DATA OF CLINICAL EXAMINATION OF THE ORAL CAVITY AND LABORATORY INDICATORS OF PATIENTS WITH GENERAL SOMATIC PATHOLOGY

Vahitova E., Ghegalina N., Svetlakova E., Zholondziovskiy P., Kotikova A.

Ural state medical university, Ekaterinburg

Annotation. The article deals the clinical manifestations of iron and B12-deficiency anemia in the mouth, correlation with clinical symptoms and indicators of laboratory diagnostics (the general blood test, the general analysis of urine) of these patients.

Keywords: *anemia, iron deficiency, B12 deficiency, mouth, dentistry*

Introduction

Anemia — a group of diseases, a characteristic feature of which is a decrease in the concentration of hemoglobin in the blood. According to WHO data, 1.62 billion people are subject to anemia worldwide, which corresponds to 24.8% of the world's population. The disease at the initial stages can be almost asymptomatic, which prevents the timely diagnosis and the prevention of complications. The oral cavity is the earliest indicator of the appearance of somatic diseases in the body, including anemia. The knowledge and skill of the dentist to find early signs of anemia will help in time to establish the diagnosis and begin treatment, preventing the development of complications of the disease.

The purpose of the study is to identify the characteristic manifestations of anemia in the oral cavity, with which the dentist will be able to diagnose this disease in the early stages.

Materials and research methods

The study was conducted in two stages on the basis of the MBU TsGB № 7. At the first stage, data from the case histories of patients from the therapeutic department with anemia for 2015, 2016 was collected. 234 case histories were processed. We studied the indicators of the general blood test (leukocytes, erythrocytes, hemoglobin, MCV, MCH, platelets and ESR), urine specific gravity, biochemical blood tests (total protein, albumin, bilirubin, glucose, urea creatinine, total cholesterol, ALT, AST, serum iron, OZHSS and C-reactive protein), blood electrolytes (Na, K, Cl). The presence of concomitant pathologies for anemia was also investigated. At the second stage, 16 patients of the therapeutic department were surveyed and examined the oral cavity (average age of the examined group was 59 ± 4.75 years), who were diagnosed with anemia. The questionnaire included questions about bleeding gums while brushing teeth and eating hard foods (for example, green apples), taste disturbance and distortion, unpleasant sensations on the tongue in the form of tingling, burning, and the presence of dry mouth and cracks in the corners of the mouth. Also, each examinee was asked the question "For what reason did you make the first request for medical help?". On examination of the oral cavity, the state of the oral mucosa was assessed, the CPU index was determined. The data were statistically processed in Microsoft Excel and Google forms.

Results

First stage. When studying the case histories, the following forms of anemia were encountered: secondary, iron deficiency, B12-deficient, hypochromic, macrocytic, aplastic, refractory, and anemia of complex genesis. The most common form of anemia is iron deficiency (40%), followed by B12-deficient anemia (10%).

According to the results of the treatment, it turned out that women (56%) are more likely to suffer from anemia than men (44%). Also, persons older than 70 years are more likely to suffer from anemia (43%) than people in the age group of 46–69 (37%) and people under 45 years old (20%).

The average values of blood and urine, obtained after statistical processing of all selected case histories, were compared with the norm [2] and found that the hemoglobin content (54.7±1.91g/l), erythrocytes (2.35±0.13 * 1012 cells/l) and total protein (63.2±1.24 g/l) is below normal, while the ESR indicators (31.95±3.12 mm/h), urea (8.73±1, 37 mmol/l) and C-reactive protein (24.58±5.85 g/l) were higher than normal, other indicators (leukocytes — 6.26±0.68 * 109kl/l; MCV — 79.81±3,61; MCH — 27.33±1.59; platelets — 260.54±23.29 * 109 cells/l; specific gravity of urine — 1014.78±0.77; sodium — 139.35±0.52 mmol/l; potassium 4.56±0.09 mmol/l; chlorine — 107±1.11 mmol/l; albumin — 36.88±1.39 g/l; bilirubin — 16.71±2.62 mmol/l; glucose — 5.8±0.19 mmol/l; creatinine — 92.95±10.08 mmol/l; cholesterol — 4.17±0.85 mmol/l; ALT — 20.64±3.08 U/l; AST — 24.61±2.33 U/l; serum iron — 17.18±2.27 mmol/l; OZHSS — 55.15±4.45 mmol/l) were within the normal range. Low levels of hemoglobin and red blood cells are associated with various disorders of blood formation, depending on the type of anemia, in cases of iron deficiency and folic deficiency anemia, this may be caused by a violation of the absorption of iron and vitamin

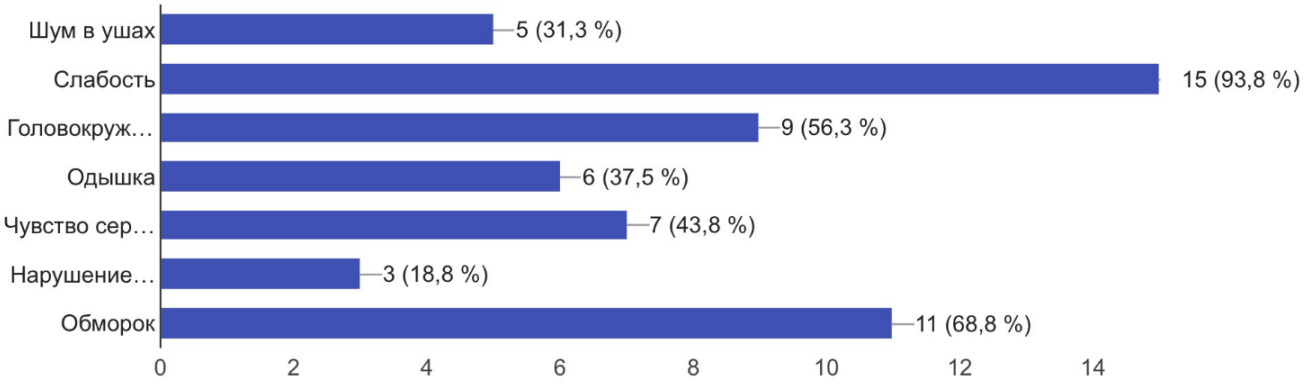

Fig. 1. **The reasons for the first request for medical care**

B12 in the intestines or a lack of these elements in food. The decrease in total protein is due to a decrease in transferrin protein in case of iron deficiency anemia. An increase in ESR and CRP may indicate that anemia is a secondary manifestation of the inflammatory process in the body, in particular, an increase in the concentration of urea may indicate chronic inflammation of the kidneys.

In determining concomitant pathologies, it turned out that anemia is most often accompanied by cardiopulmonary syndrome (41%), then hypertension (30%), gastritis (13%), peptic ulcer disease (9%) and chronic renal failure (7%). A prolonged course of anemia leads to chronic hypoxia of the organs and tissues to which the heart belongs, this leads to the development of heart failure, stagnation in the pulmonary circulation and the development of cardiopulmonary failure. It was not possible to establish the connection between anemia with gastritis, peptic ulcer and hypertension, most likely they are considered as independent common diseases.

Further, a comparison was made of laboratory parameters in individuals with iron deficiency and B12-deficient anemia, since they are the most common among the other forms of anemia. Common to both diseases were lower blood levels of red blood cells, hemoglobin, total protein, PTI, and elevated values of ESR in the blood and chlorine in the urine. Possible reasons for these changes are described above. When B12-deficient anemia, the level of leukocytes and platelets decreases, this can be explained by the fact that the deficiency of vitamin B12 disrupts the formation of these formed elements in the red bone marrow [1, 3]. In case of iron deficiency anemia, the following indices are lowered: MCV is the average red blood cell volume and MCH is the average amount of hemoglobin in the red blood cell; with B12 deficiency anemia, these figures are increased. With iron deficiency anemia, serum iron levels are lowered due to the lack of iron in the body, with B12 deficiency anemia, this figure is within the normal range. The total iron binding capacity of serum with iron deficiency anemia is increased, as the level of serum iron is lowered.

Second phase. As a result of questioning and examination of the oral cavity in 16 patients (11 women, 5 men; mean age 59±4.75 years) with iron deficiency and B12-deficient anemia, the following results were obtained. The reason for seeking medical help was the following complaints - tinnitus, weakness, dizziness, shortness of breath, feeling of palpitations, insomnia and fainting. The frequency of occurrence of these manifestations is indicated on the histogram (fig. 1).

Only 37.5% of respondents noted their appetite as good, and 62.5% ate 3 times a day or more. 56.3% of respondents confirmed violations of taste sensitivity, burning sensation, tingling, tingling on the tongue 62.5%, dryness in the oral cavity noted 68.8%, bleeding gums 31.3%, long non-healing cracks in the corners of the mouth 56.3%. When examining the oral cavity, tooth imprints on the mucous membrane of the cheeks in the area of their closure were found in 6.3% of cases, and no erosions and ulcers in the oral cavity were found. The mean KPU value in patients was 17 ± 2.63. The color of the mucous membrane of the mouth in 31.3% of cases was pale with a whitish tinge, in the others pale pink. At the top of the tongue there was an atrophy of the filiform papillae of the tip of the tongue (18.8%), atrophy of the filiform and mushroom papillae of the tongue (56.3%), atrophy of all papillae only on the front half of the tongue (6.3%), atrophy of the epithelial cover and all papillae of the tongue (18.8%). Also, (25%) patients had deep cracks on the upper surface of the tongue.

Findings

1. In the analysis of blood in patients with anemia, low values of erythrocytes (2.35±0.13 * 1012 cells/l), hemoglobin (54.7±1.91g/l) and total protein (63.2±1.24 g/l) and high values of ESR (31.95±3.12 mm/h) and SRB (24.58±5.85 g/l).
2. Cardiopulmonary syndrome is the most common pathology (41%) encountered in anemia.
3. Patients with anemia quite often note dry mouth (68.8%), burning and tingling of the tongue (62.5%), cracks in the corners of the mouth (56.3%), taste perception perversion (56.3%).
4. When examining the oral cavity in patients with chronic anemia, in some cases there is a pale color with a whitish tinge of mucous (31.3%) and atrophic processes in various areas of the upper surface of the tongue.
5. The average value of the CPU 17±2,63, which indicates low resistance to caries.
6. The most common manifestations of anemia, due to which patients seek medical care are weakness (93.8%), dizziness (56.3%), fainting (11%), feeling of heartbeat (43.8%).

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