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Optimal Treatment of Infectious Rhinosinusitis

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Abstract: the connection of diseases of the upper and lower respiratory tract is noted in a large number of studies and is explained by various theories. In particular, there is evidence that nasal symptoms in diseases of the nasal cavity and paranasal sinuses affect exacerbations of chronic obstructive pulmonary disease (COPD). Accordingly, therapy aimed at the treatment of rhinosinusitis can alleviate the condition and improve the quality of life of this category of patients.

The aim of the study was to evaluate the clinical efficacy, tolerability and safety of a combined drug with antibacterial, anti-inflammatory and vasoconstrictive effects in patients with acute rhinosinusitis (mild and moderate course) and concomitant COPD.

Material and methods: a study was conducted with the participation of 50 patients of both sexes aged 41 to 65 years. The initial examination included the collection of complaints and anamnesis, examination, physical and instrumental methods of examination of ENT organs, consultation of a pulmonologist. All patients included in the study underwent digital diaphanoscopy at the 1st visit to exclude acute exudative rhinosinusitis. In addition, all patients filled out a questionnaire for a subjective assessment of their condition. Therapy continued for 10 days with an interim examination 5 ± 1 day after the start of treatment. Patients of the main group were prescribed a combined Polydex preparation with phenylephrine, 1 injection into both halves of the nasal cavity 4 times a day for 10 days and irrigation with isotonic saline solution. Control group patients received mometasone furoate 2 doses 2 times a day in both halves of the nasal cavity for 10 days and also irrigation with isotonic saline solution. If necessary, it was allowed to use local vasoconstrictors.

The results of the study: statistically significant differences in the relief of inflammatory changes between the groups were recorded already by the 2nd visit. In the main group, the effect occurred earlier and was more pronounced at all stages of treatment. The study noted a natural relationship between upper respiratory tract infection (acute rhinosinusitis), the choice of treatment tactics and exacerbation of COPD. At the same time, a greater number of exacerbations of COPD were observed in the control group than in the main group — 7 versus 4, respectively.

Conclusion: the use of the combined drug Polydex with phenylephrine in patients with acute rhinosinusitis (mild and moderate course) and concomitant COPD has reduced the frequency and severity of exacerbations of COPD.

Keywords: rhinosinusitis, nasal symptoms, inflammation of the upper and lower respiratory tract, Haemophilus influenzae, chronic obstructive pulmonary disease, phenylephrine, neomycin sulfate, polymyxin B.

Rhinosinusitis refers to a group of inflammatory diseases of the nasal cavity and paranasal sinuses (ONP). This pathology affects a significant part of Russians, both children and adults. According to statistics, about 10 million people annually carry rhinosinusitis in Russia, and in the structure of ENT hospitals this disease ranges from 15 to 36% [1]. Depending on the duration of the disease , there are: 1) acute rhinosinusitis, which lasts less than 12 weeks. with the complete disappearance of symptoms after recovery; 2) recurrent rhinosinusitis (from 1 to 4 episodes of acute sinusitis per year, the periods between exacerbations last at least 8 weeks, at this time there are no symptoms of the disease, treatment is not carried out); 3) chronic rhinosinusitis, characterized by the presence of symptoms for more than 12 weeks. The etiopathogenesis of acute rhinosinusitis (ORS) is mainly due to rhinogenic infection of the ONP through natural anastomoses, through which aeration and drainage of the sinuses are carried out. Recent studies have shown that the main causative agents of acute respiratory viral infections are respiratory viruses that infect ONP in almost 90% of cases (rhinoviruses, respiratory syncytial, adenoviruses, coronaviruses). Under the influence of the virus on the atrial epithelium of the nasal cavity and ONP, epithelial cells lose cilia, the epithelium becomes loose, swelling of the mucous membrane develops. As a result of these processes, as well as the active release of anti-inflammatory mediators, an inflammatory reaction develops. The consequence of this is a violation of sinus aeration, inactivation of mucociliary clearance and accumulation of serous exudate in the lumen of the sinuses. Reducing the speed of mucociliary transport allows you to prolong the contact time of pathogenic bacteria with the mucous membrane and promotes bacterial infection. The condition caused by the attachment of a bacterial infection is called "acute bacterial rhinosinusitis" (OBRS). According to the recommendations of the American Society for Infectious Diseases (IDSA), the criteria for the diagnosis of "acute bacterial rhinosinusitis" are: the persistence of symptoms of the disease for more than 7-10 days, the appearance of a "second wave" of symptoms after the 5th day of the disease, the onset of the disease with pronounced symptoms (fever $\geq$ 39 ° C and purulent discharge from the nose), persisting within 3-4 days from the onset of the disease. The fight against ORS is an urgent and rather difficult task. This is due to a significant number of patients, the difficulty of diagnosis, the appointment of adequate etiopathogenetic therapy aimed at restoring ventilation of the paranasal sinuses and mucus drainage, suppression of the vital activity of pathogens, reduction of oxidative stress and associated inflammatory phenomena. Studies have shown that more than 90% of general practitioners and otorhinolaryngologists prescribe antibiotics in the presence of rhinosinusitis symptoms. In the case of bacterial infection, the appointment of antibiotic therapy is necessary and fully justified. In inflammatory diseases of the upper respiratory tract, antibiotics are indicated with a combined lesion of several parts of the respiratory tract, accompanied by pronounced symptoms of intoxication and local inflammation (severe forms). Antibiotic therapy is also carried out for young children, often ill and weakened patients with concomitant diseases. Nevertheless, the widespread use of this group of drugs can lead to the development of complications of antibiotic therapy, such as dysbiosis, allergic reactions, liver damage, and also contributes to the growth of antibiotic resistance. The general trend today is an increase in the resistance of pneumococcus to penicillin, macrolides, tetracyclines, and hemophilic bacillus to aminopenicillins (ampicillin, amoxicillin) and tetracyclines. In addition, antibiotic therapy increases the cost of treatment. In this regard, phytotherapeutic drugs that can have an antibacterial effect, prevent the development of bacterial infections, and reduce the need for antibiotic therapy are of great importance in the treatment of rhinosinusitis. These include some of the most popular drugs for the treatment of rhinosinusitis in Germany — preparations based on the patented complex of essential oils GeloMirtol and GeloMirtol forte. These are related preparations based on myrtol, standardized in the content of limonene, cineol and α-pinene, which differ only in its dosage (120 and 300 mg, respectively). They have a clinically proven ability to effectively affect the key stages of the pathological process of sinusitis development, due to the properties of myrtol.

LIST OF LITERATURE

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