

**DIAGNOSIS AND TREATMENT OF GAYMORITIS DURING PREGNANCY**

**Samadov Axror Axmadovich**

Email: samadov.axror@bsmi.uz <https://orcid.org/0009-0007-2380-2531>

Bukhara State Medical Institute named after Abu Ali ibn Sina, Uzbekistan, Bukhara, st. A. Navoi.  
1 Tel: +998 (65) 223-00-50 e-mail: info@bsmi.

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**What is the danger of sinusitis during pregnancy?**

Maxillary sinusitis (sinusitis) is an inflammation of the mucous membrane of the maxillary sinus, a large air cave in the bone of the upper jaw. This sinus performs a number of serious physiological functions: it warms and purifies the inhaled air, participates in the formation of pronounced sounds, and protects intracranial structures from injury.

The disease almost always begins with a runny nose (rhinitis), therefore it is called rhinosinusitis. With inflammation, the mucous membranes of the nasal cavity and sinus swell, which leads to impaired nasal breathing and the removal of inflammatory fluid (exudate) from the maxillary cavity. The latter accumulates in the sinus cavity and is a breeding ground for the reproduction of opportunistic microflora, which constantly inhabits the respiratory tract. And since immunity decreases during pregnancy (this is one of the physiological mechanisms that allows to preserve the development of foreign fetal cells in the mother's body), the risk of developing severe purulent processes increases dramatically.

**Violation of nasal breathing** - the mother's brain does not receive enough oxygen, which affects the general course of pregnancy, the development of fetal organs that form during this period, including the central nervous system. Oxygen deficiency is especially dangerous in the 1st trimester of pregnancy (in the first 12 weeks).

**Decreased immunity** - the danger of any infectious process increases dramatically. Sinusitis can become purulent and, in the absence of adequate treatment, cause complications to nearby organs (hearing, vision, bronchopulmonary system), as well as to the brain (meningoencephalitis) and the entire body (sepsis).

**The danger of using medications.** Self-medication is dangerous. The doctor will always be able to choose effective medicines that are allowed for use during pregnancy.

The condition of a pregnant woman changes every three months (trimester). For the 1st trimester, the main danger of rhinosinusitis and its treatment is the toxic effect on the fetus. In the second trimester, the risks to the mother and fetus are minimal, and in the third, the risk from the mother's body increases due to the increasing stress on all her organs. There is also a risk of premature birth.

**Causes of development**

Infectious – the cause is viruses, bacteria, fungi. Most often, the disease begins with a viral infection, which is then joined by a bacterial one. Fungal infection is most often the result of irrational (independent) use of antibiotics. It is more difficult to cure mixed bacterial and fungal rhinosinusitis. Odontogenic sinusitis is one of the infectious variants, in which the infection enters the sinus through the roots of the teeth of the upper jaw in various dental diseases.

Allergic – inflammation develops in response to the introduction of an allergen, and infection often joins it.

Vasomotor – with impaired blood vessel tone. The causes may be frequent inhalation of certain substances (secondhand smoke, industrial emissions, etc.), prolonged use of vasoconstrictor drops in the nose (causes persistent paresis of the smooth muscles of the vascular walls), frequent stress, etc.

Rhinosinusitis of pregnant women – the exact cause has not been established, but the development of the disease with impaired nasal breathing is associated with hormonal features of pregnancy. Such a disease passes on its own after childbirth

The development of any type of rhinosinusitis is facilitated by disorders of the anatomical structure of the nose and paranasal sinuses, for example, curvature of the nasal septum.

### **Signs of sinusitis in pregnant women**

The disease most often begins with a common cold of infectious or allergic origin. A woman is initially concerned about nasal congestion, followed by copious clear discharge. During the infectious process, body temperature may rise. After a few hours or days, the inflammation may spread to the maxillary sinus. Sometimes this transition is accompanied by fever and increased malaise. But more often in pregnant women, sinusitis develops imperceptibly, without significant fever. Moderate but gradually increasing headaches may occur.

At the same time, the facial pains characteristic of acute sinusitis in the under-eye and the bridge of the nose are insignificant or completely absent. This feature of the course of the disease is dangerous because most women are treated on their own without consulting a doctor. This increases the risk of complications, especially suppuration.

With suppuration, nasal discharge becomes thick, greenish, and fetid. Body temperature may rise, but often the disease proceeds smoothly, without a pronounced fever and disorder. The most dangerous of all the symptoms of sinusitis is a combination of severe headache with impaired nasal breathing without nasal discharge. This indicates an accumulation of exudate in the maxillary cavity and a high risk of complications. If a woman suffered from rhinosinusitis before pregnancy, the chronic course of the disease leads to the proliferation of mucous membranes or polyps that disrupt nasal breathing. It is also a source of infection and a factor that disrupts the supply of oxygen to the mother and child. The most severe variant of the course is atrophic rhinosinusitis. The mucous membrane dries up, it is covered with crusts that disrupt breathing, severe dryness in the nose, nosebleeds, an unpleasant odor and a complete lack of sense of smell appear. It is difficult to treat this disease. In the 3rd trimester of pregnancy, sinusitis often manifests itself in the form of nasal congestion, which increases in a horizontal position during sleep. The pathology is called sinusitis of pregnant women and is associated with the peculiarities of the hormonal background during pregnancy. Sometimes her symptoms appear during other periods of pregnancy. They pass through 10-14 days after giving birth.

### **Diagnostics**

Treatment of sinusitis during pregnancy is impossible without a preliminary examination. It begins with questioning and examining an otolaryngologist. The doctor also performs an instrumental examination of the nasal cavity using a rhinoscope. Rhinoscopy can reveal swelling of the nasal mucosa, the presence or absence of secretions from the maxillary cavity, and the condition of the anastomoses (openings) connecting the maxillary sinus to the nasal cavity.

Then the doctor sends the patient for an additional examination.:

1. Laboratory tests: a general blood test reveals the presence and nature of the inflammatory process; an immunological blood test with the detection of one, two or more allergens that caused the disease is prescribed for signs of allergy.

2. Instrumental:

Ultrasound of the paranasal sinuses – reveals the presence and level of inflammatory fluid in the sinuses;

MRT – if necessary, to clarify the condition of the sinus mucosa; in the 1st trimester (in the first 12 weeks), the procedure is undesirable, but in the 2nd and 3rd trimesters it is considered safe; diagnostic endoscopy is performed using optical equipment and allows you to examine in detail all the features of the condition of the nasal cavity and maxillary sinus.

### **Treatment of sinusitis in pregnant women**

**How to treat sinusitis during pregnancy in the 1st trimester.** Treatment should be as gentle as possible, since during this period the internal organs of the fetus are being laid in the absence of the placenta (it has not yet formed), which protects the child from toxic substances.

With a mild course of the disease, a semi-bed rest, copious warm drink, and rinsing of the nasal cavity with saline solutions are prescribed. To eliminate signs of inflammation and swelling of the mucous membrane, Fleming's homeopathic ointment, which contains 5 herbal components, is suitable. For local suppression of infection in the nose, Ocomistin eye drops are prescribed with a wide range of antiseptic effects (suppresses the vital activity of viruses, bacteria, fungi). In case of viral infections, topical application of Viferon ointment is allowed. Of the physiotherapy procedures, a course of ultraviolet irradiation (tubus quartz) of the nasal cavity has a positive effect.

In moderate to severe cases, topical glucocorticoids (Nasonex) are prescribed to eliminate edema, which quickly and effectively eliminate swelling and do not have a systemic effect on the body. If purulent sinusitis develops, a course of antibacterial therapy is prescribed. Antibiotics of the penicillin group (Amoxiclav) and cephalosporin group (Suprax) in tablets or as injections are allowed for use in pregnant women. With an increasing headache, flushing of the maxillary sinuses using the "Cuckoo" or YAMIK method is prescribed. These are safe procedures, and the patient's condition improves immediately after they are performed.

**Treatment of sinusitis during pregnancy in the 2nd trimester.** During these periods, the placenta is formed. This allows you to prescribe a wider range of medications and procedures. Sometimes, if the patient's condition allows, full-fledged treatment is carried out in the second trimester, even if the disease started earlier. When indications for surgical treatment appear (punctures of the maxillary sinus, maxillary sinus), they try to carry it out during this period.

**Treatment of sinusitis during pregnancy in the 3rd trimester.** During this period, they try to use methods of treatment without punctures, as surgical procedures and operations can provoke premature birth. Therefore, they are often left for the period after the birth of a child.

### **Surgical treatment**

Puncture of the maxillary sinus with removal of the contents and subsequent washing with antiseptics. The procedure is painless, as it is performed under local anesthesia. The drug for anesthesia is administered after a preliminary sensitivity test.

Maxillary sinusectomy (opening of the maxillary sinus with removal of exudate, various formations and foreign bodies). The operation is also performed under local anesthesia using a gentle method, such as an endoscope, which allows it to be performed with minimal injury.

Any runny nose in a pregnant woman should be treated by a therapist. If the disease persists for more than 7 days, an otolaryngologist should be consulted. Due to physiologically reduced immunity, self-medication using folk remedies or popular pharmaceutical preparations should be completely excluded.

### **Prevention**

Preparation for pregnancy.

A woman should:

Undergo a full examination, identify and treat all the foci of infection in the body. Including diseases of the nasopharynx.

To move more, to walk in the fresh air, to harden up – it is necessary to strengthen immunity.

Eating right – the state of immunity directly depends on the metabolism.

Avoid hypothermia, overheating, and stress. During the cold season, try to avoid crowds due to the increased risk of contracting acute respiratory viral infections.

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