THE IMPACT OF BLOOD MANAGEMENT IN PREGNANT WOMEN AS A RISK FACTOR FOR THE DEVELOPMENT OF DENTAL CARIES

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ABSTRACT

Pregnancy is a physiological process accompanied by significant changes in hormonal balance, metabolism, and the hematopoietic system. During this period, the female body experiences an increased load, which is often associated with disturbances in dental health. One of the key complications of pregnancy is iron-deficiency anemia (IDA), which, according to the World Health Organization, is diagnosed in 21–80% of women during gestation. IDA has a negative impact on all organs and systems of the body, including the tissues of the oral cavity. Under conditions of iron deficiency, protein and mineral metabolism are disrupted, leading to enamel demineralization, reduced resistance to pathogenic microflora, and the development of dental caries. Timely blood management during pregnancy is considered one of the most important factors in the prevention of dental diseases.

Justification

The dental health of pregnant women has traditionally been distinguished as a special area of cariology and periodontology. According to Zharkova O.A., during pregnancy, the pathogenic potential of oral microflora increases, which contributes to the higher incidence of caries and periodontal diseases. Aksamyt L.A. emphasized the key role of dental plaque in the development of cervical caries in pregnant women. Lakhtin Yu.V. focused on the importance of antenatal prevention of dental caries. Lukinykh L.M. pointed out that oral disease prevention should begin even at the stage of preparation for pregnancy. Makaricheva A.D. demonstrated significant changes in immunological processes during gestation, which affect the body's resistance.

Research Objective

To determine the role of disorders in the hematopoietic system of pregnant women, particularly iron-deficiency anemia, as a risk factor for enamel demineralization, and to identify key directions for the prevention of dental diseases.

Discussion

A significant contribution to the study of this issue has been made by foreign researchers. Laine M.A. demonstrated the direct influence of pregnancy on dental health, especially the condition of the periodontium. Several clinical observations (Tarmaeva S.V. et al.) confirm a high incidence of dental caries in women with complicated pregnancies. According to Denisenko L.N. and colleagues, iron-deficiency anemia is an important pathogenetic factor that accelerates enamel demineralization and the development of complicated forms of caries.

Blood management is a scientifically based system of measures aimed at optimizing therapeutic and surgical outcomes through rational clinical management and preservation of the patient's autologous blood. The main objectives include maintaining an adequate level of hemoglobin, ensuring normal functioning of the hemostasis system, and reducing blood loss. Blood management is multidisciplinary and focuses on individualized treatment of patients with a high risk of blood loss and a potential need for transfusion. This approach is viewed as a continuous process that begins during the antenatal period and continues through delivery and the postpartum stage.

Iron-deficiency anemia during pregnancy is accompanied by a lack of serum iron, impaired hemoglobin synthesis, and oxygen metabolism, which lead to functional and morphological changes in body tissues. In terms of dental status, this manifests as reduced enamel mineralization, increased tooth tissue sensitivity (hyperesthesia), accelerated carious progression, and a high incidence of complicated caries (pulpitis, periodontitis). According to Denisenko L.N., pregnant women with IDA have a higher DMF index than healthy women, with carious teeth predominating. The most commonly affected teeth are incisors, canines, and premolars.

The maximum intensity of carious processes is observed in primiparous women aged 18–20 years. In such patients, demineralization progresses particularly rapidly: previously intact teeth become affected by caries within 3–4 months.

Blood Management in Pregnant Women

Comprehensive management includes:

- Timely diagnosis of IDA (complete blood count, ferritin, serum iron);
- Prescription of iron and vitamins (folic acid, vitamin B12, vitamin C);
- Dietary correction with increased intake of iron- and calcium-rich foods;
- Prevention of dental complications: remineralizing therapy, professional oral hygiene, and the

use of fluoride-containing products.

Thus, blood management during pregnancy should be considered a multidisciplinary task involving cooperation among obstetricians-gynecologists, therapists, and dentists.

Conclusion

Iron-deficiency anemia is a significant risk factor for enamel demineralization in pregnant women. Under iron-deficient conditions, accelerated carious progression, reduced resistance of dental tissues, and a high risk of complicated caries are observed. Effective blood management, including diagnosis and treatment of IDA, dietary correction, and preventive

dental measures, can significantly reduce the risk of enamel demineralization and preserve oral health during pregnancy.

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