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Research Article

DETERMINATION OF RISK FACTORS FOR FETAL GROWTH RETARDATION IN PREGNANT WOMEN WITH EXTRAGENITAL PATHOLOGY.

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ABSTRACT

The aim of this work is to establish by anamnestic and clinical-instrumental standard methods the factors of fetal growth retardation in pregnant women with hypertension.

A retrospective analysis of 117 case histories of pregnant patients with arterial hypertension who wore heated in the maternity hospital in 2019-2020 was performed. Women were observed at 26-36 weeks of pregnancy. Pregnant women were divided into 2 groups. Group 1 included 14 pregnant women with chronic arterial hypertension who were diagnosed with fetal growth retardation. Group 2 (comparison group) included 103 women with hypertension who did not have fetal growth retardation. Pregnancy was monitored according to current clinical protocols. Statistical analysis was performed using the program "STATISTICA® for Windows 6.0" (Stat Soft Inc., № AXXR712D833214FAN5). No statistically significant differences between groups of patients in the structure of other comorbidities were found, $p>0.05$. It should be noted that in the vast majority of women of group 1 was established 2 degrees of chronic arterial hypertension (78.6%), while in most patients of group 2 (52.4%) was determined 1 degree of chronic arterial hypertension, $p<0.05$. In the vast majority of patients in the main group, systolic blood pressure exceeded 150 mm Hg (78.6%), and diastolic blood pressure exceeded 90 mm Hg (85.7%), $p<0.01$. Uterine-placental circulatory disorders were detected in 92.9% of patients in group 1 and in 20.4% of patients in the comparison group, $p<0.001$. At the same time, grade 3 placental-placental circulatory disorders were present in 35.9% of women in group 1 and in 1% of patients in the comparison group, $p<0.05$. All pregnant women received treatment according to the medical standards of the Ministry of Health of Ukraine. The volume of prescribed therapy had no effect on the formation of fetal growth retardation, $p>0.05$. Physiological childbirth occurred in most mothers. The analysis of anamnestic and standard clinical and instrumental indicators identified the following risk factors for fetal developmental delay: chronic hypertension of 2 degrees, excess blood pressure over 150 and 90 mm Hg, the presence of uterine-placental circulation of 2 and 3 degrees. The appointment of standard treatment regimens did not affect the development of fetal growth retardation.

Key words: risk factors, fetal growth retardation, hypertension..

INTRODUCTION

Delayed fetal development is important among the causes of morbidity and mortality in infants. Fetal developmental delay is also an important medical and social problem due to the wide range of complications of pregnancy and negative consequences in the postnatal period [2, 3, 4, 8]. Currently, the etiology, pathogenesis and approaches to the treatment of fetal growth retardation continue to be actively studied. According to the literature, the diagnosis of fetal growth retardation is established in the case of a decrease in the rate of weight gain below the 10th percentile, respectively, gestational age in the presence of placental insufficiency [9]. With the expansion of knowledge about the pathogenesis of feto-placental insufficiency and fetal development delay, it became clear that their formation is associated primarily with changes in uteroplacental circulation, chronic hypoxia of the fetus and metabolic disorders [5]. hi recent years, among the various pathogenetic mechanisms of fetal growth retardation, the main importance is given to chronic maternal hypoxia and placental hypofunction, resulting in impaired transport of oxygen and essential nutrients to the fetus [1, 3, 8]. Factors of fetal developmental delay are: placental dysfunction, primary enzymatic or vascular insufficiency in the mother, impaired uteroplacental blood flow, deterioration of rheological properties of blood, hyperaggregation of erythrocytes and platelets, microcirculation disorders, vascular disorders [1,3, 5,9].

Currently, the existing criteria for fetal development do not allow to diagnose fetal developmental delay in early pregnancy. This leads to untimely diagnosis, treatment and prevention. Thus, there is a need to improve methods for diaanosing fetal growth retardation.

Aim. To determine the factors of fetal developmental delay in pregnant women with hypertension by anamnestic and clinical-instrumental standard methods.

Materials and methods. A retrospective analysis of 117 case histories of pregnant patients with arterial hypertension who were treated at the Zaporizhzhia Regional Perinatal Center in 2019-2020 w[r]as conducted. A case-control study w[r]as performed. Criteria for inclusion in the study: pregnancy, the presence of chronic hypertension 1-2 stages. Exclusion criteria: stage 3 chronic arterial hypertension, diabetes mellitus, multiple pregnancy, chromosomal and genetic disorders, thrombophilia, perinatal infections, systemic connective tissue disease. Women were observed at 26-36 weeks of pregnancy. Pregnant women wore divided into 2 groups. Group 1 included 14 pregnant women with hypertension who were diagnosed with fetal growth retardation. Group 2 (comparison group) included 103 women with hypertension who did not have fetal growth retardation. Chronic hypertension and fetal growth retardation wore diagnosed according to current clinical protocols. Uterine-placental circulatory disorders were established using an ultrasound machine "MyLabClassC-Esaote". Pregnant women were treated according to current clinical protocols. Statistical analysis was performed using the program "STATISTICA® for Windows 6.0" (Stat Soft Inc., № AXXR712D833214FAN5). The statistical significance of differences between groups in qualitative indicators was determined using Fisher's exact test, in quantitative terms - using Student's T-test.

RESULTS AND DISCUSSION.

The age characteristics of the group of pregnant women with hypertension did not differ statistically significantly: the average age of patients in group 1 reached 2S.9 = 2.0 years, group 2 - 29.2 = 0.6 years, $p>0.05$. The

group was mainly dominated by women with second pregnancies and second births. About 1/4 patients had more than 2 pregnancies. Women of group 1 did not have more than two births. Previous abortions occurred in 1/5 of women in group 1 and in 1/3 of the second group. p>0.05.

Among the concomitant lesions in pregnant women were determined: preeclampsia (5 women 1 group (35.7%) and 41 people 2 group (39.8%), obesity (4 patients 1 group (28.6%) and 25 people 2 group), 3%), varicose veins (2 women 1 group (14.3%) and 12 pregnant women 2 groups (11.7%), pathology of the urinary system (1 case in 1 group (7.1%) and 3 cases in group 2 (2.9%)). Other diseases wore observed only in women who did not have fetal growth retardation: pathology of the thyroid gland (7 cases), anemia of pregnancy (6 cases), chronic viral hepatitis C (3 cases), pathology of the nervous system (2 cases), pathology of the cardiovascular system (1 case) Statistically significant differences between groups of patients in the structure of comorbidities were not found. According to other data [6], preeclampsia, diabetes mellitus and renal pathology were factors in the cardiovascular system and kidneys, fetal growth retardation in pregnant women. However, these studies were performed in all women, not only in patients with grade 1 and 2 hypertension.

It should be noted that in the vast majority of women of group 1 was established 2 degree of chronic arterial hypertension (78.6%), while in most patients of group 2 was determined 1 degree (52.4%), p<0.05.

In the vast majority of patients in the main group, systolic blood pressure exceeded 150 mm Hg (78.6%), and diastolic blood pressure exceeded 90 mm Hg (85.7%). In the vast majority of systolic and diastolic blood pressure levels reached more than 160 and 100 mm Hg, respectively (p<0,001). In patients of the comparison group, in 63.1% of cases, the levels of systolic blood pressure did not exceed 150 mm Hg, and diastolic blood pressure did not exceed 90 mm Hg in 75.6%.

Uterine-placental circulatory disorders were detected in 92.9% of patients in group 1 and in 20.4% of patients in the comparison group, p<0.001. At the same time, grade 3 placental-placental circulatory disorders were present in 35.9% of women in group 1 and in 1% of patients in the comparison group, p<0.05. In women who w'ere diagnosed with fetal developmental disorders, mostly grade 2 uterine-placental circulatory disorders were found (57.1%), while in patients who did not have fetal growth retardation, 1st and 2nd degree uterine-placental circulatory disorders were found in 9 , 7% of women. Disorders of uteroplacental circulation of 1 degree in persons of group 1 were not, p<0.05.

The obtained results do not contradict the conclusions of other researchers [1, 2]. That is, disorders of uteroplacental circulation are one of the key factors that lead to fetal growth retardation.

All pregnant women received treatment according to the standards of the Ministry of Health of Ukraine. All patients were prescribed a diug with central antiadrenergic. action (methyldopa). Combination therapy with methyldopa and a calcium channel antagonist (nifedipine) was used in 9 women in group 1 (64.3%) and in 47 pregnant women in group 2 (45.6%). Tri-therapy with methyldopa, nifedipine and β-receptor blocker (bisoprolol) was prescribed to 6 women of group 1 (42.9%) and 12 persons of group 2 (11.7%). Also, most patients received symptomatic therapy. The volume of prescribed therapy had no effect on the formation of fetal growth retardation, p>0.05.

The weight of the fetus at birth reached an average of 2425.0 = 121.7 g in women of group 1 and 2948.0 ± 58.0 g in patients of group 2, p<0.01. Physiological births were performed in most mothers. Cesarean section was performed in 6 women of group 1 (42.9%) and in 12 patients of the comparison group (11.7%), p<0.01. Vacuum extraction of the fetus was perfonned in 6 w omen of group 2 (5.8%).

CONCLUSIONS

The analysis of anamnestic and standard clinical and instrumental indicators identified the following risk factors for fetal growth retardation: chronic hypertension of 2 degrees, excess blood pressure over 150 and 90 mm Hg, the presence of disorders of uteroplacental circulation of 2 and 3 degrees. Risk factors for fetal growth retardation did not include: a combination of chronic hypertension in pregnant women with obesity, pathology of the cardiovascular system and kidneys. Appointment of standard treatment regimens according to different schemes (1 - monotherapy with a drug with central antiadrenergic action (methyldopa), 2 - combination therapy with methyldopa and calcium channel antagonist (nifedipine), 3 - tri-therapy with methyldopa. nifedipine and receptor (bisoprolol)) did not prevent the appearance of fetal growth retardation.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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