



A cross sectional study to evaluate prevalence of different grades of Anaemia in hospitalized elderly.

KEYWORDS

elderly, anemia, grades, geriatric

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ABSTRACT

The world population is ageing. Thus with increase of life span Geriatric Medicine is now getting more attention. Age is also associated with compromised hematopoietic reserve and consequently with increase susceptibility to anemia in the presence of an underlying disorder. Total of 120 patients admitted to ward were part of the study. The anemic patients were identified based on Complete blood counts reading of the hemoglobin value and classified according to anemia workup profile. Results and Interpretation: Out of total 120 patients, 36 (30%) patients were found anemic, with 20 (30.7%) males and 16 (29.09%) females. The age & sex distribution along with different grades of anemia was analyzed for results. An important finding presented in our study is that anemia in old age appears to be highly prevalent in both males and females. The findings of the present study showed, that mild anemia is common and also severe anemia is frequently common in the hospitalized elderly.

INTRODUCTION

The world population is ageing; in 2000 there were 600million people aged 60 or over, and it is estimated that this figure will double by 2025, and more than triple to 2 billion by 2050. Increasing elderly population has drawn attention to number of age related health conditions and healthcare requirements. Thus with increase of life span Geriatric Medicine is now getting more attention. Age related declines in gastrointestinal and bone marrow functional reserve have been found to occur in elderly. The elderly have decreased physical activity, changed dietary pattern and in developing countries, lowered food supply due to socio economic factors. This makes the elderly more prone to develop anemia. Age is also associated with compromised hematopoietic reserve and consequently with increase susceptibility to anemia in the presence of an underlying disorder.

Anemia is defined as a reduction in blood hemoglobin (Hb) or red blood cell (RBC) mass concentration resulting in a decrease in the oxygen-carrying capacity of the blood. World Health Organization (WHO) criteria for the diagnosis of anemia, although universally used, are considered to a certain extent arbitrary as they are based on few data and do not account for significant ethnic differences. There is often an impression that, there is anaemia of senescence and mild anaemia especially likely to reflect a physiological rather than pathological process.

There is paucity of studies on anemia in elderly in India. Anemia is common in elderly and its prevalence increases with age and sharply increases after 75years of age. Due to this demographic change, it becomes increasingly important to highlight common medical problems in older people, especially if their extent and potential significance are not generally recognised. We suspected that anaemia might be one such problem. Thus this study was conducted based on elderly population above 50years of age in tertiary care hospital in Mumbai to estimate the prevalence of anemia and to assess the different grades of anemia in the elderly population.

Material & Methods:

The present study is population-based observational study in which Institutionalised patient in tertiary care hospital above age of 50 years of both sexes were enrolled. Total of one

hundred and twenty patients admitted to ward were part of the study with due consent. Grades of AnaemiaHb Criteria*Actual Number of patientsPercentage# Mild10gm%- cut off1438.88%Moderate7-10gm-%10-27.7-7%S-eve-re-<7-gm-%1233.33%All the study subjects then underwent detailed clinical history taking followed by thorough general examination and systemic examination. Vital parameters like pulse, blood pressure, respiratory rate were also recorded. The anaemic patients were identified based on the reading of the hemoglobin value and classified according to severity. Several associated features were studied later such as age and sex distribution, frequency of different grades of anaemia.

Complete blood counts were obtained using a Coulter automated cell counter. When a hemoglobinconcentration was below WHO reference criteria for anemia, following laboratory investigations were done: serum iron, Serum ferritin and total iron binding capacity (TIBC), transferrin saturation, vitamin B₁₂ and when necessary bone marrow studies.

Anemia was defined according to the WHO criteria¹⁰ as a hemoglobinconcentration lower than 12 g/dL in women and 13 g/dL in men and classified into 3 types as: mild, moderate and severe anemia.

Subsequently whole data was reviewed, assessed to classify anemias according to different grades.

RESULTS:

A total of one hundred and twenty patients admitted to ward who met the inclusion criteria were considered in the study. Of these 36 (30%) patients were anemic, with 20 (30.7%) males and 16 (29.09%) females.

Classification of anemia depending on severity:

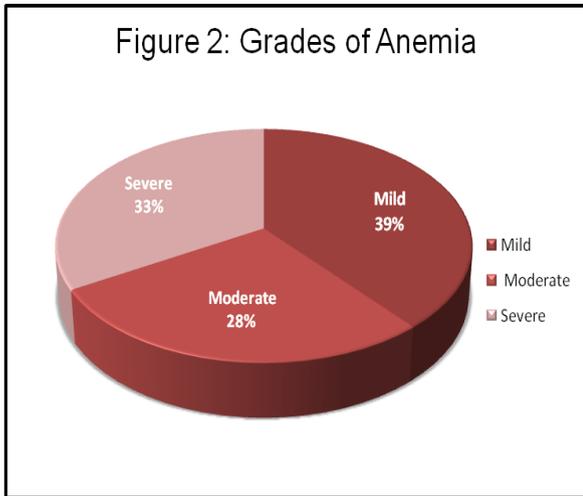
Haemoglobin threshold is also used to classify anaemia into 3 grades as mild, moderate and severe anaemia. Many patients had mild anaemia but relative frequency of severe anaemia was also more as compared to mild anaemia. Relative distribution of anaemia is given the table no. 1 and figure no. 1 and 2.

Table 1: Grades of Anemia

Grades of Anaemia	Hb Criteria*	Actual Number of patients	Percentage [#]
Mild	10gm%- cut off	14	38.88%
Moderate	7-10gm%	10	27.77%
Severe	<7gm%	12	33.33%

*WHO # Percentage of grade of anaemia amongst total anaemic patients.

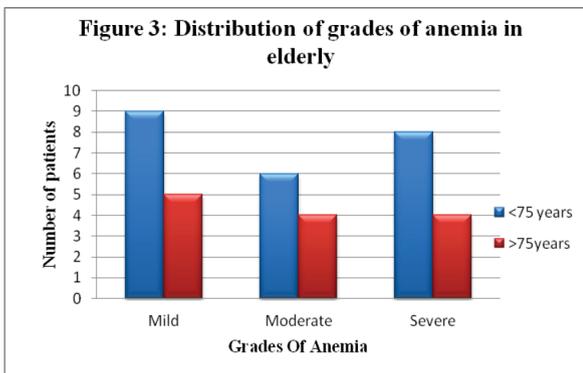
Figure 2: Grades of Anemia



Classification of anemia depending on severity along with Age: Prevalence of anemia was compared in young old (50 to <75years) and old old (75years) age group. Prevalence was seen to have increased only slightly in the old old age group (>75yr). There were total 38 subjects above the age of 75years, out of which 13 (34.21%) patients were found to be anemic whereas below the age of 75years, 23 (28.04%) patients were found to be anemic, out of total 82 subjects.

Relative distributions of different grades of Anaemia were studied in two age groups as shown in figure 3.

Figure 3: Distribution of grades of anemia in elderly



DISCUSSION

Anemia is a global public health problem affecting both developing and developed countries. The prevalence of anemia among the elderly as reported in Indian cross sectional studies varies between 6 to 30% among males and 10 to 20% among females. In the past, anemia in the elderly has been considered a part of the normal physiologic process. At the present time, however, anemia in the elderly is considered a type of pathologic condition caused by underlying diseases. Thus, anemia is no longer viewed as an accompaniment of aging and should not be attributed to natural senescence.

Anemia in the elderly is an extremely common problem that is associated with increased mortality, poorer health related quality of life and a number of adverse outcomes regardless of the underlying cause of the low hemoglobin.

Grades of anemia:

The findings of the present study show, many of the elderly patients had mild (38.8%) as well as severe anaemia (33.3%) as compared to previous studies by Mauro Tettamanti et al, S Sahadevan et al and Gaskell et al showing mostly mild anemias. Our data indicates that those from institutional background tend to present with severe anaemia. The reason behind this in Indian setup could be, due to relative negligence of patients towards disease in lower economic strata until it became severe enough to hamper routine life. Thus many cases presented directly with severe anemia.

In contrast with our finding, result of S Sahadevan et al also showed maximum cases of mild anaemia (38), followed by moderate (17) and severe anemia (9) among 54 patients. Another point in their study suggests that, evaluation of anaemia in the elderly even when it is mild can be useful because work up for mild anaemia determines a cause in almost 50% of the time which can be easily treatable.

Similarly Gaskell et al suggested that in most cases the anaemia is mild because rapid fall in prevalence of anaemia with definitions using lower thresholds (such as 110 g/L) was noted. Older people (mean age 77 years) with anaemia suffered higher mortality (57%) than those without anaemia (39%) when followed up for almost 12 years.

Emma Riva et al (2009) did prospective population-based study specifically aimed at thoroughly investigating the impact of mild grade anemia in the elderly. Risks of mortality and hospitalization were significantly higher among mildly anemic elderly subjects compared with non-anemic ones and the risk of mortality was found to be associated with mild anaemia of chronic disease.

We found a high prevalence of anaemia in a geriatric population upon admission to the hospital. However, the too easy acceptance of mild anemia as a physiologic phenomenon in the elderly runs the risk of ignoring a potentially valuable, early clue to an important underlying disorder.

The aim of this study was to provide new insights into the impact and grades of anemia in older individuals in the general population. Since the prevalence of anemia is highest in the highest age groups, further studies are needed to elucidate the specific causes of anemia in these age groups. As current diagnostic and therapeutic guidelines are based on the classic notions of the etiology of anemia, the guidelines on anemia may have to be revisited for the highest age groups in the years to follow.

CONCLUSIONS

An important finding presented in our study is that anemia in old age appears to be highly prevalent. The findings of the present study showed, that mild anemia is common and also severe anemia is frequently common in the hospitalized elderly. Anemia is a public health problem affecting some 164 million elderly people worldwide. As a rise in the aging population has been predicted, the prevalence of anemia is expected to rise sharply in the future. Undiagnosed and untreated anemia is associated with an increased risk of morbidity, mortality and a decreased quality of life, thus early detection is an important topic.

It is important that anemia in older persons receive adequate attention in clinical practice and not be considered simply a normal part of aging. Although the current study provides little information on the relationship between anemia and clinically relevant outcomes in older adults, randomized controlled trials are needed in future to investigate whether anemia is a risk factor or risk marker of excess mortality and functional decline in older individuals.

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