Terapia de Fotobiomodulação em Pacientes Portadores de COVID-19: Análise dos Efeitos sobre os Mediadores Inflamatórios

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ABSTRACT

This is a clinical, prospective, randomized study with the aim of analyzing the basic inflammatory mediators, TNF-α, interleukin 1β IL6 and IL10, C-Reactive Protein, in patients with COVID-19, during hospitalization until their discharge, in the ventilatory support unit of the Lydia Storópoli hospital.

The present study aims at the application of LED light at a length of 660nm, for the treatment of patients infected with COVID-19, as an adjunctive alternative to the conventional treatment prescribed by the clinical staff. A total of 25 patients will undergo TFBM through a transvascular application over the sublingual vessels once a day in the afternoon during the hospital stay. LED (Linealux Laser Therapy™) will be used, through an applicator (plate of teflon) with 3 LED outputs or 3 light application points (one at the top and 2 at the bottom. Continuous Wave(CW) LED Diode will be applied, in red, λ ± 660 nm, by sublingual transvascular route, in 3 points on the sublingual vessels, in the following dosimetry: Power = 5 mW/point, total of 15 mW; Power Density = 5 mW/(areax3.4)cm2. Total application time = 7 minutes (420 seconds); Area effective lighting of each light source (without overlapping) = 1 cm2; Energy Density (fluency) = 2.1 J/cm2. It will be administered 1x/day until hospital discharge. Evaluation of the evolution of respiratory compromise will be carried out, through diagnostic imaging exam: Chest X-ray, computer tomography Chest scan, O2 saturation monitoring through digital oximetry. Prepaedeutic exams will be performed, with blood and saliva collection for comparisons of the basic inflammatory markers described above:

Also, the impact on length of stay, morbidity and mortality will be assessed. With the use of this type of treatment, it is expected that the length of stay and possible aggravations due to COVID-19 will be minimized.

Samples will be collected by trained professionals, reducing the likelihood of iatrogenic events.

The data will be analyzed by the STATISTICALPACKAGE for Social Sciences (SPSS) software version 26.0, setting the level of rejection of the null hypothesis at 5%. neoplasms, patients with liver and kidney failure; Decompensated heart disease, hematologic diseases (hemophilia and Von Willembradt Disease, Individuals with collagenosis and autoimmune diseases, psychiatric patients and patients who refused to participate in the clinical trial. The study will evaluate inflammatory markers, imaging diagnosis and digital oximetry during hospitalization , follow up for up to 30 days after discharge, with return to the doctor's office or follow up by telephone.

Keyword:
Photobiomodulation Therapy, Immunological Markers, Viral Coronavirus Infection

Biography:

Carlos Alberto Ocon, Brazilian, university professor: Universidade Nove de Julho, graduated in Nursing, Postgraduate in higher education, master's degree in biophotonics and ICU, currently studying for a doctorate in medicine, by the program at Universidade Nove de Julho, resident of São Paulo Capital, Brazil, 1 international publication, Pub-Med, written chapter of a book,