

CLINICAL PROFILE OF PATIENTS PRESENTING WITH ANEMIA IN A TERTIARY CARE RURAL HOSPITAL OF WESTERN MAHARASHTRA

Milind Chandurkar¹, Shrivastava Pendalya²

¹Professor, ²Resident, Department of Medicine, Rural Medical College, Pravara Institute of Medical Sciences (Deemed University), Loni, Maharashtra, India.

ABSTRACT

Background: Anemia is defined as reduction of the total red cell mass below normal limits. Anemia is usually diagnosed based on a reduction in the haematocrit (the ratio of packed red cells to the blood volume) and the hemoglobin concentration of the blood to levels that are below the normal range. Dermal loss of iron is also suggested as one of the possible contributing factors in the genesis of iron deficiency Anemia in the tropics. In view of the geographical location of western Maharashtra which too has climate similar to tropical parts it was thought prudent to evaluate the clinical profile of anemia in the rural patients presenting with the manifestations of anemia. **Objectives:** To study Clinical profile, nail changes and type of anemia on Peripheral blood picture of patients presenting with Anemia in a tertiary care rural hospital of Western Maharashtra **Methodology:** Total 200 Patients diagnosed to be cases of anemia in a tertiary care rural hospital of Western Maharashtra were enrolled for the study during the study period. All the patients satisfying the above inclusion and exclusion criteria were studied for Clinical profile, nail changes and type of anemia on Peripheral blood picture. **Results:** In this study out of 200 cases the maximum no of cases seen in >40 yrs were 128(64%). The most frequent symptom was easy fatigability which was present in 190(80%) of patients followed by breathlessness in 132(76%) and the signs noted were Pallor in 188(94%), Venous hum in 88(44%), Pedal edema in 80(40%), signs of Heart failure in 80(40%). The most common type of anemia seen of Peripheral blood smear was Microcytic hypochromic in 84(42%) followed by Dimorphic in 54(27%). The proportion of Platonychia is highly significant than Koilonychias in all types of anemia. **Conclusion:** The clinical profile of anemia studied in the patients coming to the tertiary care hospital in rural western revealed similar pattern of presentation with other studies with easy fatigability and breathlessness as most common symptoms and pallor as most common sign . The Peripheral blood smears revealed Microcytic hypochromic anemia in 44% patient as most common morphological anemia with Platonychia as most common nail changes in all types of morphological anemia.

Keywords: Anemia, Clinical profile, Peripheral Blood Smear , Microcytic Hypochromic, Koilonychias, Platonychia

INTRODUCTION

Anemia is a Greek term meaning lack of blood or bloodlessness. Although it has been in use in a general way for a long time the word first appeared in English medical usage in 1829. Anemia is an important clinical condition in practice for three valid reasons, as is highly prevalent, as the cause of much morbidity, as eminently treatable in majority [1].

Anemia is defined as reduction of the total red cell mass below normal limits. Anemia arises either because red blood cell (RBC) production is inadequate or because RBC life span is shortened. Anemia reduces the oxygen carrying capacity of the blood leading to

tissue hypoxia. Anemia is usually diagnosed based on a reduction in the haematocrit (the ratio of packed red cells to the blood volume) and the hemoglobin concentration of the blood to levels that are below the normal range [2]. (Hemoglobin (gm/dl) 13.6–17.2 for Males & 12.0–15.0 for females) [3]. India is among the countries with highest prevalence of Anemia in the world. It is estimated that about 20%-40% of maternal deaths in India are due to Anemia; India contributes to about 50% of global maternal deaths due to Anemia [4].

Anemia are of different types. Iron deficient Anemia is the most common type of anemia¹. Quite frequently faulty nutrition is the cause of Anemia. There are many factors like inadequate diet, unsatisfactory method of preparation of food, faulty social habits, unhygienic practices, associated infections and infestations contributing to the causation of nutritional Anemia [5, 6].

India lies partly in the tropics and partly in subtropics with extreme variations of climate. In the region where hot and humid climate prevail throughout the best part of the year, the loss of iron through sweat is apprecia-



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Correspondence: Dr. Milind Chandurkar, Professor, Department of Medicine, Rural Medical College, Pravara Institute of Medical Sciences (Deemed University), Loni, Maharashtra, India. Email: director.research@pmpims.org

ble. Iron is lost through sweat to the extent of 15mg per month. This suggests dermal loss of iron should be one of the possible contributing factors in the genesis of iron deficiency Anemia in the tropics [5, 6]. In view of the geographical location of western Maharashtra which too have climate similar to tropical parts it was thought prudent to evaluate the clinical profile of anemia in the rural patients presenting with the manifestations of anemia.

Aims & Objectives

1. To study Clinical profile of patients presenting with Anemia in a tertiary care rural hospital of Western Maharashtra in terms of signs and symptoms.
2. To find out proportion distribution of type of anemia on Peripheral blood picture
3. To find out the pattern of nail changes in different types of morphological anemia

MATERIALS AND METHODS

Study design: This was a descriptive cross sectional study

Ethics consideration: Approval from IEC (Institutional Ethical Committee) was dully taken and study was done after ethical clearance and inform consent was taken from the participants.

Study location: Study was done in department of Medicine care at Pravara Rural Hospital, Loni.

Study period: over a period between September 2015 to August 2017.

Sample size: Total 200 Patients diagnosed to be cases of anemia that were treated in a tertiary care rural hospital of Western Maharashtra were enrolled for the study during the study period. **Sample selection:** Patients satisfying the following eligibility criteria were selected for the study.

Inclusion criteria: All patients of either gender presenting with anemia (hemoglobin below normal value) presenting to medicine department Patients with age more than 12 years, patients ready to give written informed consent, patients completing all the investigation protocols of the department.

Exclusion criteria: Patients with anemia due to acute blood loss, known history of cardiovascular disorders, thyroid dysfunctions and malignancies, patients on chronic corticosteroids, anticoagulants and thrombolytic therapy, patients with history recent major surgical interventions.

Study conduct: The normal range of Hemoglobin (gm/dl) considered was 13.6–17.2 for Males & 12.0–15.0 for females) below which the patients were labeled to be anemic.

Methodology:

All the patients satisfying the above inclusion and exclusion criteria were studied for the following variables:

- All the patients were studied for the following variables:
- Clinical profile of patients : Sign and symptoms
- Type of anemia on Peripheral blood picture

- Pattern of nail changes in different types of morphological anemia
- Severity of anemia : Severe degree of anemia that is Hb <8g/dl
- All the investigation were carried out at admission or at appearance in the OPD

Statistical analysis: All descriptive statistics were used such as mean, proportion as the variables were on ratio scales inferences were drawn using Z test of significance.

RESULTS

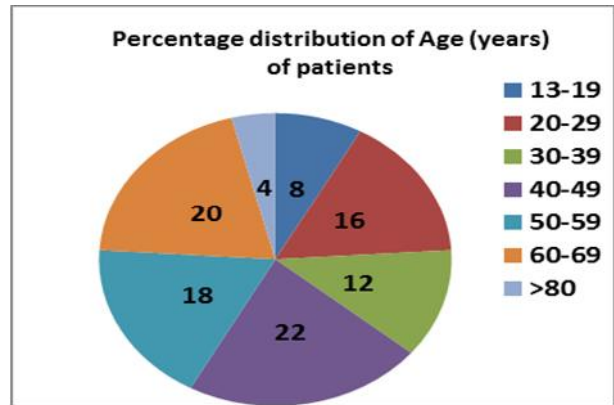


Figure 1: Distribution of Age (years) of patients

In this study out of 200 cases the maximum no of cases seen in >40 yrs were 128 (64%)

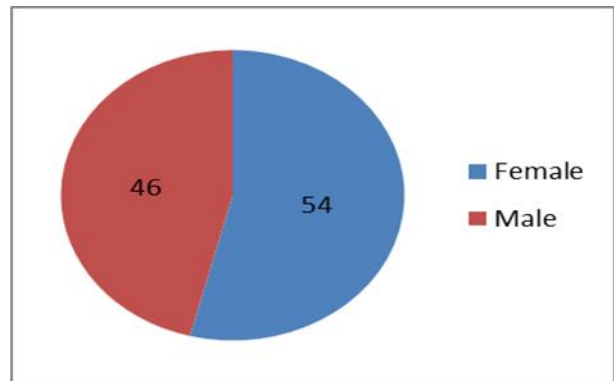


Figure no.2: Gender wise distribution of patients.

46% patients of anemia were male and 54% were female

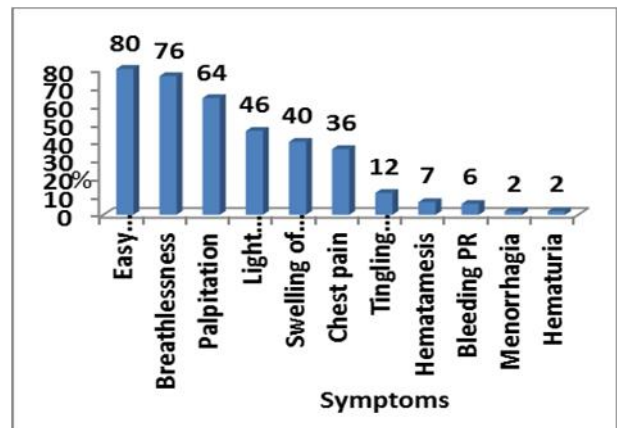


Figure 3: Percentage distribution of clinical symptoms

The most frequent symptom was easy fatigability which was present in 190 (80%) of patients followed by breathlessness in 132 (76%), palpitation in 128 (64%), Lightheadness in 92 (46%), swelling of limbs in 80(40%). The rare presentation were bleeding PR in 12(6%), he-maturia in 4(2%).

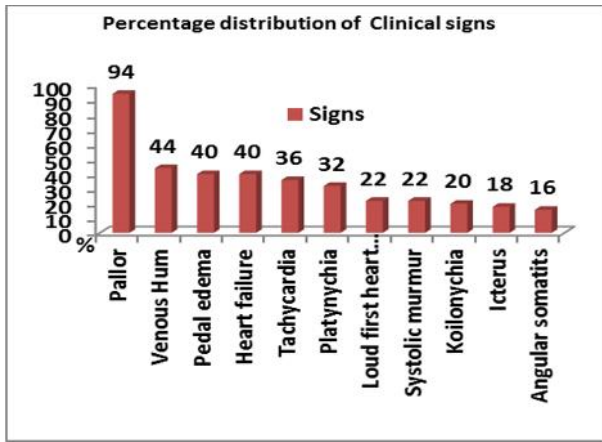


Figure 4: Percentage distribution of Clinical signs

The clinical signs in descending order of frequency were Pallor in 188(94%), Venous hum in 88(44%), Pedal edema in 80(40%), signs of Heart failure in 80(40%).

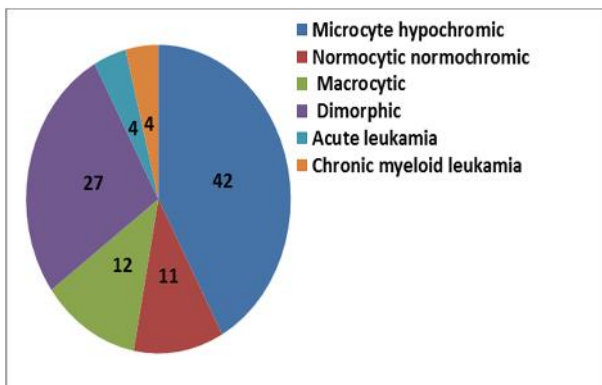


Figure 5: Proportion distribution of type of anemia on peripheral blood picture

Peripheral blood picture in 200 patients revealed Microcytic hypochromic in 84(42%) most common type of anemia followed by Dimorphic in 54(27%), Normocytic normochromic in 22(11%), Macrocytic in 24(12%), and Acute leukemia in 8(4%) and Chronic Myeloid leukemia in 8(4%)

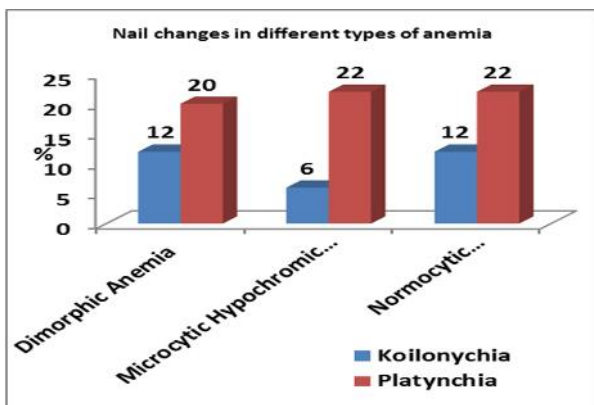


Figure 6: Pattern of nail changes in different types of morphological anemia

The proportion of Platynychia is highly significant than Koilonychias in all types of anemia.

DISCUSSION

In this study the total number of patients of anemia studied were (n=200), 128 patients (64%) were of >40 yrs and 72(36%) were <40yrs. (Figure no.1). In our study the gender wise distribution of patients revealed that 46% patients of anemia were male and 54% were females. (Figure no.2). Our results are in accordance with the studies done by Nasrin A. Qureshi et al [7] 253(43%), Parekh Alok et al [8] (83%) where maximum number of cases seen were above 40 years of age.

The most frequent symptom was easy fatigability which was present in 190(80%) of patients followed by breathlessness in 132(76%), palpitation in 128(64%), Lightheadness in 92(46%), swelling of limbs in 80 (40%).The rare presentation were bleeding PR in 12 (6%), hematuria in 4(2%), (Figure no.3). Similar results were observed in a study by K. G. Prakash et al [9], Amit Bhasin et al [10], Hajji Muhammad Shoaib Khan et al [11]. Similar symptoms simulating organic heart disease in anemic patients have reported by Wood (1958) [12].

Anginal pain has been reported to occur in about 30% of cases (Coombs). Anginal pain in anemic patients reported by Aliza Zeidman, et al. et al [12] when the Hb% is below 5g/dl. In this study angina pain is observed in 72(36%) patients out of 200 cases. In this study angina pain was observed in patients with hemoglobin below 4.5g/dl.

The clinical signs in descending order of frequency were Pallor in 188 (94%), Venous hum in 88(44%), Pedal edema in 80(40%), signs of Heart failure in 80(40%). Similar results were observed in a study by Amit Bhasin et al [10], Haji muhammad shoaib khan et al [11]. (Figure no.4).

In this study Microcytic hypochromic anemia was found in 84(42%) cases, Dimorphic anemia in 54(27%) cases, Macrocytic anemia in 24(12%), Normocytic normochromic in 22(11%) cases, acute myeloid leukemia in 8 (4%) cases and chronic myeloid leukemia in 8(4%) cases. similar results were observed in a study by K. G. Prakash et al [9], Amit Bhasin et al [10], K. S. Lamsal et al [13].Koilonychia is seen in 40(20%) cases and platynychia in 64(32%) cases Koilonychia was seen in both microcytic and dimorphic anemia the incidence in dimorphic anemia was 30% this incidence was equal in both males and females.

In this study microcytic hypochromic anemia was found in 84(42%) cases, dimorphic anemia in 54(27%) cases, macrocytic anemia in 24(12%), normocytic normochromic in 22(11%) cases, acute myeloid leukemia in 8 (4%) cases and chronic myeloid leukemia in 8(4%) cases these results coincides with the results of a study by K. S. Lamsal et al [13].

The clinical profile, nail changes and peripheral blood picture showed similar results with many studies on

Anemia thus this study stands true with existing clinical profile studies of anemia in India with same predilection to geographic location of rural Western Maharashtra.

CONCLUSION

The clinical profile of anemia studied in the patients coming to the tertiary care hospital in rural western revealed similar pattern of presentation with other studies with easy fatigability and breathlessness as most common symptoms and pallor as most common sign. The Peripheral blood smears revealed Microcytic hypochromic anemia in 44% patient as most common morphological anemia with Platonychia as most common nail changes in all types of morphological anemia.

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Conflict of interest : Nil

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