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BRIEF COMMUNICATION

Obstetrics

Preliminary results on transmission of SARS-CoV-2 antibodies to the fetus and serum neutralizing activity

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Reports about SARS-CoV-2 maternal-fetal transmission[1] exist including data on the transmission of maternal antibodies to the fetus. But there are few data concerning the neutralizing activity of the transmitted antibodies.

Among 12 delivered patients with diagnosis confirmed by nasopharyngeal RT-PCR, all other samples at delivery were negatives. All the neonates from IgG-positive mothers were also IgG positive, with no IgM. Main findings were that neonates with positive neutralization activity on cord blood had a longer delay between day of maternal first symptoms and delivery ($n = 8$; mean 50.15 days SD 8.1, [21–98]) when compared with those with negative neutralization activity on cord blood ($n = 3$; mean 9.7 days SD 4.3, [2–18]) $P < 0.02$. Mann–Whitney U-test (Wilcoxon rank-sum test) (Table 1).

RT-PCR was performed using RealStar® SARS-CoV-2 RT-PCR targeting E and S viral genes. IgG and IgM antibody (Nucleocapsid and antiSpike) detection was performed on serum or plasma by means of 2019-nCoV IgG/IgM Rapid Test and confirmed by an automated Architect platform with chemiluminescent microparticle immunoassays, using the SARS-CoV-2 IgG II Quant assay to quantify anti-S IgG (Abbott Diagnostics). Neutralizing antibodies were measured by the Iflash 2019 nCov NAb "Orgentec" assay, A pseudo-neutralization method based on ACE2 binding inhibition to measure the ability of detected antibodies to bind the RBD domain of the viral spike protein in competition with ACE2 receptors (positivity cut-off 10 AU/ml). This was validated with plage reduction neutralization.

The longer delay after maternal infection to obtain a positive neutralization activity on cord blood remains our main finding. Joseph et al.[2] in a well-documented study on 32 paired samples (maternal and cord blood) did not show at the threshold of 14 days, a difference in the neutralizing potency but their findings concerned half of asymptomatic patients. Malshe et al.[3] showed on nine infant mothers pairs a transfer of neutralizing activity beginning between 2 and 3 weeks after diagnosis.

If we postulate a similar immune response between natural infection and vaccination,[3] then the vaccination process should end 3 weeks before parturition. Considering the mRNA vaccine calendar the first injection should not be after 32 GA. Recently Rottenstreich et al.[4] showed that early third-trimester vaccination had the potential to maximize maternofetal transplacental antibody transfer and their potency, thereby allowing adequate seroprotection during early infancy. Our results are in complete accordance with this work.

Nadhira Houhou-Fidouh, Eleonora Salakos and, Dominique Luton contributed equally to the work presented here.

TABLE 1 Gestational age and Laboratory results

Case n°	GA at Diagnosis	GA at delivery	PCR on Vaginal secretion	PCR on amniotic fluid	PCR on fœtal Membrane	PCR on placental maternal surface	PCR on full placental extract	PCR on maternal blood	PCR on neonatal ear sampling	PCR on cord blood	PCR on milk	PCR on neonnatal feces	Maternal Anti N IgG / IgM	Cord blood Anti N IgG / IgM	Maternal IgG anti S UA/ml	Cord Blood IgG anti S UA/ml	Maternal Serum Neutralizing activity UA/ml	Interpretation	Cord Blood Serum Neutralizing activity UA/ml	Interpretation	Day after first maternal symptom at sampling
Case 1	34	37	<0	<0	<0	<0	<0	<0	<0	<0	nd	nd	pos /pos	pos/neg	2600,6	810,5	392,28	pos	33,71	pos	25
Case 2	35	36,5	<0	<0	<0	<0	<0	<0	<0	<0	nd	nd	neg/neg then pos/pos at day 29	neg/neg	nd	nd	nd	nd	nd	nd	9
Case 3	40	40,2	nd	<0	<0	<0	<0	<0	<0	<0	<0	nd	neg/neg	neg/neg	9,6	9,9	6,1	neg	4,35	neg	2
Case 4	36	37	<0	<0	<0	<0	<0	<0	<0	<0	<0	nd	pos /pos	pos/neg	230	13	45	pos	0	neg	9
Case 5	36	39,5	<0	<0	<0	<0	<0	<0	<0	<0	nd	nd	pos/neg	pos/neg	151,8	36,6	33,76	pos	7,19	neg	18
Case 6	35	38,5	<0	<0	<0	<0	<0	<0	<0	<0	nd	<0	pos /pos	pos/neg	9480	7805	522,71	pos	343,57	pos	21
Case 7	36	40,2	<0	<0	<0	<0	<0	<0	<0	<0	<0	nd	pos/neg	pos/neg	nd	826	nd	nd	30,12	pos	30
Case 8	31	38,5	<0	<0	<0	<0	<0	<0	<0	<0	<0	<0	pos/pos	pos/neg	3770	1929	270,56	pos	113,78	pos	50
Case 8 bis	31	38,5	<0	<0	<0	<0	<0	<0	<0	<0	<0	<0	pos/pos	pos/neg	3770	3589	270,56	pos	259	pos	50
Case 9	30,5	38,5	<0	<0	<0	<0	<0	<0	<0	<0	nd	<0	pos/pos	pos/neg	3000	6000	203,61	pos	307,56	pos	56
Case 10	33,2	39,5	nd	<0	<0	<0	nd	<0	<0	<0	<0	<0	pos/neg	pos/neg	178,4	127,3	18,22	pos	9,95	pos	42
Case 11	32,4	39	nd	<0	<O	<0	nd	<0	<0	<0	<0	<0	pos/pos	pos/neg	463,1	319,8	17,93	pos	17,56	pos	59
Case 12	25	39,3	<0	<0	<0	<0	nd	nd	<0	nd	<0	nd	pos/neg	pos/neg	nd	440	nd	nd	21,49	pos	98

Abbreviations: GA, Gestationnal age; ND, not done; Neg, negative; Pos, positive.

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CONFLICTS OF INTEREST

None.

AUTHOR CONTRIBUTIONS

Dr Houhou Fidouh and Pr Luton designed and organized the study. Pr Luton and Pr Picone wrote the manuscript, which was analyzed, amended and accepted by all the authors. Dr Houhou-Fidouh and Dr Mélanie Bertine did the virological analysis. Dr Bucau analyzed the placenta. Dr Salakos organized the samples for the mothers and Dr Thu Nguyen organized the samples for the neonates.

DATA AVAILABILITY STATEMENT

No. Research data are not shared.

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Gynecology

Low sexual desire and hypoactive sexual desire disorder in Chinese women

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Hypoactive sexual desire disorder (HSDD) is the most prevalent subtype of female sexual dysfunction.[1] The DSM-IV definition of HSDD states that the essential feature of HSDD is the "persistent or recurrent deficiency of sexual fantasies and desire for sexual activity that causes marked distress or interpersonal deficiencies".[2] This representative Chinese survey examined the prevalence and predictors of HSDD.

Between January 2021 and April 2021, the Chinese Female Sexual Health Atlas (CFSHA) Task Force conducted the CFSHA survey. The CFSHA questionnaire mainly collected data on demographics,