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ORIGINAL ARTICLE

PERINATAL ASPECTS OF PREGNANCY AND CHILDBIRTH ON THE BACKGROUND OF VITAMIN D LACK IN PREGNANT WOMEN

DOI: 10.36740/WLek202110210

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ABSTRACT

The aim: To study the features of the course of gestation and perinatal outcomes of delivery in women with vitamin D lack.

Materials and methods: The article presents the results of studies of the characteristics of the course of pregnancy and delivery outcomes in 50 patients with vitamin D lack compared with a group of 50 somatically healthy pregnant women with normal level of 25 (OH) D.

In order to establish a lack of vitamin D in pregnant women in the 10-12, 20-22, 30-32 weeks of gestation electrochemiluminescence method by using a test system EURIMMUN (Germany) in the blood serum level of 25-hydroxycalciferol (25 (OH) D) in pregnant women.

Results: When analyzing the structure of complications in women with vitamin D lack during pregnancy and childbirth we found out that risk of premature birth and premature births dominated among all the complications, respectively (58.0% and 36.0%) against (12.0% and 16.0%), $p < 0.05$. Vitamin D lack in pregnant women is often associated with a wide range of obstetric and perinatal complications, namely: preeclampsia, gestational diabetes, bacterial vaginosis, premature rupture of membranes, placental abruption, abnormal labor activity, fetal distress that required delivery by Caesarean section.

Conclusions: An analysis of the course of pregnancy and childbirth in women of thematic groups proved the expediency of an individual approach to the therapy of obstetric pathology among women with vitamin D lack. Despite the level of 25 (OH) D in the blood serum of a pregnant woman of 30 ng / ml and below, it is advisable to prescribe vitamin D for prophylaxes and treatment of Vitamin D deficiency in mother and fetus.

KEY WORDS: vitamin D, pregnancy, childbirth, complications

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INTRODUCTION

One of the urgent problems of modern health care for mothers and children is the problem of public health in many countries of the world [1-3]. Such problems, as it turned out, include the problem of vitamin D deficiency in pregnant women during gestation [4,5].

Many scientific works have been devoted to the study of various aspects of vitamin D deficiency in pregnant women [6,7].

However, the risk factors that contribute to vitamin D deficiency during pregnancy and its effect on the mother-fetus biosystem remain unspecified. There is no unified approach to diagnostics, prevention and treatment of vitamin D deficiency and prognosis for newborns.

The above facts substantiate the relevance of this scientific direction.

THE AIM

To study the features of the course of gestation and perinatal outcomes of delivery in women with vitamin D deficiency.

MATERIALS AND METHODS

In the comparative aspect of pregnancy, childbirth and the assessment of the perinatal consequences of delivery in 100 somatically healthy women with miscarriage was carried out. They were divided into two representative groups: the main group consisted of 50 patients with miscarriage, where the level of 25 (OH) D < 30 ng / ml indicated lack of vitamin D in the body of a pregnant woman, the second included 50 pregnant women with a normal level of 25 (OH) D in the serum of a pregnant woman (30-50 ng / ml) [5].

Definition 25-hydroxycalciferol (25 (OH) D) was carried out electrochemiluminescence method by using a test system EURIMMUN (Germany).

According to the nomogram, the level of vitamin D deficiency in the body of the pregnant woman was assessed.

Statistical processing of research materials was carried out using the Statistica V .6.1[®] software package. The critical value of the significance level (P) was taken as < 0.05 .

RESULTS

Pregnant women were examined between the age of 21 to 30 years, on average 25.1 ± 2.6 years in the main group and 24.9 ± 1.9 years in the comparison group, $p > 0.05$.

Table I. Characteristics of labor complications in women of thematic groups (abs., %)

Pathology	Group	
	The main n = 50	Comparison n = 50
Untimely discharge of amniotic fluid	15 (30.0%) ^x	7 (14.0%)
Abnormalities of labor activity	8 (16.0%) ^x	3 (6.0%)
Delay of part of the litter	17 (34.0%) ^x	1 (2.0%)
Perineal rupture grade I	6 (12.0%)	5 (10.0%)
Fetal distress	7 (14.0%) ^x	3 (6.0%)
Premature detachment of a normally located placenta	3 (6.0%) ^x	1 (2.0%)

Note: ^x p <0.05 relative to the comparison group.

In the study of obstetric history in the study group was observed high frequency of spontaneous abortion during early pregnancy, stillbirth and premature labor.

As a result of our study, the most common complications of vitamin D deficiency were risk of miscarriage, which was observed in 29 (58,0 %) women in the main group and in 6 (12%) women in the comparison group, p <0.05. Preeclampsia of mild severity was diagnosed in 18 (36,0 %) women in the main group and in 4 (8,0%) women in the comparison group, p <0.05.

The threat of premature birth in the main group was observed in 18 (36,0 %) women in the main group and 8 (16,0%) women in the comparison group, p <0.05.

Preeclampsia of moderate severity was diagnosed in 9 (18,0 %) women in the main group and in none of the control women, severe preeclampsia in 2 (4,0 %) women of the main group, which was not characteristic for the comparison group.

Based on the glucose tolerance test in women in the main group, the diagnosis of gestational diabetes (GD) was established in 17 (34.0%) pregnant women in the second trimester, and in 7 (14.0%) – in the third trimester. In this study, it was found that GD was accompanied by obesity of I stage in 7 (14,0 %) women of the main group.

Bacterial vaginosis (BV) at 10-12 weeks was diagnosed in 19 pregnant women – in 15 (30.0%) women in the main group and in 4 (8.0%) women in the comparison group, p <0.05.

An asymmetric form of intrauterine growth retardation (IUGR) of fetus of I degree was found in 7 (14%), II – degree – in 3 (6.0%) pregnant women in the main group and no cases in women in the comparison group. The most frequent complications of childbirth are shown in table I.

The reason for an urgent cesarean section at 30-33 weeks of gestation was placental abruption in 3 (6.0%) of the study group and in 1 (2.0%) in the comparison group, p <0.05. Also, in 7 (14.0%) and 3 (6.0%) women in the main and comparison group, an urgent cesarean section was performed as a result of fetal distress during pregnancy and childbirth at 32-33 weeks of gestation, in 3 (6.0%) women in the main group, the indication for cesarean section was severe preeclampsia at 34-36 weeks. Other complications in the main group occurred from 6% to 17% and from 1% to 7% in the comparison group.

DISCUSSION

The results of the study revealed a high incidence of preeclampsia among women. These data confirm the feasibility of taking vitamin D in pre-pregnancy training for the prevention of miscarriage and the development of pre-eclampsia [8,9].

These data confirm the advisability of taking vitamin D in pregravid preparation for the prevention of miscarriage and development of preeclampsia [10], confirming our data.

Taking into account the data obtained, it can be assumed that the lack of vitamin D may be an additional risk factor for the development of dysbiosis of the mucous membranes of the genital tract. Therefore, according to [11], the appointment of vitamin D can effectively contribute to dysbiosis prophylaxes.

CONCLUSIONS

1. Analysis of the course of pregnancy and childbirth in women of formed groups proved the advisability of an individual approach to the treatment of obstetric pathology with a lack of vitamin D.
2. When the level of 25 (OH) D in the serum of a pregnant woman is 30 ng / ml and below, it is advisable to prescribe vitamin D for the preventive and therapeutic purpose of Vitamin D deficiency in the mother and fetus.

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