EMJ MS
EUROPEAN MULTIDISCIPLINARY JOURNAL OF MODERN SCIENCE
https://emjms.academicjournal.io/index.php/ Volume: 7

Anemia Occurring in Various Chronic Diseases

Matniyozova Zaynab Tukhtaboyevna
Bukhara State Medical Institute, Bukhara, Republic of Uzbekistan

Abstract: Anemia that occurs in infectious and inflammatory processes, non-infectious inflammatory diseases, and tumors is called “anemia in chronic diseases "(AHD), emphasizing the role of the underlying disease in its pathogenesis. The incidence of anemia in a number of chronic diseases reaches 100%. Despite the variety of pathogenetic mechanisms of anemia in these situations, one of the main ones is the redistribution of iron into the cells of the macrophage system, which is activated during various inflammatory (infectious and non-infectious) or tumor processes. In terms of prevalence, ACH ranks 2nd after iron deficiency anemia (IDA).

Keywords: anemia, chronic disease, prevalence, treatment tactic.

The prevalence of AHD in the elderly and senile age varies from 2.9 to 61% in men and from 3.3 to 41% in women, and in young and mature age it is more often detected in women. In hospitalized elderly patients, its frequency reaches 36-80% (in outpatient patients, 5-14%). Among patients with systemic connective tissue diseases, anemia occurs in almost half of patients, and ACH prevails. In chronic kidney diseases, anemia with a hemoglobin level of less than 100 g / l is recorded in more than 25% of patients. The diagnostic criteria for AHD are specified in detail. The main way to correct anemia in this category of patients is the treatment of an active inflammatory process — antibacterial therapy taking into account the nature of the suspected or verified infectious agent, basic and anti-inflammatory therapy for rheumatic diseases, surgical treatment with appropriate indications (abdominal abscesses, purulent pyelonephritis, etc.). Prescribing iron and vitamin B12 supplements in these situations is usually ineffective and only delays the timely identification of the underlying cause of anemia and appropriate therapy. Identification of ACH as a separate pathogenetic variant and awareness of it is important due to the similarity of this variant with IDA and some sideroacrestic anemia, although the essence and therapeutic approaches for these anemia are different. Key words: anemia of chronic diseases; prevalence; therapeutic tactics (5-14%). The frequency of anemia in the elderly is distributed as follows: IDA-45%, AHD 68-76% (AHD associated with chronic kidney diseases-22.6%, chronic diffuse liver diseases-22.4%, chronic lung diseases-19%, chronic inflammatory diseases of the gastrointestinal tract (GIT) — 18%, chronic endocrinological diseases diseases — 16%, malignant neoplasms-6%, rheumatoid arthritis-6%), acute and chronic post-hemorrhagic anemia-6%, hemolytic anemia (acquired and inherited) - 3%, aplastic anemia-3-4%, B12 and folate — deficient anemia-2-3%, unidentified-17%. Half of the patients have concomitant diseases that induce anemia (two or more), so the percentage distribution of types of anemia is conditional. It is not possible to determine the cause of anemia in 17-20% of patients [4].

Anemia is detected in 4% of men and 8% of women, and among middle-aged and elderly people-in 8-44%. One of the most common variants of anemia is anemia of chronic diseases (AHD), or anemia of chronic inflammation, or iron-distributing anemia, which occurs in patients with chronic activation of cellular immunity and lasts for more than 1-2 months. The frequency of occurrence of this anemia in a number of chronic diseases reaches 100% [1,

2].ACH is the second most common type of anemia after iron deficiency anemia (IDA) [3]. Morbidity in the elderly and senile age is characterized by polymorbidity, i.e. the accumulation of diseases, among which anemia occupies a significant place. The prevalence of AHD in the elderly and senile age ranges from 2.9 to 61% in men and from 3.3 to 41% in women. In hospitalized elderly patients, its frequency reaches 36-80% (in outpatients with symptoms of a general disease, often masking the underlying disease or masking it. There is a direct relationship between the degree of AHD and the severity of the underlying disease. АнемизацияAnemia increases the clinical manifestations of damage to the arteries that supply the brain and lower extremities, aggravates heart failure, and in lung diseases, anemia exacerbates hypoxic syndrome. The body adapts to low levels of hemoglobin (Hb) and red blood cells, and patients often get used to their malaise, explaining it by overwork at work, psychoemotional overloads, and other factors. Changes in the internal organs appear when the Hb level drops to 80-70 g / l, and when the Hb concentration decreases to less than 40 g/L, the probability of developing anemic coma is high [6]. Criteria for anemia (according to WHO): women — Hb concentration less than 120 g / l (during pregnancy-less than 110 g/l), men-Hb concentration less than 130 g/l. In moderate and mild AHD, the Hb concentration is usually 100-110 g/l; in severe diseases, it can decrease to 80-90 g/l or lower. If the degree of decrease in Hb concentration does not correspond to the severity of the disease, it is necessary to look for another (specific) cause of anemia, primarily bleeding and hemolysis. Normal indicators of hemogram and iron metabolism in the body are presented in the table [1]. Morphological examination of red blood cells in AHD reveals normochromia or moderate hypochromia. The diameter of the central clearing and peripheral "darkening" in the red blood cell are correlated approximately as 1: 1, with hypochromia-as 2-3:1. The color index is 0.85-1.05 and in the case of progressing anemia becomes hypochromic. Normocytes predominate in the blood smear in нормоцитыAHD and microcytes can rarely be present. In normocytic anemia, the MCV is 81-100 fl. In the bone marrow, regeneration is observed — the number of reticulocytes is 1.5-5%. The number of white blood cells corresponds to concomitant pathology. In the case of infection and severe intoxication, toxic granularity of neutrophils is detected. To make a diagnosis, it is necessary to assess the adequacy of the state of iron metabolism: serum iron (HS), ферритинserum ferritin (FS), the degree of iron saturation трансферринаof transferrin (NTF) and the serum level of transferrin receptors (FiU). Ferritin level - the gold standard for estimating the amount of iron stored in the body: it is directly proportional to the accumulation of iron in macrophages and hepatocytes, if there is no infection or inflammatory process. Its reduction is 100% specific for detecting iron deficiency conditions. Ferritin concentrations may increase in AHD associated with infection, inflammation, and malignancy. The Hb content in reticulocytes of more than 28 pg indicates sufficient iron reserves for Hb synthesis and erythropoiesis. It should be taken into account that transferrin (Tf) is characterized by the qualities of a "negative" acute phase protein, i.e. acute inflammation contributes to a decrease in its level. Malignancies, liver diseases, nephrotic syndrome, and poor nutrition can reduce the concentration of serum Tf, while pregnancy and oral contraceptive use can increase this indicator. The total iron binding capacity of blood serum reflects the degree of" starvation" of serum and correlates with the level of Tf. With iron (D) deficiency, there is an increase in heart rate. A decrease in this indicator is observed in diseases accompanied. The main pathogenetic factors The mechanism of AHD is considered to be the redistribution of iron in the cells of the macrophage system, which is activated during various inflammatory or tumor processes. Anemia is very diverse in its etiology, pathogenesis, and clinical and hematological features. In the clinical and pathogenetic classification of anemia, there is a section concerning iron metabolism disorders (iron deficiency, iron distribution, sideroachrestic anemia). In the morphological classification of anemia, ACH refers to normocytic anemia and according to

the degree of regeneration— to regenerative ones. In accordance with the ICD 10th revision, the following forms of anemia associated with chronic diseases are taken into account: D63 Anemia in chronic diseases classified under other headings; D63.0 Anemia in neoplasms (C00+); D63.8 Anemia in other chronic diseases classified under other headings. Clinical situations associated with AHD: acute and chronic infections — viral, including HIV, bacterial, parasitic, fungal; tumors — hemoblastosis, solid tumors; autoimmune diseases — rheumatoid arthritis, systemic lupus erythematosus and other connective tissue diseases, vasculitis, sarcoidosis; chronic inflammatory bowel diseases; chronic kidney disease (CKD); endocrine pathology; liver diseases; chronic non-inflammatory diseases — severe trauma, thermal burns; mixed diseases — alcoholic cirrhosis of the liver, circulatory failure, thrombophlebitis, coronary heart disease [5]. Clinical manifestations in a patient with anemia are determined by the pathology that causes anemia, and the severity of tissue hypoxia. ACH is one of the significant loss or increased protein intake (nephrotic syndrome, chronic kidney failure, severe burns, chronic infections and active inflammatory processes, malignancies, severe liver diseases). There are no data on the effect of inflammatory reactions on concentration FiU [7]. A distinctive feature of AHD is the combination of D and, accordingly, iron deficiency in the hematopoietic bone marrow tissue with intensive iron uptake by macrophages and dendritic cells of the reticuloendothelial system (RES). Iron released from decaying red blood cells, which under normal conditions is reused in the synthesis of new hemoglobin molecules, enters the iron-containing depot. As a result, the PS content increases. AHD is diagnosed in the presence of hypoferremia and elevated or normal levels of FS. This occurs as a result of stimulation of iron accumulation in RES and immune activation of ferritin synthesis. With IDA and AHD, there is a decrease in the concentration of LC and saturation of Tf with iron. A decrease in Tf saturation with iron in AHD reflects a decrease in serum iron concentration, while in IDA there is an increase in Tf content (in the first case, this indicator is within the normal range or increased), which makes the decrease in Tf saturation with iron more pronounced. When combined with ACH and concomitant IDA, microcytosis and a more severe degree of severity of pathological changes are more often noted. To detect functional J during erythropoietin (EPO) therapy in patients with AHD, it is proposed to determine the percentage of red blood cell hypochromia and the level of Hb in reticulocytes [8]. Diagnostic criteria for AHD: clinical signs (depending on the disease: inflammatory, tumor, or infectious); pathology (hypoproliferative anemia, impaired iron release from the cells of the mononuclear phagocyte system for Hb synthesis, the life span of red blood cells is reduced); laboratory data (white blood cells and platelets: changes depend on the disease in which anemia is observed; red blood cells: Hb level is reduced-more often anemia from mild (Hb 95 g / l) to moderate (Hb 80 g/l) severity; Ht is reduced; normocytic/normochromic anemia; microcytic hypochromic anemia; the number of reticulocytes in the blood is normal or slightly increased; blood chemistry: the level of LC is normal or moderately reduced; OZHSS is normal or reduced; Tf level is reduced or normalTф; NTF is reduced; PS level is normal or increased; cytokine level is increased; red bone marrow: hemosiderin content is normal or increased, the number of sideroblasts is reduced); treatment: there is no effect of treatment with iron preparations [5].

References

1. Ермакова Л.А., Пшеничная Н.Ю., Амбалов Ю.М., Черникова Е.А. // Мед. паразитол., 2007. № 4. С. 32-34.
2. Абдурахимова К.Ш. Факторы риска развития гельминтозных заболеваний дошкольного возраста // Актуальные проблемы экологии и гигиены в Узбекистане. Материалы научно-практической конференции. Ташкент, 2008. С. 58.

3. Авдюхина Т.И. Современный взгляд на проблему гельминтозов у детей и эффективные пути ее решения. // Лечащий врач, 2004. № 1. С. 14-18.
4. Головченко Н.В., Ширинян А.А., Костенич О.Б., Теличева В.О., Ермакова Л.А. Клинические и лабораторные аспекты энтеробиоза. Теория и практика паразитарных болезней животных, 2016. 137-139
5. Khodzhaeva D. I. Changes in the Vertebral Column and Thoracic Spinecells after Postponement of Mastoectomy //International Journal of Innovative Analyses and Emerging Technology. – 2021. – Т. 1. – №. 4. – С. 109-113.
6. Джураев Ш. Д. ФАКТОРЫ РИСКА СУИЦИДАЛЬНОГО ПОВЕДЕНИЯ ПРИ АФФЕКТИВНЫХ РАССТРОЙСТВАХ У ВЗРОСЛЫХ И ПОДРОСТКОВ //Scientific progress. – 2022. – Т. 3. – №. 4. – С. 66-74.
7. Akhmatovna J. Z. Current Issues of Infertility Diagnosis and Treatment in Women with Internal Genital Endometriosis //Бошқарув ва Этика Қоидалари онлайн илмий журнали. – 2021. – Т. 1. – №. 6. – С. 77-84.
8. Sharipova G. I. LIGHT AND LASER RADIATION IN MEDICINE //EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – 2022. – Т. 2. – №. 1. – С. 36-41.
9. Sharipova G. I. Paediatric Lazer Dentistry //International Journal of Culture and Modernity. – 2022. – Т. 12. – С. 33-37.
10. Sharipova G. I. DISCUSSION OF RESULTS OF PERSONAL STUDIES IN THE USE OF MIL THERAPY IN THE TREATMENT OF TRAUMA TO THE ORAL MUCOSA //European journal of molecular medicine. – 2022. – Т. 2. – №. 2.
11. Fayziev X. B. et al. Morphological aspects of the spleen of white mongrel rats after severe traumatic brain injury caused experimentally in the form of a road accident //International Journal of Pharmaceutical Research. – 2021. – Т. 13. – №. 2. – С. 998-1000.
12. Файзиев Х. Б., Тешаев Ш. Ж. Черепно-мозговая травма и иммунитет //Новый день в медицине. – 2020. – №. 2. – С. 577-579.
13. Орзиев З. М., Нуриллоева Ш. Н. Компетентность количественных показателей ведущих клинических признаков холестаза в дифференциации его градаций //Биология и интегративная медицина. – 2018. – №. 4. – С. 62-73.
14. Kizi N. S. N. Assessment of the methods of the state of hyperglycemia at different body masses //ACADEMICIA: An International Multidisciplinary Research Journal. – 2021. – Т. 11. – №. 9. – С. 359-366.
15. Miralievna B. M. Community-Acquired Pneumonia in Adults: Practical Recommendations for Diagnosis, Treatment and Prevention //Spanish Journal of Innovation and Integrity. – 2022. – Т. 6. – С. 119-125.
16. Shavkatovich A. O. Characteristics of the Coronavirus Disease and Its Epidemiological Features //Бошқарув ва Этика Қоидалари онлайн илмий журнали. – 2021. – Т. 1. – №. 6. – С. 99-105.
17. Kizi N. S. N. Assessment of the methods of the state of hyperglycemia at different body masses //ACADEMICIA: An International Multidisciplinary Research Journal. – 2021. – Т. 11. – №. 9. – С. 359-366.

18. Miralievna B. M. Community-Acquired Pneumonia in Adults: Practical Recommendations for Diagnosis, Treatment and Prevention //Spanish Journal of Innovation and Integrity. – 2022. – Т. 6. – С. 119-125.
19. Shavkatovich A. O. Characteristics of the Coronavirus Disease and Its Epidemiological Features //Бошқарув ва Этика Қоидалари онлайн илмий журнали. – 2021. – Т. 1. – №. 6. – С. 99-105.
20. Sultonova N. A. Treatment of hypercoagulable conditions in women with misscarriage in early gestation //Asian Journal of Multidimensional Research (AJMR). – 2020. – Т. 9. – №. 12. – С. 13-16.
21. Султонова Н. А. ИНДИВИДУАЛЬНЫЙ ПОДХОД К ПРОГНОЗИРОВАНИИЮ САМОПРОИЗВОЛЬНЫХ ВЫКИДЫШЕЙ У ЖЕНЩИН ДО 24 НЕДЕЛЬ ГЕСТАЦИИ //Современные вызовы для медицинского образования и их решения. – 2021. – Т. 406.
22. Султонова Н. А. ПРОГНОСТИЧЕСКИЕ КРИТЕРИИ САМОПРОИЗВОЛЬНЫХ ВЫКИДЫШЕЙ В СТРУКТУРЕ ПРЕВЫЧНОГО НЕВЫНАШИВАНИЯ НА РАННИХ СРОКАХ БЕРЕМЕННОСТИ НА ФОНЕ ПАНДЕМИИ COVID-19 //ЎЗБЕКИСТОН РЕСПУБЛИКАСИ СОҒЛИҚНИ САҚЛАШ ВАЗИРЛИГИ ТОШКЕНТ ТИББИЁТ АКАДЕМИЯСИ. – С. 60.
23. Нуриддинов Х. Н. СУРУНКАЛИ ПОЛИПОЗ РИНОСИНУСИТНИ ЭНДОСКОПИК ТАШХИСЛАШ ВА ДАВОЛАШ НАТИЖАЛАРИНИНГ ТАҲЛИЛИ //Scientific progress. – 2022. – Т. 3. – №. 4. – С. 32-37.
24. Нуриддинов Х. Н. ЭНДОСКОПИЧЕСКАЯ КАРТИНА ПРИ ПОЛИПОЗНОМ РИНОСИНУСИТЕ //Scientific progress. – 2022. – Т. 3. – №. 4. – С. 42-47.
25. Uktamovna E. M. The Degree of Metabolic Disorders in Children and Adolescents with Obesity and Hypertension //Spanish Journal of Innovation and Integrity. – 2022. – Т. 6. – С. 136-141.
26. Uktamovna E. M. Diagnostic Markers of Cardiovascular Complications after Covid-19 //Spanish Journal of Innovation and Integrity. – 2022. – Т. 4. – С. 210-215.
27. Ibragimovna K. O. Competence of Quantitative Indicators of the Leading Clinical Signs of Cholestasis in Differentiation of its Grades //Indonesian Journal of Innovation Studies. – 2022. – Т. 18.