



## Patterns of Anemia in Geriatric Age Group: A hospital based study

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### ABSTRACT

**Background:** Anemia is a common concern in geriatric age group (more than 60 years of age). It is a public health problem because 164 million elderly who constitute 23.9% of the elderly population are suffering from anemia globally. It can have significantly more severe complications than anemia in younger adults. **Aim:** This study was done to evaluate the proportion and morphological patterns of anemia in geriatric age group. **Material and Methods:** A prospective study was done on patients aged 60 years and above presenting to geriatric clinic and clinical OPDs of Gauhati Medical College and hospital over a span of one year. A detailed history, general, physical examination and systemic review of the patients were undertaken. We evaluate the results of complete blood count and peripheral blood smear of all patients over 60 years after taking informed consent. Anemia was defined according to the WHO criteria as a hemoglobin concentration of lower than 13g/dl in men and 12g/dl in women. **Results:** Out of 540 cases, 310(57.4%) were found to be anemic. 170 male patients and 140 female patients were found to be anemic. Commonest pattern of anemia was normocytic normochromic. **Conclusion:** We conclude that it is important to determine the proportion and morphological patterns of anemia in elderly so that we can direct the investigation for profiling the etiology since it is well known that the treatment of anemia goes a long way in improving the overall outcome and quality of life.

### KEYWORDS

anemia, elderly, proportion, pattern.

**Introduction:** Anemia is a common concern in geriatric age population, it can have significantly more severe complications than in the younger adults and can greatly hamper the quality of life.<sup>1</sup> It is a public health problem because 164 million elderly who constitute 23.9% of the elderly population are suffering from anemia globally. Anemia was defined according to the WHO criteria as a hemoglobin concentration of lower than 13g/dl in men and 12g/dl in women. Elderly was defined according to the WHO criteria as a person above the age of 60 years.<sup>2</sup> Studies indicate that prevalence of anemia increases with advancing age and under age 75 years, anemia is more common in females, but over age 75 years it is more common in males.<sup>3</sup> It is easy to overlook anemia in the elderly, since symptoms such as fatigue, weakness, shortness of breath may be attributed to the ageing process itself but the decline of hemoglobin and concomitant increased degree of anemia with age is not necessarily, a result of normal ageing.<sup>4</sup> So anemia should not be accepted as an inevitable consequence of ageing.

**Aims:** This study was done to evaluate the proportion and morphological patterns of anemia in geriatric age group.

**Materials and Methods:** A prospective study was done on patients aged 60 years and above presenting to geriatric clinic and clinical OPDs of Gauhati Medical College and hospital over a span of one year. A detailed history, general, physical examination and systemic review of the patients were undertaken. We evaluate the results of complete blood count and peripheral blood smear of all patients over 60 years. Peripheral smears were stained with Leishman stain. Anemia was defined according to the WHO criteria as a hemoglobin concentration of lower than 13g/dl in men and 12g/dl in women. Informed consent was taken from all the patients prior to their inclusion in the study. Patterns of anemia were classified based on RBC indices which was further correlated with peripheral smear. Normocytic anemia was defined as MCV between 80 fl and 100 fl, microcytic as MCV below 80 fl and macrocytic as MCV above 100 fl. Results: A total of 540 elderly patients were included in the study. Out of 540 cases, 310(57.4%) were found to be anemic. 170 male patients and 140 female

patients were found to be anemic. Maximum anemic patients were in age group 60-69 years as shown in Table 1.

**Table 1: Distribution of anemic subjects according to age and sex**

Age group	Male	Female	Total no
60-69 years	81(47.6%)	66(47.1%)	147
71-79 years	74(43.5%)	65(46.4%)	139
>80 years	15(8.8%)	09(6.4%)	24
<b>Total</b>	<b>170</b>	<b>140</b>	<b>310</b>

Commonest pattern of anemia was normocytic normochromic(61.3%) followed by microcytic hypochromic (18.06%), macrocytic(14.19%) and dimorphic (6.4%) as shown in Table 2.

**Table 2: Distribution of anemic subjects according to patterns of anemia**

Patterns of anemia	Frequency	Percentage
<b>Normocytic normochromic</b>	190	61.3%
<b>Microcytic hypochromic</b>	56	18.06%
<b>Macrocytic</b>	44	14.19%
<b>Dimorphic</b>	20	6.4%
<b>Total</b>	<b>310</b>	<b>100%</b>

**Discussion:** Anemia in geriatric age group is common and is incorrectly accepted as an inevitable consequence of normal ageing process. In our study percentage of anemia in males (31.4%) has been high as compared to females (25.9%) which was in accordance to the study of Guralink J.M et al.<sup>5</sup> whose study has showed that 11.0% of men and 10.2% of women of 60 years and above are anemic. Normocytic normochromic anemia was the commonest morphological type of anemia in our study comprising 61.3% which was in accordance with the study by Shrivastava et al.<sup>6</sup>, Bhasin et al.<sup>1</sup> and Hee Seon Kim et al.<sup>4</sup>. In our study the least common type of anemia was dimorphic which was in accordance to the study by Saurabh R Shrivastava et al.<sup>6</sup>.

**Conclusion:** Geriatric anemia therefore is a common and underappreciated problem that is associated with significant

increase in the mortality and morbidity regardless of the underlying cause of low hemoglobin. It is important to determine the proportion and morphological patterns of anemia in elderly so that we can direct the investigation for profiling the etiology since it is well known that the treatment of anemia goes a long way in improving the overall outcome and quality of life.

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