



Significance of topical diagnosis in extreme situations

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The thematic edition of the journal is an excellent option for a comprehensive presentation of research on the selected topic at the moment. In this case, we are talking about a complex and intractable problem of sepsis and septic shock. Despite such a positive comprehensive approach covering this section, one significant feature of the analyzed materials, in my opinion, requires additional detail.

Sepsis is considered in many literary sources as a syndrome that is a continuation and complication of various inflammatory processes. This definition is more logical and fairer, since sepsis and its extreme manifestation, septic shock, can not occur suddenly, on their own, without a preliminary “gateway” for infection. That is why the leading syndrome, as the cause of the severity of the patient’s condition, is quite appropriate and even necessary as a primary diagnosis in emergency care and resuscitation., if the main cause of the disease has not yet been established and its diagnosis is pushed to the background by the need to save the patient. However, further expert assessment may well be incomplete and distorted if the root cause of the disease is not taken into account.

In other words, sepsis and septic shock should be considered as a complication of other inflammatory processes, which in themselves have not only their own unique clinic, but also, most importantly, a unique pathogenesis of development. Therefore, the concept of cause and effect in this case is not abstract, since the final

results of therapeutic efforts largely depend on the methods of eliminating the primary focus.

The authors of the articles presented in the journal carried out complex and time-consuming work to assess the quality and results of medical care for patients with sepsis and septic shock. Unfortunately, there are no detailed ideas about the composition of patients and the leading cause of their diseases in the text of published articles, which is an indirect sign of the authors’ attitude to these characteristics as irrelevant. From my point of view, the interpretation of sepsis as a standard situation, regardless of its root cause, is an error in the methodology for studying these conditions.

In this comment, I would like to draw attention to only one separate category of patients whose development of a clinical picture that mimics the signs of sepsis and septic shock has a fundamentally different mechanism of development. Usually, patients with acute pneumonia (AP) (or community-acquired pneumonia) in many other publications refer to heterogeneous groups of sepsis as one of the most severe forms of pathology. This information is not detailed in the papers presented, but based on indirect data (many authors belong to the departments of respiratory pathology), I believe that patients with AP were included in many of the analyzed materials.

Signs identical to the clinical picture of sepsis and septic shock in patients with AP have a fundamentally different pathogenesis of development in contrast to other nosologies

*, 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.

and require completely different approaches to treatment. This fact, in my opinion, significantly distorts the research methodology and conclusions, since modern concepts of AP, except for the infectious cause, do not provide other explanations for such conditions.

The classic inflammatory process, which develops due to a vascular reaction with a regular sequence of stages, was and remains the basis of AP. Modern ideas about this disease as infectious are not able to cancel this biological rule, which will operate independently of our ideas. The intensity of such a reaction is an individual feature of the body and depends on its sensitivity and the variant of the immune response. At the same time, AP is the only process among a long list of acute non-specific inflammatory diseases that is localized in the vessels of the small, rather than the large circle of blood circulation. Anatomical inseparable connection and inverse dependence of blood flow in the small and large circulatory circles is the leading reason for the difference in the pathogenesis of AP from the pathogenesis of other inflammatory processes, even in conditions of coinciding etiology. Therefore, shock, which is observed in aggressive forms of AP, has its own unique mechanism, and its interpretation as septic, as a rule, is not confirmed by objective criteria (positive blood culture) when examining this group of patients (1). References to the detection of microbes in the bloodstream in patients with AP are extremely rare, and the frequency of such cases, including bacteremia, sepsis and septic shock in combination, does not exceed 10–12% (2).

Modern infectious theories of AP explain the severity of the condition of patients as a result of aggression of its pathogens. Focusing mainly on this cause, the main goal of treatment efforts is assumed to be the syndrome principle of providing assistance to such patients by analogy with many other inflammatory processes and infectious diseases.

The main areas of medical care for sepsis and septic shock are considered, in addition to antibiotics, standard general medical techniques, among which intravenous infusions of solutions are considered as standard mandatory care. Such therapeutic efforts against the background of the unique pathogenesis of AP may have the opposite effect. Protective and adaptive mechanisms in this disease are aimed at unloading the small circle of blood circulation, which becomes the primary link and the main victim of pathological restructuring. Under these conditions, the introduction of fluids directly into the vessels of the small circle can stimulate, rather than eliminate, the dynamics of the pathological process (3).

Due to the peculiarities of AP dynamics against the background of liquid resuscitation and deepening shifts in the body, the authors' concern is understandable, who evaluated this type of treatment and made a cautious conclusion about its harmful consequences (4). Such negative consequences of infusion therapy are typical for patients with acute aggressive inflammation in the lungs. Also, this group of patients is characterized by the need for early use of vasopressors (5), which is especially noticeable after the start of intravenous infusions.

Modern ideas about the nature and mechanisms of AP development, based on an overestimated assessment of the role of the microbial factor in the interpretation of any negative consequences of the disease, narrow the direction of research on this problem and make it difficult to find scientific explanations for the observed contradictions between theory and practice. The only way out of this impasse is through a radical revision of the AP doctrine, since the explanation of such discrepancies depends on the influence of already known and generally accepted biological rules and laws (6). Meanwhile, in the light of the above, when evaluating the results of correction of terminal States, it seems necessary to distinguish a group of patients with AP into a separate one, which will allow analyzing therapeutic actions in the conditions of a unique mechanism of the disease.

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Footnote

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