Evaluation of clinical profile of anaemia in elderly patients admitted at a tertiary care center: A cross sectional study

Suresh Patil[1], Gaurav Verma[2*]

[1,2]Assistant Professor, Department of Medicine, SMBT Institute of Medical Sciences and Research Centre, Dhamangoan Nashik, INDIA.
Email: drgauravrtk@rediffmail.com

Abstract

Background: Anaemia is one of the most important public health problem in developing countries like India, and is more prevalent in older population. Anaemia is often overlooked in elderly patients, despite being evident that physical and physiological decline is associated with low haemoglobin levels. **Materials and Methods:** An observational was conducted on 200 elderly patients of both sexes aged more than 60 years, admitted to wards of general medicine at SMBT IMSRC Nasik. A detailed history, through clinical examination and relevant blood investigations such as peripheral smear and biochemical investigations were done in all patients. Morphological pattern of anaemia was classified based on red cell indices and peripheral smear. From preliminary investigation, further studies were planned according to the probable cause of anaemia. The severity of anaemia was graded according to the WHO classification. **Results:** Among 200 patients, 112 were male patients and 88 were females. Patient's age ranged from 60- 85years. The most common type of morphological anaemia among elderly patients was found to be normocytic anaemia followed by microcytic anaemia. Anaemia of chronic disease was found to be the most common etiological type of anaemia followed by iron deficiency anaemia, vitamin B12 deficiency and anaemia due to acute blood loss. **Conclusion:** Anaemia in elderly population is a common problem and it is usually underdiagnosed, so a systematic approach in diagnosis and evaluation of anaemia in elderly population helps in better management and improve the quality of life of the elderly persons.
Keywords: Elderly, Anaemia, Microcytic, Dimorphic

*__Address for Correspondence:__
Dr Gaurav Verma, Assistant Professor, Department of Medicine, SMBT Institute of Medical Sciences and Research Centre, Dhamangoan Nashik
Email: drgauravrtk@rediffmail.com

INTRODUCTION

Anaemia is a common condition among elderly, and it is a significant risk factor for increased morbidity and mortality, reducing not only functional capacity and mobility but also the quality of life.[1] National Programme for Health Care of Elderly defines an elderly as a person above the age of 60 years. According to WHO, anaemia is defined as haemoglobin concentration less than 13 g/dL in males and less than 12 g/dL in females.[2] Even though the prevalence of anaemia does increase with age, normal healthy aging is not usually associated with anaemia. Anaemia is usually underdiagnosed in elderly patients as the symptoms like easy fatigability, generalised weakness or shortness of breath may be attributed to the normal aging process. So, anaemia in elderly should be promptly evaluated and treat potentially curable conditions without any delay to decrease the mortality and morbidity. The third National Health and Nutrition Examination survey conducted one of the most comprehensive study of geriatric anaemia in the total US population (1988-1994) which revealed the prevalence of anaemia as 11% in men and 10.2% in women aged 65 years and older.[3] The prevalence of anaemia increased significantly with age, up to 26.1% in men and 20.1% in women aged 85 years and over. Approximately one-third of elderly patients were found to have nutritional anaemia, one-third of the

population had anaemia of chronic disease, and the remaining one-third remained unexplained. Hospital based observational studies from India had shown the prevalence rate of anaemia varying from 37.8% to 71%5.[4,5,6] This variability is related to some factors, including the setting of the study, the health status of the subject population, and the criteria used to define anaemia. Both population-based and hospital-based studies had shown anaemia of chronic disease and nutritional anaemia as the commonest causes of anaemia in elderly. Other uncommon causes of anaemia include thalassemia minor, hereditary spherocytosis, autoimmune haemolytic anaemia, multiple myeloma, and hypothyroidism and myelodysplastic syndrome. Anaemia in old age is unique; its diagnosis poses a challenge as there are innumerable presentations of anaemia which can be easily overlooked. The aetiology of anaemia in elderly differs sufficiently from younger adults to warrant considering it as a distinct entity. The etiological cause of anaemia in elderly persons may be complicated by polypharmacy and comorbidities, which are particularly common in them. Despite the high prevalence of anaemia in the elderly and the increasing size of the geriatric population, only a few studies had examined the aetiology and effects of anaemia on elderly patients. The present study was done to study the clinical profile and aetiology of anaemia in elderly more than 60 years of age at a tertiary care centre.

MATERIALS AND METHODS

The study was conducted in all consecutive elderly patients admitted in the Department of Medicine, Medical teaching hospital of western Maharashtra over one year period from January 2017, IEC approval sought prior to initiation of the study. All patients aged 60 years and above hospitalfrom with clinical features of anaemia and Hb% < 13gms% in males, and < 12 gms% in female.

Inclusion Criteria: Patients aged 60 years and above fulfilling the WHO criteria of anaemia haemoglobin of less than 13gm/dl in males and less than 12 gm/dl in females [2] and who gave written informed consent.

Exclusion Criteria: a. All patients who has received blood transfusion inthe last 3 months. b. Patients who were started on treatment with Iron supplements. c. Patients who didn't give consent for the study.

A total 160 patients who fulfilled the inclusion criteria were the source material for this study. A detailed informed consent was taken from all participants. A detailed history regarding the presenting complaints with duration of symptoms was taken, and a thorough clinical examination was done in all the patients. Symptom analysis was done along with the analysis of underlying morbid conditions, dietary habits and medication usage.

Haematological investigations including peripheral smear and biochemical investigations were done in all patients. The haematological investigations were carried: complete hemogram with peripheral smear, iron studies, vitamin B12 levels and folate levels. Serum ferritin levels were used to differentiate between iron deficiency anaemia and anaemia of chronic disease in addition to MCV and peripheral smear, renal function tests, blood sugar, liver function test, Urine routine, thyroid profile, Chest X-ray, ECG, USG – Abdomen, Stools for ova and cyst and occult blood in stools,

Data Analysis: Descriptive statistics was used to calculate the frequency, mean, and standard deviation. Microsoft word and excel have been used to generate the tables and figures.

RESULTS

In our study of 160 elderly patients, age of patients ranged from 60 to 85 years. 98 patients were males and 62 patients were females. 110 patients were between the age group of 60 to 69 years, 30 patients between age group of 70 to 79 years and 20 patients above 80 years of age
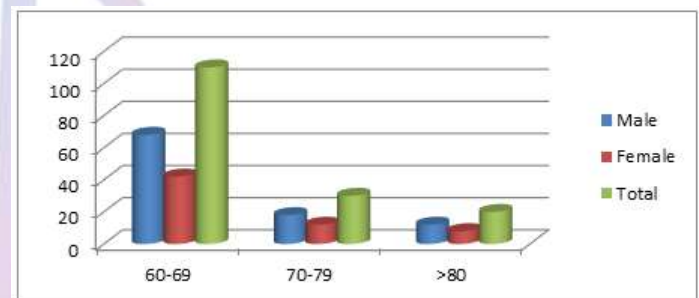

Figure 1: Age and sex distribution of study population

In our study The most common type of anaemia among elderly patients was found to normoocytic anaemia 55%, followed by 38% of patients had micromocytic anaemia and about 7% had macrocytic anaemia.
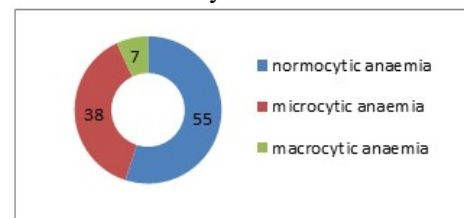

Figure 2: Pattern of Anaemia based on peripheral smear

Anaemia of chronic disease was found to be the most common etiological type of anaemia seen in 49.05% patients (Fig3). Iron deficiency anaemia was found in 19.5% patients. Anaemia due to vitamin B12 deficiency was seen in 18.4% patients while Anaemia due to acute blood loss was seen in 12.6% patients.
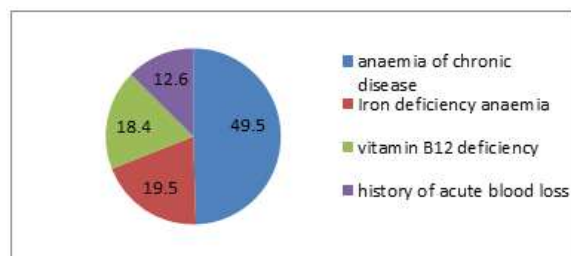
Figure 3: Etiology of Anaemia.

In 55 patients with normocytic anaemia, 28 patients had anaemia had history chronic blood loss, 15 patients had anaemia of chronic disease, 12 patients were due to nutritional deficiencies. Most common cause of acute blood loss was found to be upper GI bleed from a gastric ulcer and

variceal bleeding. Three patients were found to have pancytopenia on peripheral smear.

DISCUSSION

As per 2011 population census of India, there are nearly 104 million elderly persons aged 60 years or above in our country, which constitute 8.6% of total population of India. Anaemia in elderly population has been associated with an increased risk of cardiovascular diseases,[7] neurocognitive disturbences,[8] decreased quality of life, and increased incidence of falls and fractures. In our study age group and sex distribution matches with study done by Prakash *et al.*[9], the male patients were 64%, while 52% males were there in the study of Bhasin *et al.*[6] Tilak *et al.* reported male predominance with M:F ratio of 2.1:1. Majority of our patients fall in the age group of 60-65 years (69%). Our findings were similar to those reported by Prakash *et al.* (54%).[9] Morphological classification of anemia revealed that majority of our patients had normocytic anemia (55%) followed microcytic anemia (38%) and macrocytic anemia (7%). Prakash *et al.*, Bhasin *et al.*, Shrivastava *et al.* and Tilak *et al.* also reported normocytic anemia as the most common type of anemia morphologically in their study. We also reported macrocytic anemia as the least common type of anemia morphologically, however our study is in discordance with the study of Tilak et at. who reported microcytic anemia as the least common type of anemia morphologically.

CONCLUSION

Keeping in mind the progressively increasing number of elderly population, an extensive evaluation of anemia in these population is essential so as to make an early diagnosis of potentially treatable cause of anemia, so that elderly population remain considered as a blessing on our society and they should not be treated as burden by the society. In our study we found normocytic anemia as the most common type of anemia morphologically. Thus prevention as well as early diagnosis of these chronic disease helps us in eliminating increased incidence of anemia in elderly population. However our sample size is small and an extensive work on this with increased number of patients are required to further augment the learning of anemia profiles in elderly patients.

REFERENCES

1. Ania Lafuente BJ, Fernandez-Burriel Tercero M,Suarez Almenara JL, et al. Anaemia and functional capacity at admission in a geriatric home. An Med Interna. 2001; 18(1): 9-12.
2. World Health Organisation. Nutritional anaemias. Report of a WHO scientific group. World Health Organ Tech Rep Ser. 1968; 405:1-40.
3. Guralnik JM, Ershler WB, Schrier SL, et al. Anaemia in the elderly: a public health crisis in hematology. Hematology Am Soc Hematol Educ.2005: 528-32.
4. Kaur H, Piplani S, Madan M, Paul M, Rao SG.Prevalence of anaemia and micronutrient deficiencyin elderly. Int J Med and Dent Sci. 2014; 3(1): 296-302.
5. Shrivastava SR, Hippargi SB, Ambali AP, et al.Patterns of Anaemia in Geriatric Age Group.JKIMSU. 2013; 2(1):77-81.
6. Bhasin A, Rao MY, Characteristics of anaemia in elderly: A Hospital based study in South India. Indian Journal of Hematology and blood transfusion.2011; 27(1):26-32.
7. S, Hemmelgarn BR. Impact of anemia on hospitalization and mortality in older adults. Blood. 2006 May 15;107(10):3841-6.
8. Denny SD, Kuchibhatla MN, Cohen HJ. Impact of anemia on mortality, cognition, and function in community-dwelling elderly. The American journal ofmedicine. 2006 Apr 30;119(4):327-34.
9. Praksh KG, Devendrappa KR, Madhukumar MH, Priyashree R, Avinash BH. Clinical profile of anemia in elderly: a cross sectional study from a tertiary care centre. Sch J App Med Sci 2015;3:1266-70.
10. Tilak V, Rani D, Gambhir IS. Characteristic of geriatric anemia in and around Varanasi: a hospital-based study. Indian J Prev Soc Med 2013;44:93-101.

Source of Support: None Declared
Conflict of Interest: None Declared