Letter to the Editor

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SARS-CoV-2 behavior, through the eyes of a perinatologist?<https://doi.org/10.1515/jpm-2021-0443>

Received August 31, 2021; accepted November 26, 2021;

published online February 7, 2022

Keywords: COVID-19; perinatology; SARS-CoV-2.

To the Editor,

In this Letter to the Editor, I would like to raise a few questions related to the views on SARS-CoV-2 behavior seen through the eyes of a perinatologist in response to the article published in your Journal [1]. The article in question gives a realistic perspective on current situation of COVID-19 pandemic and is an excellent basis for discussion in the field of perinatology.

- What is partial similarity between COVID-19 infection and pathology seen in perinatology?

The origin of the problem in preeclampsia or hereditary thrombophilia is found in the uteroplacental unit: anti-angiogenic factors are increased, angiogenic ones are reduced. Vascular endothelial growth factor, placental growth factor, insulin growth factor, and insulin binding plasma protein are reduced. As a consequence of misbalance in the formation of old and new blood vessels, plasma protein 13 and C reactive protein increase. Is it possible that SARS-CoV-2 induces reaction of blood vessels for itself?

Moreover, SARS-CoV-2 primarily attacks the lungs and kidneys afterwards. Are there any similarities with the spongy appearance of the placenta? What connects all these organs is good vascularization and presence of small blood vessels with good blood supply to the tissues. Which tissues are less attacked by SARS-CoV-2? What is their protection?

How to treat conditions that predispose uteroplacental passage disorders in order to prevent blood vessel thrombosis, inflammation, hypoxia, and hypoxemia? We

administer anticoagulant and antiplatelet therapy, just like in COVID-19 infection.

Finally, many pathologies seen in pregnancy such as preeclampsia or HELLP syndrome are multisystem diseases just like COVID-19 and could be approached in a similar manner.

- How can we find similarity between stem cells and SARS-CoV-2?

SARS-CoV-2 behaves as a stem cell ‘learning’ our organism. It imposes its growth dynamics and genome on the environment. The virus avoids cells that are ‘under tobacco’ as they appear to be not healthy enough for ‘laying down the host – the virus’. After growing stronger they can manage their life and reproduction even in those tissues, more powerful, not even looking for tissues with more oxygen.

Smokers are more resistant for now, since their lung environment is ‘dirty to nestle in’ and ‘spread its young’. In the previous stage during 2020, the virus has learned how to get by and reproduce even in cells with less oxygen. Imagine that this agent known as “virus” is actually a hedgehog. When the whole hedgehog enters the body it insidiously moves until it anchors and multiplies in a human as a ‘host’. It behaves like an embryonic stem cell and a malignant cell at the same time. It then provokes extremely strong reaction and triggers an immune response ‘of cell capture and cell self-destruction’. The cells fight with inflammation which eventually leads to ischemia (general lack of oxygen) especially in the lungs but also in all organs.

- What are diagnostic missteps?

Clinical autopsies are banned on the basis of what data? Contagiousness? What are we losing? Timely diagnosis? Won't the PPE and adequate room protection be enough for the researchers as well as for the clinicians? Wouldn't tissue examination help? If the lungs ‘disappear’ after 24 or 48 h, does the virus continue to destroy and turn other tissues ‘into stone’? Are all tissues and all cells and organs occupied by this ‘multiplied virus’? In addition, the PCR test is sometimes negative if the agent has already descended into the lungs, or if it is present in a small

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amount in the nose, and antigen tests can be false negative quite often, which is why we need to look for better and more precise diagnostics.

– What about therapy and vaccination?

Vaccinators will have to unite more professionally than politically in WHO (which has already been compromised). In essence it is better to be vaccinated than to get COVID-19 infection even though most vaccines have emergency authorization up to this moment. Could SARS-CoV-2 that ‘masters’ and ‘intelligently understands our genome’ take up new model of RNA for at least some time and make up new protective proteins therefore imposing greater evil of revaccination every six months to a year? From the Marvel-like philosophical point of view, the virus as an aggressor seeks a good area to multiply and lay down its young, so when it takes over the whole human body and destroys it, the aggressor can hardly wait to jump on the next organism. Similarly to an army of the cubs that have become adults, so every cell of the human body is no longer enough for them to continue to lay their young, and new bases are sought to move in and reproduce further.

The use genetic engineering always raises an ethical question of misuse of the scientific advancement implemented for COVID-19 fight in genetic corrections of the methabopathies in embryos, and as a community we should always be aware of that.

In conclusion, the raise of COVID-19 infection and its treatments should be approached by a multidisciplinary team, similarly like in perinatology with great regard to ethical standards.

Research funding: None declared.

Author contributions: Single author contribution.

Competing interests: Author states no conflict of interest.

Informed consent: Not applicable.

Ethical approval: Not applicable.

Reference

1. Volpe N, Luca Schera GB, Dall'Asta A, Di Pasquo E, Ghi T. COVID-19 in pregnancy: where are we now? *J Perinat Med* 2021; 49:637–42.