American Journal Of Biomedical Science & Pharmaceutical Innovation
(ISSN – 2771-2753)
VOLUME 04 ISSUE 05 PAGES: 22-28
SJIF IMPACT FACTOR (2022: 5. 705) (2023: 6.534) (2024: 7.7)
OCLC – 1121105677
Publisher: Oscar Publishing Services

Journal Website: https://theusajournals.com/index.php/ajbspi

Research Article

RESULTS OF SURGICAL TREATMENT OF PATIENTS WITH POLYPOUS FORMS OF SINUSITIS ACCORDING TO THE DATA CLINICAL-AND LABORATORY STUDIES

Submission Date: May 16, 2024, Accepted Date: May 21, 2024,
Published Date: May 26, 2024
Crossref doi: https://doi.org/10.37547/ajbspi/Volume04Issue05-05

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ABSTRACT

According to modern concepts, polypous sinusitis refers to diseases with a pronounced violation of the immunological reactivity¬of the body, the humoral component of which is still insufficiently studied. The inconsistency of the data presented in the literature regarding the content of immunoglobulins in patients with polypous sinusitis, the lack of clear¬data on their relationship with other indicators¬of organ resistance, especially in childhood, are the basis for¬further development of this issue.

KEYWORDS

Cutaneous-vascular¬reaction, duration index¬(ID), and character.

INTRODUCTION

This paper presents the results of a dynamic study of a number of indicators of humoral immunity in children suffering по¬from polyporous sinusitis.

The content of immunoglobulins of classes A, G, and M was determined by the radial immunodiffusion method с ис¬using monospecific

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sera, the concentration of magnesium in blood serum was determined by the fluorometric method, and the skin-vascular reaction (CSR) to histamine was studied, which¬was evaluated by three indicators: intensity, duration index¬(ID), and character. The intensity was expressed by the¬erythema diameter that occurred at the injection site of 0.01% histamine solution 5-minutes after scarification. The duration index was calculated as a percentage of the erythema diameter at 5 and 15 minutes. Depending on the ID of the cutaneous-vascular¬reaction, it was subdivided as follows. At ID, up to 40% of DAC¬was changed to normal, from 14 to 80% — to slow, and more than 80% — to stagnant. In addition, the level of glycosaminoglycans in the blood serum was determined by the turbometric method.

A total of 50 patients aged 18 to 35 years with polyp¬-posal sinusitis were examined. In 22 patients, an edematous polyp was found in the general nasal passage¬, which occupied almost the entire half of the nasal cavity and often¬descended into the nasal pharynx. At the same time, there was no nasal breathing on the same side. In 28 patients, the polyps were significantly smaller, located in the nasal cavity, causing moderate difficulty in breathing. In 45 children, the polypous process was in the maxillary sinus, in 4-in the maxillary sinus and sinus of¬the ethmoid bone, in one child the polyps came from the sphenoid sinus (polypous form of sphenoiditis). Some patients reported head¬pain, general malaise, subfebrility, etc.

A carefully collected allergic¬history revealed that 5 patients had exudative diathesis and 4 had drug intolerance. Bronchopulmonary pathology (recurrent bronchitis, pneumonia, Cartagener's syndrome) was observed in 8 patients simultaneously with sinus involvement¬хит, пневмония, синдром Картагенера. Of the patients we examined, 13 patients had previously undergone polypotomy. However, most of them мес — 1 год отме¬had recurrent nasal polyposis after 3 months-1 year.

To clarify the diagnosis, we used contrast X-ray¬imaging, which allowed us to determine the location of the initial polyp growth and¬determine the scope of intervention. In 49 patients, a maxillary sinus was performed,4 of them simultaneously opened the cells of the sinus of the ethmoid bone and 1-the sphenoid sinus. Along with surgical intervention, as a rule, general strengthening and desensitizing treatment was performed¬. Children were examined in dynamics: at admission to the clinic and 1-2 years after surgery. Of the 50 operated patients, 44 had positive results, and 6 had a-recurrence of the disease.

The results of the determination of serum immunoglobulins in the observed patientsare shown in Table 1.

Table 1

The content of immunoglobulins in blood serum in children with polypous sinusitis

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Class of immunoglobulins	Statistical indicator	Content of immunoglobulins	
		in in patients	in in healthy [1]
Ig	MAm+ m	94.8+9	128.4+5.6
	n	50	
	t	302	
	P	<0.05	
Ig G	M+ m	105.2+13	200+9.9
	n	50	
	t	5.8	
	P	<0.05	
Ig M	M+ m	113.9+7.3	129+6
	n	50	
	t	1.6	
	P	>0.05	

From the data in Table 1, it can be seen that the average values of IgA and IgG concentrations in the group of patients were significantly lower than in the norm.

It should be noted that hypoimmunoglobulinemia is characteristic of¬most patients. The level of Ig M below normal was found in 48 out of 50 patients¬, a Igand Ig A and Ig M — in 26. High levels of Ig A were observed only in 8 a children, and Ig G — in 6 children.

The results of the CSR test for histamine and the content of one of the components of the properdine system (magnesium) in the blood serum are presented in Table. 2. It is known that¬there is an inverse relationship between these indicators and they characterize the degree аллерги- of allergy of the body.

Table 2 shows that patientssuffering from полипозным polypous-sinusitisshowed a significant increase in the intensity of CSR, as well as an increase in the number of delayed reactions, which indicates insufficient histamine inactivation by histaminopexy.¬Despite the fact that the average values of magnesium content in the blood serum in patients did not differ from those in the control group,¬the distribution of magnesium content had a pronounced bimodality: in 23 out of 50 people, the magnesium level was below 0.75 mmol/l, in 7 — above 1.05 mmol/l. In children of the control group, the distribution of magnesium content in the blood serum was singlemodal: in 90%¬of patients-0.78-1.05 mmol / l, i.e. within normal values.

Table 2

Data on the skin-vascular response to histamine and serum magnesium levels in patients, страдающих with polypous sinusitis

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Groups of examined	patients andntensivity of KCP, mm	Показатели CSR values for histamine, %		Serum magnesium content, mmol/l
		nature of reactions		
		normalные	slowные	
Patients	14,8 ± 0 ,7 [1]	36	64	0,9+0,05
Healthy	7,5±0,6	60	40	0,8±0,02

Note. 1-information about the norm is given according to N. A. Kryukova and¬other authors, the difference in intensity is significant (P<0.01).

Thus, the characteristic signs of allergization (low¬content of magnesium in the blood serum and increased concentration¬of histamine in the tissues against the background of its delayed inactivation) were detected in almost half of the sick children (the frequency of detection¬of these disorders was 0.46). This pattern was especially clearly observed in individuals (75%) with аллергизацииа history of allergy symptoms, which may¬be to some extent associated with a low concentration-цией Ig of Ig G..

Recurrent polyposis was characterized by a decrease in the level of serum Ig A and Ig G (with a frequency of 0.71) and¬a violation of the exchange of glycosaminoglycanemia. Low production of class A and G immunoglobulins was noticed G(in 8 out of 10 children with persistent relapsing process). Similar data are provided by V. I. Fedorich and N. V. Minin (1985), who studied the content of serum-immunoglobulins in adults with polypous sinusitis.

In the long-term period (1-2 years after rehabilitation)¬, the immunological status of these children underwent the following changes:¬the content of Ig M decreased, the levels of Ig G and magnesium in¬the blood serum increased, and histamine metabolism significantly normalized.

The latter was reflected in a decrease in the intensity and duration index-of skin-vascular reactions. During these periods, examinations for¬slow CSR for histamine were detected in those who underwent surgery with almost the same frequency as in the control group (in 42% and 40%, respectively). Particular importance was attached to the nature of the dynamics¬of the analyzed indicators. The dynamics characterized by the aggravation of violations detected during the initial examination was considered negative¬, and the normalization or tendency to it of the corresponding indicators was considered positive. Positive dynamics in all indicators was noted in 40% of children, which, undoubtedly, can serve as an objective criterion for the effectiveness of the rehabilitation performed. Special attention should be paid to patients with negative dynamics¬of all indicators of humoral immunity. It should be emphasized that the results of their initial examination indicated a high¬degree of intensity of immunological processes.

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Here is an example of the data obtained during the examination of patient F., 18 years old.

When the patient was admitted, the serum magnesium content was 1.05 mmol / l, a pronounced CSR for histamine was determined (the intensity of 17 mm ID is 4.7), a low concentration of immunoglobulins (IgA-81.4 IU / ml, IgG-95.2 IU / ml).

7 months after the rehabilitation, there was a sharp decrease in the level of magnesium (up to 0.55 mmol/l), IgA (up to 20.3 IU/ml), IgG (up to 34.1 IU/ml) and complete areactivity according to the data of skin-vascular reactions to histamine (intensity is 0, erythema is absent). In this case, we can probably speak of¬an immunological breakdown caused by an intervention performed against the background of a significant strain of immunological protection.

The determination of non-specific indicators of¬humoral immunity confirmed the concept of a number of researchers that the development of a chronic infectious and allergic process in the paranasal sinuses is associated with general autoimmune disorders¬and helps to clarify the relationship between the features of the immune¬response and the clinical manifestations of recurrent¬polyposis in children. The development of pronounced hyporeactivity in a number of patients may serve as a basis for measures¬aimed at stimulating general immunological resistance.¬A comprehensive dynamic study of the listed¬indicators of human immunity deserves attention as an objective criterion¬for the effectiveness of treatment of persons with polypous forms of sinusitis.

It seems promising to further study the relationship between the increased concentration of serum GAGS, on the one hand, and excessive formation of polypous tissue in children, on the other, as well as between the low concentration of these structural components of connective tissue and the recurrent nature of the pathological process.

You are a water user

1. пациентов, страдающих полипозной формой синуитаThe¬content of serum immunoglobulins of classes A and G is reduced in patients suffering from the polypous form of sinusitis.G¬There is also a tendency for the Ig M level to decrease. M.

2. Pronounced signs of allergy in the form of hypomagnesemia and altered skin-vascular reactions to histamine are detected in almost half of the examined patients. They were especially clearly observed in patients with a history of an allergic condition.

3. The recurrence of the polypous process is characterized¬by a decrease in the concentration of GAG in the blood serum, and for excessive¬expansion of the polypous tissue-its increase.

4. 1-2 years after the rehabilitation, 40% пациентов от¬of ot patients showed positive unidirectional dynamics of a number of indicators of humoral immunity (the level of magnesium and Ig G in blood serum), as well as skin and vascular reactions to

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histamine, indicating increased immunological protection of the body.

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