CORONA VIRUS/Covid/19 ADULT RESPIRATORY DISTRESS SYNDROME

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HIGH DOSE IV METHYLCOBALAMIN IS A SAFE & COST EFFECTIVE RESCUE TREATMENT for ARDS.

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Corona Virus/ Covid19/ SARS-2-Covid has ground the world to a halt and is showing up the deficiencies of our health care systems everywhere, and the vulnerability of the global population.

When Covid/19 kills, it kills through Acute Respiratory Distress Syndrome/ ARDS which, in effect, kills by a sepsis related process.

Thus ARDS is fuelled by the proverbial "cytokine storm". It is also known that people who die of Covid 19 ARDS have a depletion of Natural Killer/NK cells, and poor immune function in general. Whether the virus depletes NK cells, or whether those who are immuno-compromised/elderly lack normal NK cell levels and activity is not known for sure.

At this point in time, when the FDA have suddenly relaxed many drug control regulations, in order to be able to use off-label drugs in a desperate attempt to mitigate disaster, **the FDA actually already have one powerful item in the armoury,** to which, because of its safety and cost-effectiveness, combined

with efficacy, they granted Orphan Drug status some years ago, for use in suspected terrorist CN gas attacks. **This Orphan drug is vitamin B12 as hydroxocobalamin for high dose intravenous administration,** the safest and most efficacious CN antidote on the planet.

For some years now I have been collaborating with colleagues at the William Harvey Institute, London, investigating in animal models the use of high dose IV cobalamin for sepsis. We are now concluding pre-clinical trial work defining more precisely the mechanisms by which high dose IV cobalamin confers protection in SIRS/Sepsis and septic shock.

ARDS is often a feature of sepsis and, as mentioned, is driven by the self same unresolvable pro-inflammatory response as sepsis .

Thus our research work is potentially very applicable to ARDS/ Covid.19 crisis.

In yet to be published work, in which 6 different key cobalamins were tested, we have discovered that **high dose methylcobalamin B12 is even more efficacious in an animal model of sepsis than is high dose hydroxocobalamin B12.**

The protocol that I first discussed as potentially suitable for SIRS/ sepsis/septic shock, -thus ARDS- in a 2006 *Medical Hypotheses* paper, [available on my Researchgate page] , has

been shown by our William Harvey Institute animal model work to be the dose equivalent in a human of the anti-cyanide hydroxocobalamin B12 treatment.

This treatment already exists in Merck Serono's CyanoKit.

Based on our collective research insights, and on my knowledge of the wider cobalamin lab research, and of the lost, or forgotten, alternative clinical uses of cobalamin literature, [going back to the 1950s], I believe that:

The ideal **RESCUE PROTOCOL FOR ARDS would utilise 4 to 5 GRAMS of methylcobalamin daily, administered by IV, in saline, for anywhere between 1 to 5, or even 7 days, depending on response, as the safest and potentially most efficacious treatment available for viral sepsis related ARDS.**

Crystalline methylcobalamin is available worldwide for compassionate grounds use at these doses. However, where it is impossible to obtain methylcobalamin for the implementation of this protocol,
Merck Serono's CyanoKit, which is licensed, would be a good second best.

This protocol has already been deployed clinically in other diverse extreme scenarios:
my draft clinical trial protocol gives references showing high dose IV cobalamin efficacy in refractory

vasoplegic syndrome, both in cardiac surgery and in liver transplants; in CO and H2S poisoning; and in nitrous oxide poisoning.

The near miraculous rescue impact of high dose cobalamin IN ONE OF MANY DIVERSE EMERGENCY SCENARIOS is well illustrated in the following case history. The authors used the anti CN protocol [Mercks Cyanokit], whose potential for sepsis -thus also ARDS- was first discussed in my 2006 paper, to rescue a surgical patient from N2O overdose:

Laoutid J, Jbili N, Bibiche L, Kechna H, Hachimi MA. Delayed neurologic sequelae following anoxic-anoxia related to nitrous oxide by pipeline mix-up during anesthesia. Edorium *J Anaesthesia. 2017;3:7– 11.*

This case history above describes a major surgical accident of a 36 year old lady, who was accidentally over exposed to nitrous oxide, an anaesthetic gas known to inactivate B12 enzyme pathways, and which thus has the potential to cause a functional B12 deficiency, even in the absence of negative B12 deficiency tests. A similar accident in the USA in 2002 killed 2 people, and the N2O accident literature shows next to no survivals.

The lady ended up with alarming neurological symptoms *within 48 hrs of the accident*. She lost the use of *all* her limbs/ascending paraesthesia. She had dysarthria. She would have continued to deteriorate, but....
It seems, [cf. their citation and protocol that they then used], that the doctors had read the paper I published in 2006, advocating the use of supra-therapeutic doses of B12, for sepsis, septic shock and SIRS, -at the very same

dose used for cyanide poisoning treatment, *a massive dose, of a different order of magnitude even to the high doses of methylcobalamin some doctors across the world now use on a regular basis i.m.*

These doctors made a good judgement.

They appreciated there was no downside, -a life was at stake, -since the N2O accident literature shows no-one so exposed usually survives - and that high dose IV B12/ HOCbl is supremely safe, after over half a century's experience of this dose in French and other ICUs.
Anyway, the doctors went for broke, and look what happened to this lady in a very short time scale: - nothing short of miraculous:

"The duration of surgery was one hour. The awakening was restless and the patient was sedated for 24 hours by midazolam-fentanyl at the ICU. Non contrast cerebral scan was without anomalies. The patient was extubated the next day without neurological deficit. At the night of the second postoperative day, the patient presented symmetrical paresthesia on the feet, ascending to the trunk, chest and both arms. This was followed by weakness and clumsiness of all limbs, loss of their use and dysarthria, mental status was normal.

Before any specific therapy, vitamin B12 and homocysteine (HC) was tested. Methylmalonic acid (MMA) was not tested. Cerebrospinal MR Imaging was normal. Delayed neurologic sequelae due to the anoxic-anoxia were suspected and neuropathy secondary to N2O toxicity was evocated too.

Before receiving the results from the laboratory, we decided to begin a course of vitamin B12

(hydroxocobalamin) injections: **5 grams/day.**

Biological exams received, two days after, showed normal vitamin B12 at 785 pg/mL (normal 193–982 pg/mL) and normal HC level at 7 µmol/L (normal < 10 µmol/L) which permitted us to eliminate the diagnosis of nitrous oxide myelopathy.

Amelioration was noted from the second injection, the numbness decreased, so we decided to maintain vitamin B12 therapy 5 grams/ day for one week then 5 grams/week for two months. The patient could walk within five days and she was discharged from the hospital after one week with a light dysarthria. She has fully recovered in two months. One year later, the patient was healthy without any sequela."

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N2O poisoning is not Sepsis/ARDS. I give this here only as one dramatic example of cobalamin's cinical potential for diverse extreme scenarios in general.

More pertinent to the way that Covid 19 kills, and how high dose parenteral cobalamin can combat this, is the known fact that **cobalamin boosts Natural Killer cell levels, increases phagocytosis, and is critical for the regulated pro-inflammatory and anti-inflammatory sequence of the immune response.**
A small literature shows that **high dose parenteral cobalamin has anti-viral actions, including against HIV, and it has been used with clinical**

success to treat hepatitis. These immune regulating effects of cobalamin have been demonstrated both *in vitro a*nd in clinical studies.

[For extensive references in support of all the above statements, please see my imminent allied Researchgate post: **The Effects of Cobalamin on the Immune Response].**

Thus, all indications from the WHI research are that HIGH DOSE IV COBALAMIN, in particular methylcobalamin, is a rescue treament well worth trying now

for the Covid.19 ARDS crisis.

COBALAMIN IS LICENSED, SAFE AND COST EFFECTIVE.

There is nothing to lose and everything to gain.

Moreover, high dose methylcobalamin could also be safely and easily deployed at lower high doses, by intramuscular injection, -as per my draft methylcobalamin for sepsis clinical protocol, - **as both a potential prophylactic, and a mitigating treatment for Covid 19 cases that end up in hospital, to prevent such patients proceeding to full blown ARDS.**

This would obviously take huge pressure off our collapsing health systems worldwide.

N B Extensive Pharmacological Safety References, dating back more than half a century, for the *clinical* use of High Dose IV Hydroxocobalamin B12
start on page 14 of my *draft* Methylcobalamin for Sepsis prevention and treatment clinical trial protocol:

[This sepsis protocol is now available on my Researchgate page *as work in progress*.
I will be revising the core of this clinical protocol in the coming week, as, *mutatis mutandi, it is easily* adaptable for the treatment of ARDS].

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PLEASE BRING THIS ARTICLE AND THE RELATED DRAFT PROTOCOL ON MY RESEARCHGATE PAGE TO THE ATTENTION OF ANY INTERESTED ICU PHYSICIAN ANYWHERE IN THE WORLD.

If you wish to contact me more directly to discuss implementation of this potential therapy, please email me on:

wheatley.carmen@googlemail.com

I will be happy to help any doctor anywhere with the compassionate grounds use of cobalamin for Covid 19.

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