**Introduction.** Despite significant advances in clinical microbiology, causal treatment of serious infections, including pneumonia, at the initial stage remains empirical. According to the modern literature sources Streptococcus Pneumoniae is considered the main etiological factor for community-acquired pneumonia, the second most common pathogen is Haemophilus influenzae; bacteria in the form of monocultures are up to 45%, in the form of bacterial associations - 26-37%. Of course, the adequate empirical antibiotic therapy is crucial for saving the life of the patient.

Purpose of the work – improving the treatment of severe pneumonia requiring intensive care in children.

**Materials and Methods.** We observed 63 patients from 9 months to 14 years who were treated in the department of anesthesiology and intensive therapy for severe community-acquired pneumonia. The first group consisted of 30 children, who received piperacillin / tazobactam ("Aurotaz-R") as initial therapy; the second group (n = 33) therapy was carried out starting with third generation cephalosporins or combination of third generation cephalosporins with aminoglycosides.

**Результаты.** During the last two years, only in 20% of patients with severe pneumonia exclusively Gram (+) flora has been allocated in the microbiological samples from airways or in pleural cavity punctate in admission (half of them in the form of associations). At 27% of children with severe pneumonia Gram (-) flora has been determined, and in 20% - Association of Gram (+) and Gram (-) microorganisms. Streptococcus Pneumoniae was predominant between Gram (+) microorganisms but in 2/3 of cases – in associations with Gram-negative flora. Staphylococcus Aureus was on the second place among the Gram-positive flora detecting in associations with other Gram (+) or Gram (-) flora. Among the gram (-) microorganisms Haemophilus influenza was prevalent, both as mono flora and associational allocated in 50% of patients, also Moraxella catarrhalis, Klebsiella pneumoniae and 10% of cases - Pseudomonas aeruginosa were detected.

The choice of new generation protected penicillin Piperacillin / Tazobactam (“Aurotaz-R”) as a starting antibacterial preparation has been made because of its wide spectrum of action both on Gram-positive and Gram-negative flora. According to the results of microbiological monitoring sensitivity to piperacillin / tazobactam ("Aurotaz-R") amounted to 95.5% - in one case Pseudomonas aeruginosa was moderately resistant to the drug. Besides, the advantage of the preparation Aurotaz-R in pediatric consists in that after diluting the residue can be used within 24 hours. This allows using only one bottle a day in young children, ensuring a better economic effect.
In 16 children from the study group (53%) at admission there was an increase in the indices of intoxication, which correlated with an increase in the level of medium molecular peptides and required from one to three sessions of discrete plasmapheresis. Three children (10%) required an aggressive surgical tactics as a thoracoscopy and removal of dense fibrinous plaque around of lesion focus. All of these patients Pneumococcus was identified as an ethiological agent - as monoinfection or in associations. On the second or third day in the 77% of the children, fibrobronchoscopy was carried out for the purpose of the bronchial tree sanitation and improvement of drainage of affected lung areas. The average period of treatment in the intensive care unit was 8,5±2,3 days in this group. The change of antibiotic was needed in one case because of the 10-days treatment course finishing. There were no cases of ineffectiveness of empirical antibiotic therapy in patients of this group.

In the control group increased indices of intoxication were found in 15 children (45.5%) at admission, however, in this group at 26.7% of children there wasn’t the intoxication indexes normalization at the time of discharge from the intensive care unit. Average intensive care period was 14,0±3,9 days, that is significantly longer than in the study group. In part, the need for more long-term stay in the intensive care unit was due to the need to change the antibiotic at the 3-4-th day in 81.9% of cases because of the lack of clinical efficacy (ongoing fever, absence of positive dynamics of respiratory disorders, preservation or growth of inflammatory changes in blood tests).

Conclusions:

1. Nowadays, in the etiology of the severe community-acquired pneumonia Gram-negative flora or associations between Gram-positive and Gram-negative flora are prevalent, so it needs to be considered in the start empirical preparation choice.

2. Pneumococcal pneumonia are often characterized by lung destruction and abundant fibrinous overlays in pleural cavity that requires an active surgical interference.

3. De-escalation principle of antibiotic therapy for severe pneumonia in children is justified now and primarily dictated by the benefit of each patient.

4. Using of drug "Aurotaz-R" (piperacillin / tazobactam) as a starting antibiotic for severe pneumonia requiring intensive care for children, gives the opportunity to improve the results of treatment, reduce the number of antibiotics courses, as well as the duration of the child's stay in the intensive care unit.