



STUDY OF ANEMIA IN GERIATRIC POPULATION: A HOSPITAL-BASED STUDY

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ABSTRACT

Introduction: Anemia in the elderly can have tremendous impact on their health and functionality because of its high prevalence and associated significant morbidity and mortality.

Aim: The objectives of this study were to estimate the pattern of anemia in the elderly patients.

Materials and Methods: This was a hospital-based prospective observational study, conducted in patients aged 60 years and above at Shaheed Nirmal Mahato Medical College, Dhanbad, Jharkhand from January 2019 to December 2020. Detailed clinical history and haematological examination of patients were noted.

Results: Out of 146 patients, age ranged from 60 to 86 years with majority (57.53%) belonging to the age group of 60-69 years. The mean age was found to be 68.60. The male to female ratio was 1.5:1. The mean value of hemoglobin was 8.9 gm/dl (range of 4.9–12.8 gm/dl). On the basis of RBC indices and peripheral blood smear it was seen that normocytic anemia was the most common type, seen in 65.8% of patients followed by microcytic anemia (23.3%), macrocytic anemia (7.5%) and dimorphic 3.4%. Majority of patients presented with moderate anaemia (60.9%, 89 cases) followed by (37.7%, 55 cases) of severe anaemia and only 2 patients (1.4%) had mild anaemia.

Conclusion: Diagnosis of anemia in geriatric age group and to know its pattern helps in etiological diagnosis and management.

KEYWORDS : Anemia, Geriatric patients.

INTRODUCTION:

According to world health organization criteria, level of hemoglobin less than 13 g/dl in case of males and less than 12 g/dl in females are considered as anemic.¹ Anemia is defined as a reduction in the number of circulating red blood cells, packed cell volume or the hemoglobin concentration in the blood according to age, sex and geographical location. In geriatric population, anemia is one of the commonest problem, and is associated with severe complications including increased risk of cardiovascular disease, cognitive dysfunction, reduced bone density and longer periods of hospitalization for elective procedures. It really affects the quality of life and ultimately affects the mortality in geriatrics age group.^{2,3,4,5,6} In this age group usually patients present with common symptoms like fatigue, weakness and shortness of breath which may be attributed to the aging process itself, that's why in geriatric age group anemia usually gets ignored. The epidemiology of anemia and aging, in general, is challenging because of increased heterogeneity in the distribution of risk factors with advancing age. Given that anemia is a multifactorial condition, the increased comorbidity in older adults makes it difficult to establish whether anemia is a marker of disease burden or a mediator in the causal pathway leading to adverse events.⁷

More than two-third of anemia cases in the elderly can be attributed to two major causes: (1) Nutritional deficiencies and (2) anemia of chronic diseases.⁸ Although many anemic elderly patients can be diagnosed with nutritional deficiency, anemia of chronic inflammation, or comorbid diseases that explain their decreased hematocrit, the etiology of anemia in a significant fraction remains obscure.⁹

The reported prevalence of anemia in the elderly is 2.9%–51% and correlates with advanced age and other related conditions, including iron deficiency, inflammatory conditions and malignancy. Anemia worsens the prognosis in elderly patients with cardiovascular and other chronic illnesses.¹⁰ Studies have reported a survival benefit with the treatment of geriatric anemia.

MATERIALS AND METHODS:

A hospital based observational study of 146 patients was carried out on patients aged 60 years and above (either sex) from January 2019 to December 2020. World Health Organization (WHO) criteria, hemoglobin values less than 12 g/dl in women and less than 13 g/dl in men, were used to define anemia. We excluded patients who had received a blood transfusion during the last 12 weeks and patients who had undergone major surgical procedure in the past 3 months. A complete general physical examination and systemic review of the patients was undertaken.

Detailed laboratory studies of haemoglobin and diagnostic tests were done to fix the patterns of anaemia which included RBC indices and further correlated by peripheral smear. Microcytic anaemia was defined as MCV below 80 fl, normocytic as MCV between 80 and 100 fl and macrocytic anaemia by an MCV above 100 fl. Dimorphic anaemia were suspected when RDW was more than its normal range (11–15%) and then correlated by peripheral smear.

The following hematological investigations were carried out for all patients - Hb, Total Leucocyte Count (TLC), Differential Leucocyte Count (DLC), Erythrocytic Sedimentation Rate (ESR), Platelet Count, Mean Corpuscular Volume (MCV), Mean Corpuscular Hemoglobin Concentration (MCHC), Mean Corpuscular Hemoglobin (MCH), Packed Cell Volume (PCV), cell morphology, i.e. cell size, hemoglobin content, anisocytosis, poikilocytosis, and polychromasia with peripheral smear for blood picture.

RESULTS:

In the present study, age of the patients ranged from 60 to 86 years with majority (57.53%) belonging to the age group of 60-69 years. The mean age was found to be 68.60. The male to female ratio was 1.5:1.

The mean value of hemoglobin was 8.9 gm/dl (range of 4.9–12.8 gm/dl). Age groups of 80 years and above had lower mean hemoglobin (7.8 gm/dl).

On the basis of RBC indices and peripheral blood smear it was seen that normocytic anaemia was the most common type, seen in 65.8% of patients followed by microcytic anemia (23.3%), macrocytic anemia (7.5%) and dimorphic 3.4%.

We found that majority of patients presented with moderate anaemia (60.9%, 89 cases) followed by (37.7%, 55 cases) of severe anaemia and only 2 patients (1.4%) had mild anaemia.

Table 1

Patterns of Anaemia	Numbers	Percentage
Normocytic Normochromic	76	52.1
Microcytic Hypochromic	34	23.3
Normocytic Hypochromic	20	13.7
Macrocytic	11	7.5
Dimorphic	5	3.4
Total	146	100

Table 2

Age Groups (Years)	Male (%)	Female (%)	Total (%)
60-69	49 (58.33%)	35 (41.67%)	84 (57.53%)
70-79	28 (65.11%)	15 (34.89%)	43 (29.45%)
80-86	11 (57.89%)	8 (42.11%)	19 (13.02%)
Total	88 (60.27%)	58 (39.73%)	146 (100%)

DISCUSSION:

In this study we found that majority of patients were in the age group of 60-69 years followed by 70-79 years. The mean age was 68.60 years. These are similar to the studies by Sudarshan B.P et al¹¹, Joshi et al¹², Bhasin et al¹⁴, Vijai tilak et al¹³ and Shrivastava et al¹⁵.

In present study, there was male preponderance with the ratio of 1.5:1. These findings are in accordance with the studies by Joshi et al¹², Bhasin et al¹⁴, Vijai tilak et al¹³, Shrivastava et al¹⁵ and Prakash et al¹⁶.

Current study showed that majority of elderly patients had moderate anaemia, constituting 60.9%. These showed that hospital visits of elderly patients with mild anaemia was less in comparison to other forms. This was similar to study by Joshi et al¹².

Normocytic, normochromic anaemia was the commonest morphological pattern with 52.1%, 76 cases. This was similar to studies by Joshi et al¹², Vijai tilak et al¹³, Bhasin et al¹⁴ and Shrivastava et al¹⁵.

CONCLUSION:

Anaemia in elderly is still an underreported and challenging situation that needs a systematic approach for proper diagnosis, evaluation and management.

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