

Phospholipids in amniotic fluid in pregnant women following Covid-19 infection

Jabborov UU, Nasirov YK
 Republican Perinatal Center, Tashkent, Uzbekistan

Objective

To study the effect of the transmitted viral disease COVID-19 on the content of phospholipids in amniotic fluid in pregnant women.

Methods

Biochemical analysis of specific markers of amniotic fluid was carried out in the Republican Perinatal Center in 2022 in 70 pregnant women who were delivered during this time. All pregnant women are divided into 3 groups. Group I (control) – pregnant women with physiological pregnancy and without obstetric and somatic diseases (n=10), group II - pregnant women who underwent COVID-19 in the second trimester of their gestation (n=30). Group III- pregnant women who underwent COVID-19 in the third trimester (n=30). Amniotic fluid sampling was performed using transabdominal amniocentesis in the period from 22 to 38 weeks of gestation. To determine phospholipids such as phosphatidylcholine, phosphatidylinositol, lysolecithin and sphingomyelin, high-performance liquid chromatography was used, which was performed on an Agilent Technologies Inc 1100 series liquid chromatograph (USA).

Results

The concentration of phosphatidylcholine in amniotic fluid in pregnant women who underwent COVID-19 in the second trimester was 34.68 ± 0.83 mcg/ml. In the group of pregnant women who underwent COVID-19 in the third trimester, the concentration of phosphatidylcholine was 26.74 ± 1.07 mcg/ml. These indicators were clearly lower than in the control group, amounting to 71.30 ± 2.98 mcg/ml. The content of sphingomyelin in amniotic fluid was 1.17 ± 0.09 mcg/ml in the group of pregnant women at 22-29 weeks and 0.98 ± 0.05 mcg/ml in the group of pregnant women at 29-38 weeks, respectively. These indicators were also lower than in the control group, where the indicator was 3.28 ± 0.08 mcg/ml.

Conclusion

In contrast to the control group patients, pregnant women with coronavirus infection have lower levels of phosphatidylcholine and sphingomyelin, as well as phosphatidylinositol and lysolecithin, a decrease in the concentration of these indicators confirms the unformed and immaturity of the fetal lungs.

Indicators	Control group (n =10)	II-trimesters of gestation. (n=30)	III-trimester of gestation (n=30)
Phosphatidylcholine, mcg/ml	71,30±2,98	34,68±0,83	26,74±1,07*
Phosphatidylinositol, mcg/ml	5,28±0,17	4,30±0,15	4,22±0,11
Lysolecitin, mcg/ml	5,13±0,147	4,11±0,153	4,01±0,107
Sphingomyelin, mcg/ml	3,28±0,08	1,17±0,09	0,98±0,05*
Plate body (×10 ⁹ /l)	103,0 ±1,15	72,18±1,06	67,0±1,21

Note: * - the reliability of differences with the control group, ^ - between the studied groups (p <0.05).