Role of the Nasal Cavity Microbiome in the Diagnosis and Treatment of Chronic Rhinosinusitis

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ABSTRACT

The relevance of today's research in the world is based on the high risk of recurrence of chronic rhinosinusitis. The treatment of rhinosinusitis remains relevant and has a difficult solution in the field of Otorhinolaryngology even today. Among LOR diseases, it occurs in between 5% and 15% of patients. As before, in connection with the deterioration of the ecological condition, side effects of the external environment and harmful factors of production, a recurrence of the disease and a high incidence rate remain. Currently, rhinosinusitis is considered as a polyethiological disease, on the basis of which infectious allergic inflammation and disorders of the allergic state of the body, autoimmune processes, Genetic Disorders at the chromosome level and functional disorders of the vegetative nervous system lie. These processes lead to a decrease in the overall reactivity of the body and local immunity of the nasal mucosa, and are also the result of impaired metabolism and microcirculation, hypoxia and endogenous intoxication.

Keywords: Rhinosinusitis, chronic rhinosinusitis, chronic rhinosinusitis against the background of allergies, upper respiratory tract, colony-forming unit, acute respiratory disease, nasal lateral cavities..

Relevance of the topic. Chronic rhinosinusitis (CHRS) is a public health problem with significant socio-economic impacts. In addition, the complexity of this disease due to its uneven nature, which is based on the basic pathophysiology, leads to the rebound of various variants of the disease Hamda further complicates our understanding and directions for the most optimal targeted treatment strategies. There are a number of international/national guides, posision and/or agreed upon documents that provide current knowledge and treatment strategies for SRS. There are also many problems associated with the treatment of SRS, especially acute and resistant forms of the disease. Therefore, the international cooperation in the Sox of Asthma, Allergy and immunology (iCAALL), the partnership between EAASI, AAAAI, ACAAI and WAO decided to propose the international consensus on chronic rhinosinusitis (ICON).

All publications published in recent years have replaced sinusitis with the term "rhinosinusitis". According to the latest data, about 5-15% of the overall morals with SRS suffer. The prevalence of a doctor-identified SRS diagnosis is 2-4%. While chronic rhinosinusitis (SRS) is less common than its acute form, it is the most distressing disease in humans. This disease develops on average in 5% of the population, in the last 10 years it is observed that the increase in incidence of SRS has increased by 2 times. Patients with SRS within those hospitalised to Otorhinolaryngology units are 25-30%, with an average increase of 1-2% each year. SRS damages approximately 12-

15.2% of adult morals in the US every year. Symptoms of the disease significantly reduce the quality of life of patients. SRS is common, accounting for 4.5–12% of the general population, while a small group of patients with nasal polyposis found in studies of axolini is 0.5–4.3% gacha, it can also be observed that it is common in Western states, among male sex, elderly and asthmatics.

SRS is usually classified as additional Ravish based on the absence or presence of nasal polyps. Although mucosal-purulent drainage and nasal termination are characteristic of the two, according to tradition, doctors distinguish SRS from phenotypic gixate: disease with polyps (CRSwNP) or disease without polyps (CRSsNP). But the presence or absence of polyps does not determine the true pathophysiology of any disease. Although it is clear that the cause of these cases is chronic inflammation, it is also clear what theory Hecht cannot explain the etiology of this chronic inflammatory process.

Currently, 3 cases of inflammation are being studied. CRSsNP is often associated with Type 1 inflammation and is characterized by an increase in inflammatory factors such as IL-2, interferon, and TNF-alpha. CRSwNP is more commonly associated by Type 2 inflammatory pathway, with an increase in IL-4, IL-5, IL-13 and Ige inflammatory factors.

Despite the high development of polyps in men, women with XPN and nasal polyposes (CRSwNP), compared to men, experience acute symptoms of the disease, as well as a high incidence of aspirin sensitivity and hamrox asthma. Symptoms and clinical data that determine SRS include dysregulation of the innate and adaptive immune response, dysfunction of the epithelial barrier-a common endpoint for several certain pathogenic processes in the ham that jointly support disorders in the interaction of the master and the germ. Understanding the role of Staphylococcus aureus in the pathogenesis of CRSwNP, including specific and environmental factors for the master that predispose to the development of SRS in humans, the active Sox of the study are considered.

The nasal cavity and paranasal sinuses occupy an important place in the physiological processes of the human body, in which the state and pathological changes of the above-mentioned parts of the respiratory system attract the attention of many specialists. Unfortunately, despite the significant achievements of medical science and practice, at the modern stage, according to all countries of the world, regardless of the degree of their economic development, there is an increase in inflammatory diseases of the respiratory tract, frequent recurrence and chronization of pathological processes. The relevance of the issues of diagnosis, treatment and Prevention of these nosological forms does not arouse any doubts.

The purpose of the study. It consists in the development of an algorithm for the diagnosis and complex treatment of chronic rhinosinusitis, taking into account the condition of the nasal cavity microbiome.

Material and methods of research. Based on the above goals and objectives, the scientific research work was carried out in the Otorhinolaryngology Department of the clinic of the Andijan State Medical Institute and in the Otorhinolaryngology Department of the multidisciplinary clinic of the Tashkent Medical Academy. Under our observation, there were 161 patients with chronic rhinosinusitis aged 18 to 70 years. Of the 161 patients, 140 were without chronic rhinosinusitis allergy (SRS), while 21 patients had chronic rhinosinusitis allergy background (SRS+ar).

In addition, 20 healthy individuals aged 22-55 years, similar in sex and age, were examined, with no symptoms of acute respiratory diseases of the nose for 6 months in the ham without allergic and chronic conditions in their Anamnesis.

The analysis of lubricants from the nasal cavity was carried out in the bacterial Laboratory of the Andijan region railway workers clinic, as well as in the bacteriological Laboratory of the Tashkent Dental Institute.

In recent years, one-stop methods of determining the sensitivity of microbes to drugs have been developed by scientists (serial dilution method, disk method and x.k.). Among

these methods, in many cases a special emphasis is placed on the disc-diffusion method, zero is convenient in the application of this method, is economically cumbersome and the results are accurate.

Results of the study. The total number of patients with SRS was 140, with 75 (53.5%) of chronic rhinitis, 35 (25%) of purulent inflammatory diseases of the nasal flanks, mainly from nosological forms of SRS in 1 group of patients. It has been shown that this condition is common in the types of nosological caused and that this condition occurs almost identically to the results of other investigations.

When the duration of the disease and recurrence rates are analyzed, it can be seen in figure 3.1 that patients with SRS+ar are high.

It is worth noting that the course of chronic rhinosinusitis disease, the main factors contributing to its recurrence, are a violation of ventilation through the nose, as well as a chronic violation of the activity of permanent nasal drainage, which in most cases is considered to be the curvature of the nasal barrier, pathological processes in the anatomical structures of the nasal cavity.

59 patients with SRS were found to have oblique nasal barrier, 23 to have vasomotor rhinitis, 2 to have hypertrophy of the lower nasal ventricles, 7 to have chronic pharyngitis, 1 to have chronic otitis, 12 to have SRS+ar, 21 to have vasomotor rhinitis, and 3 to have chronic pharyngitis.

In the case of patients who were in our observation, complaints of patients were studied on the developed scale, and the following results were obtained.

Patients with SRS had difficulty breathing in 140 people, nasal termination in 122 people, nasal separations in 124 people, pain in the facial area in 32 people, decreased sense of smell in 24 people, cough in 15 people, regular headaches in 29 people, and weakness in 27 people. In patients with SRS+ar, however, shortness of breath was observed in 21 people, nasal termination in 21 people, nasal separations in 21 people, pain in the facial area in 1 person, decreased sense of smell in 18 people, cough in 7 people, regular headache in 14 people, weakness in 9 people.

In patients with qualitatively SRS, breathing difficulty averaged 3.72±0.57 points, nasal termination 3.51±0.45 points, nasal separations 3.20±0.38 points, facial pain 1.28±0.24 points, olfactory decline 1.85±0.29 points, cough 1.31±0.27 points, regular headache 1.65±0.37 points, and weakness 1.51±0.40 points. In contrast, patients with SRS+ar reported breathlessness of 3.91±0.52, nasal termination of 3.51±0.50, nasal separations of 3.67±0.49, facial pain of 0.81±0.16, olfactory decline of 2.54±0.42, cough of 1.27±0.35, regular headache of 2.04±0.43, weakness of 1.56±0.41.

In patients with SRS under study from burn diseases, foci of burn chronic infection (sio') are common, creating conditions for both infectious susceptibility and the development of secondary structural and/or functional immunodeficiency.

In order to determine the functional state of the nasal cavity mucosa in the patients being examined, mucosiliary transport, rn, separation, absorption and olfactory activity were examined, and the control group saw a comparison with the indicators of practical healthy individuals.

Endoscopic examination of the nasal cavity was performed before and after treatment in 161 patients. During the rhinoendoscopy examination, most of the 1 group of patients showed redness of the mucous membranes of the nasal cavity, swelling, enlarged nasal shells, redness, narrowing of the nasal passages (clearly observed in patients with chronic hypertrophic rhinitis), the presence of mucous, mucous-purulent formations in the nasal passages, oblique nasal barrier, hypertrophy of the hook tumor, bullous enlargement of the middle nasal, nasal shells were found to be the presence of white spots (observed in most of the 3 groups of patients.

When qualitative analysis of endoscopic examination results showed 3.87±0.47 in patients with median nasal mucosal redness SRS, 3.48±0.44 in patients with SRS+ar, 3.53±0.45 in patients with SRS, 3.48±0.44 in patients with SRS+ar, 3.89±0.50 in patients with nasal mucosal swelling SRS, 3.86±0.50 in patients with SRS+ar 0.51 points.

Conclusions.

1. In patients with SRS, the course of the disease is calculated depending on the duration of the disease, its number of relapses and the type of microflora in the nasal cavity, negatively affecting the course of the disease when an allergic background is added to the body.
2. Patients with SRS and SRS+ar experienced decreased commensal microflora in the nasal cavity, increased conditioned pathogenic and pathogenic microflora, mainly Staph. aureus and St. Louis. it was found that the epidermidis increased quantitatively, which in turn indicates the formation of a pathogenic microbe in the nasal cavity.
3. In patients with SRS and SRS+ar, increased pathogenicity of staphylococci detected in the nasal cavity, i.e. a sharp increase in plasmacoagulase, fibrinolysin, lecithinase and antilizosim, as well as decreased lysosimal titer from immunological status indicators, increased neutrophil phagositar activity, increased IGA.
4. A 16rrna gene assessment of the phylogenetic diversity of microflora in patients with chronic rhinosinusitis found increased levels of pathogenic microflora and decreased commensal microflora in patients with SRS and SRS+ar.
5. The use of pathogenetically based clinical-diagnosis and treatment algorithms in patients depending on the SRS night and the condition of the nasal cavity microflora leads to an increase in the effectiveness of treatment, a decrease in the number of relapses and their rapid recovery.

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