Abstract citation ID: ofac492.138

2300. Neonates born to mothers with SARS-CoV-2 infection in pregnancy: a follow-up and serological study

Concetta Marsico, MD[1]; Liliana Gabrielli, n/a[2]; Santo Arcuri, MD[3]; Caterina Vocale, N/A[4]; Caterina Borgatti, N/A[5]; Tiziana Lazzarotto, Prof[6]; Luigi Corvaglia, n/a[1]; Maria Grazia Capretti, n/a[1]; [1]IRCCS Azienda Ospedaliero Universitaria di Bologna, Neonatal Intensve Care Unit, Department of Medical and Surgical Sciences, University of Bologna, Bologna, Emilia-Romagna, Italy; [2]IRCCS Azienda Ospedaliero Universitaria di Bologna, Microbiological Unit, , Department of Specialized, Experimental and Diagnostic Medicine, University of Bologna, Bologna, Emilia-Romagna, Italy; [3]IRCCS Azienda Ospedaliero-Universitaria di Bologna, Neonatal Intensive Care Unit, Department of Medical and Surgical Sciences, University of Bologna, Bologna, Emilia-Romagna, Italy; [4]IRCCS Azienda Ospedaliero Universitaria di Bologna, Microbiology Unit, Reference Center for Microbiological Emergencies (CREEM), Department of Specialized, Experimental and Diagnostic Medicine, University of Bologna, Bologna, Emilia-Romagna, Italy; [5]IRCCS Azienda Ospedaliero Universitaria di Bologna, Department of Specialized, Experimental and Diagnostic Medicine, University of Bologna, Bologna, Emilia-Romagna, Italy; [6]Department of Medical and Surgical Sciences, Alma Mater Studiorum University of Bologna, Bologna, Emilia-Romagna, Italy

N/A

Session: 257. Impacts of COVID-19 in Pediatrics and Pregnancy
Saturday, October 22, 2022: 2:30 PM

Background. To evaluate the early and late clinical outcomes of neonates born to mothers with SARS-CoV-2 infection in pregnancy, the dynamics of maternal IgG trans placental transfer and its persistence during the first month of life.

Methods. Prospective study enrolling neonates born to mothers with SARS-CoV-2 infection in pregnancy at IRCCS Azienda Ospedaliero Universitaria di Bologna, Italy, between April 2020 and September 2021. Neonates born to women with infection onset before 2 weeks prior to delivery were enrolled in a 12-month follow-up, including clinical and laboratory evaluations, cranial ultrasound, fundoscopy evaluation. Quantitative IgG to S1/S2 subunits of spike protein were assessed in mother-neonate dyads within 48 hours post-delivery and during follow-up until negative. Transplacental IgG transfer ratio was assessed in relation to the type and trimester of maternal infection.

Results. One hundred and forty-five neonates were included. the rate of preterm delivery was similar between women with and without SARS-CoV-2 infection (6.2% versus 8.7%, P=0.53). No clinical, laboratory, cerebral and fundoscopy abnormalities were detected at birth or during follow-up, through 11 months (range 8–12). MedianIgG level at birth was not different between neonates born to asymptomatic or symptomatic mothers (18.5 AU/mL, IQR 12–49, versus 31.5 AU/mL, IQR 15–71, P=0.07) nor in relation to the trimester of maternal infection (Table 1), even though mothers with third trimester infections had higher IgG level at birth.

Transplacental transfer ratio was higher following second trimester maternal infections and was the lowest following third trimester infections (Table 1). Maternally derived IgG were rapidly weaned, with most infants (115/140, 82%) seronegative by 4 months of age.

Table 1. Neonatal IgG level and transplacental transfer ratio in relation to the type of maternal SARS-CoV-2 infection, for the dyads with known trimester of maternal infection (131/145, 90%)

	I trimester (N=28)	II trimester (N=46)	III trimester (N=57)
Neonatal IgG level, median (IQR)	24 (18.5-51.5)	24 (18-73)	43 (25-76)
IgG transfer ratio, mean (SD)	0.99 (0.45)	1.05 (0.61)	0.74 (0.43)
IgG transfer ratio, median (min-max)	0.87 (0.33-2)	0.98 (0.38-3.25)	0.68 (0.13-1.75)
Transfer ratio, No. (%)			
- **No TR**	1 (3)	0	11 (19)
- **≤ 0.5**	11(38)	12 (26)	22 (39)
- **0.51-1**	7 (25)	16 (35)	17 (30)
- **> 1**	9 (32)	18(39)	7 (12)

Conclusion. Early and later outcomes of infants born to SARS-CoV-2 infected mothers were favorable. IgG trans placental transfer was higher following second trimester maternal infections, which could be relevant to inform studies on appropriate vaccination strategies aimed at neonatal protection. Maternally derived IgG are rapidly weaned in the first months of life.

Disclosures. **All Authors**: No reported disclosures.