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

INTRODUCTION
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.

Material & Methods:
The present study is population-based observational study in which Institutionised 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 Anaemia

Hb Criteria*Actual Number of patients Percentage
Mild 10-12 gm-% 100
Moderate 7-10gm-% 100-27.7
Severe <7-gm-% 100-7

Complete blood counts were obtained using a Coulter automated cell counter. When a hemoglobin concentration 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 criteria as a hemoglobin concentration 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**

<table>
<thead>
<tr>
<th>Grades of Anemia</th>
<th>Hb Criteria*</th>
<th>Actual Number of patients</th>
<th>Percentage*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>10gm%- cut off</td>
<td>14</td>
<td>38.88%</td>
</tr>
<tr>
<td>Moderate</td>
<td>7-10gm%</td>
<td>10</td>
<td>27.77%</td>
</tr>
<tr>
<td>Severe</td>
<td>&lt;7gm%</td>
<td>12</td>
<td>33.33%</td>
</tr>
</tbody>
</table>

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

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.

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.
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.

REFERENCES: