Researchers find antibodies in placentas of pregnant women infected with COVID-19

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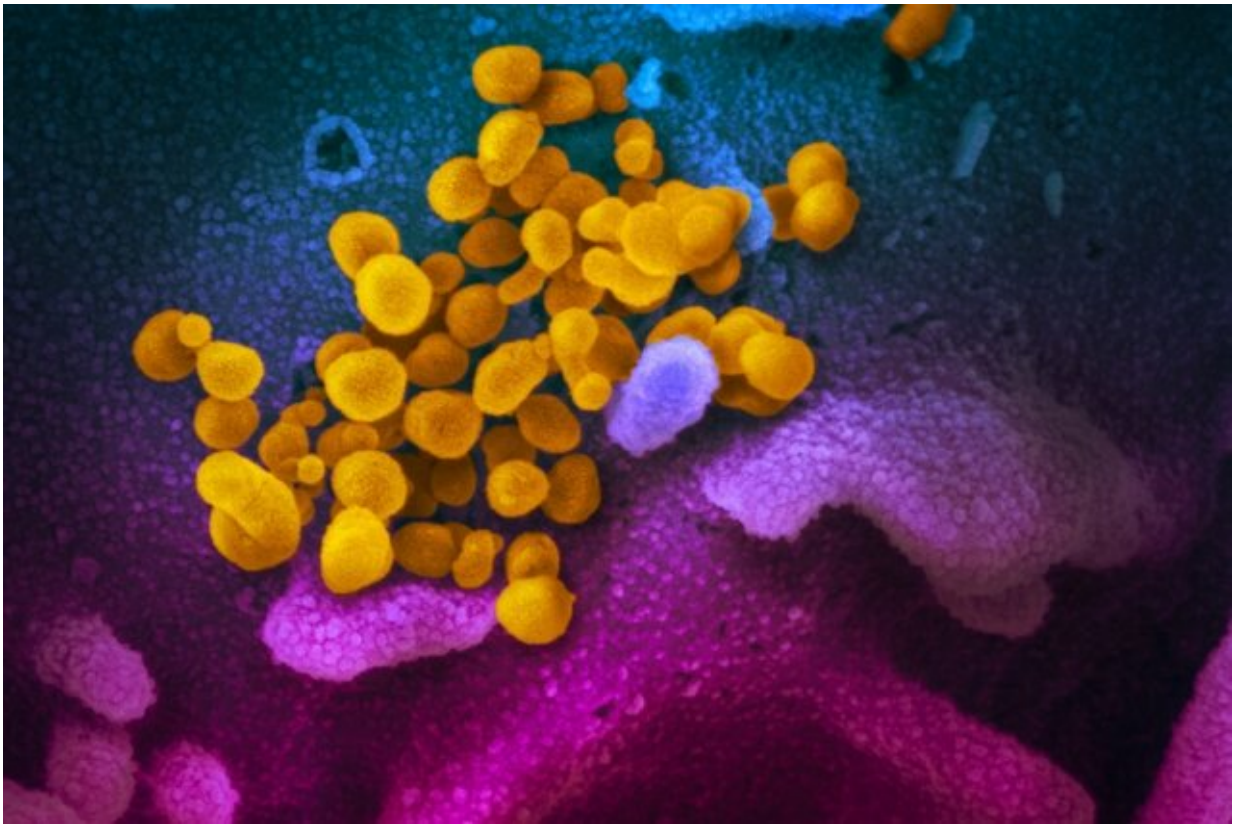

This scanning electron microscope image shows SARS-CoV-2 (yellow)—also known as 2019-nCoV, the virus that causes COVID-19—isolated from a patient, emerging from the surface of cells (blue/pink) cultured in the lab. Credit: NIAID-RML

A team of researchers with the Children's Hospital of Philadelphia and

the University of Pennsylvania Perelman School of Medicine, has found SARS-CoV-2 antibodies in the placentas of multiple women who tested positive for COVID-19 during their pregnancy. In their paper published in the *Journal of the American Medical Association*, the group describes their findings after examining multiple pregnant women who had become infected with COVID-19 and the placentas that were delivered with their babies.

As the pandemic has continued to infect millions of people around the world, scientists have scrambled to better understand what the SARS-CoV-2 virus does to its victims. One area of concern has been pregnant women—some research has suggested that they are more at risk of developing serious symptoms than the general population. But also of concern is what happens to their babies, both during pregnancy and after delivery. In this new effort, the researchers examined the placentas delivered by 1,470 women infected with the SARS-CoV-2. The team looked for both the presence of the virus and the antibodies that arise as part of an immune response. The researchers found SARS-CoV-2 antibodies in 83 of the placentas. This finding suggests that it is likely that the antibodies made their way to the babies, giving them protection against the virus.

The researchers found that the number of antibodies found in the placenta tended to reflect the degree of infection of the mother and when she was infected. More antibodies were found in placentas associated with women who had been infected early in their pregnancy—and it did not seem to matter if the mother developed symptoms or not.

It is still not clear how much protection the babies received, however, nor is it known how long the antibodies persist. There is also the issue of which types of antibodies make it into the placenta. In their study, the researchers found that only immunoglobulin G antibodies were able to

make their way into the placental cord blood. They noted that none of the babies in their study tested positive for COVID-19, a good sign, but not enough to claim that babies cannot be infected while still in the womb.

More information: Dustin D. Flannery et al. Assessment of Maternal and Neonatal Cord Blood SARS-CoV-2 Antibodies and Placental Transfer Ratios, *JAMA Pediatrics* (2021). DOI: 10.1001/jamapediatrics.2021.0038