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ANEMIA DURING ANTENATAL PERIOD;
EVALUATION OF DIFFERENT RELATED PARAMETERS IN PREGNANT WOMEN

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ABSTRACT... zahid@emedpak.com Anemia is a common deficiency disorder in females of Pakistan during their reproductive bodies. Objectives: To evaluate anemia in pregnant women, to study prevalence type and management of anemia. Design: Prospective study. Setting; Jinnah Teaching Hospital Lahore. Period: From 01.01.2004 to30.04 2004. Material & Method There were 100 females having two age groups 18-35 years and 36-50 years. Proper history with special emphasis on age, parity and symptoms were taken. Antenatal anemia was evaluated on the basis of history, clinical signs, symptoms and complete blood counts. Results: Iron deficiency anemia (80%) was found to be most common disorder. Urban and rural split depicts 60% and 40% respectively. The 25% subjected had mild anemia and 15% were asymptomatic. Standard treatment was advised according to severity of anemia. In country like Pakistan, Health Education is imperative and is necessarily needed to address this issue which is important for the outcome of any pregnancy.

Keywords: Anemia, Pregnancy, Health Education,

INTRODUCTION

The abnormally low level of RBCs and hemoglobin are prevalent in this part of world. It is important for health care providers to check for anemia. Severe anemia during pregnancy may slow the baby's growth or result in a premature delivery, also because of the weakness, females will not recover as quickly from bleeding, infections and other possible complications of delivery. If there is heavy bleeding at the time of delivery or there is need to have a C-section anemia may make it more likely that a blood transfusion would be needed[1]. Having a transfusion blood increases the risk of infection and other problems related with it. Mostly anemia during pregnancy results from an increased need of iron The body needs more iron, because it is making more blood. Also the growing baby takes all the iron it needs regardless of how much iron mother has in the system. Sometimes anemia during pregnancy is caused by a lack of one or other type

of vitamins. The baby's iron absorption ability greatly increases as pregnancy

progresses. Iron requirement in pregnancy is increased greatly especially after the first trimester. There is significant association between poor perinatal outcomes and moderate anemia. Severe anemia mostly in developed world[2] may result as death from hypoxia and heart failure. Iron supplementation alone may not correct anemia if other nutrient deficiencies exist as well Iron supplementation does not increase hemoglobin higher then the optimal amount needed for oxygen delivery. Current practices of iron supplementation are not based on improved outcomes, but simply on elevating hemoglobin to its supposed "optimal" level. Chronic inflammation may contribute to anemia, since in a study conducted by Kildride et al[3], up to 73% of anemic women have elevated levels of C-reactive protein. Folate, vitamin B12 and vitamin A deficiencies, in addition to iron are common in anemic females[1].

According to UNICEF 19953,lron deficiency anaemia is still a major nutritional and public health problem in developing countries including Pakistan (UNICEF 1994). It was estimated that 50% of pregnant women in developing countries and up to 80% in South Asia have iron deficiency anaemia (WHO 1998)[2]

In this regard study conducted by Kilbride et al 20001 showed that the mean levels of Hb were lower than 11gm/dl in 107 female subjects and the conclusion was that nutritional depravation was more prevalent in women of child bearing age, often having high fertility rate and inadequate inter-pregnancy intervals, This replenishes the body stores of iron and other minerals leading to development of anemia among them. The same findings were also supported by other surveys conducted in Jordan4. According to another study conducted by Cook under UNRWA in 19905, it was found that anemia increased in later periods of pregnancy and it may reach upto 53.7%.

According to Population Action International (PAI) publication[6], the iron requirements during pregnancy are as follows:

* 1st Trimester 0.8mg daily
* 2nd Trimester 4-5mg daily
* 3rd Trimester 6mg daily

During the 3rd trimester it is almost impossible to get enough iron from the diet, which means that the mother's iron stores will be utilized to meet the rapid demand. The total iron requirement for a normal pregnancy in average size female is approximately 1000mg.

OBJECTIVES

To review and critically evaluate the prevalence, types, clinical patterns as well as to diagnose and manage cases of Anemia in pregnant women.

MATERIAL & METHODS

In a hospital based study performed in Gynae & Obs. unit II Jinnah hospital AIMC Lahore for a period of 4 months from 1st Jan 2004 to 30lh April 2004. Subjects showing antenatal anemia were included in the study.

Depending upon first come first served basis a total of 100 females were taken. They were subdivided into two groups, 1st group having 18-35 years and 2nd of 36-50 years age. Proper history with special emphasis on age, parity and symptoms was taken. Antenatal anemia was evaluated on the basis of history, clinical signs , symptoms and complete blood examination. The data were collected on a specialized Proforma prepared already for this purpose.

The main criteria for labeling anemia was the concentration of hemoglobin as;

Severely anemic = Hemoglobin < 5 gm%
Moderately anemic = Hemoglobin 6-9 gm%
Mildly anemic = Hemoglobin 10 gm%

RESULTS AND DISCUSSION

The subjects were categorized as anemic & non anemic according to their symptomatology and blood picture. Further categorization was done on the basis of age, at the time of pregnancy and anemia.

Table-1. Percentage distribution of the cases (n=100)

Anemic	Non-Anemic	Total
80%	20%	100%

On the basis of blood picture, out of these 100 pregnant women, 80 were anemic and 20 non-anemic.

Table-ll. Percentage distribution of anemia (n=80)

Rural	%age	Urban	%age	Total
48%	60%	32%	40%	80%

On the basis of rural and urban distribution 60% belonged to rural and 40% to urban population. Anemia was more prevalent in rural areas probably because of lack of health education, inadequate nutrition and improper medication. Similarobservations were made by Awan et al[10].

Table III. Percentage distribution of anemic cases according to pregnancy status

Primi Gravida	%age	Multi Gravida	%age
10	12.5%	70	87.5%

When the pregnancy status was studied, it was found that out of 80 anemic females 12.5% were primigravida, 87.5% were multigrainda and majority had 4-5 children already. Therefore, parity is an important factor in anemia ,

Table-IV. Percentage distribution of anemic cases in different age groups (n=80)

Age group	Cases observed	Total	%age
18-35 years	30	80	37.5%
36-50 years	50	80	62.5%

As Table IV shows, the anemic pregnant females were categorized into two age groups. There was an increased prevalence in age group 36-50 years (62.5%)
as compared to 18-35 years age (37.5%). This may be due to an increase in age factors along with multi parity.

Table-V. Percentage distribution of anemic cases in different types of anemia (n=80)

Type of Anemia	No. of pts	%age
Hypochromic, microcytic	60	75%
Folic acid deficiency	06	7.5%
Normocytic Normochromic	04	5%
Combined & mixed	10	12.5%

According to blood picture, it was found that most prevalent type of anemia was hypochromic microcytic (75%), followed by mixed type (12.5%), folic acid deficiency (7.5%) and normocytic normochromic type

Table-VI. Percentage distribution of anemic cases according to severity (n=80)			
Hemoglobin Cone	Cases observed	% age	Intensity
Less than 5 gm %	08	10%	Severe
Between 6-9 gm %	60	75%	Moderate
Less than 10gm %	12	15%	Mild

Similarly as shown in above table, according to severity about 10% cases were severely anemic with blood hemoglobin levels less then 5gm%, 75% were moderately anemic with hemoglobin between 6-9gm%, 15% were mildly anemic with hemoglobin levels less then 10gm%.

The Symptoms frequently shown by the patients include easy fatigue-ability, pallor, headache and weakness (85%) each and fainting and breathlessness (10%).

Infrequently observed symptoms include fainting, palpitation, nausea and abdominal pain (10%) each. A small number of cases exhibited symptoms as pica, craving for clay (5%) while almost 15% of cases were asmptomatic.

Table-VII. Percentage distribution of cases according to symptoms observed (n=80) a) Frequently observed symptoms		
Symptoms	No. of pts	%age
Easy Fatigue, Tiredness & Weakness	68	85%
Fainting & Breathlessness	08	10%
Pale Skin, Gums & Nails Beds	68	85%
Palpitation	08	10%
Headache & light headedness	68	85%
Nausea & abdominal pain	08	10%
Craving for clay & pica	04	5%
Asymptomatic	12	15%

Table-VII. Percentage distribution of cases according to different modes of treatment (n=80) b) Infrequently observed symptoms		
Preparation	No of pts	%age
Oral preparations	20	25%
Injectable	08	10%
Oral & injectable	40	50%
Fresh blood transfusion	12	15%

Demographic studies and nutritional surveys highlight circumstances in which pregnancy anemia is most likely to develop. Population Action International (PAI) publication 19986 relates that the reproductive risk ranked the countries into two having prevalence of anemia from low (less then 20% women affected) to very high (60% or more women affected).

In this regard and other reference UCSF health. Org7 says that out of the 133 countries in the world, 29"fall in very high category other 46 are classified as high having 40-60% females suffering from anemia. According to a report8 published in American journal of clinical nutrition 20001, iron supplement did not affect the overall prevalence of anemia and the incidence of preterm births. However, the mean birth weight for more than 200g was raised. There was a significantly lower incidence of low weight birth infants (4% compared with 17% for placebo). Similarly there was a significantly lower incidence of preterm low birth weight infants (3% compared with 10% for placebo). As recommended by CDC 19989 all

pregnant women take iron supplements (30mg/day) starting at the first prenatal visit. In addition it is recommended that pregnant women should eat iron rich foods and foods that enhance iron intake. It was illustrated that pathological anemia of pregnancy is mainly due to iron deficiency. Over 90% of anemia is due to iron deficiency associated with depleted iron stores and deficient intake.

Awan et al[10] studied anemia in pregnant women of Railway Colony, Multan. They observed that microcytic, hypochromic anemia resulting from iron deficiency was the most frequent of anemia (76%) followed by folate deficiency was 20% and combined iron and folate deficiency (20%). Khan et al related biochemical and hematological parameters correlate during pregnancy. The hemoglobin hematocrit and red cell count decreased during pregnancy. One factor may be the expansion of plasma volume. They were of the opinion that low level of hemoglobin might be due to inadequate food consumption, malabsorption, worm infestations or excessive menstrual bleedings. Jilal et al 2000[11] conducted a preliminary survey to estimate the prevalence of anemia in females aged 14-65years. The hemoglobin was estimated in each patient and out of 447 patients 376 females were pregnant and 71 were non-pregnant showing different reproductive complaints. Considering mg/dl as normal limits of hemoglobin level for the study population 43.1 % patients were found to be anemic.

Seyal and Rehana (1982) observed that fefol spansule ferrous sulphate +folic acid slow release capsules) were effective in prophylaxis and treatment, of anemia in pregnancy. Similar were our findings where oral preparation ferrous sulphate and injectable preparations ferrous gluconate were most effective in relieving the symptoms of anemia

Different modes of treatments were adopted according to severity of anemia. The 25% were given oral ferrous preparations and 50% were given oral and injectable both. In case of moderate anemia, they were given fresh blood transfusions and packed cells. This approach was quite effective in treating the anemia as was found from above different studies[10'11].

CONCLUSION

1. Mostly (80%) female were categorized as anemic.

2. Anemia was more prevalent in rural population (60%) as compared to urban.

3. Increased prevalence of anemia in older age groups 36-50 years (62.5%).

4. Hypochromic microcytic type of anemia was most prevalent (75%).

5. 75% cases were moderately anemic followed by 15% mildly anemic and 10% severely anemic.

6. 85% cases exhibited symptoms and 15% cases were asymptomatic.

7. Mildly anemic (25%) cases were given oral ferrous preparations, moderately anemic (50%), oral and injectable preparations and severely anemic (25%) cases were give blood transfusions and packed cells.

REFERENCES

1. Kilbride J, Baker TG, Parapia LA and Khoury SA. Iron status, serum folate and vitamin 612 values in pregnancy and post partum. Ann. Saudi. Med. 2000; 20(5-6): 371-76.

2. World Health Organization 1998. The World Health Report 1997. Conquering suffering, enriching humanity. 1998 WHO Geneva Switzerland.

3. United Nation International Children Emergency Fund 1995. Annual Report 1995 p.52 UNICEF New York.

4. Mawajdeh S, Badran 0, Haddadin A, Abu-Laban A, Idris M. Prevalence and determination of anemia and iron deficiency among Jordanian Women 15-49 years of age; a national study. UNICEF. Jordan Country Programme and Ministry of Health Jordan 1996.

5. Cook R. UNRWA. Annual Report of the Director of Health Vienna. United Nation Relief and works Agency for Palestinian Refugees in the Near East 1990.

6. http://www.PAI.Org 1998. Internet Reference.

7. UCSF Health .Org. 2001. Internet Reference.

8. Brain BJ, Pelletier D. An analysis of anemia and pregnancy related maternal mortality. American Journal of clinical nutrition 2004.

9. CDC Health. Org. 1998. Internet Reference.

10. Awan MM, Akbar MA, Khan Ml. A study of anemia in pregnant women of railway colony Multan, Pakistan J. Med Res 2004; 43(1): 11-14

11. Jilal F, Jilali S, Khan NB. A prevalence of anemia in women at district headquarter hospital Gilgit Pakistan J. Med Res 2000; 39(2): 78-79

12. Seyal N. A and Rehana N. Treatment and prophylaxis of anemia of pregnancy with fefol spansule J.P.M.A February 1982;32:43-45