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«ПРОБЛЕМИ ТА ПЕРСПЕКТИВИ РЕАЛІЗАЦІЇ ТА ВПРОВАДЖЕННЯ МІЖДИСЦИПЛІНАРНИХ НАУКОВИХ ДОСЯГНЕНЬ»

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СЕКЦІЯ XXI.
ПСИХОЛОГІЯ ТА ПСИХІАТРІЯ

СЕКЦІЯ XXII.
МЕДИЧНІ НАУКИ ТА ГРОМАДСЬКЕ ЗДОРОВ'Я

СЕКЦІЯ XXIII.
ФІЗИЧНА КУЛЬТУРА, СПОРТ ТА ФІЗИЧНА ТЕРАПІЯ

СЕКЦІЯ XXII. МЕДИЧНІ НАУКИ ТА ГРОМАДСЬКЕ ЗДОРОВ'Я

CLINICAL EFFECTIVENESS OF THE SEMISYNTHETIC PENICILLINS IN ETIOTROPIC THERAPY OF THE UPPER RESPIRATORY TRACT

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Sinusitis are children is the dominant pathology of the upper respiratory tract. According to Ukrainian and foreign authors, in recent years, the incidence of diseases of the nose and paranasal sinuses in children has increased to 28-30% among all diseases of the upper respiratory tract [1]. According to statistics, 50% of children with sinusitis continue to suffer from this pathology in adulthood.

It is important to emphasize not only the medical and biological, but also the socio-economic significance of this problem. A significant decreasing in the life quality of children with diseases of the paranasal sinuses, a deterioration in the psychological state of patients and their parents, and increassng in treatment costs in cases of recurrence and chronicity of the process have been proven [8].

In this regard, the main task of the clinicians is to eradicate the infection and restore the sterility of the sinus. Achievement of this goal is possible only if timely comprehensive treatment is prescribed, in which systemic antibiotic therapy plays a leading role. The choice of starting antibiotic is carried out empirically before receiving results of a bacteriological study. It should be borne in mind that the most common causative agents of this disease are pneumococcus, Haemophilus influenzae and Maraxella catarrhalis. This determines the importance to use the group of aminopenicillins as the drugs of choice [3,4,9].

At the present stage, amoxil is an effective and safe semisynthetic antibiotic of the penicillin group with a broad spectrum of action for the treatment of infectious and inflammatory diseases of various localizations, including pathologies of the inner organs. The active substance amoxicillin is an active metabolite of ampicillin, close to it in the antibacterial spectrum, effective against all strains of hemolytic streptococci, pneumococci and enterococci, staphylococci, gram-negative bacteria, a number of anaerobes, etc. Its effect on sensitive strains is 5-7 times higher then ampicillin. It has a bactericidal effect [5,6]. The therapeutic effect of amoxil is determined by the specificity of the molecular structure, which differs from ampicillin by the presence of a hydroxyl group in the amoxicillin molecule. This molecular disorders increases the rate of absorption of antibiotics, causing less destruction of the β- lactam ring and creates high concentrations in the blood in a shorter period of time. So amoxil tablets are prescribed instead of the injectable form of ampicillin sodium salt, which provides economic benefits and easy to use. Among penicillins, amoxicillin, amoxil is used most often in pediatric practice [7].

The purpose of our work was to comparatively evaluation of the clinical effectiveness

of ampicillin and amoxil as initial antibiotic therapy for sinusitis in children.

Materials and methods.

For achieving this goal, a comprehensive examination and treatment of 25 children with sinusitis aged 10 to 14 years was carried out. The diagnosis was established on the basis of complaints (local: difficulty in nasal breathing, purulent discharge, impaired sense of smell, headaches and facial pain; general: fever, prolonged, persistent cough that worsens after awakening, nasal tone, fatigue, prolonged low-grade fever), medical history, endoscopic results, X-ray and laboratory examination. Among the concomitant pathologies observed: chronic adenotonsillitis (27.7%), autonomic dysfunction (46.6%), normochromic anemia (4.4%), atopic dermatitis (7.7%), and diarrhea (8.8%).

Due to the principle of randomization, two groups of patients were formed. The 1st group of children received the oral antibiotic amoxil as a starting antibiotic. The single dose of antibiotic for children over 10 years old (weigh more than 40 kg) was 500 mg with an intu7k erval between doses of 8 hours (1 tablet (500 mg) 3 times a day)**.** Children in group 2 were prescribed ampicillin trihydrate in tablet form at a daily dose of 100 mg/kg in 4 divided doses after meals. The duration of prescription of both antibiotics was depended on the severity of the condition (on average 7-10 days). As part of complex therapy, the examined children also received local antibacterial therapy, vasoconstrictor drugs (decongestants), vitamin therapy, and probiotics.

The effectiveness of therapy was assessed due the dynamics of local and general clinical data (headache, difficulty in nasal breathing, amount of nasal discharge, swelling of the mucous membrane, its hyperemia and infiltration), general blood test (leukocytosis, formula shift, acceleration of ESR). Clinical parameters were assessed using a 5-point visual scale on days 3, 7 and 14 of treatment. The absence of this symptom was taken as 0, and its maximum manifestation as 5 points. Laboratory data were assessed as follows: formula shift up to 4 - 0 points, 5-10 - 1 point, 10 - 15 - 2 points, more than 15 - 3 points; ESR – up to 8 – 0 points; 8 - 15 - 1 point, 15 - 20 - 2 points, more than 20 - 3 points. Antibiotic tolerability was assessed based on side effects: 1 point – very good, 2 points – good, 3 points – satisfactory, 4 points – unsatisfactory, 5 points – very unsatisfactory.

Research results and discussion.

Analysis of subjective signs dynamics during treatment showed that positive dynamics in the group of children receiving Amoxil were observed already from the 2-3rd day of taking the drug: the temperature returned to normal, headaches disappeared. From the 3-5th day, nasal breathing improved, and by the 7-10th day, the rhinoscopic picture and hemogram parameters returned to normal. In the group of children who received ampicillin, the dynamics of clinical data were less positive, the temperature reaction and subjective complaints lasted up to three days in 6 children, which gave grounds to replace ampicillin with another antibiotic. The transient diarrhea was observed from the 3rd-5th day of the disease in 3 children who received ampicillin. They underwent corrective therapya (multiprobiotic). 4 patients had an allergic rash, which disappeared after stopping the antibiotic. Whereas in the group of children receiving amoxil, It was registered only 1 case of an allergic reaction.

Significant regression of the disease was observed after 7 days from the moment of treatment, while the headache regression was faster than others, and the impairment of smell persisted was the longest. The dynamics of these indicators were most pronounced in children of group 1 - in 26 people (86.6%) and in group 2 - in 21 (70.0%). Rhinorrhea disappeared in group 1 - in 16 (46.6%), in group 2 - in 13 (43.3%). Positive dynamics of rhinoscopy were noted in both groups: swelling of the nasal mucosa and the amount of discharge were decreased. When re-examined, The regression of pathological signs in the

groups were more significant on the 14 the day.

Already, in all groups of children the indices of peripheral blood tests normalized on the 7th day, more significantly in children receiving amoxil ($p < 0.05$).

Conclusions

Thus, the experience of using a modern antibiotic from the group of semi-synthetic penicillins amoxil in the treatment of children with sinusitis has shown high efficiency and good tolerability of the drug under study, which was higher then in the comparison antibiotic (ampicillin).

The antibiotic amoxil is a highly effective drug in the treatment of the paranasal sinuses diseases, has good tolerability, ease of use and a minimum of side effects, which makes it possible to recommend as a drug of first choice in the complex treatment of acute infectious and inflammatory diseases of the upper respiratory tract in pediatric practice.

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