

COVID-19 ASSOCIATED COMMUNITY-ACQUIRED PNEUMONIA: CLINICAL EXPERIENCE OF PARENTERAL USE OF ACETYLCYSTEINE IN COMPLEX THERAPY

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Abstract

COVID-19 is one of the major biological threats of mankind in modern history. Severe forms of the infection are associated with polysegmental pneumonia and respiratory failure, leading to respiratory distress syndrome. Epidemic situation is further deteriorated by the lack of effective antiviral medications and vaccines. Despite availability of international and local guidelines, there are quite profound disputes between clinicians regarding the choice of drugs and methods of their administration. Considering these factors, the first line of the therapy of COVID-19 patients is often include a pathogenetic and symptomatic medications. Among the drugs which are justified, especially in patients with underlining chronic respiratory diseases (such as COPD, asthma, bronchiectasis, interstitial lung diseases) and require no written consent for use, there's the acetylcysteine.

Current published data on pharmacodynamics of acetylcysteine are summarized in the report. Unique properties of acetylcysteine molecule determine its powerful antioxidative and detoxication effects. Increased bacterial wall permeability and overcoming of bacterial resistance mechanisms under the influence of acetylcysteine improve efficacy of antibiotics if used in combination.

Parenteral use of acetylcysteine should be considered in patients with COVID-19 pneumonia, complicated by severe respiratory failure, who require permanent oxygen support. Several previously published clinical cases of parenteral acetylcysteine use is severe COVID-19 community-acquired pneumonia patients, and one clinical case of 46-year old man, clinical group 3 pneumonia, severe respiratory failure and long-term oxygen therapy, observed by the authors (successful use of Ingamist, Juria Farm, Ukraine, parenteral followed by nebulized administration), are reviewed in this article.

Authors conclude that in conditions of the deficit of large-scale placebo-controlled randomized clinical trials, being the cornerstone of evidence-based medicine today, there is an urgent need in deep research of acetylcysteine to determine its distinct place in the regimens of complex treatment of respiratory infections in general and coronavirus disease, caused by SARS-CoV-2 virus, in particular.

Key words: COVID-19 associated community-acquired pneumonia, acetylcysteine, parenteral use

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