



Changes in The Mouth Cavity and Metabolic Disorders during Toxicosis in the 1st Half OF Pregnancy

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ABSTRACT

The problem of early toxicosis today is quite relevant. There are frequently occurring (vomiting of pregnant women, salivation) and rare forms of early toxicosis (dermatoses of pregnant women, tetany, osteomalacia, acute yellow liver atrophy, bronchial asthma of pregnant women). In this work, the most frequent clinical manifestation of early toxicosis, namely vomiting of pregnant women, will be considered in more detail. Vomiting of pregnant women is a complex clinical syndrome, which is characterized by digestive disorders, leading to significant disorders: dehydration, changes in metabolism and electrolyte balance. This complication of pregnancy affects the further course of pregnancy and the development of the fetus. Pregnant women have one of the highest risks of dental disease. The main diseases of the oral cavity that a woman faces are periodontitis and caries. These problems arise for very specific reasons. Pregnancy is always a change in the hormonal background, the result of which is a change in blood circulation in the skin and mucous membranes. The pathological process in the oral cavity is caused by the active growth and reproduction of Actinomyces bacteria. Naeslundii. If they are present on the surface of incisors, canines and molars, microorganisms often enter the gastrointestinal tract and blood along with food during meals. The risk of increased uterine tone, opening of the cervical canal and destruction of the membranes increases.

Key words: pregnancy, teeth demineralization, pregnancy toxicosis

Received 16.05.2023

Revised 21.05.2023

Accepted 27.06.2023

INTRODUCTION

Toxicosis of the first half of pregnancy (vomiting of pregnant women) is a common complication of the gestation period, its incidence reaches 22-28% and does not tend to decrease [2, 3, 4]. To date, clinical and laboratory criteria for assessing the severity of toxicosis in the first half of pregnancy have not been systematized. The classification of this pathology used in clinical practice is based on the frequency of vomiting, the severity of nausea and generally accepted indicators of the functional state of the cardiovascular system, liver, kidneys and urinary system [1]. Meanwhile, traditional indicators for assessing the functional activity of a number of internal organs and systems do not always objectively reflect the severity of the pathology.

Pregnant women have one of the highest risks of dental disease. The main diseases of the oral cavity that a woman faces are periodontitis and caries. These problems arise for very specific reasons. Pregnancy is always a change in the hormonal background, the result of which is a change in blood circulation in the skin and mucous membranes.

The pathological process in the oral cavity is caused by the active growth and reproduction of Actinomyces bacteria. Naeslundii. If they are present on the surface of incisors, canines and molars, microorganisms often enter the gastrointestinal tract and blood along with food during meals. The risk of increased uterine tone, opening of the cervical canal and destruction of the membranes increases.

To study the protein spectrum of the blood, the level of bilirubin, urea, creatinine, as well as the state of cell membranes to identify cytolysis syndrome in patients with emesis gravidarum (vomiting of pregnant women) of varying severity to identify new diagnostic and prognostic criteria for the course of the disease.

MATERIAL AND METHODS

Under observation were 46 patients with toxicosis of the first half of pregnancy, who were hospitalized in the MUSE "Perinatal Center" in Engels in the period 2008-2010. The patients were divided into three groups in accordance with the generally accepted classification (Mirov I.M., 1990). Group 1 consisted of

16 pregnant women with mild pathology. The general condition of the patients remained satisfactory. Vomiting was observed up to 5 times a day, more often after meals, sometimes on an empty stomach. The patient loses no more than 3 kg in weight, body temperature remains within the normal range. Humidity of the skin and mucous membranes remains normal, the pulse rate does not exceed 80 beats / min. Arterial pressure does not change. Clinical analyzes of urine and blood - without pathological changes.

The 2nd group included 15 pregnant women with a moderate course of vomiting of pregnant women. With the II degree of severity of toxicosis of the first half of pregnancy, the general condition of the woman is noticeably disturbed: vomiting is observed from 6 to 10 times a day and is no longer associated with food intake, weight loss is from 2 to 3 kg in 1.5-2 weeks. Subfebrile temperature is possible. Moisture of the skin and mucous membranes remains normal. Tachycardia - up to 90-100 beats / min. Blood pressure may be slightly reduced. Acetonuria is observed in 20-50% of patients.

Group 3 included 15 pregnant women with severe toxicosis in the first half of pregnancy. With III degree of severity (excessive vomiting), the general condition of the woman deteriorates sharply. Vomiting occurs up to 20-25 times a day, sometimes with any movement of the patient. Sleep is disturbed, adynamia develops. Weight loss reaches up to 8-10 kg. The skin and mucous membranes become dry, the tongue is lined. The body temperature rises (37.2-37.5°C). Tachycardia - up to 110-120 beats / min, blood pressure decreases. All types of metabolism are disturbed. Daily diuresis is reduced, acetonuria, protein and casts in the urine are observed. The control group consisted of 20 pregnant women at similar terms of pregnancy with uncomplicated gestation.

The analysis of integrative biochemical blood parameters (contents of total protein and its fractions, bilirubin, urea, creatinine, medium mass molecules (MSM), transaminase activity (AST, ALT) was carried out by conventional spectrophotometric methods.

Statistical data processing was carried out on a personal computer using the programs Statistica 99 (Version 5.5 A, "Statsoft, Inc", Moscow, 1999); Microsoft Excel, 97 SR-1 (Microsoft, 1997). Student's criterion of reliability, reliability of differences, calculation of the arithmetic mean were determined. Significance of differences (p) was determined by a parametric criterion of significance.

RESULTS AND DISCUSSION

α_1 -globulins in the blood increased ($p < 0.05$). At the same time, there were no changes in the level of total protein in the blood, bilirubin, urea, creatinine, activity of transaminases (ALT, AST) in the blood compared with the indicators of women with a physiological course of pregnancy.

Regarding the nature of systemic metabolic changes in group 2 with a moderate course of the pathology, noticeable quantitative and qualitative changes in the protein spectrum of the blood should be noted: the level of serum albumin remained as low as in patients with mild toxicosis in the first half of pregnancy, the amount of α_1 and α_2 globulins significantly exceeded those of the control group ($p < 0.05$). There was no decrease in the level of total protein in the blood of patients with moderate toxicosis in the first half of pregnancy. C-reactive protein was detected in the blood of 66.7% of patients; a significant increase in the level of fibrinogen ($p < 0.05$) was detected in the blood of patients in the specified observation group.

The increase in the activity of alanine aminotransferase ($p < 0.01$) and aspartate aminotransferase ($p < 0.02$) in the blood of pregnant women with moderate toxicosis in the first half of pregnancy, which we found, indicated an increasing violation of the stability of biological membranes and the development of cytolysis syndrome.

Systemic metabolic changes in patients with moderate toxicosis in the first half of pregnancy were combined with the development of endogenous intoxication, as indicated by a significant increase in the level of medium-weight molecules compared to that in the comparison group ($p < 0.02$). Thus, in the moderate course of toxicosis of the first half of pregnancy, systemic metabolic changes progressed, and pronounced manifestations of autointoxication occurred.

As shown by the results of our studies, in patients of the 3rd group with a severe course of toxicosis in the first half of pregnancy, there was a significant increase in the activity in the blood serum of the studied enzymes - alanine - and aspartate aminotransferase, which are objective marker molecules of damage to the cytoplasmic membranes of cells during various exo- and autointoxications. At the same time, further progression of hypoalbuminemia, dysproteinemia was revealed, while the content of total protein in the blood serum remained within normal values. C-reactive protein was found in the blood of all patients of this group, the content of fibrinogen significantly exceeded both the indicators in the comparison group and the indicators in the groups of patients with moderate toxicosis in the first half of pregnancy.

With the aggravation of the clinical manifestations of the disease, the level of MSM progressively increased: in patients with severe toxicosis in the first half of pregnancy, the level of MSM in the blood serum was maximum compared to that in the control group ($p < 0.01$) and in patients of the 1st and 2nd observation groups ($p < 0.05$).

CONCLUSIONS

The detection in pregnant women with toxicosis of the first half of pregnancy of such metabolic changes as hypoalbuminemia, dysproteinemia, cytotoxic syndrome, the severity of which correlated with the severity of the pathology, allows us to recommend the determination of a number of integrative biochemical blood parameters to clarify the severity of the course and, accordingly, the prognosis of this pregnancy complication.

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CITATION OF THIS ARTICLE

Saidova Nilufar Akhrorovna. Changes in the Mouth Cavity and Metabolic Disorders during Toxicosis in the 1st Half OF Pregnancy. Bull. Env. Pharmacol. Life Sci., Vol 12[6] May 2023: 290-292