Presentation by the association of Long-Covid patients UPGCS at the Congress on Long Covid organized by the SPIL (Society of Infectious Pathology of French Language), which will take place in Nancy on December 8, 2022.

Covid-19 and covid-long:

The role of **certain bacteria** and **their toxins in the inoculum effect of the virus and in the symptoms described, obscured by many works of infectiology**

Work presented by the association of covid-long patients UPGCS

The irrefutable proof of these assertions is provided by the answers to the following questions:

- Do intracellular and wall less germs (mycoplasma pneumoniae), present during dysbiosis, play a role, both in cytokine storm, and in chronic post-infectious syndromes (SCPI) especially in covid-long?
- Do some* antibiotics have an effective "virostatic" effect, both in acute phases (macrolides) and in chronic forms (Rifaximin) and could they be useful in the treatment of covid-long by neutralization of RNA polymerases suspected of explaining the role of viral amplification of the germs mentioned?

I) The role of "bacteria/virus cooperation"

Described in the work of Professor Luc Montagnier (1), confirmed in vitro (2) in patent EP0649473B1) of the research laboratory of "International Mycoplasma" and in vivo (3) by the ABC team (Association Biologie et Coopération), the role of "bacteria/virus cooperation" has just been irrefutably confirmed by the lessons learned from the covid pandemic via therapeutic evidence (indirect) and via electron microscopy (direct evidence).

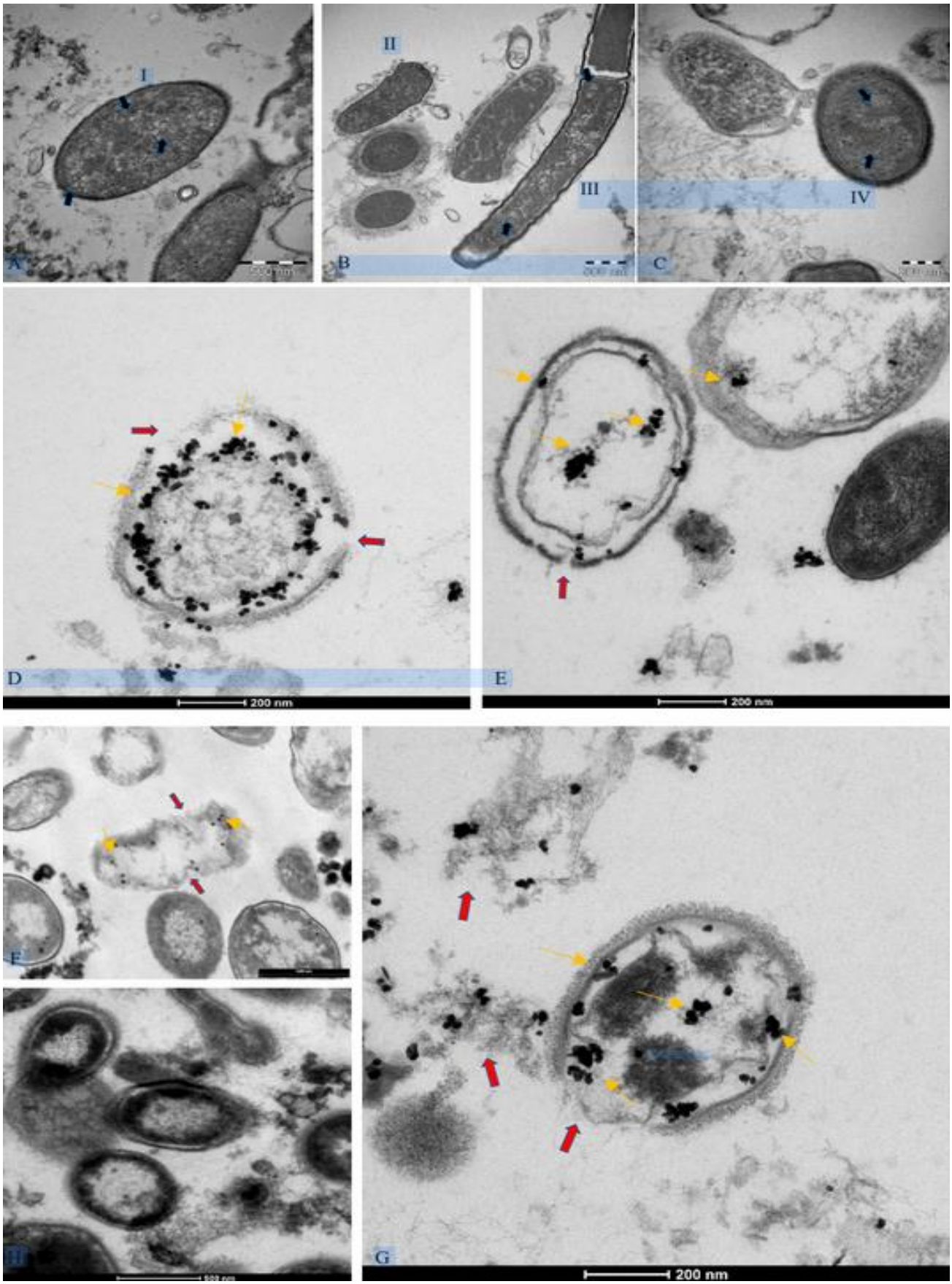
1) The therapeutic proof of the paradoxical **effectiveness** of certain antibiotics* in the **early** viral phase of **covid-19: the "virostatic" effect of certain antibiotics.**

All doctors around the world, who treated TAP on an early outpatient basis (within the first 5 days after the appearance of the first symptoms) with an antibiotic molecule specific to intracellular germs, of the following families*: macrolides, cyclins, or Clofoctol (11) (see ARTE survey: "the miracle drug"), have noted a drastic drop in case fatality: 0.1% compared to 2.3% of patients left on Doliprane. These results of the city doctors, confirming those of the IHU of Marseille, have been published (10-4). Our hypothesis would be the pooling of RNA polymerases of bacteria with those of the colonizing virus (bacteriophage-like effect) which will allow the virus to multiply in the incubation phase and beyond in the so-called "viral" phase and to obtain a viral inoculum acting on interferon (see IFN table below). This hypothesis is derived from the study of mimiviruses (12-13) which showed that RNA polymerases from archaea, bacteria, and eukaryotic cells had a common phylogenetic origin. **Two of the three RNA polymerases of eukaryotes are thought to have a viral origin.**

This hypothesis is supported by the fundamental effect of Zinc in early outpatient treatment in combination with a macrolide because Zinc acts on the RNA polymerase of viruses (14). The efficacy described by Carlo Brogna of Rifaximin (antibiotic active on the RNA polymerases of bacteria, and therefore potentially on viral replication) in covid-long would avoid the resurgence of virions, causing symptomatic outbreaks. It is the "inoculum" effect resulting from viral multiplication or the absence of IFN (autoantibodies) (40-41-43) that induces a paradoxical action of interferon (see schema 2) causing in patients with co-morbidity a "septic shock" (cytokine storm) and in people without co-morbidity but with dormant "bacteria" or periodontitis (mycoplasma, intracellular (44), chronic viral persistence: paradoxical action of IFN (5-39) and macrophages (32-33): hence the interest of TAP.

2) Proof in electron microscopy of the "**cooperation" of certain bacteria with SARS cov2:**

Photo in electron microcopy:SARScov2 multiplying in bacteria: Carlo Brogna (16): arrows: red (penetration) yellow visualizing the virus (black dots)



The recent work in electron microscopy by the research team of the Craniomed research laboratory, led by Carlo Brogna, has just confirmed the track of cooperating bacteria (15-16), cooperation illustrated by a "bacteriophage-like" mechanism.

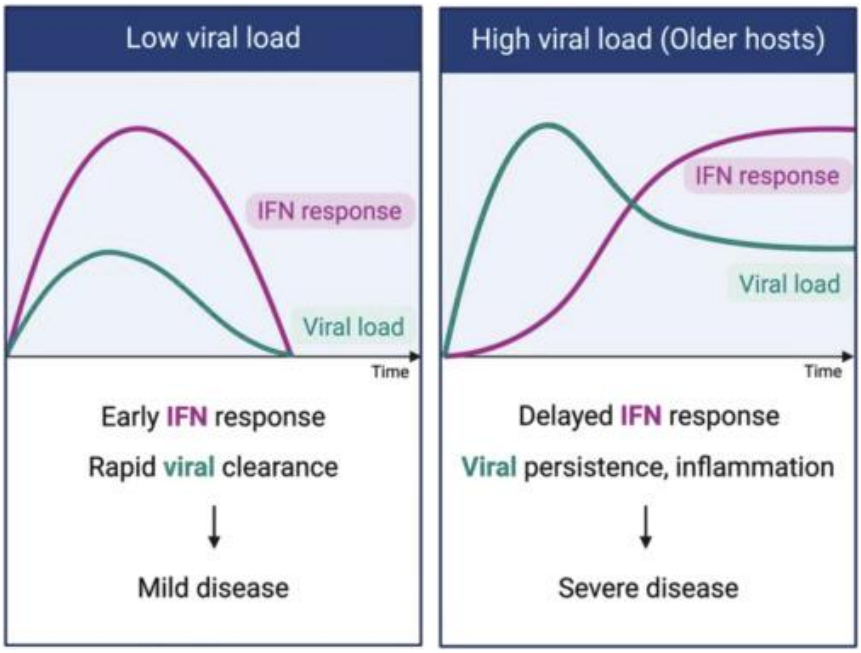


Table of the "dual" action of the IFN according to the inoculum of coronaviruses (5)

"To study the effects of reducing viral load in more detail, we conducted simulations assuming that an antiviral treatment reducing 90% or 99% of viral production could be readily initiated upon hospital admission".

II) Would these "bacteria/virus **cooperations" play a role in chronic post-infectious syndromes and in the predisposition of patients with MAI to develop such a complication?**

1) Is there a common denominator between Autoimmune Diseases (**AMI) and the various post-infectious syndromes (SCPI)?**

70 to 80% of MAI and SCPI concern women: there is therefore an etiological bridge between these two pathologies.

2) Why are women more prone to both MAI and REITs?

It is from these data that we hypothesize the responsibility of quiescent germs (without walls or intracellular) in chronic post-infectious syndromes (SCPI), syndromes that include covid-longs, shared responsibility, with viruses, both in the genesis of autoimmune diseases and in that of ICS which affect a majority of women (70 to 80%). Women are much more "vulnerable" (23-24-25), through their genitals and during childbirth, to colonization by these types of germs. Link: Mycoplasma Hominis, postpartum fevers, hypothyroidism? (24-42)

3) Apart from intracellular germs of urogenital infections **more frequent** in **women than in men, would there be other intracellular germs involved?**

I) Intracellular germs of genital origin are not the only ones potentially responsible for the development of chronic post-infectious syndromes. We will mention mycoplasma sp (found in 60% of SCPIs), Borellia, Ehrlichia, Bartonella, Babesia, Anaplasma, Coxiella, (germs of diagnosis and difficult culture: cf Pr Grueb (27) interfering in the genesis of MAI and in the severity of covid and covid-long, which could explain the 20 to 30% of men C L. Intracellular modify the action of macrophages.

4**) What " silent" pathophysiological mechanisms would these intra-cellular, so-called crypto-infections, act both in the MAI and in these SCPIs?**

Several mechanisms then promote the signs described in these chronic post-infectious syndromes:

– Presence of autoantibodies by avoidance mechanisms: concealment of the antigens of these crypto-infection germs to TLR receptors, modification of these antigens (Mimicry) and preferential pathway of TL17 (19-28).

– Persistence of clinical signs in a resurgent way: their localization within biofilms, protect them from secreted antibodies as well as circulating antibiotics

– Diversion of the "phagosomal conversion" (32-33) within macrophages allowing the host organism to chronically host the virus if the latter is located inside the "cooperating" bacterium: the localization of intracellular is essentially located within macrophages.

- By the metabolism of these crypto-infection germs secreting, especially at the level of endothelia, free radicals active on inflammation, and toxins at the time of their lysis, toxins variable according to the "cooperating" germs (20-21)
- By the properties arginine + of the most frequently encountered germs (mycoplasmas: M Hominis) which, by the consumption of arginine, establishes a NO depression of the endothelial wall with all known consequences (inflammation, coagulation, regulation of blood pressure, etc.).
- By the ability of cells infected by these intracellular, potentially "colonized" by residual viruses (viruses, virions, RNA particles), to produce in an exaggerated way trans-glutaminases (TG2) (34), molecules that can intervene in association with G4 (35) both in the occurrence of chronic fibrosis, in the appearance of amyloid responsible for cognitive signs of the "Alzheimer-like" type, that in the development, quite specific of SCPIs, of micro-clots resistant to fibrinolysis (36) cf. previous work of the UPGCS (38).
- The presence of these germs, colonized by the virus, in the form of biofilm allows the establishment of a persistent "silent" infection

Conclusion.

Microclots resistant to fibrinolysis causing peripheral hypoxia, cognitive signs secondary to amyloid substances, anti-idiotype autoantibodies, endotheliopathy, chronic inflammation, and asthenia secondary to poor tissue oxygenation, are the major signs of post-infective syndromes and covid-long, with variables related to the toxins involved. However, the treatment of covid-long, like that of post-infectious syndromes should not be limited to the treatment of symptoms (neurological, endothelitis, micro-clots, related to autoantibodies, asthenia, dys-biosis), but must above all **associate** in an alternative way symptomatic treatments **to the treatment result of our study concerning "bacteria/virus cooperation".**

For this we propose to the health authorities, in partnership with the voluntary members of our association of patients, all covid-long, to participate in a therapeutic research work based on our hypotheses, within the framework of a CPP proposed to the DGS and the Ministry of Research: in particular the potential effectiveness of Rifaximin , an antibiotic active on RNA polymerases to eradicate viruses or viral fragments (virions) that can replicate in target bacteria very long after infection.

Foreword (to be read or listened to for better understanding):

Links and interactions between mycoplasmas and viruses **https://www.ncbi.nlm.nih.gov**

Place of autoimmune diseases in the Covid-19 epidemic ...https://www.upgcs.org

Claude Ecranguel: his prescriptions against Covid **https://laparoledonnee.fr**

from cohorts of Inserm, the French Blood Establishment, and Cerba Healthcare, a partner in the Human Genetics of Infectious Diseases Laboratory. **Bibliography**

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17Toxin-like peptides in plasma, urine and faecal samples from ...https://www.ncbi.nlm.nih.gov

18 *Mycoplasma pneumoniae* detections before and during the COVID- 19 pandemic: results of a global survey, 2017 to 2021:

19 Infection strategies of mycoplasmas: Unraveling the panoply ...**https://www.ncbi.nlm.nih.gov ›**

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38 Place of autoimmune diseases in the Covid-19 epidemic ... *https://www.upgcs.org*

39 Type I and Type III Interferons - Induction, Signaling, Evasion ... https://pubmed.ncbi.nlm.nih.gov ›

40 A quarter of severe forms of Covid-19 are explained by ... https://presse.inserm.fr ›

3 to 4% of severe forms have a genetic origin, while 10 to 11% are explained by the presence of autoantibodies directed against IFN 1 and which block their antiviral action

In order to better understand the distribution of these autoantibodies in the general uninfected population and in particular the influence of age (most cases of severe forms of Covid-19 concern those over 65 years of age), the authors compared more than 34,000 healthy individuals, classified by sex and age group, They made an unexpected discovery: the presence of autoantibodies to IFN 1 is very rare before age 65 (0.2 to 0.5%) and then increases exponentially as we age

41 New therapeutic targets in systemic lupus https://www.edimark.fr ›

This article describes the role of interferons (IFN) in the pathophysiology of systemic lupus and the different treatments targeting these cytokines in clinical development in this disease. Important inoculum mechanisms (bacteria/virus cooperation in virus diseases) promoting the maintenance of IFN at a high rate, appear to be the same in MAI (LE) and chronic forms. The persistence of "quiescent" germs will maintain this phenomenon in those under 65 years of age. In + 65 years: anti body ifn

42 Hashimoto's thyroiditis, Fibromyalgia, Fatigue Syndrome ... https://www.fibrokur.com ›

43Antiviral therapy - For or against interferon type I *https://www.medecinesciences.org* ›

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