



OPTIMIZATION OF THE TREATMENT OF ACUTE RHINOSINUSITIS IN CHILDREN

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Annotation

It is known, that types and ways of treatment of acute rhinosinusitis in children depend on the form of disease. Thus, according to B.V. Shevrygin et al. in uncomplicated situations on the background of active antibiotic therapy performed puncture of perinasal sinuses. A.B.Slivko et al. in purulent complications of acute sinusitis in children suggest wide opening of the affected sinuses with simultaneous drainage of all purulent foci.

Keywords: rhinosinusitis, antioxidants, purulent sinusitis, oxythesis, paranasal sinus probing, pathophysiological processes.

Introduction

In the pathogenesis of paranasal sinusitis and its complications orbital, intracranial, sepsis, special importance is attached to the lesion of small vessels and capillaries; i.e. to changes in the microcirculation. The microcirculatory channel is responsible for the vital blood-tissue exchange necessary for cellular metabolism in all organs.

The diversity of functions performed by the mucous membrane of the nose and paranasal sinuses, the complexity of pathophysiological processes occurring in the respiratory tracts require that the doctor, who starts the treatment of diseases of the nose and paranasal sinuses, observe the principles of sparing treatment aimed at effective elimination of the pathological process.

Unfortunately, until now, the traditional radicalism of surgical interventions has been leading the way in rhinology. The changed architectonics of the nasal cavity at





this time severely compromises aerodynamics, a very important factor in humidification and air purification. Due to impaired transport secretion and calorific function, dry, uncleaned air begins to enter the lower respiratory tract, leading to dysfunction and lower respiratory tract disease. Despite improvements in the diagnosis and treatment of rhinosinusitis, the prevalence has not decreased; moreover, there has been a steady increase in chronic forms of the disease. Acute rhinosinusitis affects 14% of the population each year.

Usually, when making a diagnosis, only the local manifestations of the disease are taken into account, and the state of the adaptive systems of the child's body is not taken into account. One of the body's adaptive systems is the antioxidant system (AOS). In-depth clinical studies on the characteristics of the antioxidant defense system (AOS) in children with acute sinusitis have not been conducted. Such studies appear to be necessary to elucidate the mechanisms predisposing to the emergence of dysadaptation tendencies and leading to a chronic course of inflammatory pathology of the paranasal sinuses in children. We analyzed 34 case histories of children aged from 1 year to 14 years who were hospitalized at the Department of Otorhinolaryngology of Samarkand Regional Pediatric Center. Only cases of concomitant sinus involvement with simultaneous drainage of all purulent foci were included in this work.

In this connection, the aim of the work is to improve the efficiency of the treatment of acute purulent rhinosinusitis in children on the basis of the study of the anti-oxidant system of the sick child.

When making the diagnosis of acute purulent sinusitis we followed the classification of S.Z. Pisi G.Z. Piskunov, adopted by the International Rhinitis Consensus.

The children examined were divided into 4 groups based on the aim and objectives of the study. Group I consisted of patients who received conventional treatment (25). Group II received actovegin against the background of conventional therapy (27). III - received local oxygen therapy against the background of traditional treatment (27). IV - received actovegin and local oxygen therapy against the background of traditional treatment (25). 104 children with acute sinusitis were examined, 58 boys (55.8%) and 46 girls (44,2%). All children were divided into 2 age groups: Group 1 from 7 to 11 years- 44; Group 2 from 12 to 14 years- 60.

Clinical and laboratory examination included, general blood analysis, bacteriological analysis of the paranasal sinus microflora with determination of sensitivity of pathogenic microflora to drugs.

The anamnestic study revealed a high incidence of perinatal pathology in 39 (37.5%) of the observed children. Moreover, the maternal history revealed pregnancy





pathology in 32 (30.8%) mothers, toxicosis in the first half of pregnancy in 19 (18.3%), in the second half of pregnancy in 15 (14.4%), threatening termination of pregnancy in 13 (12.5%), hypotension and anemia in 84 (80.7%). Infectious diseases during pregnancy - in 5 (4.8%), Rh conflict - in 2 (1.9%). Pathology of childbirth was noted in 17 (16.3%) babies born prematurely - 8 (7.7%), mild degree of asphyxia on Angar's scale - 7-8 points - in 6 (5,8%) patients, medium degree of asphyxia - 6-7 points - in 24 (3,8%) babies. The neurologist in the first year of life observed 13(15.5%) infants. In most cases there was a combined pregnancy and childbirth pathology - in 41 (39.4%) mothers. To increase the effectiveness of the therapy, along with conventional methods, we proposed a method of local oxygenation of purulent inflammation. Our studies have shown that in some children, along with aerobic infection, anaerobic infection is involved. For this purpose, all sick children underwent perinasal sinus oxygenation through a probe.

Treatment involved probing the paranasal sinuses and, if necessary, puncturing and draining them, followed by flushing the sinuses with antiseptic solutions and administering antimicrobial agents, i.e. the generally accepted methods used in clinical practice in similar cases. In addition, we carried out oxygenation of the paranasal sinuses of all sick children through a probe or drainage. A portable oxygen unit was used for sinus oxygenation. Oxygen was passed through a needle lowered to the bottom of a jar, closed with a rubber stopper and filled with warm water (40°C). In this way, the oxygen was moistened and heated. Through a second needle, a short one that was above the water surface, oxygen was transferred from the jar to a rubber tube ending with a needle. The end of a probe (0.6 size subclavian catheters) or a drainage tube inserted into one of the sinuses was placed over this needle. Oxygen delivery rate was 2-3 litres per 1 min, and the oxygenation time was 5 min for one sinus. 4-5 sessions of oxygenation per treatment. The procedure is technically simple and easily tolerated by sick children.

The pathogenetic justification of oxygen application in patients with upper respiratory tract infectious lesions can be explained firstly by the presence of oxygen deficiency in all cases of the disease and secondly by the direct effect of hypoxia on the infectious agent. The oxygen reduces arterial hypoxia, improves correlation between blood circulation and breathing, restores respiratory enzyme systems at the tissue level after deep hypoxia, enhances immunologic features of the organism, and stimulates activity of the central nervous system. The use of oxygen enhances the effectiveness of antibiotic therapy. Oxygen in the sinus increases the fibrillatory activity of the ciliary epithelium. During the period of using oxygen for sinus oxygenation, we did not observe any complications, although a slight dizziness is possible with a longer





oxygenation period. After oxygenation, the patient was injected into the sinus through drainage, or a drug solution was dripped into the sinuses of the reticulum. This procedure takes about an hour. After a short rest, the patient receives a physiotherapy treatment (UHF, microwaves, laser therapy) selected for him/her.

Conclusions

Thus, the comparative analysis of laboratory tests in children with acute sinusitis before and after baseline treatment with activegen and local oxygen therapy revealed antioxidant and membrane-protective effects. Local oxygen therapy leads to rapid clinical recovery of patients with acute purulent sinusitis and allows refusing from antibiotics or reducing duration of their use. Developed and substantiated approach to complex therapy of acute sinusitis with Actovegin allows achieving a pronounced, sustained clinical effect, confirmed catamnesticly. It is necessary to pay attention to the importance of anamnestic and clinical data in the diagnostics and treatment of sinusitis, as in recent years some preoccupation for additional methods of investigation has taken place. Each of the described methods of diagnostics and differential diagnosis can be used in otorhinolaryngological practice according to the indications. Thus, from the above it follows that when selecting individual complex therapy for a child with acute sinusitis it is necessary to study the indices of LPO and AOS processes intensity.

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