

The role of vitamin D for threatened miscarriage in the first trimester of pregnancy

M Bakleicheva (RU) [1], I Kovaleva (RU) [2], O Bespalova (RU) [3]

Context. Vitamin D deficiency or insufficiency is thought to be common among pregnant women and its supplementation during pregnancy was suggested as an intervention to protect against adverse pregnancy outcomes. It is proved that deficiency of Vitamin D may be associated with pregnancy complications, including spontaneous abortion. Vitamin D has pleiotropic functions that regulate the processes of implantation, growth and development of the fetus.

Objective. The purpose of this study is to compare level of vitamin D among 2 groups of patients: with the threat of miscarriage and with a normal pregnancy.

Patients. The study included 100 pregnant women between 6-14 weeks of gestation.

Interventions. The state of vitamin D was based on the concentration of 25-hydroxy-vitamin D [25(OH)D], determined by enzyme immunoassay in the mother's serum, between 6-14 weeks of gestation. Serum concentrations of 25(OH)D were classified as: severe deficient <10ng/ml, moderate deficient (10-30ng/ml), and normal status (>30ng/ml). Exclusion criteria: twins, HIV, parathyroid, kidney or liver diseases, malabsorption syndromes, age under 18 and after age 40, drug or alcohol abuse, since they can alter the metabolism of vitamin D. All patients were divided into 2 groups: 65 - with the threat of miscarriage (retrochorial haematoma, pulling pain), and 35 - with a normal pregnancy.

Main Outcome Measures and Results. In group 1, 80% of patients had a low concentration of 25(OH)D <30 ng/mL, of which 36.9% had a severe deficit, an average of 25(OH)D, 23.8±1.4 ng/mL. In group 2, only 37.1% of women had a deficiency of 25(OH)D, and only 14.3% of pregnant women had a concentration below 10 ng/ml, an average value of 28.4±2.8 ng/mL. The groups were statistically different. We found correlations between the concentration 25(OH)D and BMI of a pregnant woman, between vitamin D levels and recurrent miscarriages and failures of ART in history, homocysteine levels and 25(OH)D.

Conclusions. Serum levels of 25(OH)D among Russian pregnant women, especially with a threatening miscarriage in the first trimester, are low. Further studies are needed to assess the frequency of vitamin D deficiency in the first trimester of pregnancy and to include in standards for screening vitamin D in all pregnant women.

[1] D.O.Ott Research Institute of Obstetrics, Gynecology and Reproductology, Saint-Petersburg, Russia, [2] Clinic "Ava-Peter", Saint-Petersburg, Russia, [3] D.O.Ott Research Institute of Obstetrics, Gynecology and Reproductology, Saint-Petersburg, Russia