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FEATURES OF THE COURSE OF ATYPICAL AND TYPICAL COMMUNITY-ACQUIRED PNEUMONIA IN CHILDREN

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Abstract

Despite significant progress in studying acute respiratory diseases in children, the incidence of pneumonia in childhood remains high, and diagnostic and therapeutic errors persist.

To improve the current situation, practical guidelines on pneumonia in children have been published. However, specialists involved in developing these guidelines note the insufficient evidence base for many provisions and emphasize the need for further research. Most existing studies focus on severe cases of community-acquired pneumonia (CAP) and their complications. However, mild and moderate forms of CAP, which prevail in outpatient practice, pose equally serious challenges for researchers.

Introduction

In recent years, diagnostic criteria for pneumonia in children have undergone certain changes. According to WHO experts, in modern conditions, pneumonia diagnosis cannot rely solely on non-specific clinical symptoms. The most significant clinical signs include the combination of febrile temperature and tachypnea, provided there are no signs of bronchial obstruction. However, there are certain doubts regarding the reliability of these criteria for diagnosing mild pneumonia, as similar symptoms may also be observed in other respiratory diseases in children under five years old.

Study Objective

To determine the spectrum of pathogens responsible for radiologically confirmed community-acquired pneumonia, assess its clinical manifestations based on etiology, and evaluate the effectiveness of current recommendations for rational antibacterial therapy.

Materials and Methods

1. The study population consisted of children with radiologically confirmed community-acquired pneumonia without signs of bronchial obstruction.
2. A comprehensive set of modern diagnostic methods was employed to identify possible bacterial (typical and atypical) pathogens.
3. A mandatory condition for the study was the collection of biological samples before the initiation of antibacterial therapy.

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4. Empirical antibacterial therapy was administered before determining the etiology of community-acquired pneumonia, following the principles of rational antibiotic therapy. The first-line drugs were amoxicillin (or amoxicillin/clavulanate). In children with allergies or suspected atypical pneumonia, azithromycin was prescribed. All medications were administered orally in standard age-appropriate dosages.

The diagnosis of community-acquired pneumonia was primarily based on clinical criteria recommended by WHO for typical pneumonia: persistent or recurrent fever above 38.5°C, tachypnea corresponding to respiratory distress syndrome (defined as a respiratory rate >60 breaths per minute for children under 2 months, >50 breaths per minute for children aged 2–12 months, and >40 breaths per minute for children older than 12 months), focal, infiltrative, or interstitial changes on chest radiographs, and bacterial inflammation markers based on hematological findings.

Among the 56 examined patients aged 1 to 18 years with radiologically confirmed moderate community-acquired pneumonia, preschool children predominated (58.9%), with more than half of them being under 3 years old (Table 2.1).

Distribution of Patients with Community-Acquired Pneumonia (Main Group) by Age and Gender

Age	1-3 years		4-6 age		7-10 age		11-15 age		16-18 age		Total	
Male	B	G	B	G	B	G	B	G	B	G	M	D
Abs * 0	10 61,1	7 38,9	9 53,3	7 46,7	5 55,5	4 45,5	6 50,0	6 50,0	2 2/2	0 0	32 57,1	24 42,9
Total *0	17 32,1		16 26,8		9 17,4		12 16,0		2 3,6		56 100	

Study Results

In the etiological structure of community-acquired pneumonia (CAP) in children, the proportion of Streptococcus pneumoniae accounts for 28.3%, while Mycoplasma pneumoniae is responsible for 32.1% of cases. The role of Chlamydophila pneumoniae (11.3%) is less significant. Among pneumococcal pneumonias, bacterial monoinfection was detected in 13.3% of cases.

Community-acquired pneumonia of mycoplasma etiology is most often accompanied by febrile fever (64.3%), but rarely by dyspnea (28.6%) or inflammatory changes in general blood analysis. The physical examination findings from the first day of illness are characterized by diffuse fine bubbling moist rales, more pronounced in the area of pneumonic infiltration (78.6%). Radiographic changes may include not only a focal form but also lobar and segmental patterns. The predominance (57.1%) of lobar infiltration in mycoplasma infection does not increase the severity of the overall condition. In chlamydial pneumonia, the absence of febrile fever, dyspnea, and inflammatory changes in peripheral blood is characteristic in most cases, despite lobar and segmental infiltrative radiographic findings.

A retrospective assessment of CAP treatment based on outpatient medical records revealed typical errors in 35% of cases, mainly due to irrational use of antibacterial agents. Adherence to the

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principles of rational antibacterial therapy in severe CAP ensures a therapeutic effect in all children with pneumococcal pneumonia. The use of penicillins as first-line therapy often necessitates switching to macrolides in patients with atypical pneumonia.

Practical Recommendations

A presumptive diagnosis of pneumococcal community-acquired pneumonia in children can be made in the presence of febrile fever and dyspnea (or respiratory distress syndrome), provided that there are no signs of bronchial obstruction.

Radiographic findings in children with community-acquired pneumonia cannot be used to differentiate between "typical" and "atypical" pneumonia.

To improve the effectiveness of CAP treatment in children, it is essential to follow the principles of rational antibacterial therapy and initiate treatment with oral penicillin-class antibiotics (amoxicillin/amoxicillin-clavulanate). The indication for macrolide antibiotics is the absence of convincing clinical signs of pneumococcal pneumonia, or suspected atypical infections based on clinical or epidemiological data.

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