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EVALUATION OF THE CLINICAL EFFECTIVENESS OF ANTIBIOTIC THERAPY IN COMBINATION WITH TOPICAL STEROIDS IN THE TREATMENT AND PREVENTION OF RECURRENT BACTERIAL SINUSITIS

Shamatov Islom Yakubovich
Associate professor, Samarkand State medical university, Samarkand, Uzbekistan

Shopulotova Zarina Abdumuminovna
Assistant, Samarkand State medical university, Samarkand, Uzbekistan

Khayatova Shoira Telmanovna
Assistant, Samarkand State medical university, Samarkand, Uzbekistan

Abduzadirova Nargiza Batyrbekovna
Assistant, Samarkand State medical university, Samarkand, Uzbekistan

ABOUT ARTICLE

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Abstract: The study included 60 patients who were treated in private companies "Saodat Medical" MCH and "BIONUR LLC" medical service for inflammatory pathology of the paranasal sinuses. Depending on the antibacterial treatment received, patients were divided into two groups. All patients underwent lavage of the paranasal sinuses, if necessary, puncture of the maxillary sinuses, and trypanopuncture of the frontal sinuses. In patients of the 1st group receiving antibiotic therapy, the sinuses were washed with a solution of Decasan; when treating patients of the 2nd group, the sinuses were washed with a solution of sodium chloride 0.9%, and also Cefamed and Forinex nasal spray were used in combination, 2 injections of 50 microns each nasal passage (total daily value -200 mcg).

INTRODUCTION

A chronic inflammatory process occurring in the mucous membrane of the paranasal sinuses (MNS), having a specific or nonspecific nature and involving the bone walls of the

sinuses, usually manifests itself with characteristic clinical symptoms (4,5). Currently, chronic rhinosinusitis (CRS) is considered as a heterogeneous group of diseases, united by similar localizations of the pathological process. Despite the differences in pathogenesis, most researchers recognize the role of bacterial pathogens in the formation and maintenance of an inflammatory focus in the MNS (7,16). In the structure of inflammatory diseases of the upper respiratory tract, sinusitis plays a leading role [2,8.9]. According to epidemiological studies, the incidence of sinusitis has increased 3 times over the past 10 years. On average, 5-15% of adults and 5% of children suffer from some form of chronic bacterial sinusitis (CRS). Patients hospitalized for pathology account for approximately 2/3 of the total number of patients in specialized ENT hospitals [3,6,10,11]. The percentage of recurrence of the bacterial inflammatory process in the MNS remains high; it ranges from 15 to 40% [1,5,7,1,19]. The most frequently recorded bacterial pathogens of MNS inflammation are Streptococcus pneumoniae, Haemophilus influenza, Staphilococcus aureus, Moraxella catarrhalis, various types of B-hemolytic streptococci that do not belong to group A, as well as obligate anaerobic microorganisms (8,12,13,15). At the same time, during the transition of acute rhinosinusitis to CRS, according to the classification of B.S. Preobrazhensky, with productive (polyposis, parietal hyperplastic, cystic) or mixed (purulent-polyposis) forms of the inflammatory process, the dominant role in inflammation is assigned to S. aureus, Pseudomonas aeruginosa, Enterobacteriaceae, etc. (6,9,12,18). Thus, according to foreign researchers, contamination of the upper respiratory tract with S. Aureus is detected in every third European and in 85% of patients with polyposis CRS (14,17,20). At the same time, there is a high frequency of isolation of P. aeruginosa, reaching 9% of CRS and 49% in patients with comorbid conditions associated with CRS, such as cystic fibrosis.

Thus, the need to create a modern treatment and diagnostic algorithm for the disease, taking into account the characteristics of its clinical course and the specifics of the microbial flora, becomes urgent.

Objective: To evaluate the effectiveness of respiratory cephalosporins in the complex treatment of patients with exacerbations of recurrent bacterial sinusitis.

METHODS

The study included adult (over 18 years old) patients of both sexes who were treated in the otorhinolaryngology department of the private company "Saodat Medical" MChZh and LLC "BIONUR" honey. service from January 2020 to March 2023 60 patients aged 18 to 70 years (average age 38.1+_9.4 years) were examined, of which 28 (46.7%) were men and 32 (53.3%) women. The subjects reported different durations of the disease: 15(25%) patients reported an experience of 3-12 months, 25(41.6%)

patients reported an experience of 2-5 years, 20(33.3%) patients reported an experience of more than 5 years. . Patients are divided into two groups: main and control.

Group I included (comparison group) 33 patients with various chronic recurrent sinusitis (of which 15 (53.5%) were men and 18 (56.2%) women), who were treated using traditional methods.

Group 2 included group II (main) 27 patients with recurrent bacterial sinusitis and nasocomial sinusitis (of which 13 (46.5%) were men and 14 (43.8%) women), who, along with standard treatment, received treatment with the antibacterial drug Cefamed and intranasal CS Forinex.

A comprehensive clinical examination of all patients included collection of complaints, anamnesis, examination of ENT organs, laboratory (general blood count, microbiological examination) and instrumental studies (anterior, posterior rhinoscopy, endoscopy, radiography, computed tomography of the nasal cavity and SNP). 39(65%) patients suffered from purulent-hyperplastic sinusitis, 11 (18.3%) patients were diagnosed with parietal-hyperplastic sinusitis, 7(11.6%) patients were diagnosed with chronic, parietal-hyperplastic sinusitis; 3 (0.5%) patients had polyposis-purulent maxillary ethmoiditis.

The exudate obtained during endonasal probing of the sinuses was removed by rinsing the sinuses with an antiseptic solution. In 75% of patients, the exudate was purulent, and in 25% it was mucous.

During endonasal lavage using the displacement method, if necessary, puncture of the maxillary sinus and trypanopuncture of the frontal sinus were performed to take its contents to study the species composition of the microflora and its sensitivity to antibiotics for further treatment.

Bacteriological research was carried out using the generally accepted method. In our work, X-ray examination of the paranasal sinuses was performed in patients only in cases where it was not possible to perform computed tomography (CT) of the paranasal sinuses. We performed an endoscopic examination of the nasal cavity using a rigid endoscope, after anemization and a single lubrication of the nasal mucosa with a 10% lidocaine solution using a Hinemann endoscope (Germany) with a diameter of 2.7 mm, 4 mm with end and angular optics 0°, 30°, 70° with a light source from the same company.

Each patient underwent a detailed analysis of the clinical manifestations of diseases preceding chronic sinusitis. The most common diseases preceding sinusitis in patients from the main group and the control group were: acute respiratory infections - 19 (31.6) cases, influenza - 25 (41.6), tonsillitis - 3

(5%). 13 (21.6%) patients indicated a sluggish onset of the disease and in the early period of the disease. Cefamed is one of the highly effective and safe agents, active against gram-positive, gram-negative microorganisms, anaerobes, has a double elimination route: 50 - 60% in urine and 40% - 50% in bile, maintains a bactericidal concentration for a period.

Cefamed is not hepato- and nephrotoxic, does not suppress the immune system; double compensatory route of elimination - there is no need to change the dosage in case of renal and liver failure; 100% bioavailability - maximum bactericidal concentrations in all tissues and organs. The maximum concentration of Cefamed in plasma is achieved after 2-3 hours; the half-life of Cefamed is on average 8 hours and may vary depending on the age and other individual characteristics of the patient.

We chose Forinex as a topical steroid. Forinex is a glucocorticosteroid for local use, has anti-inflammatory and antiallergic effects.

Forinex prevents the marginal accumulation of neutrophils, which reduces inflammatory exudation and the production of lymphokines, inhibits the migration of macrophages, and leads to a decrease in the processes of infiltration and granulation. The drug reduces inflammation by reducing the formation of a chemotaxis substance (influencing late allergy reactions), inhibiting the development of an immediate allergic reaction (by inhibiting the formation of arachidonic acid metabolites and reducing the release of inflammatory mediators from mast cells).

Forinex in the form of a spray for intranasal use, containing a corticosteroid of synthetic origin - Mometasone furoate. 1 dose (100 mg) of spray contains: Mometasone furoate (micronized) – 50 mcg. The effect is to reduce the level of histamines and reduce the number of neutrophils, adhesion proteins of epithelial cells and eosinophils, suppressing the activity of the latter.

The course of treatment with the drug lasted quite a long time, the maximum permissible effective dose of the drug taking into account the type of pathological process, the individual characteristics of the patient's body and his age category. After the course of intensive treatment, a period of maintenance therapy began, when the dose and/or frequency of doses per day was gradually reduced in order to consolidate the positive results of treatment.

RESULTS

Cefamed is not hepato- and nephrotoxic, does not suppress the immune system; double compensatory route of elimination - there is no need to change the dosage in case of renal and liver failure; 100%

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Results of a bacteriological study of exudate from the maxillary sinus in patients with purulent-hyperplastic sinusitis

Table 1

	Main group		**Control group**	
	Before antibiotic therapy	After antibiotic therapy	Before antibiotic therapy	After antibiotic therapy
	S. epidermidis	no growth	S. epidermidis	S. epidermidis
	Str. pneumoniae	no growth	Str. Pneumoniae	St. saprofiticus,

	St. aureus	S. epidermidis	St. Aureus	S. epidermidis
	St. varidans	no growth	St. Varidans	Pseud, maltofilia
	H. influenzae	no growth	H. influenzae	H. influenzae
	Pseudomonas aeroginosa	no growth	Pseudomonas aeroginosa	Pseudomonon as cepacia
	E. Coli	no growth	E. Coli	no growth
	Pr. vulgaris	no growth	Pr. Vulgaris	no growth

After treatment in the main group, S. Epidermidis gave growth to all patients. No growth was observed in the remaining strains. In patients in the control group, growth was observed in almost all strains. Analyzing the data obtained, it can be noted that the dynamics of the involution of pathological symptoms of exacerbation of sinusitis in both groups was approximately the same during the first week of treatment, in the main group it was more pronounced. However, by the 30th day of observation, all signs of the inflammatory process in the main group were two times less pronounced than in the control group. Insufficient effectiveness of the therapy by the 10th day of treatment was noted in 1 patient (3.03%) of the main group and 6 in the control group (22.2%). Recurrence of the pathological process by the 30th day of observation was noted in 4 (14.8%) patients in the control group; there were no relapses in the main group.

Thus, analysis of the results of treatment of bacterial sinusitis in the immediate and long-term periods showed that the treatment was effective in 3 (11.1%) patients in the control group and 30 (90.9%) patients in the main group.

During the control (after 1 year) computed tomography of the paranasal sinuses in patients who did not have relapses of bacterial inflammation, no negative dynamics of the X-ray picture were noted, with the exception of 2 (6%) patients of the main group against the background of a polypous process and 6 (22.2%) patients control group in which there was an increase in the severity of the polyposis process.

CONCLUSION

Thus, the results of the study showed the high effectiveness of the use of antibacterial therapy in combination with topical steroids and even faster dynamics of the disappearance of symptoms of

exacerbation of bacterial sinusitis. The effectiveness of such therapy turned out to be higher and in the early period amounted to 94.4% - with a purulent-hyperplastic process.

When treating an exacerbation of bacterial inflammation in the ED with our proposed combination of an antibiotic and a topical steroid, the effectiveness of treatment remained higher and amounted to 83.3% after 6 months for purulent-hyperplastic sinusitis. A year later, treatment effectiveness rates for hyperplasia decreased slightly to 72.2%.

The most common pathogens of bacterial recurrent sinusitis are represented by Pseudomonas aeruginoza - 18%, E. Coli - 10%, Str. pneumonia - 13%, Gram-positive flora occurs only in 26% of cases: Staphylococcus aureus - 15%, Streptococcus epidermidis - 12%, Streptococcus viridans - 2%. In 4% of cases, fungi (Candida albicans) are sown.

After obtaining a larger volume of confirmatory data, it was established that the dynamics of pathological symptoms of exacerbation of sinusitis in both groups was the same, but by the 15th day of observation, all signs of the inflammatory process in the main group were 1.5 times less pronounced than in the control group. Bacteriological efficiency was also high in the main group by 2 times. The use of antibiotic therapy in combination with topical steroids should be recognized as an effective comprehensive method of conservative treatment of recurrent bacterial sinusitis.

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