

## TRANSPLACENTARY TRANSFER OF ANTIBODIES IN PREGNANT WOMEN VACCINATED AGAINST COVID-19: A SYSTEMATIC REVIEW

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*Leticia Cabral Ventura*

Medical Student at the Faculty of Medical Sciences at ``Universidade de Pernambuco``

*Gabriela de Oliveira Mello*

Medical Student at the Faculty of Medical Sciences at ``Universidade de Pernambuco``

*Marcos José Valença Silva Neto*

Medical Student at the Faculty of Medical Sciences at ``Universidade de Pernambuco``

*Patrícia Moura*

Associate Professor at ``Universidade de Pernambuco``

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## INTRODUCTION

The transplacental transfer of antibodies is essential for fetal immunity, since adaptive immunity, developed after contact with immunogenic antigens, is still maturing. Therefore, in view of the globalization of the coronavirus and the severity of infections, the relevance of analyzing the effectiveness of immunization of pregnant women regarding the transport of immunoglobulins through the placenta, as well as the influencing factors, was perceived.

## OBJECTIVE

To evaluate the effectiveness of transplacental transfer of Anti-Spike antibodies in pregnant women vaccinated against COVID-19 and its influencing factors, such as the number of doses administered, the gestational period in which the vaccine was applied, the duration of these antibodies in the organism of the newborn and the type of vaccine that was inoculated.

## METHOD

A systematic review of the literature was carried out, analyzing articles between 2018 and 2022, with free access to the databases, in English and/or Portuguese, that answered the guiding question: "How effective is the transplacental transport of anti-inflammatory immunoglobulins? Spike in pregnant women vaccinated against COVID-19?". The selected databases were PubMed, ScienceDirect and Google Scholar, with the descriptors "COVID-19", "Vaccination" and "Antibody Placental Transfer", according to DeCS. In the end, 151 articles were obtained, among which 33 were selected.

## RESULTS AND DISCUSSION

Inoculation of the COVID-19 vaccine during pregnancy can stimulate an immune response in pregnant women and generate antibodies that are transferred to the fetus through the placenta. In the study carried out in women vaccinated against SARS-CoV-2, the titer of IgG antibodies in the umbilical cord blood was higher than in those born to women infected with COVID-19, demonstrating that the transfer of Anti-Spike antibodies is more effective through from vaccination than from infection. A cohort study collected cord blood from 36 deliveries from vaccinated dams an average of 13 weeks before birth. The 36 newborns were positive for anti-S IgG at high titers (34 >250 U/mL and 2 <250 U/mL). Mothers who had cord blood titers <250 U/mL received their second dose of vaccine at least 20 weeks before delivery. These findings support the transplacental transfer of antibodies after vaccination against COVID-19 during pregnancy and that the closer the vaccination is to delivery, the higher the rate of effectiveness of antibody transfer. Despite this, a scientific concern is how long they will last. Studies have shown that SARS-CoV-2 IgG levels in newborns of infected mothers have dropped sharply by one twelfth month after birth, but it is still unclear about antibody decay in newborns of vaccinated mothers. In addition, there are still no elucidative studies on the influence of different types of vaccine against COVID-19.

## CONCLUSIONS

The literature described is consistent with regard to the effectiveness of the transfer mechanisms of anti-SARS-Cov-2 antibodies from the pregnant woman to the fetus, based on the mother's vaccination. Studies indicate that transfer is more effective the shorter the time between vaccination and delivery, and the greater the number of doses received. New

studies are still needed to clarify gaps on the subject, such as the length of time antibodies remain in the child's body and the influence of different types of vaccine against COVID-19.