



COMMENTARY

Acute Pneumonia: The Beginning of a Revision of Views or Just a Statement of Known Facts?

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#The author conducted research on the topic under discussion in the USSR at the State Institute for advanced training of doctors (Novokuznetsk). To date, the USSR and the mentioned Institute no longer exist. However, research and clinical trials of new approaches to the treatment of children with acute pneumonia and the results of this work can provide answers to a number of questions facing us today, which allows us to consider the research of thirty years ago relevant and worthy of mention.

Over the past few decades, acute pneumonia (AP) has consistently remained one of the leading causes of morbidity and mortality worldwide, regardless of the level of medical development in individual countries and regions, and accounts for a significant share of the workload in emergency and intensive care units. Throughout this period, the main reason for this unenviable popularity was considered to be the lack of Express methods for determining the pathogens of AP and the inability to conduct targeted and timely antibacterial therapy in this regard.

Such regrets and wishes for a long time determined the direction of the main efforts in trying to solve this problem, although it was no secret that the vast number of patients with AP continued to be treated without verifying the pathogens of the process. The probability of bacteriological examination of the material directly from the affected area, as a rule, appeared in the later stages of the disease in the case of pleural complications. However, due to the widespread belief that the microbial factor is the main cause of AP development, and antibiotics are the basis of treatment, the desire to get information about the causative agent of the

process was stimulated by any means. In this regard, materials were studied not only from the nose and oropharynx, but also various indirect traces of bacteria and laboratory tests.

One of the consequences of the "microbial" concept of AP was hyper diagnosis of sepsis and septic shock in this group of patients, which in most cases were not confirmed by bacteriological blood tests. In the light of the long-term one-sided trend noted above in solving the problem of AP, the cited review article stands out among many publications on this topic for its bold and non-standard conclusion about the need to significantly reduce bacteriological blood tests that do not have a noticeable impact on the results of treatment [1]. Today, when the current generation of doctors is brought up on the assumption of the danger of banal microflora and the exaggerated role of antibiotics in the treatment of such patients, it is very difficult to draw such a conclusion. After all, changing views on the nature of AP is the most difficult task in overcoming existing stereotypes, isn't it?

A serious reason for this conclusion was the low frequency of positive results of bacteriological blood tests in AP, which is quoted in the article and does not exceed several percent. However, these results are not a discovery, and the incidence of bacteremia in AP is significantly lower than the number of diagnoses indicating sepsis and septic shock [2]. Unfortunately, the authors do not attempt to initiate a deeper revision of views on the nature of AP, limiting themselves only to the analysis of studies published over the past one and a half to two decades. Stating the low information content of blood cultures in AP, they do not provide a

reasoned scientific explanation for this fact, and considering it necessary to significantly reduce the use of this test, they do not offer any other directions for monitoring the condition of such severe patients.

In this case, it seems that there are no signs of reconsideration of views on the nature of AP in the article. After reading the entire article, it becomes almost obvious that the purpose of this review was only to determine the practical value of bacteriological blood analysis and its impact on the choice of antibacterial drugs. The prejudice about the priority of the microbial factor as the main cause of inflammatory processes is felt throughout the text and is illustrated by such a circumstance as the analysis of three diseases, absolutely different from each other on all grounds, but United by a common conclusion.

From my point of view, the dominant "microbial" concept of AP does not allow us to look at this problem from a different angle and find a scientifically sound answer to many questions that remain open today. At the same time, in the existing system of views on the nature of AP, instead of objective facts, there are many assumptions and inconsistencies. For example, antibiotics belong to a group of drugs that have an exclusively antimicrobial effect, and cannot have a direct impact on the mechanisms of the inflammatory process, the classic form of which is AP. The true causative agent of AP both in the initial period of antibiotic use and currently remains unidentified in the vast majority of patients with this disease. However, effective treatment of AP over a long period using "antibiotics alone" distorted the idea of the source of the disease in the direction of infectious nature. It is now becoming increasingly clear that the infectious interpretation of AP does not match the characteristics of the true infection, and antibiotics continue to lose their former effectiveness. Therefore, the concept of the disease, which determines the diagnostic and therapeutic approaches, must be reasoned and carefully thought out.

The first steps in this direction have already been made and confirmed by excellent results of clinical trials [3], and fragments of this work in English can now be found in the public domain. I think that the most unexpected aspect of the new AP doctrine for many specialists may be that it is based on the fundamental materials of medical and biological science. It is a pity that this long-verified information remains without proper attention when solving such an important task. Such disregard for biological rules and laws leads to the search for a solution to the problem of AP on the wrong path, but this does not exclude their inevitable action in the dynamics of the development of the disease. New ideas about the origin and mechanisms of the disease development allow us to find an answer to the topic raised in the analyzed article about the causes of rare bacteremia in the so-called septic shock in AP.

Commentary to Article: Jun KN, Yu QH, Lateef F (2019) Is it Always Necessary to Take Blood Cultures before Starting Antibiotics in the Emergency Department? A Review of Usefulness of Blood Cultures in Community-Acquired Pneumonia, Cellulitis, Urinary Tract Infection and Pyelonephritis. *Int J Crit Care Emerg Med* 5: 062. doi.org/10.23937/2474-3674/1510062.

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1. Jun KN, Yu QH, Lateef F (2019) Is it always necessary to take blood cultures before starting antibiotics in the emergency department? A review of usefulness of blood cultures in community-acquired pneumonia, cellulitis, urinary tract infection and pyelonephritis. *Int J Crit Care Emerg Med* 5: 062.
2. Igor Klepikov (2019) Mortality in acute pneumonia: Fatal inevitability?. *EC Anesthesia* 5: 106-109.
3. Klepikov I (1989) Acute pneumonia and its purulent and destructive complications in children in the midst of a major industrial centre of Western Siberia. Dissertation for the degree of doctor of medical science. Leningrad.