



Bronchial Asthma Occurs in Approximately 1-2% of Pregnant Women

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Abstract: In this paper, research on bronchial asthma occurs in approximately 1-2% of pregnant women is considered. Regardless of the form of bronchial asthma, three stages of its development (pre-asthma, attacks of mild, moderate and severe asthma, asthmatic condition) are targeted. All of these forms and stages occur both outside and during pregnancy.

Key words: Allergens, asthma, allergic, chronic pneumonia, infectious.

Introduction

Bronchial asthma can be of non-allergic origin, for example, after a brain injury or due to endocrine disorders. But more often bronchial asthma is an allergic disease. There are infectious-allergic and non-infectious-allergic (atopic) forms of bronchial asthma. The infectious-allergic form of asthma is the most common, occurring in 67-98% of patients.

Infectious-allergic asthma develops against the background of various previous infectious diseases of the respiratory tract: bronchitis, pneumonia, nasopharyngitis, tonsillitis. Allergens are microorganisms; in most cases they are opportunistic and saprophytic microorganisms. The allergens of the atopic form of bronchial asthma are various organic and inorganic factors: plant pollen, street and house dust, feathers, hair and dander of pets, food allergens, medicinal substances, industrial chemicals. In the origin of the atopic form of bronchial asthma, hereditary predisposition plays a role.

Main part

Regardless of the form of bronchial asthma, three stages of its development are targeted: 1) pre-asthma, 2) attacks of mild, moderate and severe asthma, 3) asthmatic condition. All of these forms and stages occur both outside and during pregnancy.

Pre-asthma includes: chronic asthmatic bronchitis, chronic pneumonia with elements of bronchospasm. Severe attacks of suffocation are not yet observed at this stage. In the mild stage of bronchial asthma, asthma attacks rarely develop and spontaneous remissions occur. Bronchial asthma of moderate severity is characterized by frequent attacks of suffocation, difficulty breathing during interictal periods, the possibility of developing an asthmatic state, and the rarity of spontaneous remissions. The severe stage of bronchial asthma is characterized by frequent, severe attacks of suffocation, which are difficult to relieve, sometimes turning into an asthmatic state; remissions rarely

occur. In mild, moderate and severe stages of bronchial asthma, pulmonary insufficiency of degrees 1 and 2 may be observed. The most severe stage of bronchial asthma is characterized by prolonged attacks of suffocation, frequent asthmatic conditions, accompanied by stage 3 pulmonary insufficiency or pulmonary-cardiac insufficiency.

Pulmonary failure is characterized by the following symptoms:

1st degree - slight shortness of breath on exertion;

2nd degree - slight shortness of breath and cyanosis at rest, increasing with exertion;

Grade 3 - along with pulmonary insufficiency, signs appear heart failure stages I-PA (pulmonary heart failure): shortness of breath, cyanosis, tachycardia, congestive (fine bubble) rales in the lungs.

Attacks of bronchial asthma usually develop at night and last from several minutes to several hours. Choking is preceded by a scratching sensation in the throat, vasomotor rhinitis, and tightness in the chest. A persistent dry cough appears. There is a sharp difficulty in exhaling. The patient is forced to sit down, lean on a table or the back of a chair to facilitate breathing. All the muscles of the chest and neck are tense. Breathing becomes noisy, whistling, hoarse, audible at a distance. At first, breathing is rapid, then it is reduced to 10 per minute. Facial cyanosis appears. The skin becomes covered with perspiration. Percussion sound over the lungs is boxed. Breathing is heard with a significantly prolonged exhalation, hard, with many dry wheezing of different types. With the cessation of the attack, the wheezing disappears. Towards the end of the attack, sputum begins to separate and becomes more and more liquid and abundant.

Status asthmaticus is a state of severe asphyxia that cannot be treated with conventional means for many hours or several days, sometimes ending in the development of hypoxic coma and death of the patient. The asthmatic condition develops as a result of blockage of the bronchioles with thick mucus, swelling of the bronchial mucosa, as a result of which the drainage function of the bronchi is disrupted, hypoxia and decompensated acidosis develop. The condition is extremely serious. Pale cyanosis. Severe expiratory shortness of breath with very clear and then rare shallow breathing. No wheezing is heard in the lungs, although breathing remains whistling and noisy. Tachycardia and arterial hypotension are noted. The ECG shows overload of the right side of the heart and diffuse changes in the myocardium. In the terminal stage, mental disorders appear: motor restlessness, fear, anxiety, then loss of consciousness, bradypnea, blood pressure is not determined, and death occurs from asphyxia. In the interictal period, patients may feel well, do not experience any discomfort, or they may complain of difficulty breathing, usually in the evening, night or early morning hours. In bronchial asthma, typical elements are often found in sputum: Charcot-Leyden crystals, Kuriman spirals, and eosinophilia in the blood.

Bronchial asthma is characterized by dissymmunoglobulinemia: increased levels of immunoglobulin E, decreased immunoglobulin A and immunoglobulin G.

External respiration parameters change significantly. In pregnant patients with bronchial asthma, compared with healthy pregnant women, the forced expiratory volume in the first second (FEV₁) is reduced. FEV₁ 1%. and Tiffno's test. In the second half of pregnancy, the air velocity indicator (APSV) also decreases. These indicators characterize bronchial patency, which is impaired throughout pregnancy and childbirth. The respiratory rate and tidal volume (VT) change insignificantly, the vital capacity of the lungs (VC) remains the same, as well as most other indicators of external respiration.

Bronchial asthma may first appear during pregnancy, but more often it appears several years before, often in childhood. Asthma that appears during pregnancy may go away after childbirth, or may remain as a chronic disease.

The course of asthma during pregnancy varies. Worsening of the disease most often occurs in the first half of pregnancy. In many patients, in the second half of pregnancy, their condition improves; attacks of suffocation occur less frequently or completely stop.

But there may be a deterioration in the second half of pregnancy, or the condition throughout the entire pregnancy remains the same as it was before it. Sometimes an improvement in the condition occurs in the early stages of pregnancy and persists until the end or is erased by exacerbation of asthma in the 2nd or 3rd trimesters of pregnancy. It is currently not possible to predict the course of bronchial asthma during pregnancy. An attack of suffocation can also develop during childbirth. 2-3 weeks after birth, many patients, regardless of asthma during pregnancy, experience an exacerbation of the process.

The effect of bronchial asthma on the treatment of pregnancy and childbirth is unfavorable. The most common complications are spontaneous miscarriages in the early stages of pregnancy (in 3.5% and in late stages (in 1.2%), early toxicosis (in 35.9%) and late toxicosis of pregnant women (in 43%), premature birth (in 7.1%), untimely discharge of amniotic fluid (in 34.9%), anomalies of labor

(y 19.4%), fast and rapid labor, high maternal birth trauma (y 23.5%).

With bronchial asthma, the fetus also suffers. The frequency of chronic fetal hypoxia (68%), asphyxia of newborns (33%) is high. Perinatal mortality is 4.2%.

Management of pregnancy and childbirth in women with bronchial asthma. Pregnant patients with bronchial asthma should be examined not only by an obstetrician, but also by an antenatal clinic physician. A monthly examination of the patient is recommended, especially in the first half of pregnancy, when bronchial asthma is more likely to worsen:

The examination of the patient includes an examination by an obstetrician and a therapist, a thorough study of the medical history, including an allergic history (food, drug and other allergies, its types: urticaria, Quincke's edema, rhinitis, etc., the medications used, their effectiveness and tolerability)

Each patient needs to have a clinical blood test done to detect eosinophilia. It is advisable to carry out the following additional examination methods:

1. Study of external respiration function;
2. Study of the acid-base state of the blood;
3. Sputum examination;
4. Study of serum immunoglobulins.

It is necessary to systematically monitor the condition of the fetus, including, in addition to auscultation of the fetal heartbeat, ultrasound scanning, ECG and FG of the fetus, cardiac monitoring study, dynamic determination of estriol in the mother's blood for the purpose of early diagnosis of fetal suffering.

The most important issue in obstetric tactics is the question of the permissibility of pregnancy. Most women with asthma can be allowed to become pregnant. Pregnancy is contraindicated in case of repeated attacks of an asthmatic condition and in the presence of pulmonary-heart failure, as well as in severe hormone-dependent forms of bronchial asthma. In these cases, there may be a need for early abortion or early delivery.

It should be noted that in case of bronchial asthma it is dangerous to use prostaglandin preparations, because they can increase bronchospasm.

Indications for hospitalization of pregnant women with bronchial asthma occur during exacerbation of the disease, deterioration of fetal development and 2 weeks before the due date. In a hospital, supervision is required not only by an obstetrician-gynecologist, but also by a therapist.

Childbirth is carried out through the natural birth canal. Frequent attacks of suffocation and asthmatic conditions, ineffectiveness of treatment, and the appearance of symptoms of pulmonary heart failure are indications for early delivery at 37-38 weeks of pregnancy. In these cases, in order to stimulate the maturation of the surfactant lung system of the fetus, pregnant women should be prescribed prednisolone 30 mg per day for 3-5 days preceding childbirth. To prepare the birth canal for childbirth, a vitamin-glucose-calcium hormonal background is created within 3-5 days with the introduction of folliculin or sinestrol. Measures for the treatment of chronic fetal hypoxia are continued; a 2% solution of sigetin 10 ml + a 5% glucose solution 200 ml is administered for 2-3 days. In cases of cervical rigidity, antispasmodics are administered: no-spa 2 ml, papeverine hydrochloride 2% solution 2 ml, baralgin 5 ml.

Treatment of bronchial asthma in pregnant women and women in labor.

Treatment of bronchial asthma consists of treating an attack of suffocation, treating patients in the inter-attack period and treating the asthmatic condition. Relieving a mild attack of suffocation involves prescribing tablets: omphylline (0.15g), ephedrine hydrochloride (0.05g), theafedrine (1/2 tablet), anastman, solutan (60 drops). If the attack cannot be eliminated, inhalation of adrenergic agonists is used: alupenta (asthmapenta), berotek, ventalin, isadrin, (novodrin, euspiran). Adrenergic agonists are also used in tablets under the tongue: isadrin 0.005 g, alupent 0.02 g. A mixture of aminophylline is used - 3 g, marshmallow syrup 40 g, 12% ethyl alcohol - 360 g, 1 tablespoon per dose. In addition, for a mild attack of bronchial asthma, hot drinks, mustard plasters or cups are prescribed.

If the above remedies do not help, inject subcutaneously 1 ml of a 5% solution of aphedrine hydrochloride or 1 ml of a 0.05% solution of alupenta.

An attack of moderate bronchial asthma is treated with parenteral drugs: ephedrine or alupent subcutaneously or inhalations of the above adrenergic agonists. If this treatment does not help, inject 10 ml of a 2.4% aminophylline solution with 10 ml of a 40% aminophylline solution with 10 or 40% glucose solution into a vein slowly.

In case of a severe attack of suffocation, 1 ml of a 5% solution of ephedrine hydrochloride, 2 ml of suprastin, 1 ml of a 1% solution of diphenhydramine are injected subcutaneously. If the effect is insufficient, a solution of aminophylline with corglycone (0.06% solution 1 ml) on glucose is injected into a vein. If there is no effect, 60 mg of prednisolone is prescribed intravenously. Adrenaline and atropine are contraindicated for pregnant women. Oxygen therapy is recommended.

In the interictal period. therapy consists of sanitizing foci of infection in the bronchopulmonary apparatus and treating "cold" diseases. Antibiotics and sulfonamide drugs are used for this purpose. Of the antibiotics, penicillin and semisynthetic penicillin preparations are the safest for the fetus. Sulfonamides are prescribed with non-extended action. Bronchodilator therapy is prescribed in maintenance doses. Systematic administration of aminophylline isadrin and alupent in small doses is acceptable. Etimizol 0.1 g 3-4 times a day can be used. From the 4th month of pregnancy you can use Intal (4 inhalations per day). Theaphedrine, antasman and solutan are not recommended for pregnant women to take systematically for the purpose of preventing asthma attacks, because they contain phenobarbital and belladonna, which are contraindicated during pregnancy. Terpene hydrate, marshmallow root, sodium bicarbonate, trypsin inhalation, and chymotrypsin should be used as expectorants. Potassium or sodium iodide, usually used for this purpose, is contraindicated for pregnant women due to the effect on the fetus, and thermopsis and ipecac are ineffective because The expectorant effect is accompanied by an increase in mucus secretion and is influenced by the increased

activity of the epithelial cilia, which are significantly damaged in bronchial asthma). Valerian, elenium, and trioxazine are prescribed as sedatives. Acupuncture and physical therapy may be used. The last two methods of treatment are not opposed to medication, but are combined with it, enhancing the effect of drug therapy.

A patient with bronchial asthma should systematically engage in breathing exercises.

In case of frequent exacerbations of bronchial asthma or incomplete effect of treatment with the above drugs, corticosteroid therapy can be used. In some cases, a few pushes are enough: Prednisolone 20 mg per day is prescribed for 2 days, then a break for 2 days and the "push" is repeated. In other cases, daily treatment with corticosteroids is prescribed, starting with 20 mg of prednisolone per day, gradually reducing the dose. Maintenance dose of prednisolone

5-10-12.5 mg per day. Prednisolone administered parenterally is quickly metabolized, so 1 tablet of prednisolone (5 mg) corresponds in its activity to 1 ampoule containing 30 mg. Instead of prednisolone, other corticosteroid drugs can be used: urbazone (metipred) - 4 mg per tablet; maintenance dose 6-10 mg per day. Triamcinolone (kenacort, polcortolone) - 4 mg in 1 tablet; it is equivalent in activity to prednisolone. Dexamethasone - 5 mg in 1 tablet; in terms of effectiveness, 0.5 mg of dexamethasone corresponds to 3.5 mg of prednisolone; maintenance dose 1.5-2 mg/day. Beclomethasone is used only for local treatment in the form of an aerosol (becotide, beclomet). To relieve an attack of suffocation, 16 inhalation doses (800 mg) must be used; The maintenance dose of these drugs is 8-10 inhalations per day.

Etiotropic treatment of bronchial asthma - desensitization with serum to found allergens - has been carried out for a number of years and has no practical significance during pregnancy.

Treatment of an asthmatic condition must be carried out in a hospital. A mixture containing 10 ml of a 2.4% aminophylline solution, 1 ml of a 5% ephedrine solution and from 300 ml to 1 liter of a 5% glucose solution is administered dropwise; if necessary, add corglycone or strophanthin.

A large volume of liquid is necessary to combat dehydration and to thin sputum, so the amount of glucose and 0.9% sodium chloride solution is adjusted to 2 liters. If the effect is insufficient, 30 mg of prednisolone is injected intramuscularly or into a vein and repeated every 3 hours until the asthmatic condition is relieved, gradually increasing the intervals between injections. The drip infusion can be repeated after 8-12 hours. In the interval, 100 ml of plasma or 50 ml of a 20% albumin solution is administered. For metabolic acidosis, pour in 200 ml of 4% sodium bicarbonate solution. 2-4 ml of cordiamine are prescribed subcutaneously to stimulate the respiratory center. Oxygen is constantly administered through a nasal catheter, periodically mixed with nitrous oxide. If the condition does not improve within 1 - 1.5 hours, the auscultatory picture of a "silent lung" persists, with the help of an anesthesiologist they begin artificial ventilation of the lungs with active liquefaction and suction of sputum.

During childbirth, to prevent suffocation, a 2.4% solution of aminophylline 10 ml in glucose or saline is injected into a vein. If the patient received corticosteroids during pregnancy, the dose is doubled during childbirth. Thus, timely registration of pregnant women suffering from bronchial asthma, clinical and biochemical examination of them, and the use of the listed therapeutic measures help reduce complications in both the mother and the fetus.

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