

CLINICO-ETIOLOGICAL PROFILE OF ANAEMIA IN ELDERLY WOMENGopal Krishnamurthy S. N¹, Ashwin Kulkarni², Anil Kumar T³¹Specialist Physician, Department of General Medicine, Srirampura Referral Hospital, Bangalore, Karnataka.²Assistant Professor, Department of General Medicine, Ramaiah Medical College, Bangalore, Karnataka.³Professor and HOD, Department of General Medicine, Ramaiah Medical College, Bangalore, Karnataka.**ABSTRACT****BACKGROUND**

Anaemia is a common medical problem seen in all the age groups. Anaemia in elderly population has lot of impact on the quality of life. The causes of anaemia in elderly women is multifactorial. In this study, we tried to find out the clinico-etiological profile of anaemia in elderly women attending outpatient department in a General Hospital in South India.

METHODS

65 women of age of more than 60 years with anaemia (haemoglobin < 12 gm/dL) were included in the study. They were subjected to detailed history taking, clinical examination and investigations to find out the cause of anaemia. The clinical features, peripheral smear findings and the cause of anaemia in this group of patients were studied.

RESULTS

65 patients were included in the study. Most of the patients were in the age group of 60-80 years. Most common symptoms were fatigue, breathlessness on exertion, diffuse aches and pains. Most frequent peripheral smear findings were microcytic hypochromic anaemia and dimorphic anaemia. Iron deficiency accounted for 51% of cases and Vitamin B12 deficiency accounted for 32% cases. In 18% of cases of Iron deficiency anaemia cause was nutritional. Other causes of iron deficiency were gastro-intestinal blood loss due to peptic ulcers, carcinoma stomach and haemorrhoids. 2 patients had carcinoma cervix. 6 patients had chronic kidney disease.

CONCLUSION

The cause of anaemia in elderly women was very diverse. In this study, the most frequent cause was iron deficiency and Vitamin B12 deficiency. Malignancies of gastro-intestinal tract, cervix, endometrium and haematological systems were seen. Hence anaemia in elderly women needs a comprehensive approach and a detailed work up. The comorbidities, polypharmacy and dietary and social aspects are to be taken into consideration while evaluating the cause of anaemia in elderly women.

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BACKGROUND

Anaemia is a common medical condition affecting both men and women across all the age groups. Anaemia is a major health concern among women in the developing countries. In older patients, anaemia of any degree contributes significantly to morbidity and mortality and has a significant effect on the quality of life. Despite its clinical importance, anaemia in the elderly is under-recognized and evidence-based guidelines on its management are lacking.¹ The causes of anaemia in elderly women can be multifactorial. Anaemia is a decrease in the total amount of red blood cell (RBCs) or haemoglobin in the blood² or a lowered ability of the blood to carry oxygen.³ When anaemia develops slowly, the symptoms are often vague and may include feeling tired,

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weakness, shortness of breath or a poor exercise intolerance.⁴ Anaemia is common in the elderly and its prevalence increases with age. Using World Health Organization criteria for anaemia (haemoglobin of less than 12 g per dL (120 g per L) in women and less than 13 g per dL (130 g per L) in men), the prevalence of anaemia in the elderly has been found to range from 8 to 44 percent, with the highest prevalence in men 85 years and older. Based on the WHO definition, studies have estimated that, in people over 65 years, the prevalence of anaemia is 12% in those living in the community, 40% in those admitted to the hospital, and as high as 47% in nursing home residents. All in all, an estimated 17% of those over 65 has been found to be anaemic.⁵⁻⁸ The common causes can be nutritional deficiencies, anaemia of chronic diseases and malignancies. There are very less studies related to anaemia in elderly women. Anaemia in the elderly is particularly relevant as it has a number of serious consequences. Anaemia has been associated with a higher incidence of cardiovascular disease,⁹ cognitive impairment,¹⁰ decreased physical performance and quality of life, and increased risk of falls and fractures.¹¹ Furthermore, presence of anaemia is significantly associated with longer hospital stays,¹² and with an increased risk of mortality, in particular, mortality related to cardiovascular disease. More importantly, anaemia might

be an early sign of a previously undiagnosed malignant disease.¹³ Hence in this study we have tried to identify the clinical features and aetiology of anaemia in elderly women in a tertiary care institute.

METHODS

This study was conducted from June 2018 to December 2018.

Inclusion Criteria

1. Women more than 60 years with anaemia (Haemoglobin<12 gm/dL).

Exclusion Criteria

1. Patients presenting with acute febrile illness.
2. Patients with critical illness getting admitted to ICU.

This study was conducted in Srirampura Referral Hospital, Rajajinagar, and Bangalore. Elderly women (Age more than 60 years) who met the inclusion criteria and exclusion criteria, attending the Outpatient department of General Medicine were included in the study. They were subjected to detailed history taking and clinical investigations like Complete blood count, peripheral smear examination, Reticulocyte count, Coomb’s test, Serum Iron studies, Vitamin B12 levels, Stool for occult blood, Stool for Ova and Cysts, Bone marrow aspiration and Biopsy was done in the selected cases. Upper Gastro-intestinal endoscopy and Colonoscopy was done in the selected cases. Blood urea, Serum creatinine, Liver function tests, Ultrasound abdomen and pelvis were done in all patients. Serum protein electrophoresis was done in patients suspected of multiple myeloma.

RESULTS

65 women aged more than 60 years attending Medicine OPD were included in the study. The following table no-1 shows the age distribution of the patients. 30 patients were in the age group of 60-70 years, 26 patients between 71-80 years, 9 patients were more than 80 years old.

Age	Numbers (%)
60-70 Years	30 (46.15%)
71-80 Years	26 (40%)
>80 Years	9 (13.84%)

Table 1

Sl. No.	Symptom	Number (%)
1.	Fatigue	58 (89%)
2.	Breathlessness	40 (61.5%)
3.	Non-specific aches and pains	38 (58.46%)
4.	Light headedness	35 (53.8%)
5.	Loss of appetite	28 (43%)
6.	Palpitations	10 (15.38%)
7.	Asymptomatic	7 (10.7%)

Table 2. The Presenting Symptoms in Each Cases

Mean haemoglobin was found to be 8 gm/dL (SD+/- 2.6), Mean Total leukocyte count was 6500 cells/dL (SD +/- 2200), Mean Platelet count was 2.10 Lakhs/dL. 20 patients had pancytopenia. Table no-03 shows the peripheral blood picture findings.

Peripheral Smear Findings	Number (%)
1. Microcytic Hypochromic Anaemia	29 (44.6%)
2. Dimorphic Blood Picture	12 (18.4%)
3. Macrocytic Anaemia	09 (13.8%)
4. Normocytic Normochromic Anaemia	10 (15.3%)
5. Atypical Cells and Blasts	04 (6.1%)

Table 3

The cause of anaemia was established in 62 cases. In remaining 3 cases the exact cause could not be found out. Bone marrow was done in ten cases. Table no -04 show the cause of anaemia.

Cause	Number of Patients (%)
1. Nutritional iron deficiency anaemia	20
2. Vitamin B12 deficiency	18
3. Pernicious anaemia	2
4. Chronic kidney disease	6
5. Myelodysplastic syndrome	02
6. Acute myeloid leukemia	01
7. Multiple myeloma	01
8. Carcinoma cervix	02
9. Carcinoma endometrium	01
10. Peptic ulcer disease	05
11. Haemorrhoids	04
12. Cause could not be found	03

Table 4

DISCUSSION

This study was undertaken at a referral hospital in South India. This study shows the cause of anaemia in elderly women. Majority of women were of age between 60-80. In the study it was seen that majority of the patients had Iron deficiency and Vitamin B12 deficiency anaemia. Iron deficiency accounted for 51% of cases and Vitamin B12 deficiency accounted for 32% cases. Among 36 patients who had Iron deficiency, it was found that in 18 patients (50%) could be attributed to nutritional deficiency as no cause of iron deficiency could be found. In rest of the cases iron deficiency was due to chronic blood loss like peptic ulcer disease, haemorrhoids, gynaecological causes like carcinoma cervix and endometrium. It was observed that 32% of the cases had Vitamin B12 deficiency. Many of these patients were vegetarians. 2 patients had pernicious anaemia. Other causes of Vitamin B12 deficiency could be due to drug induced causes like Metformin, Phenytoin intake. The causes of anaemia in elderly women were found to be multifactorial. Still the most common cause of anaemia was nutritional deficiency of Iron and Vitamin B12.

Nutritional anaemia in elderly can be due to poor appetite, polypharmacy, co-existing diseases, psychological causes, family neglect. Causes of anaemia in the elderly are divided into three broad groups: nutritional deficiency, anaemia of chronic disease (ACD) and unexplained anaemia (UA). These groups are not, however, mutually exclusive. In any given patient, several causes may co-exist and may each contribute independently to the anaemia. Nutritional deficiencies represent a treatable subgroup and include lack of iron, vitamin B₁₂ or folate. The most frequent nutritional anaemia is due to iron deficiency, which is characterized by low serum ferritin levels and transferrin saturation.¹⁴ In our study, the causes of anaemia were even due to malignancies like Carcinoma cervix, carcinoma endometrium, multiple myeloma, Myelodysplastic syndromes. Anaemia in elderly can have an adverse impact on the overall health of women. Some patients had atypical symptoms like syncope, non-specific aches and pains. The exact cause of dietary deficiency in elderly women could not be studied. Most frequent cause were multiple co-morbidities and poor appetite, poly-pharmacy in the elderly population, Social and psychological aspects related to family, dental disorders in the elderly. In a study conducted by Douglas et al, the most common cause of anaemia in elderly was anaemia of chronic diseases (30-40%), Iron deficiency anaemia was 15-20%, Post haemorrhage and Vitamin B12 deficiency was 5-10%.⁴ Iron deficiency has a documented prevalence of 4%-7% among North American men and women aged >70, the corresponding prevalence of anaemia resulting from this haematinic deficiency being 2% in this age group, using haemoglobin cut off concentrations of 118 g/l and 124 g/l for female and males respectively.¹⁵ The under investigation of iron deficiency anaemia is exemplified by a study showing that, in one health district, gastrointestinal investigations for the underlying cause of this haematinic deficiency were performed in only 63% of 109 iron deficient patients aged >50¹⁶ In another analysis, comprising 721 iron-deficient subjects aged >50, compiled from seven studies, upper gastrointestinal lesions were documented twice as frequently as those from the lower gastrointestinal tract.¹⁷ Medications may be important contributors to anaemia in the elderly, but the relative contribution of each medication is often unclear in the individual patient because suppression of erythropoiesis may be idiosyncratic and complicated by comorbidities. Metformin and phenytoin are known to cause decrease in absorption of Vitamin B12. Anaemia of the elderly is a challenge and a burden for the individual, the community and health care providers. All healthcare providers should be aware that anaemia impacts a significant group within our societies. It is an entity that lies within our ability to diagnose and treat. A Dutch study of 1016 community-dwelling adults aged 85 years and older found that WHO-defined anaemia was also strongly associated with all-cause mortality, even in those without known comorbidities at the beginning of the study.¹⁸ Anaemia in the elderly is an extremely common problem that is associated with increased mortality and poorer health-related quality of life, regardless of the underlying cause of

the low haemoglobin.¹⁹ Medication and ethanol use are important contributors to anaemia in the elderly, but the relative contribution of each is often unclear in the individual patient because suppression of erythropoiesis may be idiosyncratic and complicated by comorbidities. Similarly, an increased MCV warrants measurement of serum homocysteine and vitamin B₁₂ levels to evaluate for either vitamin B₁₂ or folate deficiency. For borderline vitamin B₁₂ levels (at the lower end of the "normal" range), assessment of methylmalonic acid may confirm tissue-level vitamin B₁₂ deficiency. In normocytic anaemia, initial tests should include determination of serum creatinine and Epo levels. Macrocytic anaemia that cannot be attributed to either drug effect or vitamin B₁₂/folate deficiency should raise the possibility of MDS, but liver disease or alcohol abuse must always be considered as alternative explanations for the macrocytosis.¹⁹

CONCLUSION

The causes of anaemia in elderly women are diverse. In our study, the most frequent cause of anaemia was nutritional iron deficiency anaemia, followed by Vitamin B12 deficiency. However, many patients had other causes like gastrointestinal blood loss, gynaecological malignancies, hematological malignancies and chronic renal failure. Hence a comprehensive approach is required for investigating the cause of anaemia in elderly. The comorbidities, polypharmacy, dietary and social aspects are to be taken into consideration while evaluating the cause of anaemia in elderly women.

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