

The Hague, June 3, 2020

From: Idelette Nutma, Sepsis en daarna, patient platform
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To: The Minister of VWS, H.M. de Jonge and mr. ing. H.E. Soorsma, director of Public Health

Subject: Vitamin C as an adjuvant treatment for COVID-19
Response to your letter of May 15, 2020, reference 1685491-204918-PG

Dear Minister of Health, Welfare and Sport and Director of Public Health,

Thank you for your detailed answer to the letter of April 23, 2020. We are pleased that you wanted to discuss it substantively. However, we note that a number of important aspects are not included or well understood. We'd like to emphasize that exactly those aspects put the consideration of adjuvant treatment with vitamin C in a different light. We are therefore happy to clarify them below. Our argument rests on 4 pillars.

A) Patients who exhibit a severe infection response develop acutely severe vitamin C deficiency. This has been extensively described in scientific publications.¹ Without supplementing this shortage, they lack the substance that is essential for their own defenses and which protects them against a derailed inflammatory response. They are therefore fighting an unequal battle. We explain this below.

B) Vitamin C does not have a direct effect on the virus, but by strengthening many functions of the immune system it does strengthen its fight. In addition, vitamin C intervenes in another way: it is an essential substance in preventing the infection from derailing. This is a key point. An important part of the damage and death is determined by how the body responds to the virus. The disease sepsis (the disordered response of the body to an infection) has taught us enough about this in recent decades. There is a lot of scientific evidence for the role of vitamin C in sepsis. In addition, the aspect of timely administration has proven to be critical. We do not believe that sticking with the 'dogma of waiting for more studies' is appropriate, given that a short-term high dose of vitamin C in intensive care patients has been shown to be safe in controlled studies, and given the importance of patients who have the chance to become less sick due to the administration of vitamin C.

For a meta-analysis, see Wang et al: "Effects of different ascorbic acid doses on the mortality of critically ill patients."² In this there is no doubt about the role of vitamin C and the evidence, only the encouragement to further clarify that role. In this context, we also emphasize that the WHO refers to vitamin C as an adjuvant intervention.³

C) The ethical and urgency perspective has so far remained out of the picture. Further strengthening of the evidence that vitamin C, if administered as soon as possible, can significantly prevent or reduce organ damage is a matter of time. But patients and loved ones lack that time. And there is one big difference from all other drugs that are being researched: vitamin C has been shown to be safe in all major trials. We do not see a conceivable argument from a patient and ethical perspective not to start using vitamin C in a controlled way in the fight against the virus right now, if it is not in therapeutic

¹ Carr, A.C. et al. Hypovitaminosis C and vitamin C deficiency in critically ill patients despite recommended enteral and parenteral intakes, *Critical Care* (2017) 21:300, <https://pubmed.ncbi.nlm.nih.gov/29228951/>

² Wang, Y. et al. Effects of different ascorbic acid doses on the mortality of critically ill patients: a meta-analysis, *Annals of Intensive Care*, volume 9, Article number: 58 (2019)
<https://annalsofintensivecare.springeropen.com/articles/10.1186/s13613-019-0532-9>

³ WHO, A coordinated global research roadmap: 2019 novel coronavirus, March 2020
https://www.who.int/blueprint/priority-diseases/key-action/Coronavirus_Roadmap_V9.pdf, p. 37

(high) doses, then at least in doses that supplement the deficiency. You are right to say that vitamin C is important for resistance. How much more does this apply to ICU patients who have a demonstrated deficiency. Ex-patients and relatives should play a leading role in ethical questions such as: what deserves a chance in reducing the impact of the virus on patients and relatives and in promoting a positive outcome? What matters most to them? In addition, it's getting very hard to explain to patients and their loved ones that adjunctive vitamin C therapy is being excluded while (high-risk) other substances do get a green light. Which of them, if asked, would be opposed to a natural substance that can safely support the body and increase the chances of recovery? Failure to apply it exposes patients to much greater risks.

D) From an innovative point of view, this new virus requires a broad, innovative approach in which multiple approach routes reinforce each other. Unfortunately, the image of vitamin C as an "innocent substance" is not an advantage in the "high tech" medical world. The drug is cheap, simple and patented. It is important that unnecessary resistance is broken.

You are right to note that vaccine protection is still a long way off. That should challenge us to consider all options that can prevent or limit damage, especially those that are safe.

Proposal

Below we make a proposal in which the government could play an important role. The proposal is in line with the 'Sensible care' program ⁴ and the report 'Living together is more than surviving - Looking wider and choosing in times of corona' ⁵ of the Council for Health and Society, which calls for citizens and a wider circle of experts (including ethicists) in determining the added value of health treatments (and lives are at stake here). In any case, it is certain that the cost aspect of vitamin C does not have to play a role in the considerations.

- Promote the method 'Application alongside further research', in consultation with (former) patients and relatives via, among other things, client councils in hospitals and patient representatives.
- Encourage hospitals to collaborate in starting up the high dose vitamin C protocol (whether or not as part of the US applied MATH + therapy (Methylprednisolone, Ascorbic Acid, Thiamine, low molecular weight Heparin), administered as early as possible, at the ER and / or the IC, in a well-monitored way, by means of a 'pre-post study'. We refer in this context to the lessons learned by the (renowned and experienced) Critical Care doctors who have united in the Frontline COVID-19 Critical Care Consortium (FLCCC). ⁶ They are absolutely in favor of further research, but they use the evidence that is available so far and they let the ethical perspective prevail. 'Waiting for the perfect will be an enemy of the good' is a telling statement by Pierre Kory, member of the aforementioned FLCCC.

As a government, you can give decisive support to the critical care physicians who are willing, but are being held back by the above-mentioned "dogma" and do not want to come to the fore.

Sincerely and with best regards, on behalf of

Sepsis en daarna, Patient Platform

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⁴ <https://www.zorginstituutnederland.nl/werkagenda/zinnige-zorg>

⁵ <https://www.raadvsv.nl/documenten/publicaties/2020/05/03/goed-samen-leven-in-tijden-van-corona>

⁶ <https://covid19criticalcare.com/>