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### **Review Article**



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### What is the Role of Endothelium and Activated Cofactors in the Physiopathogenesis of Sars COV1-2 Disease: Hypothetical Considerations

#### Ferracani E

Cardiovascular Surgen, Instituto Privado de Ultrasonido Vascular LASER Endovascular, Argentina

#### SUMMARY

The hypothesis presented is analysis based under a bibliographic research and the experience of the author as a vascular surgeon, expert in LASER Electromagnetic Energy and Radiofrequency applied to the vascular endothelium. It examines whether there would be "cofactors" outside of only one etiological agent (Covid-19) that would promote the development of the disease; what role the endothelium and its "hyperactive" response observed; if physical factors such as electromagnetic emission (EME) of millimeter microwaves injure cellular homeostasis and alter the immune response systemically.

This virus disease is reconsidered in this work as a "severe imphlamatory response syndrome" (SIRS) disease and not just an exclusively lung condition.

Therefore, we present other factors that could be involved that increases disease mortality by synergistic cofactors and erroneous therapeutic decisions instituted globally.

#### \*Corresponding author

Ferracani E Md. Cardiovascular Surgeon, Instituto Privado de Ultrasonido Vascular LASER Endovascular. Borges 2226. Buenos Aires City Argentina. E-mail: eferracani@gmail.com

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#### Background

The development of a disease requires three factors: susceptible host, etiological agent and enabling environment. We know that the disease affects humans with previous organic alterations, HTA, immunosuppression, chronic obstructive pulmonary disease, cardiovascular pathology and others such as obesity, diabetes etc.

Under Biological basis, a virus is not a living being. To be so, it must have a complex organizational material involving molecular communication systems that relate it internally and to the environment in an exchange of matter and energy in an orderly manner.

It must perform the basic functions of life: nutrition, relationship and reproduction, present two nucleic acids DNA and RNA, so that living beings work on their own without losing their structural level until their death [1].

Viruses, along with other viral agents (viroids and satellite viruses), have been described as "gene vectors" since in addition to replicating in cellular guests they also transport genes from one organism to another by transduction of genetic material, being transmitters of genetic information at the horizontal cellular level.

By definition, Koch's postulates requires, to consider a living being as a pathogen, must comply with four postulates: **First:** The pathogen must be present in sick animals and absent in healthy animals.

**Second:** The agent must be cultivated in a pure axenic culture, isolated from the body of the animal.

**Third:** The isolated agent in an axenic culture must cause the disease in a susceptible animal when inoculated.

**Fourth:** The agent must be "isolated from injury" produced in experimental animals. It will be exactly same as the originally isolated one.

#### What we know about the Covid 19?

We know about SARS-Cov 1-2 that is a covered  $\beta$ -coronavirus, with a genetic sequence very similar to SARS-CoV-1 (80%) and bat coronavirus RaTG13 (96.2%) [2].

The etiological agent detected is a variant of coronavirus Covid 19 beta type, named for its form under electronic microphotography by the spikes it presented in the form of a crown, being its size from 0.12 to 2 microns. The virus is coated with peak (S) or spicular glycoprotein (similar to human synticine), a wrap (W) and a membrane protein (M).

The sequenced viral genome of the disease's etiological agent, Wuhan-Hu-1/2019, was sequenced on January 10, 2020 and inscribed as MN908947 in the GenBank and EPI-ISL-402119

sequence base in the GISAID sequence base. According to the literature consulted in China and other countries, the virus was obtained "only" from nasopharyngeal mucus samples and lung tissues. No mention and no information about obtaining the virus in culture in live chicken embryo cells and other cell cultures. Therefore, it should be clarified that the virus was **"sequenced" but not "purified"** in cell cultures. However and apparently, cell cultures lines were obtained in China, being the basis of vaccines developed by Sinovac and Sinopharm, to "inactivated viruses," which opens up difficult-to-answer questions.

Quantitative reverse transcription polymerase chain reaction (PCR) technology can detect SARS-CoV-2RN for two weeks after the onset of symptoms [3].

Development in cell cultures up to apoptosis, cell death and analysis of its infectious curve is the only scientifically valid method for all types of viral identification detection of viral RNA by PCR does not necessarily amount to infectivity and viral culture from positive samples from the upper respiratory tract of PCR rarely test positive beyond nine days of disease.

We must add that the PCR, while highly sensitive, is questioned for its limited specificity. Only a small fraction of the 30,000 nucleotides of composition viral genome is detected. It and can yield more than 50% false positives.

This viral disease is highly transmissible among humans, but it is surprising that its fatality rate is not significantly higher than the influenza virus or dengue. This point is a source of controversy by "independent medicine" and we must consider ourselves as a hypothetical basis whether patients die from Coronavirus with positive PCR or with positive PCR Coronavirus, being the cause of death from co factors such as bacterial infection and Severe Inflammatory Response Syndrome (SIRS).

The true mortality rate is also difficult to determine because it depends on its variability according to population age, the type of country analyzed and development degree. The most worrying dilemma is whether the true cause of patients death is not known if are by COVID or the cause of death is by another cofactor; physical or biological; added with positive PCR.

As of January 2021, according to publications in mortality databases collected by Wikipedia Worldwide, the number of contagions is 86,752,314 globally and its mortality is 1,875,320, which yields a mortality rate of 2.1%, different country-by-country data compiled into a single database. According to statements by Angel Valdepenas Md. of Spain, H1N1 infection for the period 2018-19 was 800,000 contagions with a mortality of 15,000 equal to 1.87 % Would the cause of death have any "therapeutic bias" by the directives imposed by Wordl Health Organization (WHO)? This is one of our questions and one of the hypothesis of this work.

#### **Role of the Endothelium**

The endothelium is an endocrine secreting organ whose weight is 2 kilograms and covers an area of 1500 m2.

Dr Howard Florey, Nobel Prize in Medicine, called it for his endocrine secreting activity, not just a "nucleated cellophane lamina", being his functions: regulate coagulation, thrombosis and the fibrinolytic system, tissue plasminogen [t-PA] and its inhibitor [PAI-I], modulate the activity of mid-layer muscle cells (vascular tone/proliferation) and control the transit of macromolecules and inflammatory cells to the wall. When the express/secret endothelium is activated cytosins (such as interleucine-1 [IL-1]), growth factors (PDGF, bFGF), chemoatractor factors (protein-1 chemotactic for monocytes [MCP-1]) and surface proteins that act as adhesion molecules (CAM) of circulating leukocytes [4, 5].

The endothelium in Cov-19 disease is the target organ triggering a **systemic endothelitis** and hypothetically could be affected by "**cofactors**" that we will define in the course of this work. We will now give answers to the gateway of the etiological agent at the cellular level.

The key that opens the cell is the S "spiculum". It penetrates the endothelial cell through the renin-angiotensin-aldosterone system receptor (RAAS) and its ACE 2 receptor, being present mainly at the testicular, ovarian and renal level [6].

The virus joins ACE 2, as the host's target cell receptor, in synergy with host transmembrane 2-protease (cell surface protein), which is mainly expressed in airway epithelial cells and vascular endothelial cells. This leads to membrane fusion and releases the viral genome into the host cytoplasm.

As we mentioned the endothelium is present in the vascular irrigation of all organs, as it is the cell layer that coats the arteriovenous vascular system and is its "white" organ, causing a "multiparenchymatous systemic endothelitis"

#### SARS-CoV disease Physiopathogenic development

The hypothesis presented in this work is contrary to considering Covid-19 infection only a lung disease, as initially defined, baptized in Wuhan "Atypical Pneumonia by a New Virus".

The gateway is initially orolaryngeal but we have seen, with the knowledge of the disease, that it is not only the lung affected. All the patient endothelium is under a systemic danger.

Described as a pure bilateral lung infection at the mantle level (not lobular center) generating a blockade of gaseous exchange it was being the first conceptual error for the poor choice of therapeutics instructed by Wordl Health Organization (WHO) and then applied worldwide [7].

The cause of the blockage of the O2, CO2 exchange is inflammation of the alveolocapilar membrane, due to the body's "demodulated inflammatory response", coupled with immunosuppression factors by physical factors that would affect immunity and cortisol released by the overall informational stress induced by the WHO name as a pandemic.

In the course of the disease and further research, other nonpulmonary symptoms were added, incorporating them as pathognomonic signs of SARS Cov 1-2: alterations of cranial pairs (olfactory), diarrhea, strokes, myocardial infarction, arterial vascular ischemia and deep vein thrombosis and pulmonary thromboembolism [8-11].

Today we can say that it has a two-stage pattern resulting from the combination of an early viral aggression phase and a second demodulated inflammatory phase generated by the organism itself.

A hyperactive immune system, that attacks particularly the lungs was described at the beginning, resulting in broken alveoli, causing insufficient oxygen to be absorbed into the blood with pluriparenchymatous lesions.

Moreover, SARS-CoV-2, the virus that causes the disease is a virus that is not recognized by our immune system.

Might be the Trojan Horse that hides another harmful co-agent? The SARS pandemic, as well as other viruses (Dengue) cause similar alteration of the clotting mechanisms that we will try to explain in our hypothesis.

Laboratory tests showed alteration in the number of platelets (decrease by consumption) and their response, increased dimer D and fibrin deposits, explaining a pro-coagulant effect. Hemorrhagic lesions from, similar to those of Dengue at the skin and lung level, have enormous similarity. The description of inflammatory hemorrhagic skin lesions, called "Cov-19 rash," have been incorporated as symptoms of SARS Cov 1-2 as another sing disease.

The combination of viruses plus another etiopatogenic factor such as bacterial over infection of the patient's own flora or by intrahospital infection could be another "enlarged interpretation", being the initial combination of systemic disease and not the description of only one lung disease.

The endothelitis releases at the vascular level necrotizing factors, interleukins and cytokines causing edema of the alveolicapilar membrane by exudation and alveolar flood leading to mechanical respiratory assistance by extreme hypoxia in severe cases.

The cellular inflammatory defense mechanism is common to any inflammatory phenomenon, involving activation of neutrophils, macrophages (ineffective in response), reduction of T cells and platelet activation, generators of the associated phenomenon described as micro and macrovascular Intravascular Coagulation Disease (ICD).

Laboratory demonstrates lymphopenia, less number of platelets by consumption, alteration of acute phase leukocyte count, elevated C-reactive protein, increase of Dimer D > 1ug/ml and thrombin, Increased LDH, increased blood ferritin, elevated troponin, elevation of IL-6 and ACE2, IFN- $\alpha$ , IFN- $\gamma$ , TNF- $\alpha$  and cytokines [12].

The visible, "macro expression" of this phenomenon is bilateral lung lesions of the mantle, from diffuse alveolar damage giving the typical image in frosted glass described on the lung x-ray and in CT scan. Histopathology of lung tissues of patients who died of Covid-19 have confirmed the inflammatory nature of the lesion, with characteristics of bilateral diffuse alveolar damage, formation of hyaline membranes, interstitial mononuclear inflammatory infiltrates and flaking consistent with acute respiratory distress syndrome (SARS)

Histopathological studies of cadaveric lung of Cov1-2 SARS victims showed as the main injury "vascular endothelitis", being under electron microscopy viral samples in necropsies performed in Italy and the USA with diffuse alveolar damage, arterial and venous thrombosis, micro and macrovascular, i.e. disseminated thrombotic intravascular coagulation angiopathy [13-16].

As we said, the viral S spike through the ACE2 cell receptor, triggering an endothelial cell aggression and subsequent inflammation by "cytokine storm" and the formation of a prothrombotic environment, produces the entry of SARS- Cove 1-2 [17, 19].

All of these factors constitute the "Storm Symphony" of Inflammatory Severe Response Syndrome and Disseminated Intravascular Coagulation and not just a mere lung infection (by macroscopic description) to refer to its initial typing.

Today is known that decreasing the endothelial response with endothelial and anti-inflammatory protectors, coupled with anticoagulation with HBPM, are the key to combating disease progression and aggravation decreasing the inflammatory response of the vascular endothelium and systemic intravascular coagulation [19].

Some patients, by "primary" or secondary bacterial participation by hospital over-infection, develop septic shock and multiorgan dysfunction in response to this multisystem disease.

The cardiovascular system release troponin and natriuretic peptides as markers of lesion. In the lung, there is intra-alveolar focal hemorrhage, platelet-fibrin thrombus in small arterial vessels with healthy arteries and the skin is no stranger to CID causing petechial thrombocytopenia lesions [20-23].

#### Role of EMF Electromagnetic Emission Capos and nonionizing radiation on the human endothelium

The electromagnetic spectrum ranges from shorter wavelength (microwave) radiation, gamma rays, X-rays including ultraviolet radiation, visible light and infrared radiation to higher wavelength electromagnetic waves such as radiofrequency waves and radial emission waves.

In medicine, the use of radiofrequency EME (RF) under the diathermia technique by the heat produced is away to produce coagulation of tissues and blood vessels. In endovascular venous surgery in the form of emission LASER and Radiofrequency for occlusion of insufficient veins by action of emitted heat, that causes endothelial damage and the other parietal layers.

This depends on the joules or joules issued may be; occlusive or vascular remodeling; depending on the power in watts and the LEED used or Longitudinal Energy Emitted Density [24].

What causes the emission of heat is the injury of the endothelium and its destruction, as well as the injury of the middle layer and adventitious

These treatments are mediated by heat emission, local coagulation, activation of the inflammatory cascade, initial platelet activation, endothelium damage and occlusion at last.

#### **Electromagnetic Microwaves Emission**

Nikola Tesla was the discoverer of the properties of Electromagnetic Emission (EME) being the creator of Alternate Frequency, currently the form of electricity supply in the EEUU. The EME is nowadays the main source for transmission of microwaves, as Marconi did for radio broadcasting the last century.Today 5G emission could be harmfullto biological tissues.

It is necessary define some physical concepts of this transmission type, starting with Density, thus calling itself the connection of many mobile devices. This increase in Density requires more speed, lower latency, and higher data transmission capacity. A 4G computer has 1000 MB/sec while a 5G has 20 Gigabytes, i.e. a speed increase of almost 2000%. Cell phone transmission uses millimeter waves from an emitting base to repeating antennas and from there to cells (mobile phones) that in 4G technology are antennas 20 meters high.

5G transmittal uses two-meter-high antennas with saturation level in number per km2 of antennas (Density) far superior to 4G technology, from 3500/km2-4G to 1 million/km2 -5G.

5G technology suffers a change by millimeter microwaves. The 5G emission requires a triangulation mechanism because obstacles (humans, trees and other living beings) that stand in their way can absorb them,

#### **Beam Forming and Full Duplex**

Beam Forming is the triangulation technology implemented to "direct emission beams" with satellite repeaters networked as source emitting receivers.

Full Duplex is the way that improves real-time bi-directionality using multiple inputs and outputs (MIMO) reducing "latency". In 5G, the transfer capacity goes from 1000MB/sec to 20GB/sec.

It was Heinrich Rudolf Hertz, who introduced the concept of hertz and how electromagnetic waves spread in space. This measure comes from the world of waves and not from computing being defined a Hertz as a cycle per second, GHz is short for a measure used in electronics called Gigahertz or Giga Hertz, it is multiple of hertz equal to 109 million Hertz which is what uses 5G technology.

Cellular telephony is based on EME and is a form of microwave radiation in the range of 450-3800 MHZ in 4G technology, but amounts to 24 -80 GHZ in 5G. Now will be analyze the effects they have on biological tissues such as human tissue. Some of that energy is absorbed by living tissues. Milimetric Microwaves are a form of energy absorbed by dielectric tissues, such as biological tissues, being the Absorption Index Specifies IAE between 1.6 Watts / 2 Watts per kg.

Dielectric heating is a heating mechanism through electromagnetic radiation of a wavelength of between 0.001 and 1 m (corresponding to frequencies between 300 and 0.3 GHz), i.e. radio and microwave waves.

Watt (symbol: W) is the unit derived from the International System of Units (IS) for power being equal to 1 joules per second (1 J/s) and is used to quantify the rate at which energy is transferred, with the definition of joules being the unit used to measure energy, work and "heat".

Link antennas between cells emit non-ionizing EEM radiation. The radiation emitted is measured in PIRE or Isotropic Radio Power Sent as measured in Watts/Kg.

The biophysicist Roland Glaser detected in his work, "Are thermoreceptors responsible for "non-thermal" effects of RF fields?", so-called cellular.

Thermo-receptor molecules activates a cellular messaging system and produces a increase in called Thermal Shock Protein, that causes cellular metabolic stress from absorbed heat.

The effect is altered blood-brain barrier by permeabilization, increasing the presence of albumin in cerebrospinal fluid whose normal maximum value is 23 mg per deciliter [25].

Analysis of the effects of Low Frequency EMS Fields (LF) and Radio Frequency (RF)

It is our ethical commitment to try to raise hypotheses and questions, as they are the search for such answers the basis of Scientific Research. Could EME have a greater implication for the immune system and the general condition of the human being?

We will try to explain, because it is not clear to what extent, an immune system weakened by electromagnetic fields (EMF) may be involved, to analyze whether it has gone unnoticed in medical research, focusing only on a viral agent and not on a condition or cofactor of the disease.

This hypothesis seeks to develop whether the true causes of mortality are the existence of other non-described mechanisms added to an inflammatory response such as SIRS, cytokine storm trigger, leukotriene and necrotizing factors.

Therefore, we hypothesize whether long-term exposure to lowfrequency CEM LF and RF of electromagnetic energy and nonionizing radiation emitted are not a possible co-factor of SARS COV1-2 viral disease.

The non-thermal biological effects caused by wireless emission of LF and RF have been demonstrated in scientific publications, with no international commission on Non-Ionizing Radiation Protection exposure guidelines [26-29].

Several of these effects causes serious health problems altering human health status. EME has been shown to affect the immune system. Scientific studies showed that low frequency and radiofrequency electromagnetic fields (EMF LF-RF) cause numerous effects on human tissues by weakening the immune response by inhibiting T cells [30-33].

If the FEMP alters the immune response, this would worsen a viral infection. The initial action would reduce the response to the aggressor, but this inflammatory phenomenon is twofold, first weakening the cells responsible for fighting the virus, but then a systemic demodulation and an overactive inflammatory response happens.

The COVID-19 pandemic installs the question of whether the course of viral infections is or could be enhanced by low-frequency electromagnetic fields of 5G and radiofrequency.

A bibliographic study providing the information needs, specifically on the effects of EME on our system, on blood clotting and virus replication, all for viral infections and now true for Cov19. As WHO has avoided the analysis of these factors, the COVID-19 pandemic has been aggravated by the EM fields of antennas, retransmission satellites and the use of 5G technology.

Therefore, an investigation of the consequences of the burden of EME on viral infections but on a viral infection without known defenses, an additional burden of EME and its tissue effects could worsen its progression.

#### **Rouleaux effect and thrombosis**

We will stop to explain another effect induced by EME, the Rouleaux phenomenon [34].

This is a microscopic visualization of agglutinated blood cells with an abnormal appearance of coin-stacked erythrocytes. This phenomenon is another procoagulant and thrombotic factor obstructing blood flow, causing systemic intravascular coagulation with macro thrombosis and arterial and venous microvasculars vessels, so affecting multiple parenchymas (brain, arteries and peripheral veins, livers, intestinal and myocardial) hypoxia and anaerobic acidosis due to ischemia. The Rouleaux effect is the effect in which red files are pasted (stack) in the form of a roll of coins being a reaction to action services and infections In the context of this article, it is important that the Rouleaux effect as well as is caused by the EME of wireless communication [35,36].

Stacking prevents the particular flow through the capillaries) and therefore before oxygen absorption into the lungs, oxygen transport and oxygen delivery into the system in shape. This causes the Krebs cycle to be altered by using glucose in anaerobic form by releasing lactic acid and causes acidosis associated with respiratory acid by carbonic acid by unsaturated air.

A 1978 publication has already shown that there has been a tendency for blood to clot millimeter emission waves. 5G waves are millimeter waves as described in the section on mobile telephony wave transfer [37].

Respiratory problems in Covid-19 patients have been attributed "only" to a pneumonitis, the cause of blockade of interchange of oxygen delivery and it decreases into tissues blood flow.

The main cause, microvascular thrombosis pulmonary infarctions from clotting (DIC), were not detected until autopsies were done in Italy [38, 39]. Several publications have reported that the Rouleaux effect promotes blood clotting [40, 41].

Therefore, infer that there is a link between the electromagnetic emission fields of 5G communication and the coagulation of red files.

Coagulation and correlation, micro and macro vascular thrombosis contribute to oxygen deficiency, tissue hypoxemia, acidosis, problems that are responsible for ischemia and heart attacks in patients with COVID-19.

## Virus replication, intracellular Ca<sup>2+</sup> concentration and oxidative stress

Exposure to LF EME from electrical devices and RF leads to increased intracellular concentrations of  $Ca^{2+}$  and the formation of reactive oxygen species (ROS) and oxidative stress. ROS and other free radicals, also formed by EME, damage cellular components such as proteins, lipids and DNA and cause damage to DNA chains [42-45].

Other viral infections promote effects similar to Electromagnetic Fields (EMF) exposure lead to increased intracellular ca<sup>2+</sup> concentrations and the development of oxidative stress. Oxidative stress induced by viral infections contributes to system weakening and virus replication [45, 46].

Increased  $Ca^{2+}$  concentrations are essential for virus entry and replication. In this way, viruses use host cell signal transduction mechanisms using their messenger RNA and/or transcribers, to modulate  $ca^{2+}$  cell concentrations in their favor by promoting replication [47,48].

Therefore, we could infer that field EME and "a present virus" would act synergistically in increasing intracellular concentrations of  $Ca^{2+}$  causing oxidative stress, accelerating viral replication. Several publications have linked geographical distribution of the COVID-19 pandemic to the implementation of 5G worldwide [49]. The most affected countries in the world, with the highest

number of deaths per million inhabitants, son countries with well-infrastructure for 5G wireless communication (on 29 May 2020: Belgium, Spain, United Kingdom, Italy, France, Sweden, the Netherlands and the United States).

On the contrary, the number of deaths per million inhabitants to date in many African countries, with less developed infrastructure is minimal, orders of magnitude less than in more developed countries [50].

Therefore, the spread and increase of COVID-19 worldwide was not seen the EMF roll as an immunosuppressant cofactor that enhance SARS disease

The only ethilogic factor was attributed to a "virus, sequenced by computational apps and did not purified by live cell cultures ". This is part of the hypothesis presented and requires more and extensive global research to determine whether there is a direct link between.

What we do know is what I described at the cellular level according to the research conducted.

I invite a reader to review Doyon's literature alerting him in several scientific publications on 5G emission density in Wuhan, as in countries with the largest relay antennas of 2 meters unlike 4G 30 meters [51,52].

The points described as side effects of EMS: weakened Immunologic system, Rouleaux effect and the accelerated viruses replication open questions about the correlation and synergy of millimeter microwaves and viral action.

#### Effects over cellular membrane potentials

Alterations of membrane potentials by membrane alteration alter ion channels and increase intracellular concentration of Ca<sup>2+</sup> (calcium ions) and cause alterations in membrane excitability. Its effects are at the muscle level muscle contractions and myalgia and at cardiologic level, cardiac rhythm disturbances (arrhythmias), myocardial myocarditis infarction and cardiac arrest by hypoxemia and ischemic anoxia.

#### Discussion

Was an initial medical treatment WHO guidelines biased and possible non-desired side effects?

The overall mortality rate, according to the most comprehensive study on the outbreak by the Chinese Center for Disease Control and Prevention (CCDC), is 2.3% People over the age of 80 at higher risk, with a death rate of 14.8%. Research from the Chinese Center for Disease Control and Prevention (CCDC) CCDC states that about 80.9% of new coronavirus infections are classified as mild, 13.8% as severe, and only 4.7% as critical, including respiratory and multiorgan failure, and septic shock.

The World Health Organization initial treatment guidelines ban autopsies

If the medical independent community have done autopsies, the true pathological mechanisms were faced up.

WHO recommend ban of parenteral use of corticosteroids, ibuprofen and indicating early intubation.

Why was it forbidden to perform autopsies that would demonstrate the presence of Intravascular Disseminated Coagulation?

Necropsies have been showed and put in evidence an accurate diagnosis; CID and SIRS.

#### I leave these disturbing questions to independent doctors answering these questions freed to their own freedom of thought

As I mention "ut-supra", anti-inflammatory drugs like Ibuprofen were discouraged being today one first drug of choice, as well as the corticosteroids EV and heparin.

We know that the use of corticosteroids in viral diseases is an absolute contraindication.

However prednisolone EV is used now as a first-line drug as corticoid promotes decreased inflammation at the pulmonary alveoli capillary level and cytokine storm.

How did WHO and intensivist doctors not initially use this drug to improve capillary alveoli watering?

Early intubation was indicated as a front-line weapon, but medical care intensivists knows that early and prolonged intubation promotes hospital bacterial infection from multi-party germs.

Non-intubation, except for cases of critical hypoxia, prevents colonization of hospital flora that inexorably aggravates lung alteration of the lung mantle.

It is the closeness of the lung mantle to the skin and the absorption of EME that causes these peripheral and non-center lobular lesions, as described in other viruses and bacterial conditions, is another question that I leave open for medical consideration.

2) Why is an antibiotic effective and indicated as azithromycin in a viral infection?

Azithromycin belongs to a class of medicines called macrolide antibiotics. Its action is to stop the growth of the bacteria indicated to treat "bacterial infections and mycobacteria", such as bronchitis, pneumonia, sexually transmitted diseases (STDs) and prevent infection spread by the Mycobacterium avium (MCA) complex [a type of lung infection that often affects people with human immunodeficiency virus (HIV).

Antibiotics such as azithromycin do not work to fight flues, influenza or other viral infections; our hypothesis is that the reason for their indication is to combat bacterial over infection.

3) It is also necessary to question the use of antivirals and their side effects, instituted by mandatory protocol in some countries of Europe. The side effects of treatments instituted by Protocol in hospitals in Spain and Italy are similar to those described the symptomatology of Cov19.

The drugs used were antivirals used in HIV such as lopinavir and ritonavir. Lopinavir is an antiretroviral in the protease inhibitor family. It is a sub therapeutic in conjunction with ritonavir. According to the package leaflet of the drug; of which I will not mention your trade name for legal considerations; the effects of these medicines are:

Upper and lower respiratory tract infection, very common by bacterial over infection.

Blood and lymphatic system disorders Anemia, leukopenia, frequent neutropenia. Immune system disorders such as Inflammatory Immune Response Syndrome are also common.

Nervous system disorders. Headache (including migraines), neuropathy (including peripheral neuropathy), dizziness. Stroke, seizures, dysgeusia and ageusia.

Heart disorders such as myocardial infarction, atrioventricular blockage are less common, but are described. Vascular disorders Deep vein thrombosis were mentioned as common.

Very common gastrointestinal disorders like diarrhea, nausea and vomiting, pancreatitis, gastroesophageal reflux, gastroenteritis and colitis, abdominal pain (upper and lower), bloating. Hepatobiliary disorders, hepatitis and increased liver enzymes AST, ALT and GGT.

Therefore, will we not be able to hypothesize that the decrease in immune response and the presence of this virus "has a clear association with bacterial over infection induced by cofactors not described by medicine?

4) Role of facial masks as a cofactor agent of hypoxia In the so-called silent hypoxia described in the early part of the disease play any paper using textile facial mask?

Surgical beard is an effective barrier for viral particles in the order of microns, only if their porosity prevents the entry of particles less than 3 microns, not being the effective textile industry hubs because they are too porous. In contrast, they are a place to grow bacteria and fungi that are breathed as a source of self-inflicted infection.

The answer was that nasal spray was avoided when speaking, sneezing but the only effective viruses filters are those used by specialized teams, incompatible for use by the general population. The indication is the use of three-layer surgical facial protection that while not as effective as virus filters are much more effective than facemasks.

Which are the side effects of "face masks" over  $O_2$  blood saturation. While it decreases the "nasal spray" by sneeze and speaking, also desaturates the blood by breathing a mixture of  $O_2$  and  $CO_2$  causing hypoxemia, respiratory acidosis due to increased  $CO_2$  and subsequent carbonic acid that alters intra and extracellular PH and enzymatic mechanisms.

#### Conclusions

We will be able to hypothesize and we will do, on "hidden" morbidity "cofactors."

First, a Trojan virus sequenced by nucleotide fragments obtained from swabs but not grown in living cells.

Second, the hypothetical consequences of the effects of the Low Frequency and Radio Frequency Electromagnetic Fields (LF and RF EMF) of wireless communication are:

• weaken our immune system,

• promote blood clotting through the Rouleaux effect, impede blood flow and prevent oxygen transport,

• have a pro-viral effect by increasing intracellular concentrations of  $Ca^{2+}$ , causing oxidative stress, and promoting viral replication. Therefore, the EME will have a negative impact on the course and severity of this "Quid" called 1-2 TMS SARS.

Increasing the EME (non-ionizing radiation) load when deploying

5G would intensify the negative effects of a viral disease, being a substantive part of SARS TMV disease 1-2 but not its exclusive cause.

Third, bacterial and therapeutic iatrogen agents that trigger a SIRS and Coagulate Intravascular Disease CID and not just a lung disease, as initially and erroneously described, unintentionally or not.

Its synergistic phases in our hypothesis are:

\*Immunosuppression induced by the effects of EME.

\*Decreased immune response by a "Trojan" virus that would affect the human hard drive of information (DNA) by reconfiguring it to self-apply.

\*Demodulation of the immune response by transforming it into hyperactive and self-aggressive (cytokine storm) of the Inflammatory Symphony of cytokines and leukotriene, necrotizing factors, etc.

This has been a contribution as a research hypothesis to try to avoid increasing mortality and morbidity of "pseudo-induced" knowledge, for reasons beyond this publication.

It will be subject to discrepancies of the medical universe to which I present it, for the sake of Ethical Medicine and the Hippocratic Oath.

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