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Research Article

A COMPREHENSIVE STUDY OF LOW IRON VALUES AND ANEMIA FREQUENCY IN PATIENTS OF RURAL AREA

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Background: When the volume of blood to take oxygen is less than the capacity required such condition or state is known as anemia. To evaluate the prevalence different stages of anemic patients, this retrospective research study was conducted to analyzed the immensity of Deficiency of Iron Anemia in Mayo Hospital, Lahore from period of March 2016 to February 2017. **Aim:** To evaluate the prevalence of different anemic levels in patients to give better treatment and to improve quality of life of patients was the objective of this research. **Methods:** Two hundred patients who met all the criteria needed to this study were included in this study. Blood tests, CBC reports of all patients were examined in the laboratory for this research study. Furthermore, we examined detailed patient's history, current diseases, previous diseases, gynecological history of women and anemia history in family. **Results:** From all two hundred anemic patients, it was found that 30 (15%) patients had inadequacy of non-iron (lack of other minerals) anemia and 170 (85%) patients had deficiency of iron. 58.8% of the patients who had less volume of iron were in the age of 21 Years to 32 Years. The intensity of deficiency of iron was observed on basis of serum ferritin level (SFL) and classified into groups as modest, mildest and acute. It was found that 20 (11.8%) patients had acute iron deficiency anemia, 120 (70.6%) patients had modest IDA (iron deficiency anemia) and rest (17.6%) had mildest deficiency of iron anemia. From 170 IDA patient's 95 (56.0%) were women, 40 (23.52%) were men having the age of more than 19 years and 35 (20.58%) were growing children having the age of less than 14 years. **Conclusion:** In this detailed study, it was observed that, especially in females, deficiency of iron is the most frequent cause in patients of anemia.

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INTRODUCTION:

The state in which the volume of blood (hemoglobin level) to take oxygen is less than the required volume of blood in normal with respect to sex, age and physiological state is known as anemia. In all over the world, mostly in rural areas, number of deficiency of iron anemia patients is increasing. Cause of it might be less diet, lack of resources and no awareness.

Iron deficiency is generally observed in such a condition when need of iron is much important for example pregnant women and growing children. Iron deficiency is also seen in old aged persons because of weakness, less hemoglobin level, loss of blood in any incident and nix healthy diet. In whole world population deficiency of iron anemia can be most commonly observed.

For anemia definition in men and women 13gm/dl and 12gm/dl is measured as the less hemoglobin level than the required one. On the bases of hemoglobin values deficiency of iron anemia can be further categorized as acute, modest and mildest. Cause of anemia might be due to deficiency of mainly three minerals which are folic acid, VitB12 and iron. But the cause of anemia which is most commonly and most frequently observed is the iron deficiency and in most of the other studies same problem is observed. In under developed countries 50% to 60% of growing children and 20% to 30% of non-pregnant women were found anemic patient as a search result of World Health Organization.

The most common cause of anemia in Pakistan is iron deficiency and in pregnant women it is most commonly observed. To examined/evaluate the frequency of this main health related disease in Pakistan different studies regarding to IDA have been conducted in different areas of the country. This research study was conducted to assess the rate of recurrence of IDA to reduce the death ratio and to improve quality of life of patients and to provide

better health care facilities to the patients affected by anemia.

METHODS:

This retrospective research study was conducted in Mayo Hospital, Lahore from period of March 2016 to February 2017. The participants of this research study were 200 whom hemoglobin values were less than 9gm/dl. Also deeply observed the whole history of all patients as like regarding their age, sex, current diseases, previous diseases, loss of blood details, IDA history in family, use of drugs, diarrodea, malaria, gynecological history of women and details of diet history after taking their consent.

Complete detailed physical health checkup of all patients was carried out for this research study. Patient's Hb Level, blood tests, CBC and SFL reports were examined in the laboratory and also counting of platelets was carried out. For acute ID, SFL was considered less than 14ngm/dl. Hemoglobin values were considered to examine the designated limit in men and women were 10gm/dl to 12gm/dl.

RESULTS:

The deficiency of iron was found as the main cause of anemia in all the participants of this study. From all two hundred anemic patients, it was found that 30 (15%) patients had inadequacy of non-iron anemia and 170 (85%) patients had deficiency of iron value. 58.8% of the patients who had less volume of iron were in the age of 21Years to 32 Years. The intensity of deficiency of iron was observed on basis of serum fertin level (SFL) and classified into groups as modest, mildest and acute. It was found that 120 (70.6%) patients had modest IDA (iron deficiency anemia), 20 (11.8%) patients had acute iron deficiency anemia and rest (17.6%) had mildest deficiency of iron anemia. From 170 IDA patient's 40 (23.52%) were men, 95 (56.0%) were women having the age of more than 19 years and 35 (20.58%) were growing children having the age of <13 years.

Table1. Anemic patients with Deficiency of iron

Characteristics	Percentage	Frequency
Deficiency of iron	85%	170
Deficiency of other minerals	15%	30

Table 2: Distribution of patients as age wise

Participants	Percentage	Frequency
40-45	8.82%	15
34-39	11.8%	20
27-33	30.02%	51
21-26	8.8%	49
14-20	0%	0
8-13	0.6%	35

Table3. Serum Ferritin Level (SFL)

SFL	Percentage	Frequency
F <14ng/dl	11.8%	20
F 14-44	70.6%	120
F 45-99	17.6%	30

Table4. Category wise

Category	Percentage	Frequency
Acute IDA	11.8%	20
Mildest IDA	17.6%	30
Modest IDA	70.6%	120

DISCUSSION:

Affected people in the world by anemia are in millions. There are many hidden causes of it such as unhealthy diet, poor financial status, lack of awareness, low literacy ratio in under developing countries and also in rural areas of developed countries. These causes speculate the severity of this disease. Various studies on anemia and iron deficiency in females and growing children had been conducted in different areas of Pakistan. This research study was conducted to assess the causes of IDA to provide better health facilities and to decrease the morbidity.

It was found that the rate of IDA is very excessive in such rural areas of Pakistan. The most expected causes of it are poor financial status, high illiteracy rate, lack of awareness about iron deficiency of anemia and lack of health facilities. Iron deficiency of anemia is mostly found in females and children. The major cause of IDA in females is their gynecological issues.

Because our main focus was to examine the frequency of deficiency of iron anemia so the common causes/factors/reasons are not included in this study as the IDA is a most frequent problem and danger to health in all over the world. Furthermore,

this research is insufficient so more evaluation is needed to find out the factors and reasons related to this disease for redundancy of morbidity, to improve the quality of life and better medical treatment of anemic patients.

CONCLUSION:

Anemia due to Iron deficiency is most commonly observed in females and growing children. High frequency of this disease is due to many elements such as unawareness of nutrition and minerals, poor financial status and low literacy rate etc. These factors have to be overcome so that the frequency of IDA could be decreased in such areas of Pakistan

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