PREVALENCE OF IRON DEFICIENCY ANAEMIA IN FEMALES PRESENTING TO MEDICAL OPD OF BACHA KHAN MEDICAL COMPLEX SHAHMANSOOR, SWABI

Mohammad Zahid[1], Tariq Zubair[1], Rabeea Sadaf[2], Faiza Rahman[2]

INTRODUCTION

Anaemia is defined as reduction in amount of red blood cells or hemoglobin, thus reducing the oxygen carrying capacity of blood.[1] According to world health organization, anaemia is defined as hemoglobin concentration below 12 g/dl in non-pregnant women and below 11 g/dl in pregnant women.[2] Anaemia is classified by severity based on content of hemoglobin in the blood. Mild anaemia corresponds to hemoglobin level of 10 g/l to normal level, moderate 8-9.9 g/l and severe anaemia as less than 8 g/l.[3]

World wide, iron deficiency is the most common cause of anaemia, accounting for more than 50% of cases. Other causes of anaemia include nutritional deficiencies e.g. vitamin B-12 & vitamin A, worm infestations, and disorders of red blood cell destruction and hemoglobin synthesis.[4]

Iron deficiency anaemia develops when body stores of iron get exhausted and drop too low for availability of normal red blood cell (RBC) production. Insufficient dietary iron, impaired iron absorption, bleeding, or losses of body iron in the urine or stool are different causes of Iron deficiency anaemia.[5]

Iron deficiency anaemia (IDA) in women of reproductive age is a public health concern that globally affects 17% of women including 26% of non-pregnant and 19% of pregnant women.[6,7] Most of the burden occurs in the less developed countries, majorly because of low resources, poverty, poor dietary intake, and higher rate of chronic diseases.[8,9]

Iron deficiency anaemia impairs health and well-being that is associated with adverse reproductive outcomes in women.10 It reduces work performance, enhances the occurrence of coronary insufficiency and myocardial ischemia and behavioral disturbances. It impairs normal growth, reduces intelligence quotient (IQ) and impairs body immune system function.[11]

The present study is undertaken with intend to gauge the prevalence of iron deficiency anaemia and its severity in different age group females. This will help determine the disease burden in this area and advise policy makers to develop strategies to improve the nutritional status of females in general.

MATERIAL AND METHODS

This descriptive study was carried out at Bacha Khan Medical Complex Shahmansoor, district Swabi from June 2017 to November 2017. This recently constructed hospital is 230 bedded at present and is the only teaching hospital in Swabi district Khyber Pakhtunkhwa Province. Approval for the study was taken from the ethical committee of the hospital before start of the study. The purpose of this study was explained to the subject and informed consent was taken. Sample size was 180 using 30% prevalence of iron deficiency anaemia in females, 95% confidence interval with 8% margin of error under WHO software. Sampling technique was non probability consecutive sampling.

Females age 15-48 who visited medical OPD with various complaints were included in this study. Females with blood dyscrasias, chronic illnesses, and those with history of repeated blood loss were excluded from the study. Blood was drawn from the patient and sent to laboratory for special blood smear and serum ferritin levels.

The basic demographic data, age, hemoglobin level and serum ferritin levels of patients were entered in the Pro-forma and analyzed using SPSS 16. Results were compiled and tabulated.

RESULTS

Among a total of180 patient, 36% (65 pts) were anaemic. Out of these 65 anaemic patients 56.9% had low serum ferritin levels (<15 µg/l) i-e they were iron deficient. Among patients who were iron deficient, 72% had low hemoglobin and 28 % had normal hemoglobin. The percentage of Iron deficiency as a whole in all patients (anaemic and non-anaemic) was 30.55%.

Patients were categorized in four age groups, out of which the most commonly affected one was above 40 years of age. The average age of this age group was 32.2 years +/- 5.54 SD.

Distribution of severity of anaemia in these 65

[1] Department of Medicine, KGMC/BKMC Shahmansoor, District Swabi, Khyber Pakhtunkhwa, Pakistan
[2] Department of Gynae KGMC HMC Peshawar Pakistan.

Address for correspondence:
Dr. Mohammad Zahid
Associate Professor, Department of Medicine, GKMC/BKMC Shahmansoor, District Swabi, Khyber Pakhtunkhwa, Pakistan.
Cell No: 0092-3018919087
Email: drzahidk@gmail.com

Severity-Wise Distribution of Anaemic Patients

	Frequency	Percentage
No Anaemia	115	63.8%
Mild Anaemia	36	20%
Moderate Anaemia	26	14.4%
Severe Anaemia	3	1.67%

Severity-Wise and Age-Wise Distribution of Anaemic and Non Anaemic Patients

Age	No Anaemia		Mild Anaemia		Moderate Anaemia		Severe Anaemia		Total Patients	
	N	%	N	%	N	%	N	%	N	%
<20 Yrs	21	11.6%	12	6.6%	4	2.2%	0	0%	37	20.5%
20-29 Yrs	30	16.6%	5	2.7%	8	4.4%	0	0%	43	23.8%
30-39 Yrs	28	15.5%	8	4.4%	6	3.3%	1	0.56%	43	23.8%
>40 Yrs	36	20%	11	6.11%	8	4.4%	2	1.12%	57	31.67%
Total	115	63.8%	36	20%	26	14.4%	3	1.67%	180	100%

Patient With Iron Deficiency (Serum Ferritin <15μg/Dl)

	Total Number Of Pts	Pts With Iron Deficiency	PERCENTAGE OF Iron Deficient Pts
No Anaemia	115	18	15%
Anaemia	65	37	56%
Total	180	55	

Serum Ferritin, 15ug/L In Patients With Anaemia

	Number of Anaemic Patients	Anaemia + Iron Deficiency
Mild Anaemia	36	24
Moderate Anaemia	26	11
Severe Anaemia	3	2
Total	65	37

documented patients was as: 1.67% (3 pts) had severe anaemia, 14.4 % (26 pts) had moderate anaemia and 20% (36 pts) had mild anaemia.

Age wise distribution of anaemia shows that severe anaemia is slightly higher in older age people though it was statistically insignificant.

DISCUSSION

This study was conducted on 180 consecutive females presenting to medical OPD of BKMC Shahmansor, district Swabi with different complaints. Frequency of anaemia in our study was 36%. Iron deficiency was present in 56.9 % of anaemic patients and 18% of non-anaemic patients.

The estimated prevalence of iron deficiency anaemia in females was 20%. This is slightly higher from the estimated worldwide prevalence which is 17% and is considerably lower than previous estimates reported from Pakistan more than 10 years ago as 30-60 %.[12]

Regarding age of the patients, severe anaemia was greatest in patients above age 40 years. Moderate anaemia was highest in age group of 21-29 years as well as patients above 40 years. Mild anaemia was most prevalent in adolescents. 24% of young patients below age 20 years had iron deficiency anaemia. The percentage of IDA was16.9% in patients group 21-29 years of age while it was 20 % in age-group 30-39 years. 36.8% of patients with age above 40 years had iron deficiency anaemia. This shows iron deficiency anaemia is most prevalent in older age as well as adolescents.

According to WHO standards, Pakistan remains a country of moderate iron deficiency anaemia which is based on the prevalence of anaemia defined by hemoglobin alone. The prevalence of iron deficiency anemia in our study is consistent with a study from Ethiopia

(18%)[13] but lower than that documented in studies from Afghanistan (48.4%)[14], Saudi Arabia (27%)[15] and India (36.3%)[16]

The strength of this study lies in the fact that to the best of our knowledge, this is the 1st study on iron deficiency anemia in females alone in district Swabi and will serve as pilot study to assess the magnitude of this problem. The power of this study will provide basis to take steps to improve nutritional status of females by different means.

The limitations of this study include small size of the study rendering the power of the study too small to give significant results. Also this study does not establish the associated factors of iron deficiency anaemia that needs to be explored by studies carried out in this locality in future.

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