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Features of the course, clinic and approaches to treatment of community-acquired pneumonia

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Abstract. This article covers the work devoted to the study of the features of the course, clinic and treatment of CAP.

Key words: pneumonia, wax, lungs.

Pneumonia is a group of different etiology, pathogenesis, morphological characteristics of acute infectious (mainly bacterial) diseases characterized by focal lesions of the respiratory parts of the lungs with the mandatory presence of intraalveolar exudation. Pneumonia is clearly separated from other focal inflammatory lung diseases of non-infectious origin caused by physical (for example, radiation pneumonitis) or chemical factors having an allergic (for example, eosinophilic pneumonia) or vascular (for example, lung infarction) origin. Community-acquired pneumonia is considered to have developed outside the hospital, or diagnosed in the first 48 hours from the moment of hospitalization. In some countries, pneumonia associated with the provision of medical care is distinguished in a separate group. This group includes cases of the development of the disease in residents of nursing homes and other long-term care institutions, in the presence of hospitalizations for any reason during the ≥ 2 days in the previous 90 days, patients who received intravenous infusion therapy (including systemic antibiotics), underwent dialysis sessions or wound treatment at home in the previous 30 days. The assumption that such patients are at high risk of infection with polyresistene bacterial pathogens (PRV) and, accordingly, should be treated as persons with NP has not been clearly confirmed in modern studies. In this regard, Russian experts at this stage consider it inappropriate to introduce a separate term "pneumonia associated with the provision of medical care" into clinical practice. Treatment of this group of patients is carried out in accordance with clinical guidelines for CAP, and the above factors, along with others, are taken into account when choosing the regimen of antibiotic therapy (ABT).VP in patients with severe immunosuppression, including persons with HIV infection, congenital immunodeficiencies, receiving chemotherapy and / or immunodepressions, recipients of transplants of donor organs and tissues differ from the general population in etiology, the nature of the flow and the prognosis and are not addressed in the present recommendations

The list of potential pathogens of CAP includes more than 100 microorganisms (bacteria, viruses, fungi, protozoa). However, most cases of the disease are associated with a relatively small range of pathogens, which include *S. pneumoniae, M. pneumoniae, C. pneumoniae, H. influenzae,* respiratory viruses, enterobacteria, *S. aureus* and *L. pneumophila*. Epidemic outbreaks and pandemics can have a significant impact on the etiological structure of the EaP both at the level of individual settlements and regions, and globally. An example is the pandemic of infection caused by the SARS-CoV-2 virus, seasonal epidemic outbreaks of influenza, local epidemic outbreaks of infections caused by individual pathogens, such as *L. pneumophila,* MERS virus, etc.

S. pneumoniae is the most frequent pathogen, it accounts for up to 30-50% of cases of CAP of established etiology - Table 1. In the mild course of CAP, *M. pneumoniae* and *C. pneumoniae* are relevant - their share in the etiological structure in total reaches 20-30%. Untyped *H. influenzae* often causes CAP in patients with concomitant COPD;

K. pneumoniae and *E. coli* (less often other representatives of Enterobacterales) are detected mainly in persons with chronic concomitant diseases, such as diabetes mellitus (DM), chronic heart failure (CHF), alcoholism, cirrhosis of the liver and in TBP [11, 12]. *S. aureus* is more often associated with the development of CAP in the elderly, intravenous drug addicts, against the background or after the flu;

P. aeruginosa - with cystic fibrosis, bronchiectasis, the use of systemic corticosteroids in pharmacodynamic doses (prednisone**, etc.) preceding long-term ABT.The specific gravity of *L. pneumophila* is obviously low in the general population in the Russian Federation, but the importance of this pathogen increases significantly

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with TVP and the presence of certain risk factors - Table 2.The likelihood of infection with anaerobes may increase in persons with proven or the frequency of occurrence of other bacterial pathogens - *C. psittaci, S. pyogenes, B. pertussis,* etc. usually does not exceed 2-3%, and lung lesions caused by endemic micromycetes are extremely rare in Russia. In addition to bacterial pathogens, CAP can be caused by respiratory viruses, most often influenza viruses, coronaviruses, rhinosyncytial virus, human metapneumovirus, human bocavirus. The frequency of detection of respiratory viruses in patients with CAP is pronounced seasonal and increases in the cold season. There are primary viral pneumonia (develops as a result of direct viral damage to the lungs) and secondary bacterial pneumonia, which can be combined with primary viral lung damage or be an independent late complication of a respiratory viral infection (primarily influenza). In most cases, CAP caused by respiratory viruses is characterized by a mild course, but in the elderly and senile, in the presence of concomitant bronchopulmonary, cardiovascular diseases or immunodeficiency, they can be associated with the development of severe, life-threatening complications.

In 10-30% of patients with CAP, a mixed or co-infection is detected, which can be caused by the association of various bacterial pathogens (for example, *S. pneumoniae* with *H. influenzae* or *M. pneumoniae)* or their combination with respiratory viruses [7, 9, 16-18].

Forsome microorganisms, the development of bronchopulmonary inflammation is not characteristic (Ctaphylococci, *Enterococcus* spp., *Neisseria* spp., *Candida* spp.) Their isolation from sputum with a high degree of probability indicates contamination of the material by the microflora of the upper respiratory tract. It should be noted that, despite the expansion of opportunities for microbiological diagnosis, about half of the of patients with VP, the etiological diagnosis remains unidentified.

Clinical symptoms and signs of CAP vary widely, which is due to factors such as the different volume and localization of the lesion, the type of pathogen, the severity of the "response" of the microorganism to infection.CAP is characterized by acute cough, shortness of breath, sputum separation and / or chest pain associated with breathing, which in most cases are accompanied by fever. Patients carrying pneumonia often complain of unmotivated weakness, fatigue, chills, severe sweating at night. The development of CAP may be preceded by damage to the upper respiratory tract or acute bronchitis. In the elderly and senile, typical complaints may be absent, and the syndrome of intoxication (drowsiness or anxiety, confusion, anorexia, nausea, vomiting) or decompensation of chronic concomitant diseases (diabetes, CHF, etc.) comes to the fore in the clinical picture of the disease. The change in the classical picture of the disease contributes to the self-medication of ABP of systemic action.

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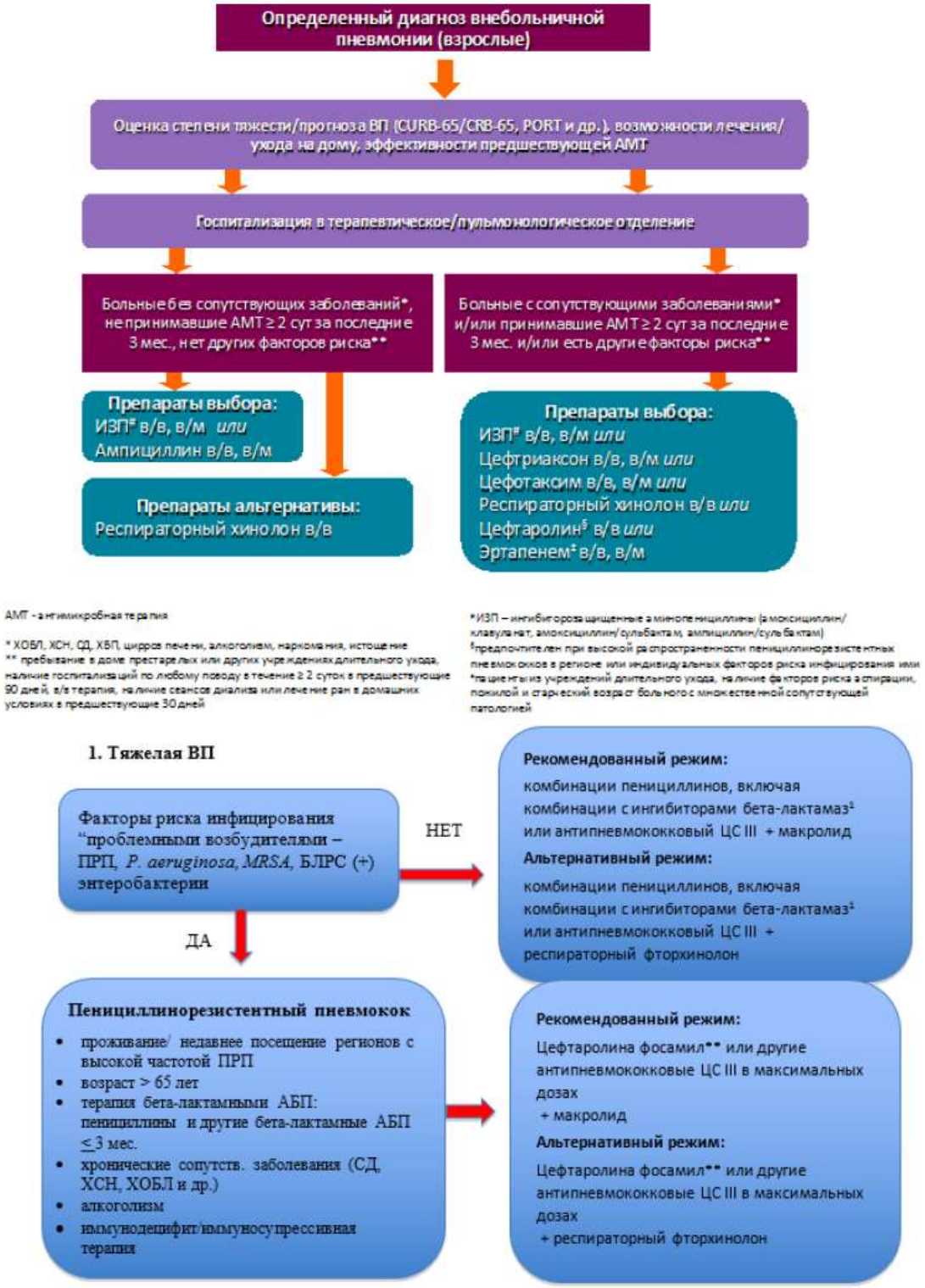

With TBP, the clinical picture of the disease can be supplemented by the development of septic shock, acute DN and / or other organ dysfunction.Despite the presence of certain features in the clinical picture and the course of VP of different etiologies (for example, for pneumococcal acute onset, high fever, chest pain, for legionellosis - diarrhea, neurological symptoms, for mycoplasma - muscle and headaches, symptoms of damage to the upper respiratory tract), There are currently no patterns that allow predicting the causative agent of the disease with a high degree of reliability without the use of additional research methods.

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