

Anemia among patients visiting the Department: A clinical study

¹ Manjinder Singh, ² Gurpreet Kaur

¹ Department of Medicine, Govt. Mata Kaushalya District Hospital Patiala, Punjab, India

² Senior resident, Department of Plastic Surgery, Govt. Medical College Patiala, Punjab, India

Abstract

Background: Anemia is a global public health problem which affects both the developing and the developed countries. The present study was conducted to assess the number of cases with anemia.

Materials & Methods: The present study was conducted in department of general medicine in year 2015. It included 1025 patients. Hemoglobin (Hb) level was estimated by the cyanmethaemoglobin method. Anemia was classified into mild, moderate and severe. All the patients had their height and weight measured. BMI was calculated as the weight in kilograms, divided by the square of the height in meters. The BMI was further categorized into low (<18.5 kg/m²), normal (18.5-24.9 kg/m²) and high (>25 kg/m²).

Results: Out of 1025 patients, male were 480 and females were 545. The difference was non – significant (P- 0.21). Mild anemia was seen in 210 males and 280 females. Moderate was seen in 165 males and 115 females. Severe was seen in 105 males and 150 females. Age group 18-28 years had 240 males and 320 females, age group 29-38 years had 75 males and 45 females, age group 39-48 years had 115 males and 95 females, >48 years had 50 males and 85 females. The difference was significant (P < 0.05). Low BMI was seen in 290 males and 250 females, normal in 110 males and 145 females and high in 80 males and 150 females. Socio- economic status was low in males (325) and females (345), middle in males (110) and females (125) and high in males (45) and females (75). The difference was significant (P < 0.05).

Conclusion: Anemia is common among population. Proper diet and nutrition level is required to prevent developing anemia. Young adults are more prone to the anemia.

Keywords: anemia, hemoglobin, socio-economic

1. Introduction

Anemia is a global public health problem which affects both the developing and the developed countries. 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 ^[1].

Anemia affects 1.62 billion people, which corresponds to 24.8% of the 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 ^[2].

According to the World Health Organization (WHO), it has affected 24.8% of the world's population. In neighboring India, one in every two women suffers from anemia. When anemia prevalence is 20–39.9% of the general population, it is considered as a moderate public health problem by WHO. 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. Prevalence of anemia among non-pregnant women is 30.2% worldwide and in Asia it is 33% accounting to about 318.5 million individuals ^[3]. Out of the total non-pregnant anemic individuals of the world, nearly 3/4 resides in Asia. Anemia among non-pregnant women has become a public

health problem in 191 countries out of the 192 member countries of WHO.

Anemia in young children is a serious concern because it can result in an impaired cognitive performance, behavioural and motor development, lack of co-ordination, language development and scholastic achievement, as well as an increased morbidity from infectious diseases. Anemia in the school age children is associated with the retardation of growth, decreased immunity and a poor cognitive development which results in a lower Intelligence Quotient (IQ) and behavioural abnormalities ^[4]. The present study was conducted to assess the number of cases with anemia.

2. Materials & Methods

The present study was conducted in department of general medicine in year 2015. It included 1025 patients visited to general medicine department with any complaint. They were informed regarding the study and written consent was obtained. Patients below 18 years of age and those suffering from any chronic disease like diabetes, hypertension, arthritis, renal disease or any gastrointestinal disease and those who were on some medication were excluded from study. Patient information such as name, age, gender, family history, dietary history, Haemoglobin (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. All the patients had their height and weight measured. BMI was calculated as the weight in kilograms, divided by the square of the height in meters. The BMI was further categorized into low (<18.5 kg/m²), normal (18.5-24.9 kg/m²) and high (>25 kg/m²)

Results were tabulated any subjected to statistical analysis using chi square test. P value < 0.05 was considered significant.

3. Results

Table 1 shows that out of 1025 patients, male were 480 and females were 545. The difference was non – significant (P-0.21). Table 2 shows that mild anemia was seen in 210 males and 280 females. Moderate was seen in 165 males and 115 females. Severe was seen in 105 males and 150 females. Fig 1 shows that age group 18-28 years had 240 males and 320

females, age group 29-38 years had 75 males and 45 females, age group 39-48 years had 115 males and 95 females, >48 years had 50 males and 85 females. The difference was significant (P < 0.05).

Table 1: Distribution of patients

| Total - 1025 | | |
|--------------|--------|---------|
| Male | Female | P value |
| 480 | 545 | 0.21 |

Table 2: Distribution of patients according to Hb level

| Hb level | Male | Female |
|----------|------|--------|
| Mild | 210 | 280 |
| Moderate | 165 | 115 |
| Severe | 105 | 150 |
| Total | 480 | 545 |

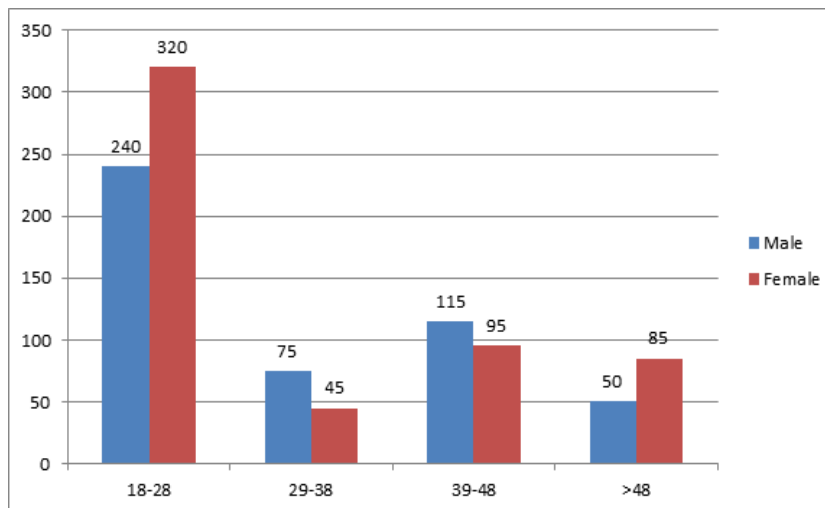


Fig 1: Distribution of patients according to age group

Fig 2 shows that low BMI was seen in 290 males and 250 females, normal in 110 males and 145 females and high in 80 males and 150 females. Fig 3 shows that socio- economic

status was low in males (325) and females (345), middle in males (110) and females (125) and high in males (45) and females (75). The difference was significant (P < 0.05).

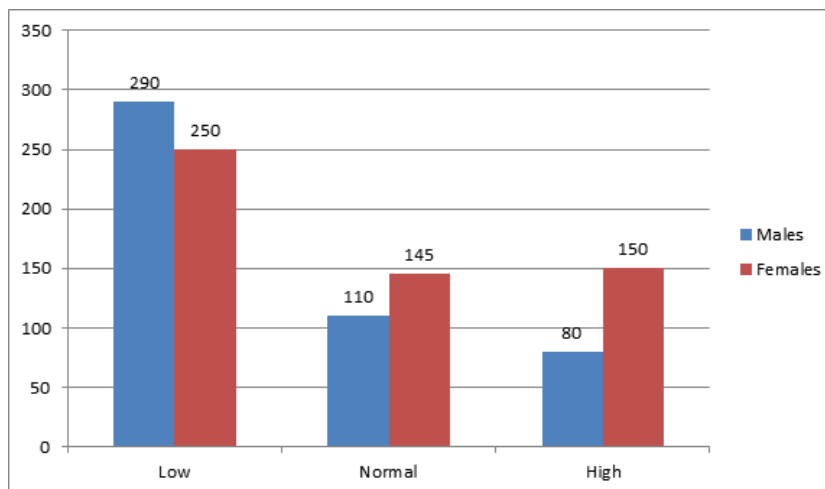


Fig 2: BMI of patients

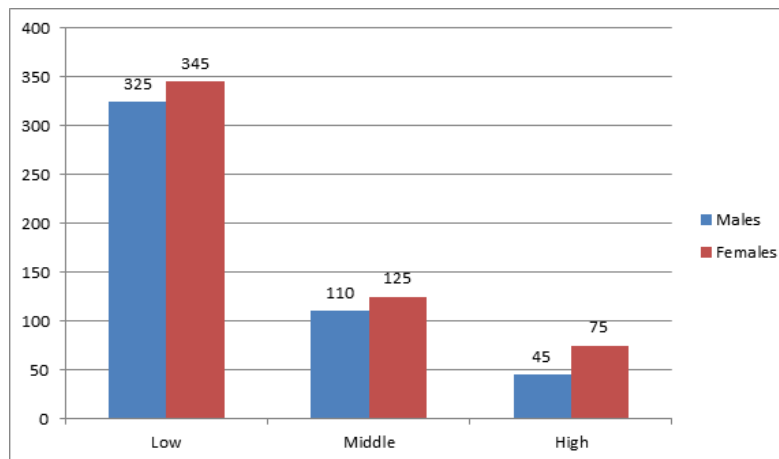


Fig 3: Socio- economic status of patients

3. Discussion

Anemia is defined as a decrease in the number of red blood cells or the amount of hemoglobin in the blood. 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 [5]. The present study was conducted to assess the number of cases with anemia. In present study, out of 1025 patients, male were 480 and females were 545. 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 210 males and 280 females. Moderate was seen in 165 males and 115 females. Severe was seen in 105 males and 150 females. Our results are in agreement with Teoteja *et al.* [6] We found that age group 18-28 years had maximum number of males and females with anemia. Similar findings were seen in study by Sultan [7] in which he assessed anemia in female college students. We also found that anemia was quite common among males and females with low BMI. Similar findings were seen in study by Shill *et al* [8] 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. This is in agreement with study of Kaur [9]. 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). In the course of slowly depleted iron status, an increasing RDW normally appears even before anemia appears [10]. Anemia is sometimes treatable, but certain types of anemia may be lifelong. If the cause is a dietary iron deficiency, eating more iron-rich foods, such as beans, lentils or red meat, or taking iron supplements will usually correct the anemia [11]. Alternatively, intravenous iron (or blood transfusions) can be administered.

4. Conclusion

Anemia is common among population. Proper diet and nutrition level is required to prevent developing anemia. Young adults are more prone to the anemia. The prevalence of anemia increases with age and is associated with race, chronic diseases, and other conditions such as infection.

5. References

1. Macgregor MW. Maternal anaemia as a factor in prematurity and perinatal mortality. *Scottish Medical Journal.* 1963; 8:134.
2. 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.
3. Gowri A.R, Sangunam HJ. Assessment of the mental and motor abilities of school going children with anaemia. *Ind. J. Nutr. Dietet.* 2005; 42:99-105.
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. Teoteja GS, Singh P. Micronutrient profile in the Indian population. *Indian Council Medical Research.* 2002; 131-40.
7. Sultan AH. 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 KB, Karmakar P, Kibria MG *et al.* Prevalence of iron-deficiency anaemia among university students in Noakhali region, Bangladesh. *Journal of Health, Population and Nutrition.* 2014; 32:103-110.
9. Kaur IP, Kaur S. A comparison of nutritional profile and prevalence of anemia among rural girls and boys," *J of Exer Sci and Physio.* 2011; 11-18.
10. Ayoub AI. Iron deficiency anemia in Dubai Medical College for Girls: a preliminary study. *The Journal of the Egyptian Public Health Association.* 1995; 70:213-228.
11. Karkar PD, Kotecha PV. Prevalence of anemia among students of Nursing School of Vadodara. *The Nursing Journal of India.* 2004; 95:257-258.