

Iron Deficiency Anemia in Bahawalpur Region of Pakistan: A Descriptive Study

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ABSTARCT

Background: This study was done to highlight the magnitude of iron deficiency anemia in Bahawalpur, a big city of Southern Punjab Region of Pakistan, so that affective remedies are carried out to address iron deficiency among vulnerable groups in this part of Pakistan. There have been no such study has been conducted to assess the prevalent type of anemia in Bahawalpur region in past.

Method: One hundred anemic patients were selected from Bahawal Victoria Hospital /Quaid –e Azam Medical College, Bahawalpur. After a detailed history and examination, preliminary blood tests including full blood count, platelet count, retic count, absolute blood count and blood film examination, were done the laboratory. A clinical diagnosis was made based on the finding of history, clinical exam and blood tests. In patient suspected to have iron deficiency, serum ferritin was done to confirm the diagnosis.

Results: Out of 100 patients 80 had iron deficiency anemia and 20 were found to have non iron deficiency anemia. Majority of patients with iron deficiency anemia were aged between 20-30 years (50%). Severity of iron deficiency was arbitrarily categorized into moderate and severe groups on basis of serum Ferritin level. Majority of patients (53%) had moderate iron deficiency anemia. 10 patients (12.5%) had severe iron deficiency anemia. Out of 80 patients, 60% were females. 56(70%) patients) were from rural areas. 30% were from urban population.

Conclusion: Iron deficiency is more common cause of anemia in Bahawalpur region , more in females. It is seen more in people living in rural areas.

INTRODUCTION

A clinical condition characterized by decrease in hemoglobin level of blood below the normal for someone's age, gender, physiological condition and altitude above sea level of that person is anemia¹. Anemia can be seen in all parts of world affecting any gender and age but it affects lower socioeconomic population more due to lack of resources and deficiency in diet². It has been seen more in conditions when requirement of iron is more such as in growing children and pregnant females. It is also seen more on elderly population when intake is less or if there is blood loss from gastrointestinal or genitourinary tract, which could be occult³. There are many conditions predisposing to anemia, and it has been classified into various types, nutritional deficiency, blood loss, hemolytic aplastic anemia, and anemia associated with chronic diseases like rheumatoid arthritis, chronic liver disease, chronic renal disease, malignancies^{4,5,6}.

Iron deficiency anemia is a common cause of anemia found worldwide in all age groups. It has many causes in different age groups. The hemoglobin cut off values have been set to define

anemia, in children <5 years of age and pregnant women, nonpregnant women and men as 11, 12 and 13g/dL respectively. Also we can further classify iron deficiency anemia to moderate and severe based on hemoglobin^{7,8,9,10}, and <7g/dL Hb represent moderate and severe anemia respectively¹¹. It has been estimated that iron deficiency anemia is affecting nearly 700 to 800 million people worldwide. More than 50% of pregnant women in developing countries are anemic. Among these, South Asia and Africa have been found to be the most vulnerable regions for prevalence of iron deficiency anemia. It has been found that about 65% of pregnant women in South Asia have iron deficiency anemia and in Southeast Asia it has been found to be as high as 88% in pregnant females^{12,13,14}. It is also a common problem in our country but not enough measures have been taken to assess the gravity of the condition and its prevalence in different areas of Pakistan. We are still a long way off from goal to overcome IDA among vulnerable population groups, including all pregnant women and nursing mothers in Pakistan who are mostly affected by IDA¹⁵.

It has been revealed in different studies that iron deficiency anemia is the commonest type of anemia in the world and in developing countries, about 50-60% of young children and pregnant females and 20-30% of non pregnant females have iron deficiency

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anemia in developing countries. In Pakistan, various studies have been performed among different areas to estimate the prevalence of this important public health problem⁸⁻¹⁰. There has been no study done in Bahawalpur Region about very common and fairly treatable health condition. This study is being conducted to assess the prevalence of this problem in Bahawalpur, so that affective measures can be taken to treat this condition and reduce morbidities associated with it.

MATERIALS & METHODS

For the study, one hundred patients of either sex, age more than 18 yrs and hemoglobin <10g/dl were selected for the study from Bahawal Victoria Hospital Bahawalpur. After getting an informed consent ,a detailed history was taken from them, including history of present illness, past illness, family history of anemia, socioeconomic status, any history of blood loss, drug use, menstrual, gynecological and obstetrical history in females, history of diarrhea, dysphagia, malaria, eating habits, quality and quantity of food consumed, history of blood transfusion or donation and worm infestation A complete physical examination was carried out later that included as detailed exam of hematopoietic system, looking for pallor, koilonychias, lymphadenopathy, hepatomegaly, splenomegaly, purpura, bruises, rectal examination and pelvic examination. Following these, preliminary blood tests were performed on 5ml venous blood, including full blood counts by Automated method, Histogram were taken on automated analyzer and hemoglobin; blood indices and RDW was noted. The total Platelets, reticulocyte counts and absolute values were done. Ferritin level of checked on each patient with clinical diagnosis of iron deficiency anemia. Serum ferritin values < 15ng/dl was considered diagnostic for severe iron deficiency. Cutoffs for hemoglobin women and men are 11 and 12g/dL respectively

RESULTS

Results of this study are shown in tables. 1-6. Iron deficiency anemia was the commonest type of anemia affecting most of the patients.

Out of 100 patients 80 had iron deficiency anemia and 20 were found to have non iron deficiency anemia. Majority of patients with iron deficiency anemia were aged between 20-30 years (50%). Severity of iron deficiency was arbitrarily categorized into moderate and severe groups on basis of serum Ferritin level. Majority of patients (53%) had moderate iron deficiency anemia. 10 patients (12.5%) had severe iron deficiency anemia.

Out of 80 patients, 60% were females. 56(70%) patients were from rural areas. 30% were from urban population.

Table 1: Iron deficiency anemia patients

Anemia	n	%age
Iron deficiency	80	80
Non iron deficiency	20	20

Table 2: Age distribution of iron deficiency anemia patients

Age	n	%age
20-30	40	50
31-40	22	27.5
41-50	18	22.5

Table 3: Measurement of serum ferritin level, severity of iron deficiency anemia

Serum Ferritin Level	n	%age
Ferritin <15 ng/dl	5	6.25
Ferritin 15-45 ng/dl	60	75
Ferritin 46-100 ng/dl	15	18.75

Table 4: Gender distribution of iron deficiency anemia

Gender	n	%age
Male	20	25
Femaled	60	75

Table 5: Population distribution

Location	n	%age
Rural	56	70
Urban	24	30

DISCUSSION

Anemia has been found to affect about millions of people, around the world, mostly in developing countries, with many underlying causes, including poor socioeconomic status, lack of health education and inadequate health facilities particularly in rural areas of the developing countries. All these factors have aggravated the severity of this problem. Most of the research on anemia in Pakistan has focused on females and children. No study on the prevalence of iron deficiency anemia has been conducted in Bahawalpur region.

Our findings depict that there is a high prevalence of this disease in this part of Pakistan. It could be from various factors including poverty, lack of awareness and education, limited access to health care facilities. Also the result show that IDA is seen more in reproductive age group and in growing age given the fact of increased requirement. Researchers found significantly lower hemoglobin levels in women age thirty years and more. It could be because of their birth related complications Regarding gender distribution , it is seen in both although more common in females that could be due to loss during reproductive age and pregnancies in

premenstrual period. After that it could be secondary to blood loss via gastrointestinal or genitourinary routes, which may be seen in both genders. Severe iron deficiency anemia is also seen in to a significant extent in this region and can contribute to many co morbidities and mortalities in this area of Pakistan. This study also shows that iron deficiency is seen more commonly in population belonging to suburbs of Bahawalpur, again putting more emphasis on focusing on awareness programs and establishing health facilities in these areas, which may need more research as well.

In our study, the evaluations for causal factors were not carried out as the purpose of this study is to emphasize on the increased prevalence of iron deficiency and to raise awareness about its effects on the population at large. Our study was mainly focused on the presence of iron deficiency, a common health problem worldwide, in this region of Pakistan, using clinical grounds and basic investigations. Further studies are required on a bigger sample sizes with more sophisticated equipment on general population to address this issue in detail. This will make the treatment of iron deficiency anemia more effective.

It is suggested that no patient with anemia should be treated blindly with medicines. This must be investigated further to find out the cause and type of anemia before starting treatment.

CONCLUSION

Iron deficiency anemia contributes to significant mortality and morbidity in Pakistan particularly in females of reproductive age. There are many factors contributing to a high prevalence of iron deficiency in Pakistan which include poverty, malnutrition, illiteracy, inadequate infrastructure and lack of policy or legislation. Millions of people in this particular region are predisposed to health consequences of iron deficiency anemia. This situation demands a multidisciplinary approach to alleviate this problem. Food iron fortification, nutritional education, improved health facilities and improvement of socioeconomic status may be the initial basic measures needed to

curtail the magnitude of iron deficiency anemia in this region of Pakistan.

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