Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the editor "SARS-CoV-2: What prevents this highly contagious virus from reaching the fetus?"

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We read with great interest the article by Celik et al. on factors preventing the maternal-fetal transmission of SARS-CoV-2. After discussing anatomical and molecular differences between the alveolar-capillary and syncytium-capillary barriers, the authors presented the well-considered hypothesis that the absence of caveolin expression in the syncytium is one of the most important mechanisms preventing the transplacental passage of this virus [1]. Building on their masterful analysis, we would like to extend the discussion to another important risk factor for vertical transmission, namely viral load in blood. Wang et al. found SARS-CoV-2 RNA in only 1% of blood samples taken from COVID-19 patients, but it was present in 93% of bronchoalveolar lavage samples, 72% of sputum samples, and 63% of nasal swabs [2]. The fact that most COVID-19 patients have no detectable RNA in the blood, with those that do having only low concentrations [3,4], is consistent with the current understanding that the virus spreads mainly in the respiratory tract, with systemic presentations being secondary to an abnormally exacerbated inflammatory response [5]. In addition, the presence of RNA does not necessarily indicate viremia, as molecular methods can detect noninfectious fragments of the virus. A recent study found low viral RNA concentrations in the blood of 13% of COVID-19 patients, but after inoculation in cell culture, no viral replication was observed [4]. Thus, the combination of low viral load in the blood and the absence of specific receptors in the placenta explains the low rate of maternal-fetal SARS-CoV-2 transmission.

Declaration of competing interest

None.

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