for mechanical ventilation. A standard dive profile of 2.0ATA for 90 minutes was employed. Patients received between **one** and **six** treatments in one of two dedicated monoplace hyperbaric chambers.

RESULTS:

All the patients recovered without the need for mechanical ventilation. Following HBOT, oxygen saturation increased, tachypnoea resolved and inflammatory markers fell. At the time of writing, 16 days after hospital admission three of the five patients have been discharged and two remain in stable condition.

CONCLUSION:

This small sample of patients exhibited dramatic improvement with HBOT. Most importantly, HBOT potentially prevented the need for mechanical ventilation. Larger studies are likely to define the role of HBOT in the treatment of this novel disease.