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Prevention of obstetric and perinatal complications in women with placental dysfunction considering psychoemotional state

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Abstract

The purpose of the study was to evaluate the effectiveness of the proposed program of psychological correction and medical therapy. Clinical and laboratory-instrumental examination of 50 patients at risk was conducted involving our proposed optimized preconception program. The evaluation of the psychological component of gestation dominant was conducted according to Dobriakov's "Pregnant woman attitude test". The proposed program of preconception preparation was modified by psychological correction and neuroadapters taking into account the type of PCGD. The results of the conducted studies show the high efficiency of the proposed approach for normalizing not only endocrine imbalance, but also psychoemotional status.

Keywords: Psychological component of gestation dominant, consequences of pregnancy, psychoemotional status, neuroprotectors, plant adapters, vitamin D

Introduction

As literary sources show, the gestational process, especially in the case of its pathological course, is an extremely strong psychoemotional factor^[1, 2]. Pregnancy has a significant impact on the female psychosomatics, leads to the formation of dysadapted psycho-vegetative syndrome, which can be a preconditioning for the pathological development of pregnancy^[1]. Before proceeding pregnancy, patients with long-treated infertility, repeated miscarriages in a case history, tend to have a symptom-complex of vasomotor and neuropsychiatric disturbances, which is leading in the manifestation of gestational complications such as premature delivery, preeclampsia, fetal distress, and indicates a cause-effect relations of psychological disorders in the genesis of these complications^[2].

Taking into account the lack of certain tactics in conducting preconception preparation in this category of patients, the problem under investigation cannot be considered completely solved, which leads to the expediency and necessity of developing a differentiated approach taking into account the psychological component of gestation dominant (PCGD) already at the stage of preparation for future pregnancy.

The above facts require a purposeful study of the mechanisms and separate parts of the pathogenesis of placental dysfunction and premature delivery in women with different types of psychological adaptation to pregnancy, and hence the search for appropriately validated methods of diagnosis and treatment of determined obstetric pathology.

The purpose of the study was to evaluate the effectiveness of the proposed program of psychological correction and medical therapy in the prepregnancy preparation of women with different types of psychological component of gestation dominant.

Materials and methods of research. For solving our tasks, we conducted a penetrating clinical and laboratory-instrumental examination of 100 patients at risk for miscarriage. Experimental psychodiagnostic research was carried out on the basis of the Center of Conscious Parenthood "Divia" on a voluntary basis with women at different stages of pregnancy. At this stage, we were guided by literary sources, which indicate the peculiarities of the psychoemotional state of a woman at the stage of preparation for pregnancy^[1-6]. Psychoemotional state hinges on the formation of a woman's "dominant maternity", described in 1960 by the Russian physiologist Arshavskiy I. A^[3]. The "dominant maternity" is consistently composed of: the dominant of conception, gestation dominant, delivery dominant, and lactation dominant^[3, 4]. The concept of "gestation dominant" reflects the peculiarities of the course of physiological and neuropsychic processes in the body of a pregnant woman, aimed at laying the groundwork

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for the conception and development of the fetus [5, 6]. Gestation dominant has two mutually influential components: physiological and psychological. The dominant of pregnancy transforms the character, behaviour, emotional background of the expecting mother, determining her mental condition, which in turn affects the course of pregnancy, fetal development, as well as the course of labour, the occurrence of labour pain, postpartum and lactation periods. Dobriakov I. V. [6 p354] profoundly studied PCGD, and it was he who proposed the method "Pregnant woman attitude test", which allows determining the type of PCGD of expecting mothers. At present, this technology is one of the screening tests to determine and correct the psychoemotional state of a pregnant woman [7]. The test helps determine the type of PCGD and divide pregnant women into following groups (optimal, hypogestognostic, euphoric, anxious and depressive). In parallel, with the aim of clarifying and obtaining more reliable data, psychodiagnostic "Dating Questionnaire" and projective drawing method "Me and My Child" by Philipova G. G. were carried out. Interpretation of the results was based on the features of the drawing, which allowed including self-perception of pregnancy and the unborn baby to a particular style [8]. At the same time, we selected a group of patients with adequate style that corresponded to the optimal type of PCGD; a group of women with an ambivalent and anxious perception of pregnancy and the unborn baby (corresponding to an anxious type of PCGD), and a group of patients with a rejection and ignoring style (according to Filippova G. G.), which characterized the conflict with pregnancy.

With the help of the above mentioned methods, 100 women of childbearing age were diagnosed, they were asked to answer the questions anonymously, using anonymous questionnaire processing with the answer to the question and analysis of the projective method. During this conversation, additional information was obtained: about lifestyle, wanted or unwanted pregnancy, termination of pregnancy, the character of patients, type and certain family problems, etc. Thus, a kind of feedback with the respondents was received on the test results (34.0% of observations).

All 100 patients, included in the study, were divided into two groups: the comparison group – 50 women with unfavourable types of the psychological component of the gestational dominant (10 patients with euphoric type of PCGD, 15 women with hypogestogenic type of PCGD, 15 – with anxious type and 10 with depression type of PCGD). All patients received the common approaches to preconception preparation. The main group included 50 women with unfavourable types of PCGD who received our proposed optimized preconception program. The control group included 20 patients with the optimal type of PCGD without reproductive dysfunction, and without somatic and gynaecological pathologies.

With a view to make the study of the psychoemotional state more penetrating, we conducted a survey using the questionnaires and the following experimental psychological methods: Spielberg score test of personal and reactive anxiety, the test adapted by Yu. L. Khanin; Beck test, which allows to appraise the level of depression by points. Hormonal profile studies included the analysis of the level of follicle stimulating hormone, luteinizing hormone, prolactin, estradiol and progesterone in different phases of the menstrual cycle by the method of immunoassay analysis. Ultrasound examination of pelvic organs, liver, kidneys, thyroid gland, mammary glands was performed using linear and sectoral sensors to the

Siemens-250 apparatus (Austria).

The proposed therapeutic and preventive program of preconception preparation was modified by the program of psychological correction, which provided for each group of patients differentiated approaches taking into account the type of PCGD, among which the preference was given to respiratory gymnastics and art therapy, in particular the following types: body oriented therapy, music therapy, isotherapy, fairy-tale therapy, mandala therapy and work with plastic materials. For patients of anxiety and depression type, psychological approaches implemented in the role-playing game and person-centered therapies were used. The proposed therapeutic and prophylactic program included the use of Mebicar drugs in patients with anxious and depressive type of PCGD. This drug has a moderate tranquilizing (anxiolytic) activity that relieves anxiety, fear, internal psychoemotional stress and irritation. Positive point is the nootropic and antioxidant action of this preparation with normostenic properties.

A significant role of the stress factor in the mechanism of development of dyshormonal and vegetative-vascular disturbances indicates the need for correction of the psychological state and state of the autonomic nervous system in such patients; so, as a result, magnesium preparations with vitamin B6 were included in the complex of treatment. Magnesium serves as a natural anti-stress factor, inhibits the excitative processes in the central nervous system and reduces the sensitivity of the body to external influences. In addition, magnesium plays a leading role in the energy, plastic and electrolyte metabolism, takes part in the processes of oxidative phosphorylation, membrane transport.

At the first stage of treatment, it is important to achieve stable indicators of normal psychoemotional status, and as a consequence, to stabilize the hormonal background, in particular to achieve normoprolactinemia. In this aspect, an integrated approach is needed that includes the physiological effect on the vegetative and metabolic links of this component. That is why the next component of the treatment program were herbal preparations – Cyclodinone (a drug that has a mild dopaminergic effect, stabilizing normoprolactinemia). At the same time, women with high BMI (>30 kg / m²) included in their treatment program vitamin D in the dose of 600-800 IU per day, as one of the main regulators of the body's reproductive function.

All types of statistical processing were performed using the standard package "Statistica for Windows – 6.0".

Results of the research and their discussion: The evaluation of the structure of the types of the psychological component of the gestational dominant showed a high percentage of unfavourable types of PCGD (among which the most significant were the anxious and depressive types), as well as a statistically significant relationship between the peculiarities of the course of pregnancy and childbirth, which had a close relationship with placental abnormalities, gestational complications (preeclampsia and fetal distress) and progression of disadaptation of utero-placental circulation. We should take note of statistically significant dependence and expediency of patients' screening with unfavourable psychoemotional factors, especially in the case of anxious type and depressive type of PCGD, which increases the risk and progression of placental dysfunction by 7.27 times (OR – 7.27, 4.66-11,35) and requires psychological help at the preconception stage.

Analysing the hormonal profile in women of the main group, it was found that almost in half of patients (48.0%), a statistically significant increase in prolactin levels was found, 42.0% had deficiency in the luteal phase, and 36.0% of patients had anovulation, confirmed by laboratory criteria.

The results of the assessment of the psychoemotional status revealed in one third of women in the control group an increase in the proportion of vegetative-emotional disorders (increased irritability, palpitation, general weakness, sweating, etc.), along with an increase in reactive anxiety. Thus, even in healthy patients, at the preconception stage and during the monitoring of early pregnancy, there are certain psychological changes that should be considered as a physiological adaptation of a woman to pregnancy.

Patients with unfavourable types of PCGD, especially those with a history of perinatal loss, long-term infertility, etc., have common features at the pregestation stage – latent anxiety and stress increased by somatic fixations, increased reactivity and high levels of personal anxiety; in one third of observations the signs of depression are detected. In the case of abnormal pregnancy (progressive retrochoric hematoma, the threat of involuntary miscarriage), the signs of depression become dominant, with a predominant proportion of patients (54.0%) with high levels of personal and reactive anxiety 3.0 times more often than in the control group ($p < 0.05$). So, even at the preconception stage this category of patients gradually develops a pathological psychological state with the domination of somatic fixations and expressed emotional lability.

Assessment of the effectiveness of the proposed program in the comparison group revealed the dominance of emotional lability among vegetative and psychoemotional manifestations (44.0% vs. 16.0% - in the main group), anxiety (26.0% vs. 18.0% respectively), and depression manifestations (36.0% vs. 12.0% in the main group). Women in comparison group also had unpleasant somatic sensations (cardialgia, mastalgia, palpitations), a tendency to interpret them as a threat to their health and fetus, emotional stress and anxiety, which is a sign of anxiety, stress, unstable psychological state with distinct elements of somatic fixation^[9].

According to Beck tests, which determine the degree of depression, in the main experimental group the average score was (23.62 ± 0.34) points, which corresponds to moderate depression. A high-functioning depression was found in 34.0% only in women of the comparison group, moderate – in 30.0%, weak – 36.0% (chiefly – in the main group). The examination of women of the comparison group showed a high level of personal and reactive anxiety, which testifies to the fact of constant influence of the chronic stress factor. It was also noticed the predominance of high levels of personal anxiety (in 42.0% of cases vs (22.0% in the main group) Besides, there was a significant increase in both situational anxiety and personality anxiety, which can be regarded as an emotional reaction to a stressful situation (in the form of increased nervousness, anxiety, concern and tension) against the data in control. Taking into account strong relationship between personal anxiety and somatic symptoms, it was noticed a significant growth of this indications in women with premature births in the first trimester of pregnancy.

Thus, the widely used traditional approaches to preconception preparation in patients with a high level of psychological anxiety and emotional stress turned to be insufficiently adequate, while the modification of approaches to preconception preparation at the stages of placentation and probable placental insufficiency contributed to a decrease in

the percentage of miscarriages and the development of negative reproductive and perinatal losses.

The obtained results of the research revealed the following conclusions. Women with a risk of miscarriage and perinatal loss in history have a long-term psychosocial tension, such women are prone to depression and aesthetic features, and the fact of pregnancy is a significant psychoemotional stress inducing factor of negative experiences, latent anxiety and stress.

Comprehensive psychological examination of pregnant women with unfavourable types of PCGD indicates the presence of common features – latent anxiety and tension intensified by somatic fixations, moderately increased reactivity and high levels of personal anxiety, they often show signs of depressive and aesthetic features, which become predominant from the first weeks of pregnancy and need an appropriate psychological correction.

The results of the studies demonstrate the high efficiency of the proposed algorithm of treatment with the use of a complex of neuroprotectors, vitamin D, antioxidants and non-hormonal herbal drugs for the normalization of not only endocrine imbalance at the preconception stage in women with unfavourable types of psychological component of gestation dominant, but also their psychoemotional status. The chosen optimized program of psychological correction and the proposed drug complex are characterized by good portability, is also effective not only for the restoration of reproductive function, but also for the normal functioning of the organism as a whole.

The further study of the influence of the complex of psychocorrection and the potentiation of its effect with the help of medication in women with impaired reproductive function, is rather perspective.

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