

ANEMIA ASSOCIATED WITH POLYDEFICIENCY IN ELDERLY AND SENILE PEOPLE

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ANNOTATION

At present, it is observed that the average survival period of the population increases, the relevance of the problem of polydeficitis (microelementosis) is recognized in the world. Of particular importance is the homeostasis of the most important hematopoietic factors, that is, the problem of storing iron, copper, zinc, etc. during aging. The study evaluated the incidence of polydeficitis in the elderly and the elderly with respect to gender. During the research work, 325 elderly (65-74 years old) and 65 elderly (75-90 years old) were examined. Analysis of gender differences in the elderly in the determination of various forms of anemia showed that these indicators are cultivated differently than kari age group indicators. It was found that iron deficiency in both sexes and iron deficiency in elderly people is more common than in other forms of anemia, which is accompanied by a deficiency of vitamin B12, and in the same group there is a significant difference in sex.

Keywords: microelementlar, polydeficient state, zinc, women, men, iron, B 12

INTRODUCTION

At present, more than 500 million people over the age of 65 live in the world, by 2030 their number reaches 1 billion, by 2050 they reach 2 billion [1,2]. The incidence of anemia in people over 65 years of age exceeds 10%, in people over 85 years of age - around 20%. In 40% of patients older than 65 years treated in stationary conditions, there is anemia in 50-65% - in the outpatient setting. In all third of the population living in the Earth's sphere, there is anemia, a concomitant occurrence of this disease with other pathologies, a decrease in the quality of life and an increase in the risk of death [3,7].

The main causes of anemia, which develops in the elderly, can be a deficiency of iron, vitamin V12 and folic acid (1/3 cases), chronic non-infectious diseases, including kidney pathology (1/3 of patients). In most cases, the cause of anemia in old and old age remains unknown. Without taking into account hemoblastosis, the number of elderly patients whose etiology is unknown with anemia is approximately 25% [4,13]. The anemia of chronic diseases (SCA) is the most common among the world's anemias (the second most common after iron deficiency anemia) and has developed and is accompanied by infectious, rheumatic and tumor diseases, chronic heart failure, chronic kidney disease, diabetes, liver cirrhosis, etc. [8,12].

The presence of anemia leads to a decrease in oxygenation of organs and tissues, a decrease in physical activity, the appearance of weakness and a deterioration in the quality of life. It should be borne in mind that patients with CKD often have a complex pathology - there may be a

violation of the functioning of the kidneys, heart, liver, etc.

Elderly and elderly are the most vulnerable groups with a high risk of developing hypomicroelementosis [5,11,14]. Also, when a deficiency of vital hemopoietic microelements, such as iron, copper, zinc, is noted, as a result of a weakening of the body's compensatory and adaptive capabilities in the process of mixing, this in turn clothing the metabolism of microelements [6,9,10,].

The aim of the study is to evaluate the incidence of polydeficitis in elderly and senile patients with gender-related.

MATERIALS AND METHODS

During the study, we examined 325 elderly (65-74 years old) and 65 elderly people (75-90 years old). All respondents were randomly selected. Of the total number of seniors surveyed, 120 (36.92%) were male and 205 (63.08%) were female; of the elderly, 28 (43.07%) were male and 37 (56.93%) were female.

In estimating the frequency of detection of various forms of anemia among the controlled contingent, a percentage of the total number of subjects ($n = 325$) was deducted, as such a division reflects the actual state of affairs.

DISCUSSION

The results showed that in older men, iron deficiency anemia (IDA) and concomitant anemia with IDA and Vit.V12 deficiency anemia were almost identical (Table 1) and did not differ significantly from each other ($p > 0.05$).

Table 1 The degree of detection of various forms of anemia among the examined elderly

Form of anemia	Elderly individuals			
	Men		Women	
	Aбс	%	Aбс	%
IDA	40	12,3±2,9	75	23,1±2,9* ↑
Anemia accompanied by iron deficiency and vitamin B12 deficiency	37	11,4±2,8	81	24,9±3,0* ↑
Anemia accompanied by iron, copper, zinc, vitamin B12 and folate deficiency	34	10,5±2,7	38	11,7±2,2^ ↔
Anemia accompanied by iron, copper, zinc, vitamin B12, folate and protein deficiency	9	2,8±1,5^	11	3,4±1,3^ ↔
Total	120	36,9±4,4	205	63,1±3,4* ↑

Note: * - Significant differences in the indicators of women from the data of men; - ^ significant difference between forms of anemia; ↑, ↔ - direction of change.

Anemia of mixed etiology due to iron, zinc, copper, vitamin V12, folate and protein deficiency was $2.8 \pm 0.9\%$ ($n = 9$), which is 3.75-4.39 times lower than other anemic parameters ($R < 0.001$). The situation is slightly different in older women, anemia with IDA and IDA + vitamin B12 is almost the same, the differences in the results of the comparative study are not significant, respectively $23.1 \pm 2.3\%$ and 24.9 ± 2.4 , respectively ($R > 0.05$). Other anemias of mixed etiology, as shown in Table 1, were -1.97 and 6.79 times lower than IDA ($p < 0.001$).

It should be noted that polydeficit due to deficiency of iron, zinc, copper, vitamin B12, folate and protein is $2.8 \pm 0.9\%$ ($n = 9$) in women and 3.4 ± 1 in men, respectively, compared to other mixed anemias. Less common in 0% ($n = 11$) cases. Both rates are significantly lower than other forms of anemia shown in Table 1. ($p > 0.05$).

The results of a comparative analysis between men and women show that IDA and concomitant anemias due to iron and vitamin B12 deficiency are more pronounced in women, with a significant difference of 1.88 and 2.18 times, respectively ($p < 0.001$). A comparative analysis between other forms of anemia showed that there were no gender differences in their occurrence ($p > 0.05$). The analysis of the obtained results is shown in Figure 1.

Thus, iron and concomitant iron and vitamin B12 deficiency in both sexes were more common in the elderly than in other forms of anemia, and it was found that there was a significant gender difference in this group. Summarizing all the studied forms of anemia, it should be noted that the incidence of anemia of mixed etiology was 1.71 times higher in women than in men, and amounted to 63.1% and 36.9%, respectively.

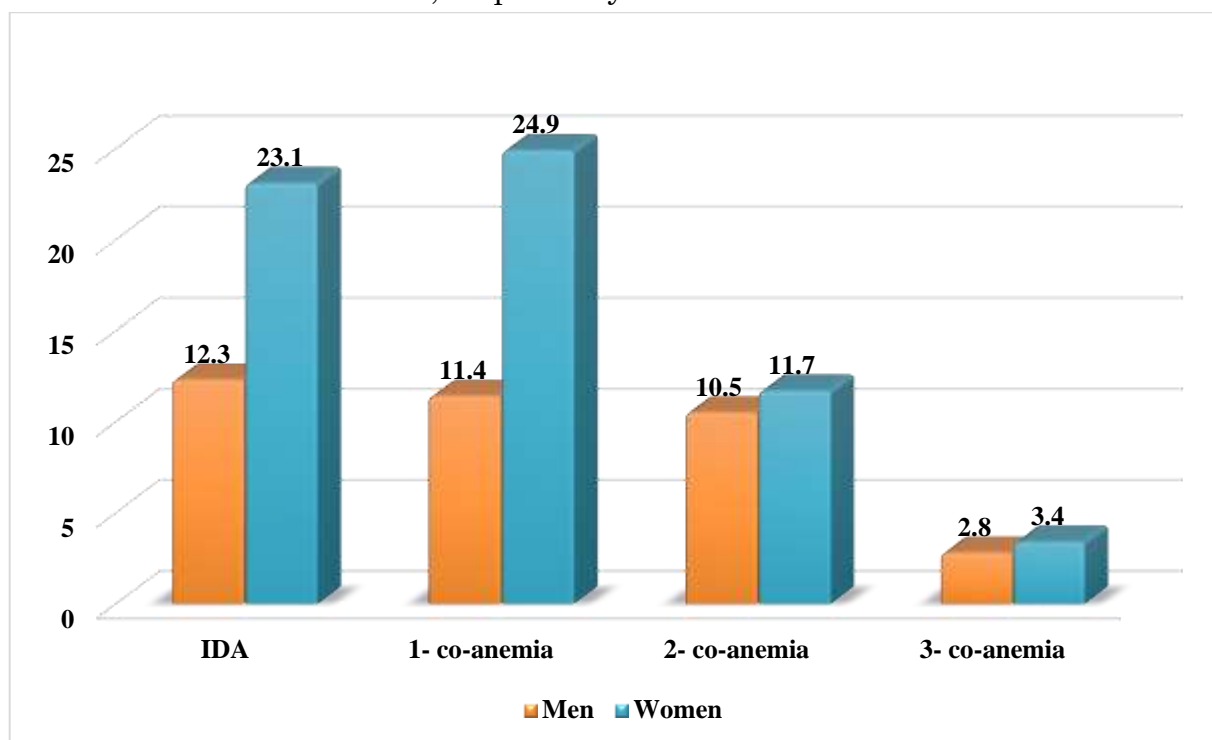


Figure 1. Comparative parameters of the occurrence of forms of anemia in older men and women

Note: first anemia - anemia caused by iron and B 12 deficiency; the second co-anemia is anemia caused by iron, zinc, copper, vitamin B12 and folate deficiency; the third co-anemia is caused by iron, zinc, copper, vitamin B12, folate and protein deficiency.

Results on the frequency of occurrence of various forms of anemia due to deficiency of certain hematopoietic micronutrients, vitamins and proteins among the elderly (75 to 90 years) were studied. As can be seen from Table 2, IDA also predominates in the incidence of anemia observed in the elderly involved in the study, which was detected in $15.4 \pm 4.5\%$ of cases ($n = 10$). The next is anemia, which develops as a result of a combination of iron and vitamin B12 deficiency, and this form of anemia was detected in $13.9 \pm 4.3\%$ of cases ($n = 9$).

Significantly, polydeficit anemia was detected at a much higher frequency among the elderly due to micronutrient, vitamin B12, folate, and protein deficiencies, a pattern that was detected in $10.8 \pm 3.8\%$ of cases ($n = 7$).

Table 2. The incidence of various forms of anemia in the elderly group

The form of anemias	Elderly anemias			
	Men		Women	
	Abs	%	Abs	%
IDA	10	15,4±4,5	18	27,7±5,6* ↑
Anemia accompanied by iron deficiency and vitamin B12 deficiency	9	13,9±4,3	13	20,0±5,0 ↑
Anemia accompanied by iron, copper, zinc, vitamin B12 and folate deficiency	2	3,1±2,1^	3	4,6±2,6^ ↔
Anemia accompanied by iron, copper, zinc, vitamin B12, folate and protein deficiency	7	10,8±3,8	3	4,6±2,6^ ↓
Total	28	43,1±6,1	37	59,6±6,1 ↑

Note: * - Significant differences in the indicators of women from the data of men; - ^ significant difference between forms of anemia; ↑, ↔ - direction of change.

The table shows that the least common type of anemia in the elderly was $3.1 \pm 2.1\%$ ($n = 2$) due to a deficiency of trace elements (iron, zinc, copper), vitamin V12 and folate. This form occurred much less frequently than IDA.

Analysis of gender differences in the elderly in identifying different forms of anemia showed that these indicators were different from those of the older age group. A significant difference was detected only in IDA ($p < 0.05$), but due to the small number of observations ($n = 65$) it was not possible to generate real reliability.

A comparative trend in the intensity of gender differences in forms of anemia in the Kari and elderly age groups is shown in Figure 2.

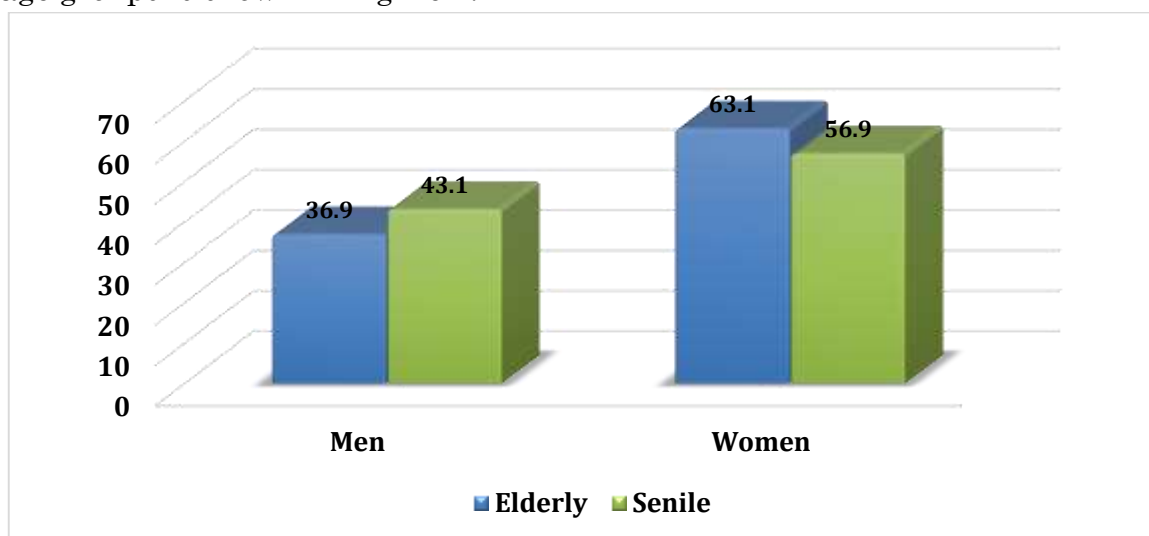


Figure 2. Intensity of gender differences in the occurrence of different forms of anemia in the elderly and the senile, in%.

The most obvious reliable gender differences can be seen among older people and vaguely reliable gender differences in older people.

Thus, the occurrence of different forms of anemia indicates that the trend of changes is the same in the elderly. IDA was significantly 1.8 times more common in women than in men. Concomitant anemia due to iron, zinc, copper, vitamin B12, folate and protein deficiency alone was found to be 2.35 times more common in men than in women. In the elderly, anemia was more common in women than in men - from 56.9% to 43.1%.

The identification of some forms of anemia due to deficiency of various hematopoietic factors for all elderly people of both sexes is shown separately in Table 3. Percentages were calculated separately by age category.

Table 3 Comparative parameters for the detection of different forms of anemia in the elderly and the senile

Form of anemias	Age			
	Elderly patients n=325		Senile patients n=65	
	abs	%	abs	%
IDA	115	35,4±2,6	28	43,1±6,1 ↑
Anemia accompanied by iron deficiency and vitamin B12 deficiency	118	36,3±2,7	22	33,8±5,9 ↔
Anemia accompanied by iron, copper, zinc, vitamin B12 and folate deficiency	72	22,1±2,3 [^]	5	7,7±3,3* ↓
Anemia accompanied by iron, copper, zinc, vitamin B12, folate and protein deficiency	20	6,2±1,3 [^]	10	15,4±4,5* ↑
Total	325	100	65	100

Note: * - Significant differences in the indicators of women from the data of men; - [^] significant difference between forms of anemia; ↑, ↔ - direction of change.

The results showed that the rate of occurrence of different forms of anemia in the elderly and the elderly has the same tendency to change. Anemia due to IDA and iron and vitamin B12 deficiency is common in both age groups and is significantly more common than other forms of anemia ($p < 0.05$).

Anemia due to deficiency of hematopoietic micronutrients (iron, zinc, copper), vitamin B12, folate and protein is more common in the elderly (43.1 compared to $35.4 \pm 2.6\%$ and $6.2 \pm 1.3\%$, respectively). $\pm 6.1\%$ and $15.4 \pm 4.5\%$, $p < 0.05$), the other two groups of mixed anemias in the elderly were $36.1 \pm 2.7\%$ and 33.1 ± 2.5 , respectively, in the elderly ($\pm 2.7\%$) more were detected.

If we compare the incidence rate of mixed transient anemias studied within the age categories, it is 1: 1.02: 0.62: 0.18 in the elderly and 1: 0.78: 0.18: 0.36 in the elderly (Figure 3).

These figures mean that they are one of the principles that need to be taken into account in the planning of treatment and prophylactic measures in geriatric patients, as well as in the financing of medical services.

CONCLUSION

Thus, concomitant nutrient deficiencies in the elderly and the elderly are clinically formed due to various hematopoietic factors - micronutrient, vitamin and protein deficiencies and co-occurring with other chronic non-communicable diseases. treatment and prevention of forms, in turn, require specific approaches.

The incidence of IDA in older women was 1.8 times higher than in men of the same age, and the incidence of anemias of mixed etiology was almost the same. However, polydeficitic anemia with iron, vitamin B 12, copper, zinc and protein deficiency was found to be 2.35 times more common in older men. Compared with those in the control group, this type of anemia was more common in women (43.1% vs. 56.9%).

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