

Original Article

Evaluation of Anemia in Study Population- A Clinical Study

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ABSTRACT:

Background: Anemia is the most common indicator which is used to screen for iron deficiency. The present study was conducted to evaluate the cases with anemia in study group. **Materials & Methods:** The present study was conducted on 624 patients of both genders (males- 240, females- 384). Patient information such as name, age, gender, and Hemoglobin (Hb) level was estimated by the cyanmethaemoglobin method. In all patients, BMI was calculated. **Results:** Mild anemia was seen in 45% males and 58% females. Moderate was seen in 35% males and 10% females. Severe was seen in 20% males and 32% females. Low BMI was seen in 48% males and 60% females, normal in 25% males and 32% females and high in 27% males and 8% females. Socio- economic status was low in 62% males and 58% females, middle in 24% males and 26% females and high in 14% males and 16% females. **Conclusion:** Anemia is common among population. Females were commonly involved than males. Maximum cases were seen in low socio- economic cases.

Key words: Anemia, Females, Hemoglobin.

Received: 10 August 2018

Revised: 22 September 2018

Accepted: 25 September 2018

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This article may be cited as: Singh Y, Singh DV. Evaluation of Anemia in Study Population- A Clinical Study. J Adv Med Dent Sci Res 2018;6(10):54-57.

INTRODUCTION

Anemia is the most common indicator which is used to screen for iron deficiency and so the terms anemia, iron deficiency and iron deficiency anemia are sometimes used interchangeably. It is an indicator of poor nutrition and poor health with major consequences for human health, as well as for the social and economic development of a population. Anemia is one of the most common health problems in India which is much more prevalent in the rural than in the urban areas. The prevalence of anemia in pregnant and lactating females and children has been found to vary from 50-90% in different parts of India.¹

Globally, anemia affects 1.62 billion people, which corresponds to 24.8% of the population. Women of childbearing age are having an additional risk of developing anemia because of their monthly menstrual blood loss and nearly 50 percent of females in this age group are anemic.² Studies have shown that infants who were born to mothers with severe anemia had a higher risk of irreversible brain damage, lower school achievement, a reduced physical and exercise tolerance and a poor immune

response.³ Studies from India have consistently shown an association between anemia and under-nutrition and the occurrence of anemia in undernourished children and in those belonged to the poor socioeconomic status are a well documented fact.⁴

The present study was conducted to evaluate the cases with anemia in study group

MATERIALS & METHODS

The present study was conducted in department of general medicine. It comprised of 624 patients of both genders (males- 240, females- 384). They were informed regarding the study and written consent was obtained. Ethical clearance was obtained prior to the study.

Inclusion criteria were young adults > 18 years of age. Exclusion criteria was patients < 18 years of age and those suffering from any chronic disease like , arthritis, diabetes, hypertension, renal disease or any gastrointestinal disease.

Patient information such as name, age, gender, family history, dietary history, Hemoglobin (Hb) level was estimated by the cyanmethaemoglobin method. Anemia

was defined as an Hb of <13g/dl in males and an Hb of < 12g/dl in females. Mild anemia was defined as an Hb of 10-12.9 g/dl in males and an Hb of 10-11.9 g/dl in females. Moderate anemia was defined as an Hb of 7-9.9 g/dl and severe anemia as an Hb of < 7 g/dl in both males and

females. In all patients, BMI was calculated. Results were tabulated any subjected to statistical analysis. P value < 0.05 was considered significant.

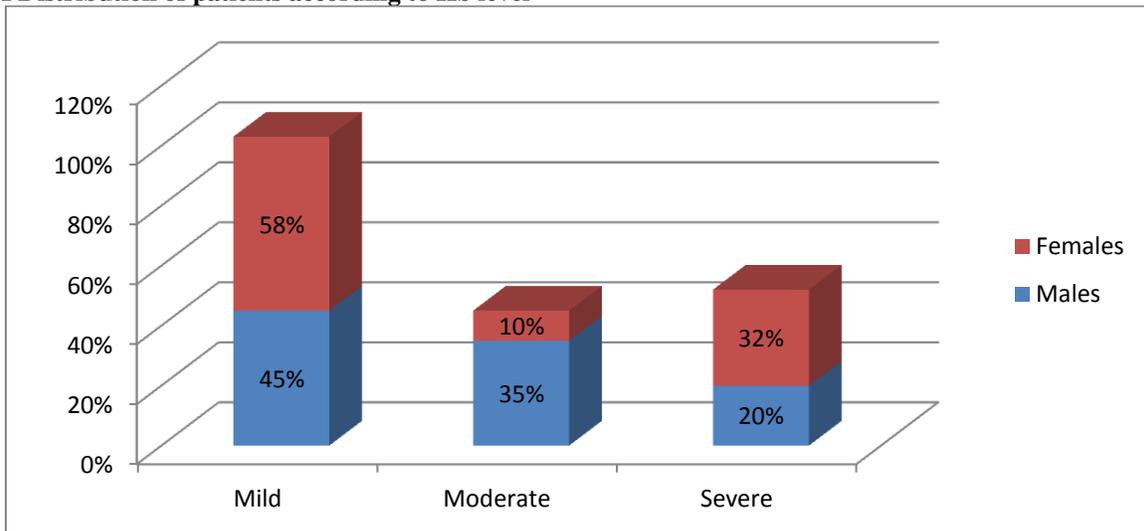
RESULTS

Table I Distribution of patients

Total – 624		
Gender	Male	Female
Number	240	384

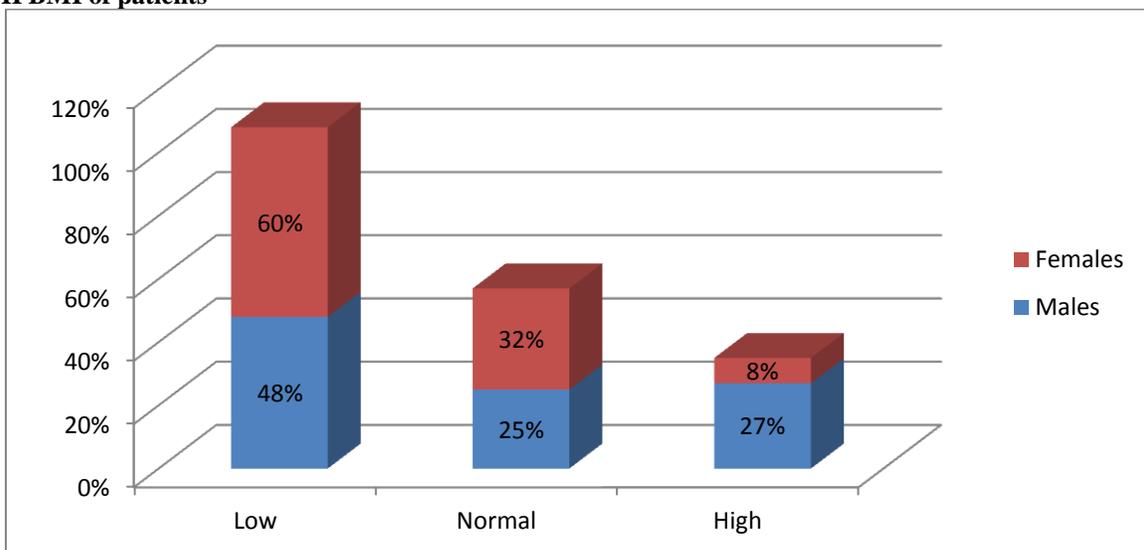
Table I shows that out of 624 patients, male were 240 and females were 384.

Graph I Distribution of patients according to Hb level



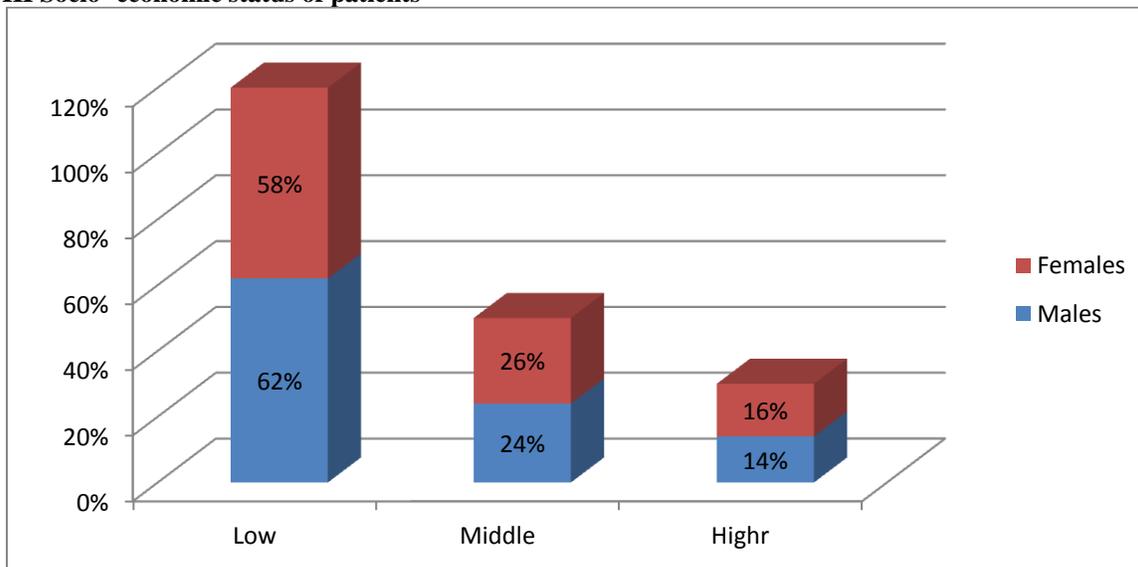
Graph I shows that mild anemia was seen in 45% males and 58% females. Moderate was seen in 35% males and 10% females. Severe was seen in 20% males and 32% females. The difference was significant (P< 0.05).

Graph II BMI of patients



Graph II shows that low BMI was seen in 48% males and 60% females, normal in 25% males and 32% females and high in 27% males and 8% females. The difference was significant (P < 0.05).

Graph III Socio- economic status of patients



Graph III shows that socio- economic status was low in 62% males and 58% females, middle in 24% males and 26% females and high in 14% males and 16% females. The difference was significant ($P < 0.05$).

DISCUSSION

Anemia is the most common blood disorder, affecting about a third of the global population. It is more common in women than men, during pregnancy, and in children and the elderly. Anemia increases costs of medical care and lowers a person's productivity through a decreased ability to work. Anemia goes undetected in many people and symptoms can be minor.⁵

In present study, out of 624 patients, male were 240 and females were 384. We estimated anemia on the basis of Hb content and classified patients in to mild, moderate and severe anemic. We found that mild anemia was seen in 45% males and 58% females. Moderate was seen in 35% males and 10% females. Severe was seen in 20% males and 32% females. Our results are in agreement with Karkar et al.⁶

When anemia comes on slowly, the symptoms are often vague and may include feeling tired, weakness, shortness of breath or poor ability to exercise. Anemia that comes on quickly often has greater symptoms which may include: confusion, feeling like one is going to pass out, and increased thirst. There needs to be significant anemia before a person becomes noticeably pale. There may be additional symptoms depending on the underlying cause.⁷

We found that anemia was quite common among males and females with low BMI. Low BMI was seen in 48% males and 60% females, normal in 25% males and 32% females and high in 27% males and 8% females. Similar findings were seen in study by Shill et al⁸ in which anemia was detected among university colleges of Bangladesh. In this study, socio- economic status was low in maximum number of patients suggesting the economic status as one of the contributing factor of anemia among population.

We observed that socio- economic status was low in 62% males and 58% females, middle in 24% males and 26% females and high in 14% males and 16% females. Anemia is first shown by routine blood tests, which include a complete blood count (CBC). A sufficiently low hemoglobin level (Hb) makes the diagnosis of anemia, and a low hematocrit value is also characteristic of anemia. If the anemia is due to iron deficiency, one of the first abnormal values to be noted on a CBC, as the body's iron stores begin to be depleted, will be a high red blood cell distribution width (RDW), reflecting an increased variability in the size of red blood cells (RBCs).⁹

185 males and 174 female school going children were examined, IDA was prevalent in 58.9% of males and 63.2 % in females, there was significant decrease in parameters of hemoglobin, serum ferritin and transferrin saturation and increase in Total Iron Binding Capacity in this group of population indicating prevalence of the Iron deficiency.

CONCLUSION

Anemia is common among population. Females were commonly involved than males. Maximum cases were seen in low socio- economic cases.

REFERENCES

- Gowri A.R, Sangunam H.J. Assessment of the mental and motor abilities of school going children with anaemia. *Ind. J. Nutr. Dietet* 2005; 42: 99-105.
- Macgregor MW. Maternal anaemia as a factor in prematurity and perinatal mortality. *Scottish Medical Journal* 1963; 8: 134.

3. Schorr TO, Hediger ML. Anaemia and iron-deficiency anaemia: compilation of data on the pregnancy outcome. *Amer J of Clin Nutri* 1994; 59: 492-501.
4. Lozoff B, Jimenez E, Wolf AW. Long term developmental outcome of infants with iron deficiency. *New Eng. J. of Med* 1991; 325:687-95.
5. Seshadri S, Gopaldas T. Impact of iron supplementation on cognitive functions in pre-school and school-aged children: The Indian experience. *Amer J of Clin Nutri* 1989; 50:675-86.
6. P. D. Karkar and P. V. Kotecha. Prevalence of anemia among students of Nursing School of Vadodara. *The Nursing Journal of India* 2004; 95: 257–258.
7. A. H. Sultan. Anemia among female college students attending the University of Sharjah, UAE: prevalence and classification. *The Journal of the Egyptian Public Health Association.*2007; 82: 261–271.
8. Shill S, Deshmukh PR, Garg BS. Epidemiological correlates of nutritional anemia in adolescent girls of rural Wardha. *Indian J Community Med* 2006; 31:255–58.
9. I. P. Kaur and S. Kaur. A comparison of nutritional profile and prevalence of anemia among rural girls and boys. *J of Exer Sci and Physio* 2011; 11–18, 2011.
10. A K. B. Shill, P. Karmakar, M. G. Kibria et al. Prevalence of iron-deficiency anemia among university students in Noakhali region, Bangladesh. *Journal of Health, Population and Nutrition* 2014; 32: 103–110.

Source of support: Nil

Conflict of interest: None declared

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