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Diagnosis of Pneumonia in Children and Indications for Hospitalization

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Abstract: The article presents the results of monitoring patients with acute pneumonia in outpatient settings and presents data on clinical, radiologic and laboratory studies, as well as the results of treatment of patients on an outpatient basis.

Keywords: pneumonia, diagnosis, treatment, patients, respiratory failure, hypovitaminosis.

INTRODUCTION

Pneumonia is an acute infectious-inflammatory process that primarily affects the respiratory part of the lung tissue, clinically manifested by varying degrees of respiratory failure, and radiologically by infiltrative changes in the lungs [1-5,15].

According to the literature, the incidence of pneumonia per year is about 15-20 per 1000 children in the first three years of life and about 5-6 cases per 1000 children over 3 years of age. Predisposing factors to the development of pneumonia in young children are perinatal pathology, congenital heart defects and other internal organs, rickets, atopic dermatitis, hypovitaminosis and deficiency conditions, including immunodeficiencys [7,11,13,17].

Purpose of the study. To determine the role of timely diagnosis and comprehensive treatment of pneumonia in an outpatient setting in the prognosis of acute pneumonia in children.

Materials and methods of research. In 98 patients aged from 3 months to 3 years who applied to family clinic No. 2 in Samarkand with acute respiratory diseases, we studied patient complaints, anamnestic data, clinical symptoms, analyzed the results of laboratory and instrumental research methods and developed based on them recommendations for hospitalization of sick children with acute pneumonia [6,9,12,15,18].

Clinical symptoms were the basis for the diagnosis of pneumonia in children. In young children, signs of acute respiratory failure and intoxication came to the fore during pneumonia, and local physical changes in the lungs often appeared later [8,10,14,16].

Therefore, if upon examination the child, regardless of the temperature level and in the absence of obstruction, has:

- increased breathing (60 per minute in children in the first months of life, 50 per minute in children 2 - 12 months, 40 per minute in children 1 - 4 years old);
- retraction of intercostal spaces;
- moaning (groaning) breathing;
- cyanosis of the nasolabial triangle;
- signs of toxicosis (“sick” appearance, refusal to eat and drink, drowsiness, irritability, severe pallor at elevated body temperature), then the condition was regarded as severe with a high probability of pneumonia. These patients were recommended to be prescribed an antibiotic and referred to the hospital.

If the child does not have the signs listed above, but has: a temperature of 38°C for more than 3 days, local physical signs of pneumonia, as well as asymmetry of wheezing, then the presence of pneumonia

should be assumed. These patients are recommended to have a blood test and be referred for radiography; if it is impossible, prescribe an antibiotic.

All patients with signs of respiratory failure were sent to hospital treatment. If children have a febrile temperature for 1-2 days in the absence of the above signs, then they were recommended to be monitored at home as a patient with acute respiratory disease (ARI) without pneumonia.

In addition to clinical symptoms, the diagnosis of pneumonia must be confirmed by X-ray data. Children under three years of age are most often hospitalized for constant monitoring of their condition and to avoid the development of complications. Older children can be left at home, provided that parents strictly follow all recommendations.

The basic principles of antibacterial pneumonia are as follows:

- if a diagnosis is established or if the patient's condition is serious, antibiotics are prescribed immediately; if there is doubt about the diagnosis in a non-severe patient, the decision is made after radiography;
- for uncomplicated, mild pneumonia, preference should be given to prescribing drugs orally, switching to parenteral administration when the disease worsens.

Indications for the prescription of antibiotics in children with respiratory pathology were severe intoxication, high body temperature for more than 3 days, clinical signs of pneumonia, early age of the child (first year of life), protracted course of the inflammatory process.

In most cases, the antibiotic was prescribed before knowledge of the causative agent of the disease was obtained. Therefore, the choice of the first drug was carried out empirically (based on experience). This was the so-called initial empirically selected therapy.

Assessing the effectiveness of the drugs administered to the patient is the only way to decide whether it makes sense to continue treatment with the empirically selected drug or whether it needs to be changed. With a good effect, after 24-48 hours the body temperature decreases, the general condition improves, pneumonic changes decrease or at least do not increase (the number of wheezing may increase). In these cases, the drugs were not replaced. If therapy was started with an injection form of the antibiotic, it was replaced with an oral one. In most cases, mild pneumonia was treated with antibiotics for 4 to 7 days at home.

The lack of effect - persistence of temperature and increase in pneumonic infiltration according to X-ray data, allows us to exclude the cause that was assumed when choosing the starting drug and prescribe an alternative regimen. Replacement or at least addition of a new antibacterial agent was carried out after 36-48 hours (and for extremely severe infections - after 24 hours) in the absence of a therapeutic effect.

In the treatment of pneumonia in children, three main groups of antibiotics are used: penicillin and semisynthetic penicillins (ampicillin, amoxicillin, amoxiclav, etc.), cephalosporins of various generations (cephalexin, cefuroxime, ceftriaxone, cefoperazone), macrolides (erythromycin, rovamycin, azithromycin, etc.) . If there was no effect during pneumonia, antibiotics of other groups and a combination of drugs of various groups, including sulfonamides or metronidazole, were used. For fungal pneumonia, fluconazole (Diflucan) or amphotericin B was used. Depending on the characteristics of the course of pneumonia, in each specific case the issue of additional drugs was decided: expectorants, bronchodilators, antiallergic drugs, vitamins, etc.

Bed rest was prescribed for the entire febrile period. Meals were prescribed according to age and were always complete. The volume of fluid per day for children under one year of age, taking into account breast milk or infant formula, was 140-150 ml/kg of body weight. 1/3 of the daily volume of liquid was given in the form of glucose-salt solutions (Rehydron, Smecta, ORSA) or fruit and vegetable decoctions. Dietary restrictions (chemically, mechanically and thermally gentle food) were determined depending on appetite and the nature of the stool.

Antipyretics were not systematically prescribed as this may make it difficult to assess the effectiveness of antibacterial therapy. The exception was children with premorbid indications for reducing fever (febrile convulsions).

We considered fever as a factor stimulating the child's body's defenses. In our opinion, many bacteria and viruses die faster at elevated temperatures, against which the body gives a full-fledged immune response. Unreasonable and frequent prescription of medications for any increase in temperature can lead to various complications.

For painful or persistent cough in patients with pneumonia, mucoregulatory agents were widely used: facilitating the evacuation of sputum (expectorants) and thinning sputum (mucolytic) agents, since expectorants increase the secretion of the liquid component of sputum and improve sputum transport by increasing bronchial motility. When prescribing expectorants, care is taken to ensure adequate hydration (drinking), since loss of water increases the viscosity of sputum. They used mixtures based on an infusion of marshmallow root with the addition of sodium benzoate, potassium iodide and ammonia-anise drops. The patients were prescribed bronchicum, "Doctor Mom", which are expectorants.

Mucolytics help thin mucus by chemically acting on the mucin (mucus) molecule. For diseases of the lower respiratory tract with the formation of thick viscous sputum, drugs containing acetylcysteine (ACC, mucomyst, fluimucil) were used. Considering that derivatives of the alkaloid vasicine have a mucolytic effect, we prescribed bromhexine, bisolvone, mucosalvan, which reduce the viscosity of secretions, restore mucociliary clearance, and stimulate the synthesis of endogenous surfactant.

Infusions of herbs (plantain, nettle, coltsfoot, ipecac root, anise, licorice root, etc.) or medicinal forms of them - eucabal, mucaltin - also turned out to be useful in the treatment of patients. In the acute period, microwave (5-7 sessions) and inductothermy were prescribed; electrophoresis with a 3% solution of potassium iodide (10 sessions). After the temperature normalized, massage and physical therapy (PT) were prescribed.

Conclusions. Thus, timely diagnosis and comprehensive treatment of pneumonia in an outpatient setting significantly improves the prognosis of acute pneumonia in children.

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