

## Clinicopathological Profile of Anaemia in Elderly - A One Year Study

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### Abstract:

**Background:** Anemia is an extremely common problem associated with increased morbidity, poor quality of life regardless of aetiology . Anemia especially observed in geriatric community is more profound owing to the complications arising due to it.

**Material and Method :** The present study was a descriptive cross sectional study conducted in the department of pathology of a tertiary care hospital carried over a period of twelve months i.e. July 2014- June 2015. All the patients above 60 years of age were considered.

**Result:** A total of 256 cases of anemia in geriatric patients were studied . In our study , the majority of patients were male with 138 (53.90%) cases. Females accounted for 118 ( 46.09%) cases .110 (42.96%) cases were of Normocytic Normochromic anemia, indicating the most common type of anemia in the geriatric age group being Normocytic Normochromic .

**Conclusion:** Anemia is a common occurrence in geriatric population given the age. Timely detection can definitely prevent severe morbidity. Further studies should be encouraged for better understanding of this type of anemia.

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### I. Introduction

Anemia is an extremely common problem associated with increased morbidity, poor quality of life regardless of aetiology . Anemia especially observed in geriatric community is more profound owing to the complications arising due to it. Despite anemia being an extremely common problem in the elderly, there is a potential for it to be under diagnosed as the signs and symptoms are often perceived as a consequence of aging. Prevalence of anemia in geriatric patients is an ever increasing problem in India. Our study aims to evaluate the clinicopathological characteristics of this type of anemia.

### II. Material And Method

The present study was a descriptive cross sectional study conducted in the department of pathology of a tertiary care hospital carried over a period of twelve months i.e. July 2014- June 2015. All the patients above 60 years of age were considered amongst which females having Hb < 12 gm/dl and males having Hb < 13 gm/dl were included .

All the patients below 60 years of age and those cases with known haematological disorders, patients having liver disorders and similar cases were excluded from the study. Detailed clinical history along with physical examination was recorded . Investigations included Complete Blood count , Packed Cell Volume, Red Blood Cell Count , Red Blood Cell Indices – Mean Corpuscular Volume ( M C V ), Mean Corpuscular Haemoglobin ( MCH ), Mean Corpuscular Haemoglobin Concentration ( M C H C ) . Peripheral smears were prepared using Leishmann stain. Further special investigations included Iron and Vitamin B12 Studies, Stool examination and Bone Marrow Studies. However these tests were not done on a routine basis.

Peripheral smear studies were interpreted as

I – Normochromic Normocytic anemia

II – Microcytic Hypochromic anemia

III – Microcytic anemia

Based on Mean corpuscular Volume and Peripheral smear correlation RBC morphology was categorised as I ) Normocytic II) Microcytic III) macrocytic .

### III. Result

A total of 256 cases of anemia in geriatric patients were studied. In our study, majority of patients were males with 138 (53.90%) cases (Table no.1). Females accounted for 118 (46.09%) cases. The age group of the patients ranged from 60 – 98 years. The mean age was found to be 68.90 years with the maximum patients in 61-70 years age group (Table no. 2) .Anemia was classified based on peripheral smear findings and RBC

indices. 110 (42.96%) cases were of normocytic normochromic Anemia (Table no.3) followed by 75 (29.29%) of microcytic hypochromic anemia . There were 28 (10.15%) cases of dimorphic anemia indicating the most common type of anemia in the geriatric age group being normocytic normochromic. There were 26(10.15%) cases of megaloblastic anemia . Both males as well as females had normocytic normochromic anemia as the most common finding. (Table no. 4)

**Table no 1 .** Distribution of cases according to sex .

| Sex          | Male   | Female |
|--------------|--------|--------|
| No. Of Cases | 138    | 118    |
| Percentage   | 53.90% | 46.09% |

**Table no 2.** Distribution of cases according to age group .

| Age group | Frequency | Percent |
|-----------|-----------|---------|
| 61-70     | 150       | 58.59%  |
| 71-80     | 80        | 31.25%  |
| 81-90     | 13        | 5.07%   |
| 91-99     | 13        | 5.07%   |
| Total     | 256       | 100%    |

**Table no 3.** Distribution of cases according to type of anemia

| Type of anemia          | No. of cases | Percentage |
|-------------------------|--------------|------------|
| Normocytic Normochromic | 110          | 42.96%     |
| Microcytic Hypochromic  | 75           | 29.29%     |
| Normocytic Hypochromic  | 17           | 6.64%      |
| Macrocytic              | 26           | 10.15%     |
| Dimorphic               | 28           | 10.93%     |
| Total                   | 250          | 100%       |

**Table no.4 .** Distribution of type of Anemia .

| Type of Anemia \Sex | Normocytic Normochromic | Microcytic Hypochromic | Dimorphic  | Macrocytic | Normocytic Hypochromic |
|---------------------|-------------------------|------------------------|------------|------------|------------------------|
| Males               | 74(53.62%)              | 27(19.56%)             | 13(9.42%)  | 18(13.04%) | 06(4.37%)              |
| Females             | 62(52.54%)              | 35(29.66%)             | 13(11.01%) | 8(6.7%)    | 00                     |

Although almost all patients presented with multiple signs and symptoms. The predominant presentation was considered amongst which the most common presentation was generalised weakness seen in 181 (70.71%) followed by breathlessness seen in 106 (41.4%) cases. Other presentations such as giddiness, pain in abdomen, loss of appetite were also noted. (Table no.5)

**Table no 5.** Distribution of cases according to Clinical Presentation

| Clinical Presentation | No. Of Cases | Percentage |
|-----------------------|--------------|------------|
| Generalised Weakness  | 181          | 70.7%      |
| Breathlessness        | 106          | 41.4%      |
| Giddiness             | 100          | 39.06%     |
| Pain in Abdomen       | 57           | 22.26%     |
| Loss of weight        | 31           | 12.1%      |
| Loss of Appetite      | 37           | 14.4%      |
| Headache              | 25           | 9.7%       |
| K/C/O HTN             | 68           | 26.5%      |
| K/C/O Diabetes        | 44           | 17.18%     |
| K/C/O Malignancy      | 18           | 6.6%       |

Radiological findings were available in 210 cases indicating Bilateral medical renal diseases and chronic kidney disease with 80(38.09%) and 43(20.47%) cases, as the most common condition associated with these patients. (Table no.6)

**Table 6.** Distribution of cases according to radiological findings .

| Radiological Findings         | No. of Cases | Percentage |
|-------------------------------|--------------|------------|
| B/L Medical Renal Disease     | 80           | 38.09%     |
| Chronic Kidney Disease        | 43           | 20.47%     |
| Ac. Parenchymal Ds. Of Kidney | 05           | 2.38%      |
| Simple Cortical Cysts         | 11           | 5.23%      |
| Cirrhosis                     | 13           | 6.19%      |
| Fatty Liver                   | 15           | 7.14%      |
| Hepatomegaly                  | 13           | 6.19%      |

|               |   |       |
|---------------|---|-------|
| Splenomegaly  | 1 | 5.23% |
| Malignancy    | 3 | 2.85% |
| Normal        | 8 | 2.38% |
| Not Available | 6 | 3.80% |

#### IV. Discussion

Anemia in elderly is a very common problem however it is more often under diagnosed as the symptoms and signs are often mistaken for the signs of ageing. Anemia in elderly is associated with profound morbidity.<sup>1,2</sup> Improper evaluation of anemia in elderly bears the risk of delay in diagnosis or missing the diagnosis of treatable cause of anemia.

As compared to younger age group in which most common cause of anemia arguably is nutritional, anemia in the elderly is more often a result of chronic disease followed by nutritional causes. However, according to a study done by Mann S et al. (2014) aetiologies of as many as 33 % of geriatric anemia's remained unexplained.<sup>3</sup>

Indian cross sectional studies have revealed prevalence of anemia in elderly males, between 6 – 30 % and females, 10 -20 %.<sup>4,5</sup>

Based on clinical examination, haematological and radiological findings, the diseases associated with geriatric anemia were found to be mainly chronic diseases such as bilateral medical renal disease, chronic kidney disease, cirrhosis, malignancies etc. Majority of our cases were associated with either of these disease conditions. Studies such as Davenport et.al. have found anemia of chronic disease (ACD) to be the most common aetiology.<sup>6</sup>

In our study, male preponderance was noted with 53.90 % cases .Study by Guralink et.al.<sup>7</sup> also showed a male preponderance . However, there are other studies such as Shrivastava et.al.(2013) which revealed female preponderance.<sup>8</sup>

A study by Basin et. al. showed that the most common pattern of anemia was Normochromic Normocytic which was observed in 65-69 years age group.<sup>9</sup>Our study was in concordance with the above study. In the present study, normochromic normocytic was the most prevalent anemia in both sexes accounting for 53.62 % in males and 52.54 % in females which was in concordance with the study done by Elis et. al. and Ania et.al.<sup>5,10</sup>

The signs and symptoms of anemia in elderly are generally non specific and related to fall in haemoglobin levels and severity of anemia. Symptoms such as fatigue, dyspnoea, weakness, palpitation and signs such as blood loss demand individual attention and evaluation . Detailed clinical history is of paramount importance .

#### V. Conclusion

Anemia is a common condition in geriatric population . Given the age , the damage it can cause leading to severe morbidity and mortality, is severe, especially if the anemia is ignored and not investigated . Timely detection followed by aggressive treatment of any anemia in the elderly can definitely prevent severe morbidity. Further studies encompassing a larger population with wider parameters should be encouraged for better understanding of this type of anemia .

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