FOTONA PIANO MODE for Immune prophylaxis and treatment of respiratory failure in Covid -19

What follows is a presumptive way to utilize the PIANO MODE to save lives in the Covid pandemic.

There is evidence that photobiomodulation will boost your immune system. The PIANO mode falls in the range of a “distinct class of laser, a low-power, continuous wave (CW) near-infrared (NIR) invisible laser between 1061–1301 nm” that “significantly enhances the immune response (Kimizuka, 2018).” this was used in vaccine augmentation and dermal effects. The 1064 nm of the PIANO mode can go deep enough to achieve stem cell (SC) stimulation(Khacho,2016; Abrahamse,2017) as well as dendritic and mast cells. Heat plays a minimal role in the effect of the CW NIR laser. The adjuvant effect of the CW NIR laser in the context of intradermal vaccination functionally depends on MCs in skin(Kimizuka, 2018).

I would propose a treatment from the prophylaxis of Covid-19 by using the PIANO mode R33 6sec pulse 300J 9mm for 6min over abd fat and 2 min over the sternum, or about 10,000 J, or
R34 6sec 150J 20mm for 8 min, or
L-Runner 1.2 W/cm^2 for about 4 min over the abdomen and 2 min over the sternum for 25,000 J.
In all of the above the goal is not temperature, but amount of energy to the tissue. The abdomen with the R33,34 could be a smaller area, as the randomness of the movement will be our friend.

Once infected there are two types of respiratory failure. One that seems to progress very rapidly with low viral titters, and another that has high viral titters and lingers for weeks on a ventilator. Tocilizumab (Actemra an interleukin-6 receptor antagonist) may prevent the Cytokine Release Syndrome, which may be causing the resp failure @ 8 mg/kg IV once; maybe administered alone or in combination with corticosteroids. If there is an overwhelming cytokine storm in the lungs, which is the 2nd group, it should help, but due to viral load may still have the virus to contend with. The first group maybe are the ones that have a rapid response to tocilizumab because it is actually a hypoventilation from encephalitis or neural inflammatory blockade of the synaptic connected route to the medullary cardiorespiratory center.(Wiley) I think the Fotona laser could treat these people to modulate the IL-6 inflammation and cytokine storm. This would only be optical penetration of the energy and resets the cytokine regulation. A lot of patients in the hot spots are being sent home and sometimes crash before they make it back, or deteriorate rapidly after being on oxygen or vent a few days. If they could be biomodulated prior it could stop this outcome. I think this is mostly a post inflammatory problem and not ongoing viral pathology.

Lasers in the 660nm range have been used for ARDS intrabronchial, but the laser from Fotona 1064 has a very long pulse duration and can penetrate 3 cm into the lungs across the skin and may be able to modulate the inflammation externally over the chest wall and within hours an effect on ventilator setting should be observed. This is optical penetration with minimal thermal effect except to the skin, but no risk for burns. The treatments would be brief and could be done 110 V (Time Walker). This type of laser is non contact and high power with a long pulse duration.

I read about Cameron Kyle-Sidell MedScape, and came across an article in Wiley about possible neuroinvasion of SARS-CoV-2- and the induced respiratory failure. That is what prompted my

thoughts. The high numbers in NYC seem that a quick non-invasive treatment that could keep patients off ventilators would be great. It may not work because the energy may have to be adjusted upwards. With photobiomodulation too much energy can autoregulate its effect and shut it off, so it would need to start low and go higher.

I leave some info about photobiomodulation (PBM) and ARDS though Fotona Nd:YAG 1064 not the same thing and typically needs lower energies for PBM.Mechanisms and applications of the anti-inflammatory effects of photobiomodulation

Low Level Laser Therapy Reduces the Development of Lung Inflammation Induced by Formaldehyde Exposure

For the go home respiratory failure, which is a happy hypoxic patient without tachycardia or apprehension, they could be treated like a NightLase treatment but with Nd:YAG not the Erbium. R33 oral aim towards medulla 150J 6sec, 9mm J for 2000 to 3000 pulses or 5400 J -8000 J. Use the temp not to go above 42 deg, and use a circular pattern in an arching pattern to focus on the medulla. If done while on EEG then the changes seen could indicate sufficient energy. The chest could be atreated in an ICU setting to stop the inflammation. The beam could be directed intercostally to modulate the inflammation I the lungs, and sternal irradiation can be done to recruit Stem Cells for the healing long term as well. Sternal irradiation at higher energies maybe helpful in post Covid cardiomyopathy and myocarditis.