

İç Hastalıkları Kliniğine Yatan Geriatrik Hastaların Anemi Sıklığı ve Nedenlerinin Araştırılması

A study of Anemia Rate and Causes in Hospitalized Geriatric Patients on Medical Wards

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ÖZ

Amaç: Bu araştırmanın amacı iç hastalıkları kliniğinde yatarak tedavi gören 65 yaş üstü geriatrik hasta grubundaki hastalarda anemi sıklığını ve nedenlerini araştırmaktır.

Materyal ve Metot: Tıp Fakültesi İç Hastalıkları Kliniğine 2018 ve 2021 tarihleri arasındaki 3 yıllık sürede yatan 65 yaş üzeri 200 hastanın dosyaları geriye dönük olarak incelenmiştir.

Bulgular: Araştırmaya alınan 200 hastanın 101 (%50,5)'inin kadın, 99 (%49,5)'nin erkeklerden oluşmaktadır. Kadınların yaş ortalamasının 80,76±3,5 ve erkeklerin yaş ortalamasının 79,93±4,2 olduğu saptandı. En yüksek yaş 102 en düşük 66 olarak bulundu. 127 hastada (%63,5) anemi tespit edildi.

Sonuç: İç hastalıkları kliniğine yatış yapılan geriatrik hastaların çoğunluğunda anemi olduğu saptandı. Hastaların kliniğe yatışı yapılırken anemi yönünden değerlendirilmesi ve uygun tedavilerinin yapılması önerilmektedir.

Anahtar Kelimeler: Anemi, geriatrik hasta, iç hastalıkları kliniği

ABSTRACT

Objective: The aim of this study is to look at the rate and causes of anemia in geriatric patients over the age of 65 who are hospitalized on the medical wards.

Materials and Methods: We retrospectively investigated the data of 200 elderly older patients who were hospitalized between 2018 and 2021 in a private university hospital.

Results: We determined that 101 (50.5%) of the patients were females and the rest were males 99 (49.5%). The mean age for females was 80.76±3.5 years and for males was 79.93±4.2 years. The oldest patient was aged 102 years, while the youngest one was 66 years. The rate of anemia was 63.5% (127 patients).

Conclusion: The majority of geriatric patients admitted to the medical wards had anemia. We recommended taking anemia into account in geriatric patients at the time of hospitalization and with appropriate management.

Keywords: Anemia, geriatric patient, medical ward

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INTRODUCTION

The proportion of the older adult population, defined as 65 years and older by the World Health Organization (WHO), is also increasing rapidly in Turkey. The 2020 data of the Turkish Statistical Institute (TUIK) reports that the older adult population constituted 9.5% of the total population in our country.¹ The proportional increase in geriatric individuals also boosts the rate of use and cost of healthcare services.^{2,3}

On the other hand, the WHO defines a hemoglobin value as <12 g/dL in females and <13 g/dL in males as anemia.^{4,5} It is a widespread condition leading to several adverse consequences in the geriatric population. The previous studies in geriatric clinics detected anemia in 61% of hospitalized patients. Besides, anemia in this patient group was found to be associated with decreased physical performance, poor quality of life, depression, and impaired cognitive functions.^{6,7} Moreover, anemia in the older adult population is often associated with many diseases and conditions such as malignancies, bone marrow failure, chronic kidney disease, chronic inflammatory diseases, congestive heart failure, and nutritional disorders.⁸

The National Health and Nutrition Examination Survey-III (NHANES-III) showed the leading cause of anemia in one-third of anemic geriatric patients to be iron deficiency, primarily due to nutritional deficiency, while the remaining two-thirds had anemia of chronic disease and unexplained anemia.⁹ In the national literature in Brazil, the latter rate above even increased to 76.4%.⁸ Yet, limited research interest in this subject led us to explore the prevalence and etiology of anemia in a group of elderly patients hospitalized in a medical.

The aim of this study is to investigate the rate and causes of anemia in geriatric patients over the age of 65 who are hospitalized in the medical department.

MATERIALS AND METHODS

Ethics Committee Approval: Our study was approved by the Istinye University Ethics Committee (Date: 26.05.2021, decision no: 2/2021.K-36). The present study was performed under the 1964 Helsinki Declaration of Good Clinical Practice.

We retrospectively investigated the data of 200 older adult patients who were hospitalized in the medical wards of a private University Hospital between 01.01.2018 and 12.31.2020. We excluded the patients hospitalized in subspecialty units, with a previous cancer diagnosis, acute bleeding, and / or under 65 years. We went through the data of 200 patients after removing the data of repeated hospitalizations. The data from the patient files included preliminary diagnosis of hospitalization, hemogram

values, biochemistry and radiological findings, treatment, consultation notes, length of hospitalization, and discharge notes. We separately evaluated diseases requiring hospitalization and the comorbid conditions of the patients.

Statistics Analysis: We analyzed the data using the SPSS 25 package program. While presenting the data as numbers, percentages, and means, we compared the variables using a t-test. Statistical significance was based on a value of p <0.05 with a 95% confidence interval.

RESULTS

101 (50.5%) of the patients were females and the rest were males 99 (49.5%). The age range was between 66 and 102. The mean age of the patients was 80.25±3.2 years (mean age females=80.76±3.5, males=79.93±4.2 years) (Table 1). There was no statistically significant difference between the ages of the men and women included in the study (p>0.05) (Table 1). years and for males was

Table 1. Findings of age and gender.

	n	Age (Mean±SD)	p
Male	99	79.93±4.2	0.05
Female	101	80.76±3.5	

Regarding anemia by age, anemia was detected in 57 (55.3%) of 103 patients aged 65-80 years and 70 (71.1%) of 97 patients over 80 years and overall anemia rate was 63.5%, implying that the anemia became more prevalent increased with age among the patients (Table 2).

On the other hand, the mean corpuscular volume (MCV) was 76.17 in males and 69.51 in females. Besides, we found the mean hemoglobin (Hb) levels to be 12.60 and 10.73 in male and female patients, respectively. Finally, the mean hematocrit levels were 34% and 32% in male and female patients, respectively (Table 2).

Table 2. Patients' laboratory findings.

	Male (Mean±SD)	Female (Mean±SD)	p
Hemoglobin	12.60±1.51	10.73±1.02	0.05
Mean Corpuscular Volume	76.17±3.4	69.51±2.9	0.05
Hematocrit(average %)	34%	32%	0.05
Anemia by age (65-80 years)	57 (55.3%) of 103 patients		
Anemia by age (over 80 years)	70 (71.1%) of 97 patients		
Overall anemia	63.5% of 200 patients		

The results revealed that 44 patients had iron deficiency anemia, 42 had anemia of chronic disease, 13 had anemia with chronic kidney disease (CKD), 7 had vitamin B12 deficiency anemia, 10 had malignancy-associated anemia, and 11 had anemia with upper and lower gastrointestinal (GI) bleeding (Table 3). When we look at the etiology of anemia patients in the study, it is striking that the numbers of Iron deficiency anemia and Anemia of chronic disease is higher.

Table 3. Findings of anemia etiology.

Anemia Etiology	N (number of the patients)	Percentage (%)
Iron deficiency anemia	44	34.6
Anemia of chronic disease	42	33.1
Anemia with CKD (Chronic Kidney Disease)	13	10.2
Vitamin B12 deficiency anemia	7	5.5
Malignancy-associated anemia	10	7.9
Anemia with gastrointestinal bleeding	11	8.7
Total	127	100

Considering the patients' diagnoses, we determined that the majority of the patients (26.0%) were diagnosed with coronary artery disease (CAD). The second most commonly seen disease was Diabetes mellitus (24%), and this was followed by hypertension (20.5%), chronic obstructive pulmonary disease (15%), chronic kidney disease (14.5%) (Table 4).

Table 4. Patients' diagnoses.

	N(number of the patients)	Percentage(%)
Diabetes mellitus	48	24.0
Hypertension	41	20.5
Chronic Kidney Disease	29	14.5
Coronary Artery Disease	52	26.0
Chronic obstructive pulmonary disease	30	15.0

DISCUSSION AND CONCLUSION

Anemia is a condition increasing morbidity and mortality in the older adult population, especially in inpatients. Yet, the literature hosts only few studies showing the prevalence and etiology of anemia in inpatients aged 65 years and over in hospitalized patients.⁷⁻⁹ We looked at the rate of anemia in hospitalized elderly patients and the mean age in our study was 75.92 and in our retrospective study with 200 patients, the rate of the anemia was 63.5% in geriatric patients hospitalized in the medical wards.

The incidence of anemia is quite variable in studies with older adults. A previous research reported the figures varying between 2.9% and 61% in males and between 3.3% and 41% females depending on the patients' conditions (inpatient, outpatient, or staying in nursing homes).¹⁰ Whilst a study with healthy older adults showed the rate 10.2% in females and 11.0% in males.¹¹ One study found anemia frequency to be 30.5% among 2100 older adults visiting a medical ward in three years. One of higher rate of anemia was reported as 53% by Soni and colleagues¹² yet, this was still lower than our finding (63.5%). In the end, the rate of anemia increases with age, and it is considered an indicator of poor health.

The most common etiological causes of anemia are shown as nutritional deficiency, iron deficiency, vitamin B12 deficiency, folate deficiency, or a combination of these factors. In a study, the nutritional deficiency was the most frequent cause of anemia in healthy older adults.^{11,13} Although increasing interest in nutritional mistakes has contributed to nutritional awareness among older adults, the findings in the study and the literature may be explained by poor eating habits and socioeconomic factors.¹⁴ In the current study, the most common cause of anemia was iron deficiency. In older adults bleeding due to gastritis or ulcers, colon cancer, diverticulum, or angiodysplasia associated with nonsteroidal anti-inflammatory use is among the significant causes of iron deficiency in older adults.¹⁴ Bleeding disorders and some types of cancer may cause iron deficiency as they lead to chronic blood loss. Nutritional disorders, previous gastrointestinal system surgeries, and iron-deficient nutrition can also cause iron deficiency.^{11,15} In some cases, iron deficiency anemia may occur together with other anemia. Ultimately, the cause of iron deficiency anemia in older adults requires in-depth investigation.^{15,16}

In the current study, coroner artery disease was the most common chronic disease accompanying anemia patients. Also, we found that anemia of chronic disease (ACD) was very common. ACD is characterized by chronic infectious diseases (lung abscess, pneumonia, tuberculosis, meningitis, chronic osteomyelitis, chronic fungal infections, AIDS, etc.), chronic inflammation (rheumatoid arthritis, systemic lupus erythematosus, vasculitis, etc.), and malignant tumor (cancer or bone metastasis of cancer).¹⁶⁻¹⁸ It is the type of anemia that older adults often experience. The shortened life span of erythrocytes/hemolysis, decreased iron absorption in the gastrointestinal tract, and reduced bone marrow response to anemia play a role in its pathophysiology.^{12,13} ACD can often develop in older adults depending on many etiological factors. Besides, ACD should not be ignored while the causes and early signs and

symptoms of anemia are investigated through anamnesis and physical examination.^{14,16,19}

Eventually, our study showed that anemia was very common in hospitalized elderly patient. For those patients, anemia was found to be associated with an increased length of hospitalization, increased mortality, and elevated hospital readmission.^{15,19} Unless treated, anemia causes decreased physical activity, myocardial infarction, congestive heart failure, left ventricular hypertrophy, cognitive dysfunction, increased risk of depression, and mortality.^{12,20} As the anemia falsely regarded as a minor problem, it is not treated properly and eventually increases morbidity and mortality in elderly people.²¹ Therefore, an in-depth examination of geriatric patients in terms of anemia and, thus, planning appropriate treatments may facilitate their recovery process.

In conclusion; anemia is very common in hospitalized geriatric population. As the anemia regarded as a minor problem, it is not treated properly and eventually increases morbidity and mortality in elderly people and determining its etiology is deemed important for adopting an appropriate treatment approach. In our study, we found the most common cause of anemia to be iron deficiency. Further studies with larger scale will reveal more aspects of this important issue in elderly people. Since this study is a retrospective study, very few of the patients have tumor markers and protein electrophoresis, and the lack of these parameters are the limitations of our study.

Ethics Committee Approval: Our study was approved by the Istinye University Ethics Committee (Date: 26.05.2021, decision no: 2/2021.K-36). The study was carried out in accordance with the 1964 Helsinki Declaration of Good Clinical Practice.

Conflict of Interest: No conflict of interest was declared by the authors.

Author Contributions: Concept – IG; Materials – IG; Data Collection and/or Processing – IG; Analysis and/ or Interpretation – IG; Writing –IG.

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