



EDITORIAL

Fortieth week

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Next month, it will have been 9 months since the emergence of the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that causes coronavirus disease 2019 (COVID-19), that is, the length of a full-term pregnancy. What can be expected? Perhaps favorable outcomes, such as the following: 1) there is a lack of viral transmission to the fetus; 2) there is a failure to produce malformations in the fetal central nervous system during the "fetal moment," that is, the period when the fetus or its parent becomes infected; 3) the fetus is immune to the virus; and 4) the fetus inherits acquired immunity from its mother during the infection period. These questions are pertinent, and the ability to address them is attributable to the speed at which our Chinese colleagues identified this new mutated virus. Their efforts in this regard are much appreciated. The same was not achieved when we encountered the Zika virus epidemic, during which it took us a considerable time to correlate microcephaly with congenital viral infection.

To date, we have counted more than 18 million confirmed cases on the planet, including over 680,000 deaths. Will the fetuses of infected pregnant mothers be spared? On reviewing works published in English and Chinese languages, we managed to identify only four cases of probable mother-to-child vertical transmission, one of which was identified at 30 h of life. However, in most of these cases, maternal contamination occurred in the third trimester of pregnancy. What is the real damage to the fetus' central nervous system when contamination occurs

during embryogenesis? Such questions will surely be addressed in the imminent months.

This pandemic has also revealed to us the fragility of our health service, considering the relatively high mortality rates obtained in well-equipped intensive care units (ICUs) with well-trained medical staff, facilities which are scarce in many regions of our country.

Two groups of patients have been of major concern to us: pregnant women and newborns. First, results have already revealed that pregnant Brazilian women who became infected with the new coronavirus had a mortality rate 3.4 times higher than that of uninfected pregnant women. Could genetic factors, immunological factors, or failure to follow up during the puerperal period have contributed to this outcome?

However, newborns seem to be protected. Due to the vaccine load they receive, they can build immunity against coronavirus; even a small amount of angiotensin-converting enzyme 2 (ACE-2), which is a co-receptor for the entry of the virus into cells (located mainly in the lungs, intestine, and heart) may block the early stages of infection by binding to the spike protein, preventing it from entering the cells. Alternatively, even a repeated number of viral infections could cause natural immunity. Nonetheless, this protection has not manifested in indigenous children, who are often malnourished and extremely vulnerable to respiratory infections. The mortality rate in the indigenous child and adolescent population is 7.5 per 100,000 inhabitants, which is 10 times higher than that in the same age group for other Brazilians. Therefore, the decimation of our indigenous population can be anticipated. Inevitably, the Indian population appeals for help (figure 1).

A new multisystem inflammatory syndrome has recently been identified as a long-term effect of COVID-19, where, due to an imbalance of the inflammatory response, several tissues are affected, such as those of the gastrointestinal system as well as cardiovascular, hematological, cutaneous, respiratory, and neurological tissues. Overall, 2% of affected children have died.

Population growth, lack of basic sanitation, deforestation of our forest reserves, and the increase

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in global temperatures have contributed to the emergence of new infectious epidemics and pandemics. Yellow fever, Ebola, Dengue fever, Chikungunya, Zika, H1N1, H1N2, Middle East respiratory syndrome (MERS), and SARS are simply precursors of what lies ahead. This presents yet another great challenge for humanity, especially those who survive the next 4 million years on Earth.



Figure 1: Xavante Indians campaign against the coronavirus pandemic. “A’uwe tsari,” which translates as “help the Xavante people.”