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Opinion Article

COVID-19 and New Forms of Acute Pneumonia. It's Time for A Brainstorming Session

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The COVID-19 pandemic suddenly and abruptly changed the usual rhythm and conditions of our existence and "has posed critical challenges for the public health, research, and the medical communities" [1]. The time has come for a critical review and reassessment of many familiar stereotypes, especially in the health services sector, where the most dramatic part of events unfolds.

How is it that modern medicine, which has achieved unprecedented success in many areas, was caught off guard with the arrival of the first patients with COVID-19? Throughout the current pandemic, it is already

known that the most common cause of hospitalization and the main cause of death is viral pneumonia. At the same time, the medical Arsenal does not have specific methods for treating its initial forms, and in extreme situations, resuscitation methods such as mechanical ventilation, positive pressure at the end of exhalation, and even extracorporeal membrane oxygenation are used [2]. The uncertainty of the situation and forecasts makes it necessary to calculate the availability of respiratory equipment and call for an increase in its production[3,4].

In General, this principle of helping patients with viral pneumonia looks at least strange: a wait-and-see attitude at the beginning of the disease, if the patient's condition allows, and attempts to correct the situation when the disease reaches a critical development. It is very difficult to find an exact epithet for such a treatment strategy, but it is obvious that this approach to helping seriously ill patients will not solve the problem of their treatment. In this regard, the latest results of this kind of assistance are very impressive. Thus, if the overall mortality rate among hospitalized patients with coronavirus disease reaches 26% [2], then among patients who were on mechanical ventilation, it increases to almost 90% [5].

Over the past three years, I have sent dozens of manuscripts to various journals, trying to draw the attention of specialists in the field of pulmonology and intensive care to the need to revise the concept of acute pneumonia (AP) and approaches to its treatment. The accumulated paradoxes and contradictions between the facts and fundamentals of medical knowledge, on the one hand, and narrow efforts to treat AP, on the other, have recently become quite obvious. But today, the possibility of unhurried discussion and gradual persuasion to look at the problem of AP more broadly and from a different angle is a thing of the past. Today, we must try to save those patients whose COVID-19 has led to viral lung damage and for whom modern medicine can not yet offer anything but supportive care [6].

Today, the main hopes for success in the treatment of COVID-19 patients are pinned on the development of a vaccine and the search for antiviral drugs [7,8]. In other words, it is a matter of perspective, not immediate help. However, the appearance of an effective coronavirus vaccine can only improve the prevention of the disease, but not the treatment of those who are already ill. The search for antiviral drugs is a continuation of the narrow etiotropic strategy for the treatment of severe AP patients, which has dominated for several decades and, ultimately, its failure in recent years has become apparent. In addition, the development of antiviral drugs raises a number of logical and important questions about when such drugs will be created, how effective they will be, and how long their effectiveness can be maintained for the treatment of future generations. At present, no one can give an exact answer to these questions, although it is almost certain that the following can be noted in advance.

If antiviral drugs are eventually created and used, it will not be possible to avoid the consequences of their impact on our own microbiome. Many years of experience in the use of antibiotics and their consequences is a fairly clear example of the results of drug aggression against concomitant microbiological objects. There is a whole group of antibiotic-resistant bacteria that are already becoming representatives of the symbiotic microflora of healthy people. Long and repeated courses of antibiotic therapy affected the human microbiome, shifting the proportions in its composition towards viruses. This influence has been reflected in the increase in the incidence of viral pneumonia in recent years, and the most notable precursors of the current pandemic have been the SARS and MERS epidemics. In addition, antiviral therapy will not be able to provide guaranteed success for all patients.

In this regard, it is necessary to look at the current COVID-19 statistics, which are updated daily in the media. The number of infected people significantly exceeds the number of sick people, and the latter group, in turn, significantly exceeds the number of dead. These indicators are a statistical reflection of the range of individual differences. In other words, we are talking about a personal reaction of the body to an equivalent infection and the onset of viral inflammation. In the case of an aggressive onset of the disease, the suppression of the pathogen does not directly affect the focus of inflammation in the lung and does not eliminate its influence on the functional potency of the affected organ. This reason was one of the main mistakes in the treatment of aggressive bacterial forms of AP, when the main effort was directed at suppressing the pathogen.

The uniqueness of the mechanisms of development of the inflammatory process in the lung tissue is the key to understanding the main directions of medical care for these patients. Pathoanatomic studies of the lungs in coronavirus pneumonia, despite certain differences in this form of inflammation from bacterial, serve as objective confirmation of severe damage to the same tissue structures [9-11], the involvement of which in the pathological process clearly indicates an equivalent mechanism of General disorders in the body of patients.

At present, a large influx of severe patients with viral pneumonia, high mortality and the lack of reliable treatment methods in General practice are very convincing circumstances for a critical assessment of the

existing etiological concept of AP. This will be a very difficult step, since several generations of doctors have been raised on the unwavering role of antibiotics in the treatment of patients with AP. For many years, no one was confused by the fact that the set of medicines for AP and many fundamentally different diseases is no different. Now that antibiotics have fallen off the list of leading treatment methods, practical medicine has felt this loss and is waiting for it to be replaced with antiviral drugs. But care for patients with COVID-19 pneumonia should be provided now. This is especially important in observations with rapid development of the process in the lungs. In such situations, the value of pathogenetic approaches is invaluable.

The results of studies that were conducted more than 30 years ago have passed the test of time and today, with the current state of the problem of AP, they are more relevant and important than at the time of completion and summing up, because over the past three decades, no progress has been made in the treatment of patients with this disease, but the problem has become more significant and obvious. The result of this work allowed us to conclude that the prevention of complicated course of AP can be guaranteed with timely assistance. Research and clinical trials were based on a revision of the disease doctrine and pathogenetic principles of the treatment approach. Etiotropic methods of influence were considered auxiliary, not the main method [12].

In order to help the most severe patients in today's situation, it is necessary to start with a critical assessment of the "microbial-viral" concept of AP and recall the classical laws and rules that play a role in the dynamics of inflammation and acute damage to lung structures. These biological patterns will work regardless of how we feel about them. Understanding the mechanisms of disease development will provide the basis for pathogenetic treatment. In connection with the current pandemic, G. Ghilardi et al. [13] very aptly observed: “Failing in the understanding of a reality equates to a scientific failure, since, as Blaise Pascal reminds us, our intellect is made for understanding”.

Competing Interests

The authors have declared that no competing interests exist.

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