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ALLERGIC RHINOSINUSITIS IN PREGNANT WOMEN: FEATURES OF DIAGNOSIS AND TREATMENT

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Abstarct. The scientific review article presents a comprehensive analysis of allergic rhinosinusitis (ARS) in the context of pregnancy, considering the features of diagnosis, clinical presentation, therapy and prevention. Introduces the issue of ARS in pregnant women, highlighting the relevance of the topic in the light of physiological changes in the body of expectant mothers. The following highlights the features of diagnosing ARS, paying attention to the safety of the procedures performed for the mother and fetus. The emphasis is on hormonal changes and their association with worsening symptoms of ARS during pregnancy. The role of drug therapy and the need for a personalized approach to the selection of drugs are emphasized. Sections are presented on the effects of treatment on fetal development, including assessment of drug safety and the possible consequences of insufficient treatment. In the context of prevention, measures to prevent the development of ARS and the role of allergen-specific immunotherapy are discussed.

Key words: allergic rhinosinusitis, immunotherapy, MRI, allergen-specific immunotherapy, pregnancy

Introduction

Allergic rhinosinusitis (ARS) is a common allergic disease of the upper respiratory tract, characterized by inflammation of the nasal mucosa and paranasal sinuses. As pregnant women experience physiological changes in their bodies,

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including hormonal and immune changes, issues related to ARS become of particular importance [12].

During pregnancy, a woman undergoes significant changes in the immune system, aimed at maintaining a therapeutic balance between the mother's body and the developing fetus. These physiological adaptations may influence the presentation of ARS symptoms and complicate diagnosis and treatment. The importance of these aspects is emphasized not only for the well-being of the expectant mother, but also for the health of the developing fetus. Despite the prevalence of ARS and the high percentage of pregnant women experiencing this disease, there is a lack of research on the diagnosis and treatment of ARS in this group of patients [19].

The study of allergic rhinosinusitis (ARS) in pregnant women becomes important in light of several factors that justify the relevance of this topic in a scientific context. Despite the widespread prevalence of ARS and the high percentage of pregnant women experiencing this disease, there is a significant lack of systematic research aimed at identifying the characteristics of its manifestation and treatment during pregnancy. This lack of data makes it difficult to formulate optimal disease management strategies and provides a poorly informed basis for clinical practice [6]. ARS, along with the physiological changes of pregnancy, can have a negative impact on the overall health of pregnant women. The lack of systematic study of this effect in the setting of allergic rhinosinusitis leads to insufficient awareness of doctors and patients about the risks and consequences. Management of ARS during pregnancy requires special attention to the safety of diagnostic and treatment methods. ARS is part of a wide spectrum of respiratory diseases affecting public health. The study of this aspect during pregnancy is of public importance, since the health of expectant mothers directly affects the health of the future generation [4].

During pregnancy, the female body undergoes complex physiological changes, among which one of the key aspects is the effect on the immune system. These changes represent a balance between maintaining the immune response to protect the mother while ensuring the safety of the developing fetus.

At the beginning of pregnancy, there is an activation of the immune system, aimed at protecting against potential threats and maintaining stability in the first weeks. This manifests itself in increased activity of some immune system cells, such as natural

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killer cells and monocytes. However, in the subsequent months of pregnancy, significant changes occur in the immune system. The immune response is suppressed, especially in the uterine area, which prevents rejection of the fetus as a foreign organ. This process involves changes in cytokines that regulate the immune response and a decrease in T-cell activity [14].

An important aspect of physiological changes is the creation of a balance between protective mechanisms and tolerance to the fetus. This balance maintains pregnancy, but can also affect the body's response to allergic rhinosinusitis, increasing or decreasing symptoms depending on the stage of pregnancy.

In the context of allergic rhinosinusitis, physiological changes in the immune system of pregnant women may influence the course of the disease, especially if the woman has chronic allergies. It is important to consider these factors in diagnosis and treatment to ensure effective management of symptoms and minimize risks to the mother and fetus [17].

The second important aspect of physiological changes in the body of pregnant women is hormonal transformations, which can have a significant impact on the development and course of allergic rhinosinusitis (ARS). These hormonal changes are complex and involve not only sex hormone levels, but also changes in other endocrine systems. First of all, estrogen and progesterone levels increase sharply during pregnancy. These hormones play a key role in regulating the immune system and can influence the occurrence of allergic reactions. Increasing estrogen levels may contribute to the worsening of ARS symptoms, as they can increase inflammation and increase sensitivity to allergens [2,17].

Hormonal changes can also affect the condition of the mucous membrane of the upper respiratory tract. Increased blood flow and changes in tissue response to hormones can lead to swelling and more severe symptoms of the disease. Moreover, estrogens and progesterone influence immune system functions, including cytokine levels and immune cell activity. These changes may create more favorable conditions for the development of allergic reactions.

It is important to note that responses to hormonal changes may vary from person to person and may not result in worsening ARS symptoms in all pregnant women. Genetic factors and predisposition to allergies also play a role in this context [21].

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Hormonal changes in pregnancy, therefore, may influence the symptoms of ARS through their immunomodulatory effects, which necessitates the need to take into account hormonal status when diagnosing and treating pregnant women with allergic rhinosinusitis.

In the context of pregnancy, diagnosing allergic rhinosinusitis requires taking into account changes in the physiology of the expectant mother. Additional precautions and the use of safe methods become key components in the diagnostic process. This involves using techniques that minimize risks to the health and development of the fetus.

When choosing methods for diagnosing ARS in pregnant women, it is necessary to take into account their safety for the mother and fetus. Some conventional techniques, such as radiography, may pose a potential risk to the developing fetus and, therefore, non-ionizing radiation techniques such as magnetic resonance imaging (MRI) may be preferred [5,22].

Immunodiagnostic methods, such as determining IgE levels, can be safe and informative in assessing the allergic status of pregnant women. Allergen-specific tests, such as skin testing or immunoreactive tests, can also provide valuable data, but they must be accompanied by consideration of possible risks and careful selection of allergens [1].

Existing safe diagnostic methods, such as allergen-specific immunotherapy, should be considered in the context of pregnancy. These methods not only facilitate effective diagnosis, but may also provide opportunities to manage symptoms of ARS with minimal risk to maternal and fetal health. It is important to diagnose ARS in pregnant women within the framework of an integrated approach, taking into account the characteristics of pregnancy, individual factors and the safety of the methods used. This approach helps ensure accurate diagnosis and effective management of the condition while maintaining safety for the expectant mother and fetus.

The manifestation of symptoms of allergic rhinosinusitis (ARS) during pregnancy can be influenced by various factors, ranging from hormonal changes to immunological adaptations. Observed features include an increase in individual symptoms such as nasal congestion, runny nose, and a feeling of pressure in the face [18].

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Pregnancy can have dual effects on the course of ARS. During the first trimester, when physiological changes are greatest, there is a possible worsening of symptoms due to hormonal changes and increased response to allergens. During subsequent periods of pregnancy, as the immune response is suppressed, symptoms may subside, but individual differences play an important role [9].

An important aspect of the clinical picture of ARS in pregnant women is the risk of complications and its impact on the general condition of the expectant mother. Poor management of ARS symptoms can worsen a pregnant woman's health and can also affect the fetus, causing problems in development and well-being.

In addition, it is important to consider the interaction of APC with other allergic diseases such as bronchial asthma. Pregnant women suffering from allergic rhinosinusitis may have an increased risk of worsening asthma symptoms, highlighting the need for a comprehensive approach to managing allergic conditions during this period [16].

Drug therapy, including the use of antihistamines and glucocorticosteroids, requires special attention in light of pregnancy. Assessing the benefits and risks of each drug is a key aspect in choosing a treatment strategy, taking into account the potential impact on maternal and fetal health. The study of the clinical picture of ARS in pregnant women should take into account not only the manifestations of symptoms, but also their impact on the general condition of the mother and fetus, and also consider the individual characteristics of the course of the disease in each trimester of pregnancy [8].

The implementation of therapy for allergic rhinosinusitis (ARS) in pregnant women requires a strict choice of medications, ensuring the effectiveness of therapy with minimal risks for the mother and fetus. The use of second-generation antihistamines, if necessary, such as cetirizine or loratadine, is preferable due to their absence or minimal penetration through the placental barrier [4].

Decongestants are not recommended due to the need to increase their dosage, which may cause a tachyphylaxis effect. Inhaled glucocorticosteroids, especially budesonide, are considered an effective and safe method of basic therapy for ARS in pregnant women, providing a prolonged anti-inflammatory effect without negative effects on the developing fetus. The safety and effectiveness of budesonide have been confirmed by many years of research, including its use in children [13].

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An important aspect of ARS therapy during pregnancy is the emphasis on non-pharmacological methods of symptom management. Systematic administration of small doses of allergens for the purpose of developing immunity can be an effective method, while minimizing the risk to the pregnant woman and fetus [20].

Lifestyle changes also play an important role in managing symptoms of ARS in pregnancy. Effective indoor ventilation, following a hypoallergenic diet, and minimizing exposure to known allergens may help reduce symptoms without the use of medications [15].

When developing a treatment plan, a personalized approach is important, taking into account the individual characteristics of each pregnant woman. This includes assessing the severity of symptoms, susceptibility to allergic reactions, and risk to the fetus. Collaboration with the doctor and regular monitoring of the pregnant woman's condition are important to adjust treatment if necessary. This allows for effective control of ARS symptoms with minimal risks to the health of the mother and fetus.

Management of allergic rhinosinusitis during pregnancy requires a comprehensive and safe approach that includes drug therapy, non-drug options, and close collaboration with a physician to ensure optimal control of the condition.

The safety of drug treatment for allergic rhinosinusitis during pregnancy requires special attention. First of all, it is necessary to assess the safety of the drugs used for the developing fetus. This includes analysis of placental penetration, potential teratogenic effects and other possible effects [2].

Insufficient treatment of allergic rhinosinusitis in pregnant women can have serious consequences for both mother and child. Increased allergy symptoms can lead to chronic stress, decreased sleep quality, and even an increased risk of preterm birth. Assessment and management of symptoms is key to ensuring optimal health and well-being for both parties [14].

When choosing treatment, it is necessary to take into account the individual characteristics of each pregnant woman and evaluate the potential risks and benefits of each drug used. Personalized treatment choices can achieve effective symptom control while minimizing possible negative consequences for the developing fetus.

An important step in the management of allergic rhinosinusitis in pregnant women is regular monitoring of the effect of treatment on fetal development. This

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includes conducting the necessary examinations, ultrasound screening, and other methods to assess the child's health and timely adjustment of therapy if necessary.

Treatment decisions should be the result of close collaboration with the physician, taking into account all aspects of the pregnancy and illness. Ensuring a balance between effective control of maternal symptoms and minimizing possible risks to the fetus requires mutual understanding and cooperation between the physician and the pregnant woman.

Prevention of allergic rhinosinusitis (ARS) in pregnancy includes a number of measures aimed at preventing the development of symptoms and reducing exposure to allergens. This includes regularly ventilating rooms, following a hypoallergenic diet, and minimizing contact with known allergens [10].

Systematic administration of small doses of allergens for the purpose of developing immunity plays an important role in the prevention of ARS in pregnant women. This method helps reduce sensitivity to allergens, which can lead to a decrease in the likelihood of developing rhinosinusitis.

Allergen-specific immunotherapy (ASIT) is an effective method for preventing ARS in pregnant women. This approach aims to change the immune response to allergens and can lead to long-term reduction in symptoms. It is important to consider safety and a personalized approach when using ASIT during pregnancy [7,11].

Special attention should be paid to the lifestyle of pregnant women as a means of preventing ARS. This includes a healthy diet, physical activity, and a good sleep schedule, which can help maintain a strong immune system and reduce the risk of developing allergic reactions. Prevention of ARS in pregnant women requires an individualized approach, taking into account the health characteristics and risk factors of each woman. Regular consultation with a physician and adaptation of preventive measures depending on the changing conditions of pregnancy are key elements of successful prevention [3].

Scientific research in the field of allergic rhinosinusitis (ARS) in pregnant women is actively developing. Current directions include the study of genetic factors, environmental influences on the development of APC, and the role of the microbiome in disease pathogenesis. Research prospects are also focused on a deeper understanding of the impact of hormonal changes in pregnancy on the course of ARS. The

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development of new methods for diagnosing and treating ARS in pregnant women requires the creation of more accurate and safe tools. This may include the development of new allergen-specific tests, the use of advanced imaging techniques for diagnosis, and the creation of innovative approaches to pharmacotherapy with minimal exposure to the fetus.

Conclusion

Allergic rhinosinusitis in pregnant women is a complex problem that requires an individual approach. Diagnosis and treatment during this period require careful analysis of the potential risks and benefits of each method used. The main features are the influence of hormonal changes, the need for safe diagnostic methods and therapy, as well as a personalized approach to each pregnant woman.

Further research in the field of ARS in pregnant women is of strategic importance to improve the practice of managing this category of patients. Research is aimed at expanding our knowledge about the mechanisms of development and course of ARS in pregnancy, as well as developing safer and more effective methods of diagnosis and treatment. This will improve the quality of life of pregnant women, ensuring safety for both the mother and the developing fetus.

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