ORIGINAL ARTICLE

Frequency of Anemia in Patients Presenting to Tertiary Health Care Hospital in Kohat, Pakistan

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ABSTRACT

Aim: To determine the frequency of anemia in all patients who presented to out-patient or in-patient in a tertiary hospital in Kohat, Pakistan and to find the frequency of various grades of anemia in females and children.

Methods: This retrospective, descriptive study was conducted in DHQ Hospital Kohat Laboratory .A total of 88 full blood count reports were reviewed for this study. Hemoglobin level <10g/dl was considered as anemia. Data was collected and analyzed.

Results: There were 58 females (48.3%) and 30 children (25%) which were found to be anemic .Mean hemoglobin level was 11.2±2.12gm/dl for female patients and 12.3±2.29gm/dl for children. Moderate and severe anemia was more common in female patients (24.13% and 20.68% respectively) as compared to children (23.3% and 10% respectively) while mild anemia is more common in children (66.7%) as compared to (55.2%) in female.

Conclusion: Frequency of anemia was high in patients presenting to DHQ hospital Kohat. The frequency was higher among female patients as compared to children even after excluding pregnant females and patient with history of surgery within two months.

Key words: Hemoglobin, anemia, children

INTRODUCTION

Anemia is derived from ancient Greek: lack of blood. Anemia is defined as decrease in amount of RBC, or hemoglobin in the blood[1]. Anemia has been defined as "a condition in which the number of red blood cells or their oxygen carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking and pregnancy status[2]. It is considered as an important global health issue with consequences regarding human health, social and economic well being[5]. It is widely prevalent in developing countries and according to world health organization (WHO) estimates; two billion of world's population is anemic[2]. Several complication of anemia has been studied, most notably, the ill effects of anemia in pregnant women leading to maternal and child complications[4]. According to WHO estimates for Pakistan in non-pregnant women aged 15-49 years, 51% had blood hemoglobin concentration of less than 12g/dl and overall mean blood Hemoglobin concentration was 11.7g/dl. In pregnant Pakistani women aged 15-49 years, 50% had blood hemoglobin concentration of less than 11g/dl and overall mean blood hemoglobin concentration was 10.9gm/dl[5].

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METHODOLOGY

Study design: Retrospective, cross-sectional, institution-based study.
Study Site: KDA hospital District Kohat.
Study population: All non-pregnant female and children below age 14.
Inclusion Criteria: All female patients having Hb≤10gm/dl and children of age group up to 14 years included.
Exclusion criteria: All males having age more than 14, all pregnant females, patients having history of surgery within two months and history of blood transfusion within two months to prior admission were excluded.

RESULTS

A total of 88 patients visited DHQ Hospital Kohat were studied. 88 samples were collected from the patients (Including both indoor and outdoor) visited DHQ hospital Kohat from 3rd May to 29th May. The detail of results is given in tables 1,2 and Fig 1,2. In our study, hemoglobin level below 10gm/dl was taken as anemic. There were 58 female patients and 30 children which were anemic. Moderate and severe anemia was more common in female patient while mild Anemia is more common in children.

Fig.1: Grades of anemia in anaemic females

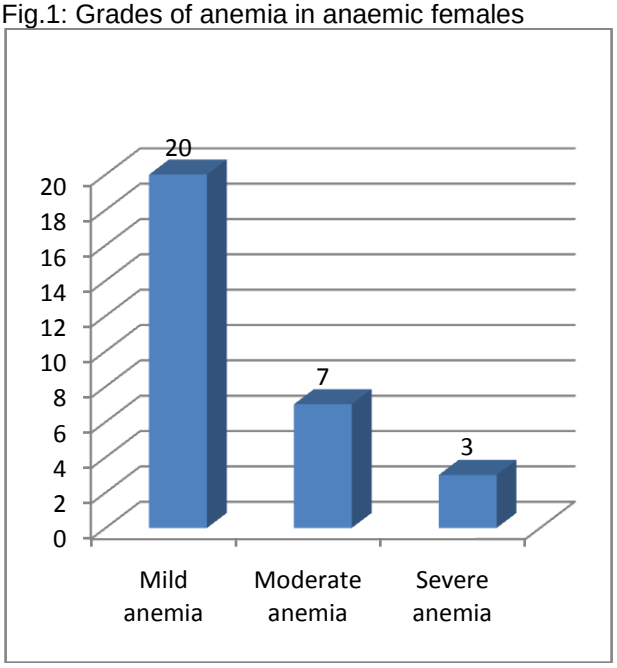

Fig. 2: Grades of anaemia in children

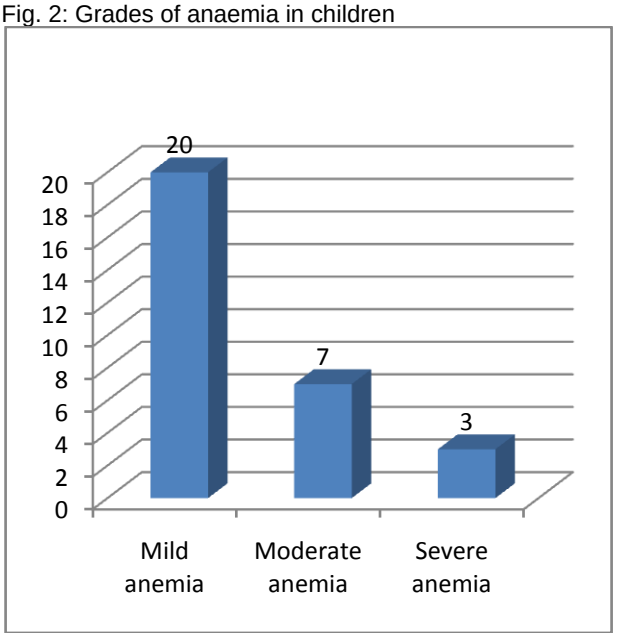

Table 1: Grades of anemia in study population

Grades	Females	Children
Mild	32(55.2%)	20(66.7%)
Moderate	14(24.2%)	07(23.3%)
Severe	12(20.7%)	03(10%)
Total	58	30

Table 2: Hb in study population

Hb (gm/dl)	Females	Children
Mean ± SD	11.17 ± 2.12	12.26 ± 2.989
Ranges	7.8 – 11.21	8.9- 12.92
Total	58	30

DISCUSSION

Anemia is widely prevalent in Pakistan and its prevalence in Male and pregnant female has been reported in various WHO reports as well as in local literature. In this study we found a very high frequency of anemia in children and female patients (non pregnant). National health survey of Pakistan (NHSP) estimated that the prevalence of anemia in whole Pakistani population amongst young men varied from 12%to 28% depending on urban-rural difference and socio-economic status while anemia in child bearing age women ranged from 3.8%-51.5%[6] .

Several studies have been done on the issue. It is more widespread in South Asia (53%) than in other regions of the world. A study conducted in Taiwan highlights the anemia prevalence in children and adolescents is a mid public Health problem among people with intellectual disabilities[7]. A study conducted in underdeveloped district of Vehari. Punjab showed anemia prevalence of 47% in children[8]. The research statistics among young pregnant women analyzed prevalence of anemia as 90.5% indicating physiological status to be the reason[9].

Food fortification with iron has been used to prevent anemia in certain countries with varying results depending on type of food fortified[10]. Assuncao et al reported lack of any increase in Hb levels or decrease in anemia after wheat fortification with iron in Brazil. Arcanjo et al reported improvement in Hb levels and decrease in anemia prevalence after using iron fortified rice[11]. This difference in results with different type of fortification can be attributed to the fact that phytins present in wheat decrease iron absorption and result in no improvement in hemoglobin levels.

Anemia in pregnancy is a growing concern worldwide; not only for developing countries but also for developed ones. Adnan Bashir et al (2015) conducted a study to analyze the frequency of anemia in pregnant females according to that study the frequency of anemia was 57% in pregnant women attending antenatal clinic in a tertiary care facility of Pakistan[12]. The percentage is much higher as compared to that observed in studies in Nigeria (40.4%)[13]. This discrepancy may be due to poverty, less access of people to health education and health facilities. However, finding of Adnan Bashir work is less as compared to previous Pakistani research (91%)[14]. In our study ,we excluded the report from antenatal clinic, and female population reported in this study was young women and geriatric population .The high frequency (48.33%)of anemia found in female population in this study depicts that it is not only the pregnant females which are at increased risk

of anemia but the female population overall suffers from anemia. Iron supplements before, during and after pregnancy should be encourage/prescribed to all females to avoid the ill effects of anemia in later stages life.

Anemia is also one of the widespread health problems among children especially in developing countries. In our study frequency of anemia in children is 25%.It is low as compare to study on frequency of anemia in school age children in district Karak, in Khyber Pakhtunkhwah Pakistan. The percentage was 34% in district Karak[15]. The prevalence of anemia in children at America (7%)[16]. It means proper diet is necessary to reduce prevalence of anemia in children.

CONCLUSION

There is very high frequency of anemia in patients presenting to tertiary care hospital in Kohat. The frequency of severe and moderate anemia was more common in female patients while mild anemia is more in children .The frequency was slightly higher among female patients as compare to children. A high frequency is very alarming and effective strategies need to be adopted to prevent this public health problem.

RECOMMENDATIONS

This study has shown that there is high frequency of anemia in female patients and children. Most of the time, little or no attention is given to patients with mild and moderate anemia. This study has shown a significant contribution of these two groups to the frequency of anemia. Therefore, we suggest that the approach to anemia control should be revised in our guideline so that preventive strategies must be targeted to all patients irrespective of their hemoglobin levels or clinical status. Routine screening for anemia should be made available. Continuous health education program should be developed .Among the preventive strategies for children include continuous use of insecticide treated nets, iron supplementation to low birth weight infants, fortification of food. Eat a varied diet and enhance iron absorption by including meat, ascorbic acid-rich foods (fruits, fruit juices), or both in meals. Avoid tea or coffee with meals.

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