Antibiotic therapy of community-acquired pneumonia in children is actual in pediatrics. S. pneumoniae is leading agent that causes pneumonia due to fine sensibility of children under five years. International data shows the increasing incidence of pneumococcal resistance. National researches of 2013-2014 years showed that sensitivity of S. pneumonia to amoxicillin/clavulanate decreased in children of early and preschool age (67.3% of isolates are sensitive, 28.3% - moderately sensitive), to erythromycin (67.3%), to azythromycin (67.8%). It was revealed nearly 20% penicillin-resistant strains of pneumococcus (12.2% of isolates with double insensitivity, 35.0% - multiresistant).

The appointment of an antimicrobial agent most active against the pathogen is ideal for effective therapy. However, in most cases the correct microbiological test is not conducted at all, but even when using a variety of sophisticated methods establishing the etiological diagnosis is possible only in half of the cases. Meanwhile the epidemiological category of pneumonia (community-acquired, hospital-acquired, in utero) has a clear practical orientation and empirically allows to choose an adequate antibiotic therapy.

Aminopenicillins have an evidence base of the effectiveness of destination in uncomplicated community-acquired pneumonia in children. Amoxicillin inherent bactericidal action and broad spectrum of activity against gram-positive and gram-negative cocci and rods, including H. influenzae. The combination of amoxicillin with clavulanate reestablishes the activity of amoxicillin to penicillin-resistant staphylococci, β-lactam-producing strains of gram-negative bacteria - H. influenzae. According to WHO recommendations (2014) amoxicillin in dispersible tablets is the preferred antibiotic for the treatment of community-acquired pneumonia in children.

According to current national and international recommendations oral amoxicillin in the outpatient setting should be used as first-line drug in healthy and appropriately immunized infants and children of preschool age with non-severe community-acquired pneumonia of bacterial etiology presumably. The use of inhibitor-protected aminopenicillins as initial treatment is recommended only in some cases: if the child received antibiotics in the last 3 months or has comorbidities.

Most experts recommend as alternative drug amoxicillin/clavulanate inside. According to national and foreign recommendations daily dose of amoxicillin and amoxicillin/clavulanate 90 mg/kg should be divided into 2-3 doses.

Macrolide antibiotics are not first line drugs, but according to the recommendations of the British society for the treatment of community-acquired infections in children they can be assigned only in cases where it is impossible to prescribe a first-line drug (allergy to beta-lactams) but also with a high probability of mycoplasmal and chlamydial infections. In the
presence of comorbidities and use of antibiotics in the last 3 months they recommend the III
generation cephalosporins.

Federation of pediatricians of CIS countries and Russian respiratory society offers to change
aminopenicillin to the macrolides or add it to the treatment if there is no effect in 24-48 hours.

Macrolides, due to the high resistance of pneumococcus in the region, are not included in
clinical recommendations as preparations or as an alternative treatment

As the initial empirical treatment of hospitalized children regardless of age, that are, not fully
vaccinated or with significant resistance of invasive strains of S. pneumoniae to penicillin is
suggested starting with empiric therapy of parenteral III generation cephalosporins (Ceftriaxone
or cefotaxim). Levofoxacin is shown in the absence of the effect of the therapy (15-20
mg/kg/day in 2 doses for children 6 months to 5 years). If it is assumed the role of community-
acquired methicillin-resistant S. aureus it is necessary to use vancomycin or clindamycin.

In the outpatient setting one can use daily intramuscular injections of Ceftriaxone with
documented in vitro activity of more than 95% of pneumococci. However, the opinions of
scientists about the effectiveness and appropriateness of use of cephalosporins as the drugs of
first choice in community-acquired pneumonia in children are very controversial. Obviously, for
a balanced understanding of the role and place of the required results of well-organized
comparative prospective studies are necessary.