Original Research Article

Clinicopathological profile of anaemia in geriatric patients

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Abstract

Background: Anaemia is a common problem in both elderly men and women of age greater than 65 years, and in men, the haemoglobin concentration below 13gm/dl and in women below 12 gm/dl respectively.

Aim: To evaluate clinicopathological characteristics of anaemia in elderly patients.

Materials and Methods: This study was a cross sectional study conducted on patients who were above 60 years of age, the males should have haemoglobin levels of less than 13 gm/dl and females should have haemoglobin levels of less than 12 gm/dl.

Results: A total of 200 cases of anaemia were found in elderly patients. In the present study, males (142) were dominant in numbers compared to females (58) which constitute to males were 71% and females were 29%. The mean age of elderly patients was found to be 68.5 years, with maximum patients in 61-71 age groups. The age group of patients ranged from 61-100 years. The cases of normocytic normochromic constituted 99 (49.5%), microcytic hypochromic constituted 40 (20%), normocytic hypochromic constituted 10 (5%), macrocytic constituted 25 (12.5%) and dimorphic constituted 26 (13%). The dominant presentation was considered among which the most common presentation was generalised weakness which constituted to 35% (70) followed by breathlessness which constituted to 27.5% and other presentations such as headache, giddiness, abdominal pain, loss of weight, loss of appetite, diabetes were noted. Radiological findings showed that the bilateral renal disease which constituted to 90 (45%) and chronic kidney disease which constituted to 42 (21%) were the highest.

Conclusion: In geriatric patients, anaemia is a common disease. It leads to severe morbidity and mortality given the age, if anemia is ignored or not investigated properly. Aggressive treatment of anemia in elderly patients can prevent severe morbidity followed by timely detection.

Key words

Clinicopathological profile, Anaemia, Geriatric patients.

Introduction

Anaemia is a common problem in both elderly men and women of age greater than 65 years, and in men, the haemoglobin concentration below 13gm/dl and in women below 12 gm/dl respectively. It is associated with poor quality of life, increased morbidity [1-3]. 164 million elderly who constitute 23.9% of the global population suffer from anaemia. It increases the risk of death by 40% [4]. Anaemia can never be a normal physiological phenomenon as in elderly population, it is considered as age related changes. In geriatric patients, prevalence of anaemia is an ever increasing problem in India. The decrease in oxygen carrying capacity thereby decreases the haemoglobin levels in elderly patients [5]. This study aimed to evaluate clinicopathological characteristics of anaemia in elderly patients.

Materials and methods

This study was a cross sectional study conducted in pathology department. It was conducted over a period of October 2015 to November 2016.

Inclusion criteria

The patients who were above 60 years of age, the males should have hemoglobin levels of less than 13 gm/dl and females should have haemoglobin levels of less than 12 gm/dl.

Exclusion criteria

Patients who were below 60 years of age, and those who had known haematological disorders, liver disorders.

The investigations done were complete blood count, packed cell volume, red blood cell count, red blood cell indices which are mainly mean corpuscular volume (MCV), mean corpuscular haemoglobin (MCH), mean corpuscular haemoglobin concentration (MCHC), Leishmann stain was used to prepare peripheral stains. Other investigations were Iron, vitamin B12, stool and bowel examination and bone marrow examination. Peripheral smear studies were normochromic normocytic anaemia, microcytic hypochromic anaemia and microcytic anaemia. It was categorised as I- normocytic, II- microcytic and III- macrocytic based on mean corpuscular volume and RBC morphology correlated to peripheral smear.

Results

A total of 200 cases of anaemia were found in elderly patients. Mean age of elderly patients was found to be 68.5 years, with maximum patients in 61-71 age group. The age group of patients ranged from 61-100 years. Males (142) were dominant in numbers compared to females (58) which constitute to males were 71% and females were 29% (**Table – 1**).

Table - 1: Demographic Distribution.

Age group	Frequency	Percentage
61-71	102	51
72-81	53	27
82-91	35	17
92-100	10	5
Total	200	100
Sex		
Males	142	71
Females	58	29

Table - 2: Distribution based on type of anaemia.

Type of anaemia	No of cases	Percentage
Normocytic Normochromic	99	49.5%
Microcytic Hypochromic	40	20%
Normocytic Hypochromic	10	5%`
Macrocytic	25	12.5%
Dimorphic	26	13%
Total	200	100

Table - 2 shows that the cases of normocytic normochromic constituted 99 (49.5%), microcytic hypochromic constituted 40 (20%), normocytic hypochromic constituted 10 (5%), macrocytic constituted 25 (12.5%) and dimorphic constituted 26 (13%).

The dominant presentation was considered among which the most common presentation was generalised weakness which constituted to 35% (70) followed by breathlessness which constituted to 27.5% and other presentations such as headache, giddiness, abdominal pain, loss of weight, loss of appetite, diabetes were noted (**Table – 3**).

Table - 3: Distribution based on clinical presentation.

Clinical Presentation	No of cases	Percentage
Generalised Weakness	70	35%
Breathlessness	55	27.5%
Giddiness	20	10%`
Abdomen pain	10	5%
Loss of weight	10	5%
Loss of appetite	10	5%
Headache	10	5%
Diabetes	10	5%

Table - 4: Radiological findings.

Clinical Presentation	No of cases	Percentage
Bilateral renal disease	90	45
Chronic kidney disease	42	21
Simple cortical cysts	20	10
Cirrhosis	10	5
Fatty liver	10	5
Hepatomegaly	17	8.5
Splenomegaly	3	1.5
Malignancy	4	2
Normal	4	2

Radiological findings show that the bilateral renal disease which constituted to 90 (45%) and chronic kidney disease which constituted to 42 (21%) were the highest (**Table – 4**).

Discussion

A total of 200 cases of anaemia were found in elderly patients. In the present study, males (142) were dominant in numbers compared to females (58) which constitute to males were 71% and females were 29%. The mean age of elderly patients was found to be 68.5 years, with maximum patients in 61-71 age groups. The age group of patients ranged from 61-100 years. The cases of normocytic normochromic constituted 99 (49.5%), microcytic hypochromic constituted 40 (20%), normocytic hypochromic constituted 10 (5%), macrocytic constituted 25 (12.5%) and dimorphic constituted 26 (13%). The dominant presentation was considered among which the most common presentation was generalised weakness which constituted to 35% (70) followed by breathlessness which constituted to 27.5% and other presentations such as headache, giddiness, abdominal pain, loss of weight, loss of appetite, diabetes were noted. Radiological findings show that the bilateral renal disease which constituted to 90 (45%) and chronic kidney disease which constituted to 42 (21%) were the highest.

Many studies have been reported which studied about clinicopathological profile of anaemia in elderly patients which were as follows; Wasim M. Khatib, et al. [6], study total of 256 cases of anaemia in geriatric patients were studied . In our study, the majority of patients were male with 138 (53.90%) cases. Females accounted for 118 (46.09%) cases. 110 (42.96%) cases were of Normocytic Normochromic anaemia, indicating the most common type of anaemia in the geriatric age group being Normocytic Normochromic. Anaemia is a common occurrence in geriatric population given the age. Timely detection can definitely prevent severe morbidity. Further studies should be

encouraged for better understanding of this type of anaemia.

Sfurti Mann, et al. [7]; conducted a study on 42 patients (70%) were male and 18 patients (30%) were female. Maximum number of patients, 24 (40%) were in the age group 65-69 years. Out of which 15 (62.5%) were male and 9 (37.5%) were female. Among all the patients (irrespective of age groups and types of anaemia), ACD was found to be most common (41.67%), followed by IDA (35%), MDS (5%), Megaloblastic anaemia (3.34%), myelofibrosis and haemolytic anaemia (3.34% each) and aplastic anaemia (1.67%).

David P. Steensma, et al. [8]; study anaemia signifies an underlying disease and is associated with poor clinical outcomes. In elderly patients, in whom anaemia has a high prevalence (>10%), neither the hemoglobin threshold for concern nor the identity of the anaemia causing disease is easily established. This is an important shortfall, because even mild anaemia can compromise patients' well-being and survival, regardless of the underlying cause. This review discusses definitions of "normal" hemoglobin levels in adults, common causes of anaemia in people aged 65 years and older (e.g., nutritional deficiency, renal insufficiency, inflammatory disorders, and myelodysplastic syndrome), and potential consequences of anaemia in elderly patients (e.g., poorer cognitive status, increased frailty, and an elevated risk of hospitalization and of complications during hospitalization). We also outline a practical initial diagnostic approach that helps determine appropriate treatment, and we weigh therapeutic options in light of new safety concerns regarding erythropoiesis-stimulating agents.

K.G. Prakash, et al. [9]; It is easy to overlook anaemia in the elderly, since such symptoms as fatigue, weakness, or shortness of breath may be attributed to the aging process itself. Although the prevalence of anaemia does increase with age, healthy aging is not usually associated with anaemia. So, anaemia should not be accepted as an inevitable consequence of aging, as a cause (often multifactorial) is identified in about 80% of the elderly patients. The purpose of this cross sectional study was to assess the clinical profile of elderly patients with anaemia and to study characteristic hematological types of anaemia and also to arrive at an appropriate etiological diagnosis. 50 patients aged 60 years and above with Hb% <13 gms% in males, and < 12 gms% in females were enrolled into the study. 64% patients were male and the mean age of patients was 66.65 years. The most common presentation was easy fatigability in 44(88%) patients, followed by dyspnoea in 35(70%) and giddiness in 30 (60%) patients. Etiologically, the most common cause of anaemia in our study was anaemia of chronic inflammation (26%), followed by iron deficiency anaemia (24%) and hematological malignancies (18%), while B12 and Folate deficiency were responsible for 10% of anaemias in the elderly. Morphologically, normocytic anaemia (contributed mainly by diseases of chronic inflammation and hematological malignancies), was the most common type present in 26 (52%) patients, while 16 (32%) had microcytic anaemia and 8 (16%) had macrocytic anaemia with a p-value of 0.001, which was statistically significant. Anaemia in elderly is not due to inevitable consequence of aging. They should be thoroughly investigated to define etiology and then appropriately treated.

Kiran Aithal, et al [10]; anaemia in the elderly is common and increasing as the population ages. In older patients, anaemia of any degree contributes significantly to morbidity and mortality and has a significant effect on the quality of life. The objective is to study the types and causes of anaemia in the elderly. Total of 100 elderly patients of either sex admitted to our hospital with anaemia was evaluated by biochemical, pathological and other relevant investigations to assess the type and cause of anaemia. 100 patients were included in the study, of which 76 were male and 24 were females.70 patients were between the ages of 60 to 69 years, 23 patients between 70 to 79 years, 7 patients

above 80 years. The major pattern of anaemia among patients was normocytic (42%) followed by microcytic (33%) followed by macrocytic/ dimorphic (22%), 3 patients had AML on peripheral smear. Out of 33 Patients with microcytic anaemia 16 had anaemia due to chronic blood loss, 7 anaemia of chronic disease, 5 nutritional deficiencies. Out of 42 normocytic anaemia patients 33 had anaemia of chronic disease, 7 acute blood losses, 1 patient each of MDS and Aplastic anaemia. Out of 22 macrocytic/ dimorphic anaemias 16 patients had B 12 and folate deficiency and 6 patients had alcoholic liver disease. Normocytic anaemia is the commonest pattern of anaemia (42%) in elderly and anaemia of chronic disease the commonest cause (40%) in our study. Anaemia is one of the most common morbidity/ co morbidity in elderly. In our study normocytic anaemia was the commonest pattern of anaemia in which chronic illness was the commonest etiology. A systematic approach for diagnosing the etiology of anaemia in elderly patients is essential, as treatment of anaemia goes a long way in improving the overall outcome and quality of life.

Conclusion

In geriatric patients, anaemia is a common disease. It leads to severe morbidity and mortality given the age, if anaemia is ignored or not investigated properly. Aggressive treatment of anaemia in elderly patients can prevent severe morbidity followed by timely detection.

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