ejog European Journal of Obstetrics & Gynecology and Reproductive Biology

Search for...

CORRESPONDENCE · Volume 253, P331-332, October 2020

Download Full Issue

Vertical transmission of antibodies in infants born from mothers with positive serology to COVID-19 pneumonia

Nicoletta Vendola · Viviana stampini · Roberta Amadori · Martina Gerbino · Annalisa Curatolo · Daniela surico

Dear Editor,

There is still much unknown regarding the impact of the disease on pregnancy. The majority of reported cases of COVID-19 infection in pregnant patients have shown a mild or asymptomatic course of the disease, with only few cases requiring intensive care unit (ICU) admission, and only a few reported cases requiring mechanical ventilation[1].

To date there is no certainty if the mother transmits serological protection through the placenta. We describe two cases of mother with positive IGG on peripherical blood test, and the evidence IGG testing positive in umbilical cord soon after delivery.

Serum samples were tested for Sars-CoV-2 antibodies by using a chemiluminescent microparticle immunoassay (CMIA) intended for the qualitative detection of IgG antibodies to SARS-CoV-2 in human serum. Patient samples were runned on an automated chemiluminescence analyzer (Architect Abbott) for the detection of specific serum IgG and IgM in response to SARS-CoV-2 recent or prior infection[2]. Positivity

We use cookies that are necessary to make our site work. We may also use additional cookies to analyze, improve, and personalize our content and your digital experience. For more information, see our Cookie Policy

Cookie Settings

Accept all cookies

cesarean section. The baby was admitted in NICU because of the onset of mild respiratory distress after 30 minutes. Serological testing on umbilical cord and peripheral blood were positive for Covid 19 IGG (index 7.03). Nasopharyngeal swab RT-PCR resulted negative for Covid 19. The baby was dismissed after 10 days of oxygen and antibiotic therapy, and her follow up has been so far negative.

The second patient GP was admitted in our clinic on June the 2nd 2020, resulting positive to the serology for Covid 19 IGG (index 8,01) but negative on naso-pharyngeal swab. She was asymptomatic for Covid 19, without fever, cough, dyspnea and diarrhea. Her obstetrical history was uncomplicated. She delivered spontaneously after amniotic rupture. During the birth serological testing on umbilical cord, amniotic fluid and baby's peripheral blood was performed, and they resulted positive for Covid 19 IGG (index 7.66).

In our cases SARS-CoV-19 IgG were detected in the maternal serum, and specific antibodies were detected in neonatal blood serum samples with elevated concentrations, similar to the IgG concentrations of their respective mothers, despite the babies' throat swab were negative.

IgG is passively transferred across the placenta from mother to fetus, beginning at the end of the second trimester and reaches high levels at the time of birth [3], while IgM is not usually transferred from mother to fetus because of its larger macromolecular structure.

Some studies have been published demonstrating the presence of IgM in the newborn, suggesting that the baby had developed the intrauterine infection and he had produced the IgM autonomously. The human fetuses has been found capable to produce immunoglobulines but half life of IgM is five days[4].

These findings update the case series published by Zeng [5] adding two cases We underline the need of further studies to deepen the serological characteristics of infants whose mothers had been infected with SARS-CoV-2, and their immunity to the virus.

References

1. Chen, H. · Guo, J. · Wang, C. ...
   Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records
   The Lancet. 2020; **395**:809-815

We use cookies that are necessary to make our site work. We may also use additional cookies to analyze, improve, and personalize our content and your digital experience. For more information, see our Cookie Policy

3. Kohler, P.F. · Farr, R.S.
Elevation of Cord over Maternal IgG Immunoglobulin: Evidence for an Active Placental IgG Transport
Nature. 1966; **210**:1070-1071
Crossref ↗ Scopus (263) ↗ PubMed ↗ Google Scholar ↗

4. Haider, S.A.
Serum IgM in Diagnosis of Infection in the Newborn
Arch Dis Child. 1972; **47**:382-393
Crossref ↗ Scopus (18) ↗ PubMed ↗ Google Scholar ↗

5. Zeng, H. · Xu, C. · Fan, J. ...
Antibodies in Infants Born to Mothers With COVID-19 Pneumonia
JAMA. 2020;
Published online March 26
Crossref ↗ Scopus (624) ↗ PubMed ↗ Google Scholar ↗

Article metrics

Related Articles

View abstract

We use cookies that are necessary to make our site work. We may also use additional cookies to analyze, improve, and personalize our content and your digital experience. For more information, see our Cookie Policy

EUGA
EBCOG
BGCS
MORE PERIODICALS
Go to Product Catalog
CNGOF
EAPM
Subscribe
Find a Periodical

The content on this site is intended for healthcare professionals.

We use cookies to help provide and enhance our service and tailor content. To update your cookie settings, please visit the **Cookie Settings** for this site.
All content on this site: Copyright © 2025 Elsevier Inc., its licensors, and contributors.
All rights are reserved, including those for text and data mining, AI training, and similar technologies.
For all open access content, the relevant licensing terms apply.

Privacy Policy Terms and Conditions Accessibility Help & Contact

RELX™

We use cookies that are necessary to make our site work. We may also use additional cookies to analyze, improve, and personalize our content and your digital experience. For more information, see our Cookie Policy