

Review Article

Can Modern Medicine have Distorted Ideas?

Igor Klepikov*, MD

Professor, Retired Renton, WA, USA

*Corresponding author: Igor Klepikov, Professor, Retired Renton, WA, USA

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Abstract

The reasons for the misconceptions that have arisen in modern ideas about the features of acute nonseptic inflammation of the lung tissue and the direction of necessary correction are considered.

Keywords: *Acute pneumonia, Etiology, Pathogenesis, Disease doctrine*

Acute inflammation of the lung tissue or acute pneumonia (AP) is one of the oldest medical nosologies, which has been and remains one of the most serious diseases. Despite the severe nature of clinical manifestations, this disease has never had any reason to consider it dangerous from an epidemiological point of view.

For most of the history of the AP, the lack of sufficient scientific information about the features of the disease did not allow purposefully substantiating the most optimal means of medical care. Therefore, the search and selection of effective methods of treatment took place empirically, by trial and error. Nevertheless, such an intuitive search for medical care for these patients allowed ancient medicine to identify methods that were subsequently used with sufficient success for many centuries until the last decades. In this case, we are talking primarily about first aid methods, the timely use of which could bring relief to the patient and reduce the severity of the disease. In different regions of the world, to achieve this effect, preference was given to such methods of care as cupping therapy, bloodletting or short-term cooling of the patient's body. The evaluation of the results was purely subjective on the part of both doctors and patients. Therefore, if these methods did not bring the expected satisfaction, they could hardly remain in demand for thousands of years. The situation in this field of medicine began to change dramatically after the discovery and the beginning of the clinical use of antibiotics in the middle of the last century. By this time, medical science had information and facts that created prerequisites for the distortion of scientific views on the problem of AP under the influence of a new type of therapy.

The development of microbiology made it possible to identify the pathogens of AP, among which *Streptococcus pneumoniae*, discovered in the 19th century and given its name in this regard, played a dominant role. At the same time, this circumstance did not change the indifferent view of the epidemiology of the disease due to the absence of cases of the spread of AP in contact with such patients. *Pneumococcus* continued to consistently dominate among the pathogens of AP, and its frequency on the eve of clinical use of antibiotics continued to reach 90-95% [1-3]. Nevertheless, these

processes were fairly interpreted as acute nonspecific inflammation, which emphasized the polymicrobial nature of its etiology.

Continuing to consider AP as an inflammatory rather than an infectious process, medicine was initially aware of the fact that antibiotics are able to act only against the microbial factor and do not have a direct effect on the mechanisms of inflammatory tissue transformation. However, the initial results of the use of antibiotics created the illusion that a universal remedy for the treatment of inflammatory diseases has been found. At the same time, the fact was overlooked that the successful suppression of the pathogens of the process required the patient's body to independently eliminate the pathological deviations that had arisen, not only morphological, but also functional. In the resulting atmosphere of euphoria, the centuries-old experience of medicine remained unclaimed as a relic of the past, and the standard treatment of AP after a short period of time began to appear under the term "antibiotics alone". The revision of the principles of AP treatment has led to equally radical changes in the didactics of medical personnel training. Therefore, when the side effects of antibiotics began to intensify, requiring the correction of unforeseen situations, efforts were made in the hope of reviving the previous effect of antimicrobial therapy. By now, persistent attempts to revive the etiotropic principles of AP treatment have become a strategic goal of solving the problem, and the process of deformation of ideas about its essence has gone so far that many indisputable facts that contradict the currently dominant concept of the disease have ceased to be the subject of discussion. The generally recognized fact of the emergence of a large group of antibiotic-resistant strains and the loss by antibiotics of their role as the leading therapeutic agent in AP is just the tip of the iceberg.

In recent decades, many experts have expressed concern about the growing role of viruses in the etiology of lung inflammation, which accounted for almost half of all AP diseases in the world about two decades ago [4-6]. The former relatively stable list of AP pathogens began to differ by changing priorities with periodic change of leaders. The initial prevalence of pneumococcus in the etiology of the disease in recent years has decreased to 10.9% - 22.5% among the positive results

of a bacteriological study [7]. It would seem that in the presence of these circumstances, there is an obligatory need for a radical revision of views on this problem and a change in therapeutic principles. However, the realization of these obvious needs has not been observed in recent decades, and even during the SARS-CoV-2 pandemic, antibiotics unable to suppress the coronavirus continued to be presented as the main method of treating COVID-19 pneumonia [8-10]. The fear of coronavirus that arose during the SARS-CoV-2 pandemic and the transition to strict epidemiological measures were dictated not only by the appearance of a pathogen that is not quite familiar to the human body, but, above all, by the lack of effective ways to provide assistance. At the same time, the statistics of this unexpected event convincingly show that 80% of the infected population safely endured this incident on an outpatient basis without any specific medical care, and 20% of them learned about the presence of infection only by the results of the tests carried out [11,12].

These data only confirm the ancient postulate that people get sick with pneumonia, not infected. Inflammation of the lung tissue, which is not a fatal inevitability even during the last coronavirus pandemic, further revealed pressing problems with the principles of its treatment when such patients began to concentrate in specialized departments, which had a strong psychological impact on medical personnel [13,14]. The loss of the former effectiveness of antibiotics every year more and more acutely required additional methods of treatment. The interpretation of the need for such care in patients with AP and the choice of additional methods were completely based on the "microbial" concept of lung inflammation, which was formed during the use of antibiotics and considers microbiological factors as the main cause of the disease and its consequences. As a result of such a narrow definition of the main difficulties in the treatment of AP, the disease itself has been classified as infectious in recent years, although the sanitary and epidemiological conditions have remained the same. In addition, in recent years, the number of cases with septic complications of AP has begun to grow, but, unlike sepsis in other localizations of inflammation, it is in this group of patients that the bacteriological blood test often turns out to be negative [15,16].

Such a selective discrepancy between the diagnosis and the criteria for its confirmation for this category of patients receives truly striking explanations as a consequence of preliminary antibacterial therapy [15,17,18]. In other words, in accordance with the dominant concept of the leading role of the etiology of the process, it is assumed that successful antibacterial therapy eliminates pathogenic microorganisms, but, at the same time, does not save (!?) from generalization of infection. In recent years, the process of diagnosing septic complications has also emerged solely on the basis of analogies and without any convincing arguments in the case of viral forms of inflammation [16,19,20]. Even more puzzling are the principles of septic shock diagnosis in patients with AP, in whom the presence of the pathogen in the bloodstream barely exceeds 10% and in fact does not differ from this indicator in sepsis [21], but the level of peripheral blood pressure continues to be one of the leading criteria for this assessment. At the same time, the fact that the primary focus of the disease damages the vessels of the small circulatory circle, which have diametrically opposite indicators with the periphery and have a regulating effect on the overall blood flow, is completely ignored [22-24].

The prevailing ideas about septic complications in patients with AP today suggest the use of additional treatment methods that were previously justified and tested for other localizations of inflammation. The basis of such assistance is infusion-bolus therapy, the effect of which is directly opposite to the methods of old medicine, since it is accompanied by an additional load on the blood vessels in the area of lung damage. And since the effectiveness of these efforts leaves much to be desired, modern recommendations provide in advance for the subsequent administration of vasopressors [16-19].

As a result, modern medicine cannot achieve noticeable success in the treatment of the most severe forms of AP, in which mortality in intensive care units remains unprecedentedly high, reaching, according to some data, 91% [25]. At the same time, only some authors publish frank confessions that the condition of many patients from this group continues to deteriorate after the start of inpatient treatment and despite this [19], and the overwhelming number of patients with septic shock did not have it during hospitalization (!) and it developed already during treatment [26]. The prevailing ideas about pneumonia today are the reason for the intensified search for etiotropic treatment of these diseases in the hope of a revival of success comparable to the beginning of the era of antibiotics. However, the nonspecific nature of this nosology, combined with the constant change of leading pathogens, as well as the accumulated experience and profound biological consequences of the use of antibiotics create real doubts about such a revival. At the same time, viral pneumonia does not have a special treatment, and studies at the cellular and molecular level, which are conducted in this direction, may be able to provide a detailed understanding of the mechanisms of the process and help in optimizing pathogenetic treatment methods. But so far this is only a prospect, not a reality. It should be added that the search for effective ways to help patients with AP over the past many years has not brought tangible success. A certain surge in the improvement of results was observed with the release of new antibacterial drugs, but their use was invariably accompanied by a tendency to decrease the achieved primary effect. At the same time, the former centuries-old experience of medicine remains forgotten and unexplored. A comparative evaluation of the effect of some of the ancient techniques mentioned above using objective tests has shown their amazing ability to bring a positive result. The rationale for new approaches to the treatment of this category of patients has been tested in the clinic and has demonstrated excellent results, fragments of which have been published in numerous articles in recent years and summarized in a monograph [27].

Today, medical science has much more opportunities for an objective assessment and selection of adequate methods of medical care than during the above-mentioned work. It is unlikely that for patients with AP, the old medical care options may be unacceptable if their use allows you to quickly and effectively eliminate the disease. To implement these projects, the results of which are urgently needed by millions of patients, it is necessary first of all to take a critical look at modern views on this problem, bringing the existing ideology of the disease in line with the facts of medical practice and the canons of science. Only after this step it will be possible to choose the optimal therapeutic methods - ancient or recently discovered.

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