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Pathology

Correlation between Haematological Parameters and Morphological Picture in Adult Anaemic Males in a Tertiary Care Hospital

Dr. Atul Pratap Singh, Dr. S. K. Nema*, Dr. Sanjeev Narang

Dept. of Pathology, Index Medical College Hospital & Research Centre, Indore Madhya Pradesh India

| **Abstract** | **Original Research Article** |

Background: The aim of this study is to evaluate the various hematological parameters and to correlate them with severity and morphological types of anemia in known adult anemic males. *Method:* Study was conducted at the Dept of Pathology, Index Medical College Hospital & Research Centre, Indore, (M.P), July 2016 to July 2018. Males between 20-60 years who attended various departmental Out Patient Depts at tertiary care centre, and inpatients participated in this study. *Result:* 610 (61%) cases were found mild (Hb) (10-12.9 g/dl), 280 (28%) were moderate (7-9.9 g/dl) and 110 (11%) were found severe (<7 g/dl). Normocytic normochromic were found 410 (67.21%), microcytic hypochromic were found 110 (18.03%) and normocytic normochromic with few macrocytes were found 90 (14.76%). *Conclusion:* The risk group to improve their iron status and the need for planning intervention programs that would increase the hemoglobin levels among adult males through prophylaxis treatment, dietary modification and helminth control. Increasing the educational level of man would also ensure safe livelihood to him and his family. We suggest that there is a need for well planned, systematic and large-scale studies by using standardized methodologies to estimate the prevalence of anaemia as well as the causes of anaemia at the community level among males in all the age groups, with an accurate evaluation of the socio-economic status and the representation of the different regions of India.
Keywords: Haematological, Morphological, Adult & Anaemic.

INTRODUCTION

Iron deficiency is a state in which the iron in the body is not enough to maintain normal physiological functions [1]. The WHO guidelines currently recommend daily iron and folic acid supplementation to all pregnant women throughout pregnancy, and intermittent iron supplementation of children (preschool age and school age) in areas where anemia is highly prevalent[2].

The prevalence of anemia was 100% in our study with severe anemia being 11%, moderate 28% and mild anemia 61%. There was a decrease in the prevalence as the age increased, however the difference was not statistically significant [3].

MATERIALS & METHODS

Study was conducted at the Dept of Pathology, Index Medical College Hospital & Research Centre, Indore, (M.P), July 2016 to July 2018.

Males between 20-60 years who attended various departmental Out Patient Depts at tertiary care centre, and inpatients participated in this study.

Study Designed: Observational Study

Inclusion criteria
All adult male anemic patients aged 20-60 years. Hb<13 gm/dl (in males) (Acc. To ICMR/WHO guidelines) were the cut off value for anemia.

Exclusion criteria
Patients below 20 years and above 60 years of age. HB level above cut off values for anemia according to ICMR/WHO guidelines

A hospital based cross sectional study
Males who attended various departmental OPDs at tertiary care centre, and inpatients participated in this study as per the inclusion and exclusion criteria.

Blood was withdrawn from antecubital vein by mean of dry sterile 5 ml disposable plastic syringe with a needle of 20 gauge after preparing the cubital fossa

with a sterile swab, 3 ml of blood was withdraw slowly, immediately blood was transferred to sterile tube with

dipotassium EDTA as anticoagulant, to prepare, stain and examine an ideal blood smear.
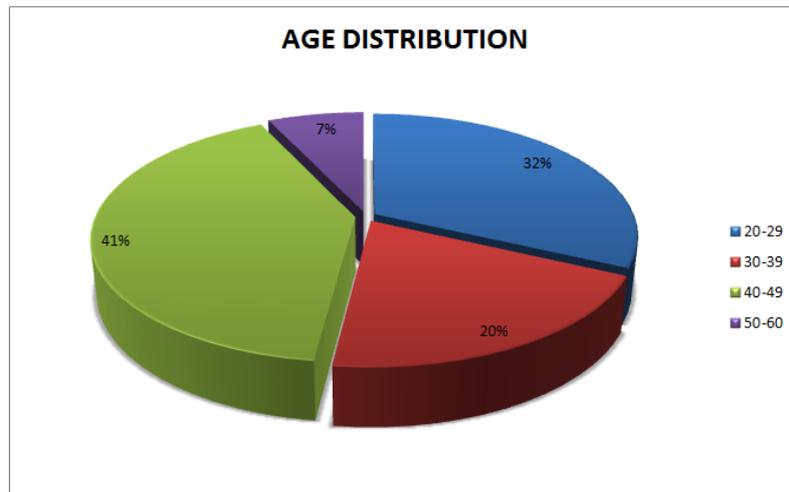
RESULTS

Fig-1: Age wise Distribution

320 cases (32%) were in age group of 20-29 years, 200 (20%) in 30-39 years, 410 (41%) in 40-49

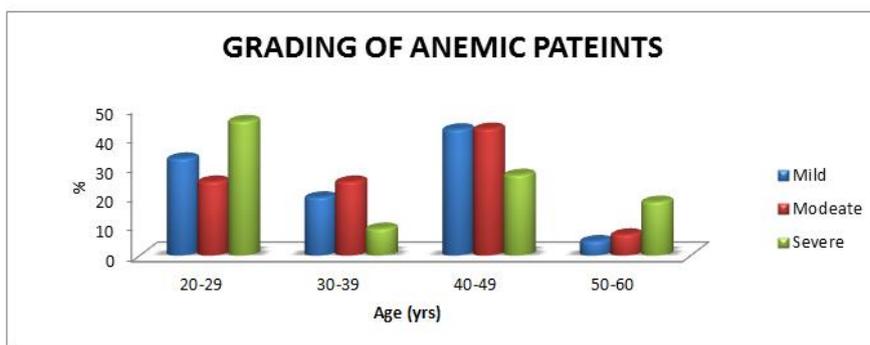years and 70 cases (7%) were found in age group of 50-60 years.

Fig-02: Grading of anemic patients

Grading of anemic patients in age group of 20-29, 200(32.78%), 70 (25%) and 50 (45.45%) were found mild, moderate and severe, in 30-39 years 120 (19.67%), 70 (25%) and 10 (9.10%) were found mild, moderate and severe in the age group of 40-49 years

260 (42.63%), 120 (42.86%) and 30 (27.27%) mild, moderate and severe and in age group of 50-60 years 30 (4.91%), 20 (7.14%) and 20 (18.18%) were found mild, moderate and severe.
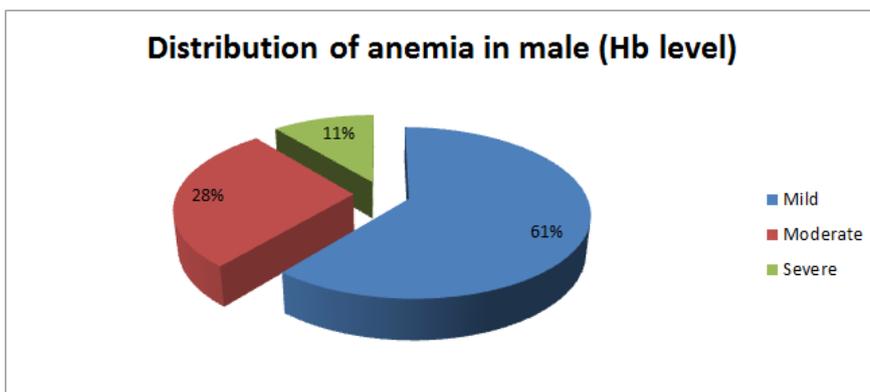

Fig-03: distribution of cases according to haemoglobin

610 (61%) cases were found mild (Hb) (10-12.9 g/dl), 280 (28%) were moderate (7-9.9 g/dl) and 110 (11%) were found severe (<7 g/dl).
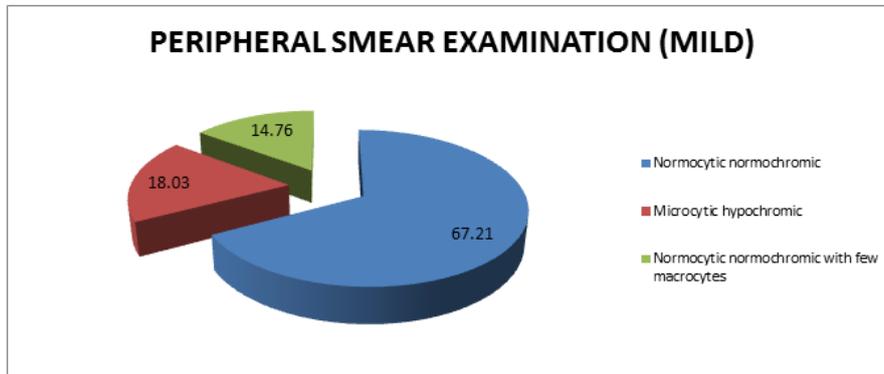

Fig-04: Distribution of cases according to peripheral smear examination (mild)

Normocytic normochromic were found 410 (67.21%), microcytic hypochromic were found 110 (18.03%) and normocytic normochromic with few macrocytes were found 90 (14.76%).
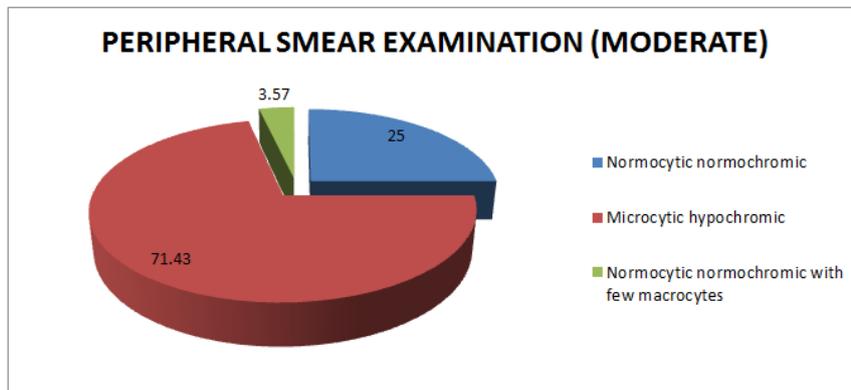

Fig-05: Distribution of cases according to peripheral smear examination (moderate)

Normocytic normochromic were found 70 (25%), microcytic hypochromic were found 200 (71.43%) and normocytic normochromic with few macrocytes were found 10 (3.57%).

DISCUSSION

Out of total 100 participants, 310 (31%) cases belongs to 20-29 years of age, 160 (16%) were 30-39 years, 400 (40%) were belong to 40-49 years and 130 (13%) was belongs to 50-60 years of age [4].

The anemia was considered to be present if Hb was <13 gm/dl as per WHO/ICMR criteria.108 The prevalence of mild, moderate and severe anaemia among adult males was 61%, 28% and 11% respectively. Majority were having mild anaemia 61% and only 11% severe anaemia. Anaemia was found to be significantly associated with educational and socioeconomic status of parents [5].

Though there are large number of study on anaemia and its prevalence in india which have reported on the severity, types, aetilogy, socio-economic of the community, cultural and ethinic customs etc., in current study, we tried to correlate the types and age distribution in adult males in a defined geographical area where the culture and socioethical factors were common but the economic and educational status varied [6].

Prevalence of anemia is very high among all the study population in India. Global prevalence of anaemia in developed, developing countries and India was 12.7% Gobal, 18%, 3% (developed countries) 26% (developing countries) and in India 35% (urban) and 45% (rural) [7].

We also observed that the degree of anaemia did not vary in place of residence and cast but socioeconomic factor has shown marginal difference in degree of anaemia [8, 9].

CONCLUSION

This study has demonstrated that anemia among adult males of Indore (Madhya Pradesh), is also high as in other parts of the country. This indicates the

importance of including males in the risk group to improve their iron status and the need for planning intervention programs that would increase the hemoglobin levels among adult males through prophylaxis treatment, dietary modification and helminth control. Increasing the educational level of man would also ensure safe livelihood to him and his family.

We suggest that there is a need for well planned, systematic and large-scale studies by using standardized methodologies to estimate the prevalence of anaemia as well as the causes of anaemia at the community level among males in all the age groups, with an accurate evaluation of the socio-economic status and the representation of the different regions of India.

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