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Chronic Vasomotor Allergic Rhinitis

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Abstract. In recent years, there has been a significant increase in the prevalence of diseases of the nose and paranasal sinuses (NPS). Inflammatory diseases of the nasal mucosa (rhinitis) are accompanied by difficulty in nasal breathing and nasal discharge. Chronic forms of rhinitis affect 10–20% of the population, and in epidemiological studies, 40% of respondents report symptoms of rhinitis. In this article, specific aspects of chronic vasomotor allergic rhinitis and treatment methods are considered

Keywords: chronic vasomotor, allergic rhinitis, treatment, method, diagnosis.

Introduction

The concepts of “vasomotor rhinitis”, “idiopathic rhinitis”, “non-infectious year-round non-allergic rhinitis”, “neurovegetative form of vasomotor rhinitis” (according to the classification of L.B. Daynyak) [4] describe a group of diseases similar in pathogenesis and clinical manifestations, which can be caused by various reasons.

The term “vasomotor rhinitis” itself has been subject to justified criticism in recent years, primarily because a violation of vasomotor innervation, which underlies the pathogenesis of VR, occurs in all forms of rhinitis with the exception of atrophic.

Materials And Methods

The following forms of VR can be distinguished [1]:

• caused by physical, chemical or toxic factors;

• psychogenic (the development of vascular imbalance is associated with lability of the autonomic nervous system);

• idiopathic;

• mixed.

Nasal congestion and difficulty in nasal breathing during BP are caused by lability and increased blood filling of the vessels of the nasal turbinates. This phenomenon is based on dysfunction of the autonomic nervous system (NS), which, as a rule, is not limited to the autonomous NS of the nasal cavity, but is accompanied to varying degrees by manifestations of general vegetative-vascular dystonia. The very fact of the presence of vegetative-vascular dysfunction in patients with VR is indisputable, but the specific mechanisms leading to the development of the disease still cause debate. Since the middle of the 20th century, it has been generally accepted that the pathogenesis of VR is based on an increase in the activity of the parasympathetic division of the autonomic nervous system [4]. The results of studies conducted in recent years allow us to challenge this postulate and indicate that the main reason for the development of VR is a decrease in the tone of the sympathetic nervous system.

Results And Discussion

The triggering factor in the development of VR is often a previous respiratory viral infection [4]. Non-specific triggers leading to the occurrence of autonomic dysfunction can be tobacco smoke, strong odors, ozone, pollutants, alcohol intake, and sudden changes in the temperature of inhaled air [1]. Cold air is the main nonspecific trigger for idiopathic VR.

Clinical picture

The main symptoms of BP are difficulty in nasal breathing, nasal congestion, clear nasal discharge, and a feeling of mucus running down the back of the throat. Sometimes patients complain of headaches and decreased sense of smell.

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Nasal congestion is caused by an increase in the volume of the inferior turbinates (as a result of increased blood filling of the vessels) and usually occurs in the form of attacks with the appearance of copious mucous or watery discharge and repeated sneezing [3]. Often, congestion is alternating in nature (blocking one or the other half of the nose), which is especially pronounced in a lying position when turning from one side to the other. Hypertrophy of the nasal turbinates, which often develops with VR, becomes the cause of persistent difficulty in nasal breathing [3].

Diagnostics

There are no reliable specific methods for diagnosing VR, so the diagnosis is usually established by excluding similar forms of rhinitis and identifying factors that provoke the occurrence of symptoms [5]. In terms of clinical manifestations, all forms of year-round rhinitis are quite similar, however, with detailed questioning of the patient, indirect signs of one or another form of rhinitis can be identified.

Thus, allergic rhinitis is characterized by itching and a tickling sensation in the nasal cavity, sneezing and watery nasal discharge, and increased severity of symptoms upon contact with a specific allergen. Symptoms of conjunctivitis and/or dermatitis typical for an atopic disease are not characteristic of VR. Unlike VR, allergic rhinitis usually debuts in childhood or adolescence. During anterior rhinoscopy in patients with allergic rhinitis, a pale pink color of the mucous membrane, its swelling, and watery discharge in the nasal cavity are observed. Before diagnosing VR, it is necessary to exclude the allergic nature of the disease (skin tests with the main allergens or blood serum testing for the content of specific immunoglobulins E are used).

In the differential diagnosis of non-allergic rhinitis with eosinophilic syndrome, determining the number of eosinophils in nasal secretions helps. Methods for objective assessment of nasal breathing - acoustic rhinometry (AR), anterior active rhinomanometry - are nonspecific and are of secondary importance. Provocative tests with histamine, metacholine and cold air provide some assistance in identifying a hyperergic reaction to nonspecific stimuli, but the use of these methods in clinical practice is limited by the complexity of their implementation and lack of standardization.

Treatment

Due to the lack of a universal concept of etiopathogenesis (which is well developed, for example, for allergic rhinitis), most existing methods of treating VR are only symptomatic. The effectiveness of many of them is questionable, since information about it is based only on the personal experience of clinicians. And yet, there are drugs for the treatment of VR with proven effectiveness.

Intranasal glucocorticosteroids (INGCS) began to be used for the treatment of VR in the 1990s, when a number of open-label studies were conducted in Sweden to study their effectiveness in the treatment of VR and drug-induced rhinitis. During treatment with intranasal budesonide, almost all patients refused to use vasoconstrictor drops [3].

The prescription of anticholinergic drugs is justified in cases where the main symptom of VR is profuse nasal discharge. The effectiveness of ipratropium bromide has been confirmed in several controlled studies. It was shown that ipratropium at a dose of 320 mcg/day was significantly superior to placebo in its effect on the volume of nasal secretion. When using higher doses, dryness, nasal congestion, and bloody discharge from the nose were often observed. Even with long-term use of the drug, there were no noticeable changes in the ultrastructure and cellular composition of the mucous membrane, the frequency of cilia, or olfactory thresholds.

Conservative treatment of BP is a very complex problem, and it should begin not with the empirical prescription of a drug, but with identifying the cause of nasal hyperreactivity, be it gastro-pharyngeal reflux or hidden anomalies of intranasal structures (surgical correction of the septum nose should be performed at the very beginning of treatment). If there are no such reasons or it is not possible to effectively influence them, a course of treatment with INGCS, physiotherapy, acupuncture, and laser therapy can be carried out. In the absence of sufficient effect from conservative measures and persistent difficulty in nasal breathing, it is necessary to decide on surgical intervention on the inferior nasal turbinates, which should be submucosal (laser or shaver conchotomy, osteoconchotomy, vasotomy, ultrasonic disintegration).

Own data

We conducted a study of the effectiveness of intranasal spray beclomethasone dipropionate (Nasobek) in drug-induced and idiopathic forms of VR.

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The study included patients aged 16 to 75 years with clinical manifestations of VR (with a subjective assessment of the severity of symptoms, the sum of points ≥3). Before inclusion in the study, all patients were

X-ray of the NPS in the nasomental projection and skin allergy tests were performed. Exclusion criteria were: severe deviated nasal septum, clinical and radiological signs of sinusitis, tumor of the NPS or nasal cavity, pregnancy, breastfeeding, and a positive skin test with at least one allergen.

The study involved 20 patients (16 women and 4 men) aged from 16 to 71 years, with 15 patients having a drug-induced and 5 having an idiopathic form of VR.

Patients received Nasobek 2 doses in each nasal passage 3 times a day (total dose 600 mcg/day) for 30 days. During this time, three times (before starting the drug, on the 14th and 30th days of the study), patients noted the subjective severity of the main symptoms of VR (difficulty in nasal breathing, nasal congestion, the amount of nasal discharge, decreased sense of smell, catching pains). During anterior rhinoscopy, the doctor visually assessed swelling of the mucous membrane, secretions in the nasal cavity, and an increase in the volume of the inferior nasal turbinates. At the same time, endoscopic photography of the nasal cavity and an objective assessment of nasal breathing using AR were performed.

During treatment with Nasobek, from visit to visit, a statistically significant improvement in nasal breathing, a decrease in nasal congestion, the amount of nasal discharge and headaches were noted. There was no statistically significant improvement in the sense of smell.

The need to use vasoconstrictor drops decreased by an average of 5.5 times. Nine of 15 patients were able to stop using decongestants.

According to AR data, by the third visit there was an increase in the volume of the nasal cavity by 11% ($p < 0.05$). Changes in the minimum cross-sectional area of the nasal cavity did not reach statistical significance. According to the PARM data (Fig. 2), by the third visit there was an increase in the total volume flow by 32% ($p < 0.05$) and a decrease in the total resistance by 32% ($p < 0.05$).

Conclusion

Thus, during the treatment of patients with VR with intranasal spray Nasobek, there was a statistically significant improvement in nasal breathing (both subjective and objective - according to anterior active rhinomanometry and AR), a decrease in nasal congestion, discharge from nose, headaches, and reduced need to use

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