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ANEMIC SYNDROME IN CHRONIC OBSTRUCTIVE LUNG DISEASE

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Abstract

Anemia is common in patients with COPD, although the exact figures vary, but studies show a prevalence of 16% to 26.5% and higher, especially among hospitalized individuals, which worsens shortness of breath, physical activity, and quality of life, and is an important systemic manifestation of the disease associated with inflammation and other factors. The article provides a review of the literature on the problem of the relationship between COPD and anemia. Most authors characterize anemia associated with COPD as anemia of chronic diseases, however, the mechanisms of its development in COPD have not been fully studied. Studies on methods for effective correction of anemia are rare, their results are highly contradictory and ambiguous; however, to find new opportunities for optimizing patient management tactics, improving the quality of life, and disease prognosis, it is necessary to conduct fundamental and clinical studies aimed at studying the mechanisms of anemia development in COPD.

Keywords

Chronic obstructive pulmonary disease, anemia.

АНЕМИЧЕСКИЙ СИНДРОМ ПРИ ХРОНИЧЕСКОЙ ОБСТРУКТИВНОЙ БОЛЕЗНЫ ЛЕГКИХ

Аннотация

Анемия часто встречается у пациентов с ХОБЛ, хотя точные цифры разнятся, но исследования показывают распространенность от 16% до 26.5% и выше, особенно среди госпитализированных, ухудшая одышку, физическую активность и качество жизни, и является важным системным проявлением болезни, связанным с воспалением и другими факторами. В статье представлен обзор литературы по проблеме взаимосвязи ХОБЛ и анемии. Большинством авторов анемия, ассоциированная с ХОБЛ, характеризуется как анемия хронических заболеваний, однако механизмы ее развития при ХОБЛ до конца не изучены. Исследования способов эффективной коррекции анемии единичны, результаты их весьма противоречивы и неоднозначны; при этом для поиска новых возможностей оптимизации тактики ведения пациентов, улучшения качества жизни и прогноза заболевания требуется проведение фундаментальных и клинических исследований, направленных на изучение механизмов развития анемии при ХОБЛ.

Ключевые слова

хроническая обструктивная болезнь легких, анемия.

SURUNKALI O‘PKA OBSTRUKTIV KASALLIGIDA ANEMIK SINDROM

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Annotasiya

Kamqonlik O‘SOK bilan og‘rigan bemorlarda tez-tez uchraydi, garchi aniq raqamlar turlicha bo‘lsa-da, ammo tadqiqotlar shuni ko‘rsatadiki, u 16% dan 26,5% gacha va undan yuqori, ayniqsa kasalxonaga yotqizilganlar orasida, nafas qisilishi, jismoniy faollik va hayot sifatini yomonlashtiradi va yallig‘lanish va boshqa omillar bilan bog‘liq kasallikning muhim tizimli ko‘rinishidir. Maqolada O‘SOK va anemiya o‘rtasidagi bog‘liqlik muammosi bo‘yicha adabiyotlar sharhi keltirilgan. Ko‘pchilik mualliflar tomonidan O‘SOK bilan bog‘liq anemiya surunkali kasalliklar anemiyasi sifatida tavsiflangan, biroq O‘SOKda uning rivojlanish mexanizmlari to‘liq o‘rganilmagan. Anemiyani samarali korreksiya qilish usullari bo‘yicha tadqiqotlar yagona bo‘lib, ularning natijalari juda ziddiyatli va noaniqdir; shu bilan birga, bemorlarni olib borish taktikasini optimallashtirish, hayot sifatini yaxshilash va kasallikni bashorat qilishning yangi imkoniyatlarini izlash uchun O‘SOKda anemiyaning rivojlanish mexanizmlarini o‘rganishga qaratilgan fundamental va klinik tadqiqotlarni o‘tkazish talab etiladi.

Kalit so‘zlar

o‘pkaning surunkali obstruktiv kasalligi, anemiya.

Purpose of the study: Improvement of diagnostic results and optimization of management in patients with anemia as a chronic obstructive pulmonary disease (COPD). COPD can traditionally affect erythropoietin and lead to chronic disease anemia.

Topic relevance: The modern concept of chronic obstructive pulmonary disease (COPD) interprets it as a disease with systemic manifestations, in which lung damage is considered one of the components of the disease [1]. The prevalence of anemia in patients with COPD was 23.1%, comparable to the prevalence of anemia in patients with SLE (23.3%). The cohort of COPD patients (n - 2524) who received long-term oxygen therapy at home was studied, the proportion of patients with anemia was 12.6%, among men and 8.2% among women, and the proportion of patients with polycythemia was only 8.4% [2].

Materials and methods of research. Studying the statistical data of the RF SRCEP and analyzing scientific literature.

Research results and discussion. New provisions have emerged in the definition of COPD: 1) the disease can be prevented and treated; 2) the disease has systemic manifestations. In the development of extrapulmonary effects in COPD, great importance is attached to the role of systemic inflammation. Systemic effects in COPD affect the body as a whole. Because chronic obstructive pulmonary disease usually develops in middle-aged people who smoke for a long time, such patients often suffer from other diseases related to either smoking or age.

The nutritional status changes: energy expenditure increases at rest, metabolism is disrupted.amino acids, the body composition of the COPD patient becomes abnormal. Skeletal muscle dysfunction occurs: their hypotrophy and atrophy develop, and their functional capabilities are impaired. Four main components of COPD pathophysiology are distinguished: respiratory tract inflammation, mucociliary transport disorders (MST), respiratory tract obstruction, structural changes in them (remodeling) with lung parenchyma damage, and systemic effects - endocrine dysfunction and skeletal muscle dysfunction (with their atrophy), decreased physical activity and body weight, anemia, osteoporosis [3].

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The mechanisms underlying these systemic manifestations are quite diverse and have not yet been sufficiently studied. In their practical activities, doctors mainly encounter COPD patients already suffering from systemic inflammatory processes, i.e., most of them are disabled due to a sharp decrease in tolerance to physical exertion and shortness of breath [4]. Recently, "secondary" anemias accompanying various diseases [5] have attracted the attention of doctors and researchers: tumors, infections, systemic vasculitis (systemic lupus erythematosus, rheumatoid arthritis). In a wide range of diseases, comorbid anemia is increasingly recognized as a risk factor associated with increased mortality. Recently, the term "anemia of chronic diseases" has been commonly used. Secondary anemias occur in various internal organ diseases.

Changes in iron metabolism are characterized by redistributive iron deficiency (decreased serum iron, transferrin, and increased serum ferritin). In some cases, micro-blood loss is observed in the presence of certain diseases [3] [6];. Often, in anemia of chronic diseases, the processes of iron absorption are disrupted; for example, iron absorption decreases with fever; the passage of iron from reticuloendothelial cells to the erythroblasts of the bone marrow may be blocked, or the consumption of iron may increase with the activation of LPO by non-erythroid cells and bacteria.

These factors can be grouped as follows:

•increased iron consumption by non-erythroid cells, including bacteria,

•activation of erythropoiesis inhibitors,

• intravascular hemolysis due to DIC syndrome,

• blood loss [7].

There are two theories about the occurrence of anemia in chronic diseases. One theory is that anemia develops due to the lack of an adequate response to erythropoietin, while the alternative theory is that inflammation causes a change in iron recirculation - a "reticuloendothelial block." Interleukin-6 is considered the central mediator of anemia in chronic diseases (in the range of inflammatory diseases), it triggers the "reticuloendothelial block" of iron, blocks iron transport from the duodenum. COPD is traditionally considered one of the most important causes of polycythemia, however, recent studies have shown that anemia is also common in COPD patients [8] [9].

Conclusions

Chronic obstructive pulmonary disease can be accompanied by anemia, which causes a complex of pathogenetic and clinical syndromes that worsen the prognosis and course of the underlying disease. The main cause of anemia in patients with COPD is systemic inflammation. Serum cytokines and chemokines can disrupt the main stages of hematopoiesis; possible mechanisms of anemia in COPD include shortening the lifespan of erythrocytes, impaired mobilization and utilization of iron, and impaired bone marrow response to erythropoietin [10]. An interesting finding was the fact that the serum erythropoietin level in patients with anemia was 3 times higher than in patients without anemia. An inverse correlation was found between the levels of hemoglobin and erythropoietin, which indicates the presence of erythropoietin resistance, i.e., a characteristic feature of anemia in chronic diseases is evident. In the study, which included 101 patients with COPD, anemia was noted.
was detected in 13% of patients [11].

Stanbrook et al. investigated the prevalence of anemia in patients with chronic obstructive pulmonary disease. Despite numerous studies devoted to the pharmacotherapy of COPD, a number of unresolved issues remain regarding the formation of treatment protocols for patients with concomitant diseases and systemic manifestations, including anemic syndrome.

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Drug therapy for the combined course of anemia and COPD is among the urgent tasks of internal medicine [6] [11]. Currently, there is no information on the nature of the course of the disease against the background of anemia, and the principles and tactics for treating patients with anemia syndrome have not been developed, which does not allow for the implementation of all the possibilities for managing this severe chronic disease.

The problem of the relationship between COPD and anemia remains ambiguous, and all its aspects - from prevalence and pathogenesis to clinical significance and correction methods - remain poorly studied. To find new opportunities for optimizing patient management tactics, improving their quality of life, and disease prognosis, it is necessary to conduct fundamental and clinical studies aimed at studying the mechanisms of anemia development in COPD.

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