



STUDY OF DIFFERENTIATED TREATMENT TACTICS AND ASSESSMENT OF QUALITY OF LIFE OF PATIENTS WITH POLYPOUS RHINOSINUSITIS

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ABSTRACT

Polypous rhinosinusitis is a chronic inflammatory disease of the nasal cavity and paranasal sinuses characterized by the formation of nasal polyps, persistent nasal obstruction, rhinorrhea, anosmia, and recurrent inflammation. The disease significantly affects patients' quality of life, sleep quality, working capacity, and psychosocial functioning. Modern approaches to treatment emphasize differentiated therapeutic tactics based on disease severity, endoscopic findings, radiological characteristics, and associated comorbidities such as bronchial asthma and allergic rhinitis. The present article analyzes modern therapeutic strategies for patients with polypous rhinosinusitis and evaluates the influence of different treatment methods on patients' quality of life. Conservative treatment methods including intranasal corticosteroids, systemic corticosteroids, saline irrigation, antibiotics, and biological therapy are discussed together with surgical management using functional endoscopic sinus surgery (FESS). The study demonstrates that a differentiated treatment approach improves clinical outcomes, decreases recurrence rates, and significantly enhances patient quality of life indicators. The article also highlights the importance of individualized patient assessment and long-term follow-up in achieving optimal therapeutic effectiveness.

Introduction. Polypous rhinosinusitis, also referred to as chronic rhinosinusitis with nasal polyps (CRSwNP), represents one of the most widespread chronic diseases in otorhinolaryngology. The condition is characterized by persistent inflammation of the mucous membrane of the nasal cavity and paranasal sinuses lasting more than 12 weeks and

accompanied by benign inflammatory polyps. The prevalence of the disease among the adult population ranges from 1% to 4%, while its incidence increases with age. Men are affected more frequently than women, especially after the age of 40.

The pathogenesis of polypous rhinosinusitis is multifactorial and includes chronic inflammation, immune



dysregulation, bacterial colonization, fungal sensitization, genetic predisposition, and environmental influences. Eosinophilic inflammation plays a dominant role in many patients, especially in severe recurrent forms associated with bronchial asthma and aspirin intolerance. Patients commonly complain of nasal obstruction, decreased sense of smell, mucopurulent discharge, facial pressure, headaches, and sleep disturbances. These symptoms negatively influence emotional well-being and social adaptation.

The chronic nature of the disease leads to substantial deterioration in quality of life. Studies demonstrate that patients with severe nasal polyposis may experience quality of life impairment comparable to chronic diseases such as diabetes mellitus and chronic obstructive pulmonary disease. Therefore, evaluation of therapeutic effectiveness should not be limited only to endoscopic or radiological findings but must also include assessment of physical, psychological, and social functioning. Modern treatment concepts focus on individualized therapeutic strategies. Mild forms may be successfully controlled with conservative therapy, whereas advanced or recurrent cases often require surgical intervention combined with postoperative medical treatment. Recently, biological therapies targeting inflammatory mediators such as interleukin-4, interleukin-5, and immunoglobulin E have opened new possibilities for severe refractory disease.

The aim of this article is to study differentiated treatment tactics in patients with polypous rhinosinusitis

and evaluate their influence on quality of life indicators.

Etiology and pathogenesis of Polypous Rhinosinusitis

Polypous rhinosinusitis, also known as chronic rhinosinusitis with nasal polyps, is one of the most common chronic inflammatory diseases encountered in otorhinolaryngology practice. The disorder is characterized by prolonged inflammation of the nasal mucosa and paranasal sinuses accompanied by the formation of benign inflammatory polyps. The prevalence of the disease among adults ranges from 1% to 4%, and the condition is more commonly diagnosed in middle-aged and older individuals. Men are affected more frequently than women, especially in severe recurrent forms of the disease.

The pathogenesis of polypous rhinosinusitis is multifactorial and includes chronic inflammatory reactions, immune dysfunction, allergic predisposition, bacterial colonization, fungal sensitization, and environmental influences. Persistent eosinophilic inflammation is considered one of the major pathogenic mechanisms leading to mucosal edema and polyp formation. Cytokines such as interleukin-4, interleukin-5, and interleukin-13 stimulate eosinophil activation and prolong inflammatory processes within sinonasal tissues.

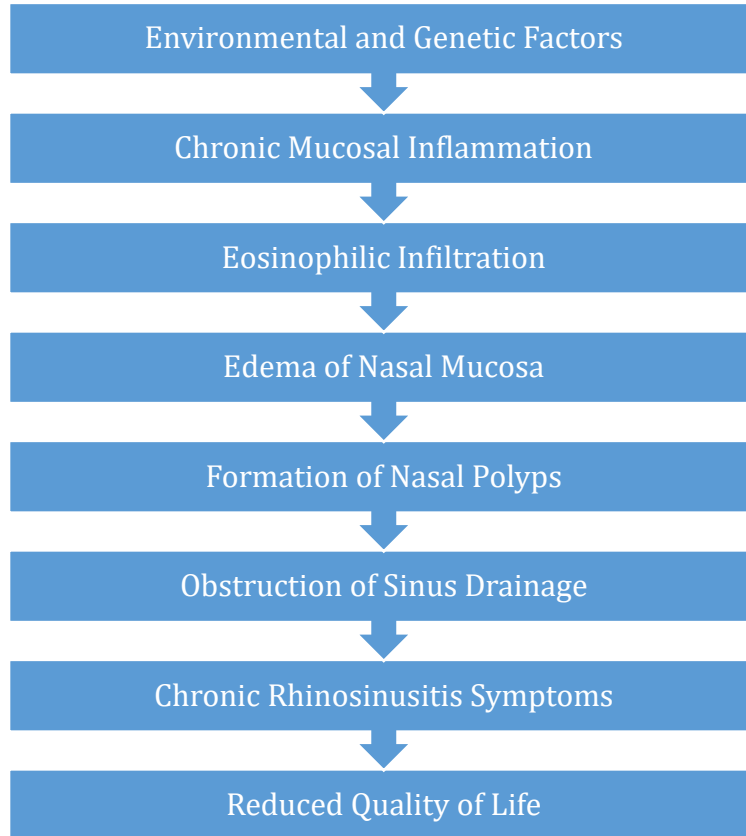
Patients with polypous rhinosinusitis usually complain of nasal obstruction, rhinorrhea, decreased or absent sense of smell, facial pressure, headache, sleep disturbance, and chronic fatigue. These symptoms significantly affect physical activity, emotional well-being, work productivity, and social



functioning. Studies indicate that quality of life impairment in severe chronic rhinosinusitis may be comparable to chronic diseases such as diabetes

mellitus and chronic pulmonary disorders.

Flowchart №1. Pathogenesis



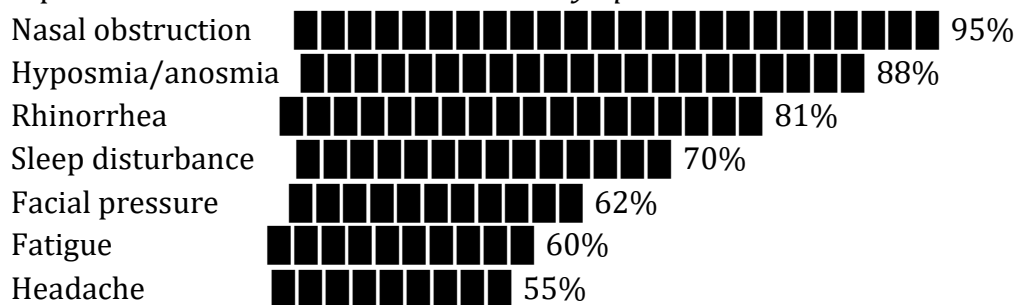
Clinical manifestations and diagnostic methods

Modern treatment strategies are based on differentiated therapeutic approaches according to disease severity, extent of sinus involvement, inflammatory phenotype, and associated diseases such as bronchial asthma and allergic rhinitis. Mild forms of the disease may respond well to conservative

therapy, while severe recurrent cases often require surgical intervention combined with long-term postoperative medical management.

The severity of symptoms varies depending on the extent of mucosal involvement and associated comorbidities.

Diagram №1. Distribution of Major Symptoms



Loss of smell is considered one of the most disturbing symptoms because it

directly influences nutrition, emotional state, and daily functioning.



Diagnosis of polypous rhinosinusitis includes a detailed clinical examination, nasal endoscopy, computed tomography of paranasal sinuses, laboratory investigations, and quality of life assessment using standardized questionnaires. Nasal endoscopy enables direct visualization of inflammatory polyps, mucosal edema, and nasal obstruction. Computed tomography remains the gold standard for determining the extent of sinus involvement and planning surgical treatment.

Conservative treatment is considered the first-line therapeutic option in most patients. Intranasal corticosteroids are the cornerstone of therapy because they reduce mucosal inflammation, decrease edema, and inhibit polyp growth. Medications such as mometasone, fluticasone, and budesonide are widely used due to their strong anti-inflammatory properties and relatively low systemic side effects.

Flowchart №2. Diagnostic algorithm



Saline nasal irrigation also plays an important role in disease management by improving mucociliary clearance, removing inflammatory secretions, and enhancing local drug penetration. Short courses of systemic corticosteroids may be prescribed in severe exacerbations or extensive polyposis to rapidly reduce inflammation and restore nasal breathing. Antibiotics are recommended

only when bacterial infection is suspected.

Surgical treatment and assessment of quality of life

In recent years, biological therapy has emerged as a promising treatment option for severe refractory disease. Biological agents target specific inflammatory pathways responsible for eosinophilic inflammation. Dupilumab, omalizumab, and mepolizumab have

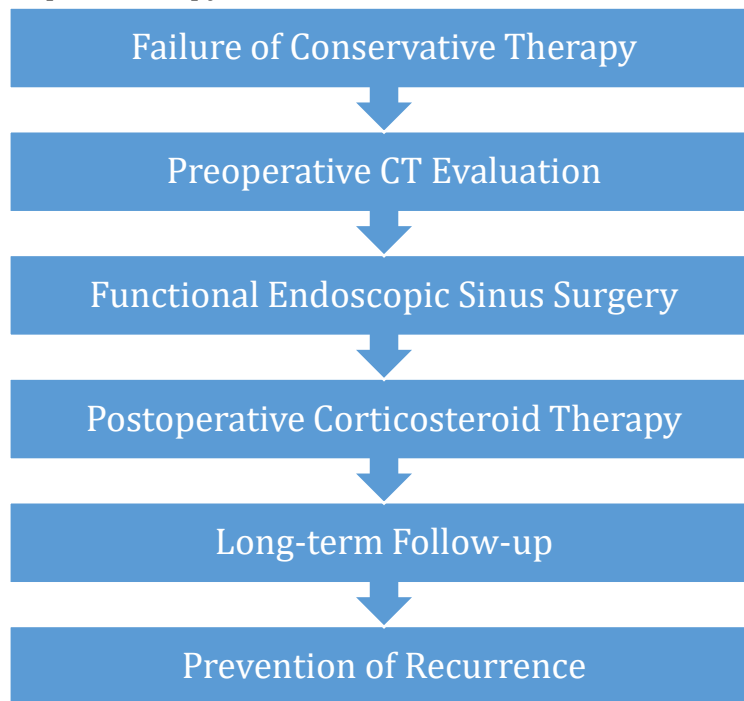


demonstrated significant effectiveness in reducing polyp size, improving smell perception, decreasing recurrence rates, and enhancing patient quality of life.

When conservative treatment fails to provide adequate symptom control, surgical management becomes necessary. Functional endoscopic sinus surgery is currently considered the gold standard surgical technique. The procedure aims to remove polyps, restore sinus ventilation, improve drainage pathways, and facilitate postoperative topical therapy.

The minimally invasive nature of functional endoscopic sinus surgery allows precise tissue removal while preserving healthy mucosa. Postoperative recovery is usually rapid, and patients often experience significant improvement in nasal breathing, smell function, and sleep quality. However, recurrence remains possible, especially in patients with eosinophilic disease and bronchial asthma.

Flowchart №3. Surgical treatment algorithm



Quality of life assessment is considered one of the most important criteria for evaluating treatment effectiveness. The Sino-Nasal Outcome Test-22 questionnaire is widely used to assess symptom severity and psychosocial burden in patients with

chronic rhinosinusitis. Major domains affected by the disease include sleep quality, emotional health, physical comfort, social interaction, and work performance.

Flowchart №4. Main affected domains

Domain	Impact Level
Sleep quality	Severe



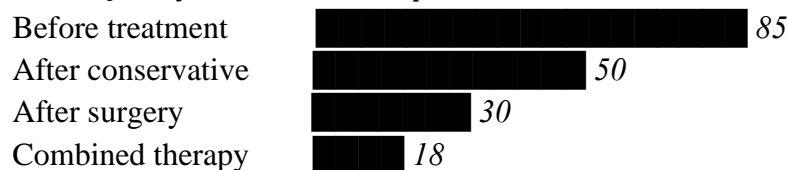
Domain	Impact Level
Emotional well-being	Moderate-Severe
Social activity	Moderate
Work productivity	Moderate-Severe
Physical comfort	Severe

The results of clinical observations indicate that patients receiving individualized combined therapy demonstrate the best long-term outcomes. Surgical intervention combined with postoperative intranasal

corticosteroid therapy significantly decreases recurrence rates compared with surgery alone. Biological therapy further improves symptom control in severe eosinophilic disease resistant to standard management.

Diagram №2. Improvement After Treatment

Quality of Life Score Improvement



Lower scores indicate better quality of life outcomes and improved symptom control.

demonstrate the most stable long-term outcomes.

Flowchart №5. Comparative Effectiveness of Treatment Methods

Patients receiving combined therapy (surgery plus medical maintenance)

Treatment Method	Symptom Improvement	Recurrence Risk	Quality of Life Improvement
Intranasal corticosteroids	Moderate	Moderate	Moderate
Systemic corticosteroids	High	High after discontinuation	Temporary high
FESS surgery	High	Moderate	High
Biological therapy	Very high	Low	Very high
Combined therapy	Excellent	Lowest	Excellent

Conclusion



Polypous rhinosinusitis is a chronic multifactorial inflammatory disease significantly affecting patients' physical, emotional, and social well-being. Persistent nasal obstruction, anosmia, recurrent inflammation, and sleep disorders substantially reduce quality of life and working capacity.

Differentiated treatment tactics based on disease severity, inflammatory phenotype, comorbid conditions, and quality of life indicators provide the most effective management strategy. Conservative therapy remains appropriate for mild and moderate forms, while severe recurrent disease frequently requires surgical intervention combined with postoperative medical therapy.

Functional endoscopic sinus surgery significantly improves nasal ventilation and symptom control, especially when combined with long-term anti-

inflammatory treatment. Biological therapy represents a promising modern direction for patients with severe eosinophilic disease resistant to conventional treatment.

Assessment of quality of life using standardized questionnaires should become an integral part of patient management because it reflects the real clinical burden of the disease and therapeutic effectiveness.

The implementation of individualized treatment protocols contributes to improved long-term outcomes, reduced recurrence rates, enhanced patient satisfaction, and better social adaptation. Future research should focus on personalized medicine approaches, biomarker identification, and optimization of biological therapies in chronic rhinosinusitis with nasal polyps.

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