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Research Article

**PREVALENCE OF IRON DEFICIENCY ANEMIA AMONG
PREGNANT WOMEN**¹Dr Ehtisham Saleem, ²Dr Muhammad Fareed Ahmed, ³Dr Hamza Akhtar,
⁴Dr Aman Ullah Tariq.^{1,2,3,4}MBBS, Central Park Medical College, Lahore.**Article Received:** February 2020 **Accepted:** March 2020 **Published:** April 2020**Abstract:**

The major health problem mainly in the developed countries is anemia during the pregnancy which is linked with the many side effects. [1] World health organization (WHO) has set the limit to define the anemia if the hemoglobin (hb) level is less than 11 g/dl [2] WHO has stated that if the prevalence of anemia is 5.0% or higher it should be considered as significant problem. If in any population the prevalence of anemia is more than 40% it must be specified as major health problem. It was a cross-sectional study containing 350 women age ranges between 19-40 years. All healthy pregnant women with HB less than 11g/dl were recruited into the study. A detailed health data could be acquired such as parity, menstrual characteristics, infections, previous iron or blood transfusions, etc. The Government needs to take solid steps to improve the quality of education and socioeconomic status of females, increase the number of health care providers and intensify public education. Health behavior's need to be changed and adherence to the prescribed programs by the government is needed. Providing long term iron supplementation and dietary modification starting from adolescence may improve the hemoglobin levels and later on prevent anemia in pregnancy.

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INTRODUCTION:

The major health problem mainly in the developed countries is anemia during the pregnancy which is linked with the many side effects. [1] World health organization (WHO) has set the limit to define the anemia if the hemoglobin (hb) level is less than 11 g/dl [2] WHO has stated that if the prevalence of anemia is 5.0% or higher it should be considered as significant problem. If in any population the prevalence of anemia is more than 40% it must be specified as major health problem. In every low- and middle-income families 56% of pregnant women are suffering from anemia. The most common causes of anemia found in pregnant women in developed countries are micronutrient deficiencies of iron, folate, and vitamins A and B12 and anaemia due to parasitic infections such as malaria and hookworm or chronic infections like TB and HIV. Iron deficiency is the most common nutritional deficiency worldwide, particularly among pregnant women. Because of higher demand of iron during pregnancy, the pregnant females are more prone towards anemia [3, 4, 5]. According to WHO the prevalence of anemia is 32.4% in non-pregnant and 44.2% in pregnant women [6]. Anemia during pregnancy is quite disturbing. The fetal iron demand increases as maternal daily iron requirement increase up to 10-fold from 6 mg/dl/day during pregnancy. The raised demand of fetal iron copes up from the stored maternal iron, which results in greater risk of having iron deficiency anemia in pregnant women. This deficiency of anemia results in serious impact on both fetus and mother. Mothers suffering from anemia often encounter with symptoms such as increased fatigue level, reduced mental performance and reduced exercise performance. [7] Moreover, when the hb level is below <90 g/L there are increased risk of premature delivery, low birth weight, and spontaneous abortion. [8] However, maternal IDA results in the poor health status of fetus and low iron. Also, pregnant women with anemia are at a greater risk of perinatal mortality and morbidity [9].

Fetal iron metabolism is completely dependent upon maternal iron delivery via the placenta and so the effects of anemia on the fetus are directly related to the extent of maternal iron deficiency with increased mortality linked to severe IDA [10]. The prevalence of IDA varies among countries but is a major public health problem in the developing world, reflecting differences in race, socioeconomic factors, nutritional habits, medical care, and the frequency of parasitic illnesses [11].

MATERIALS AND METHODS:

It was a cross-sectional study containing 350 women age ranges between 19-40 years. All healthy

pregnant women with HB less than 11g/dl were recruited into the study.

Pregnant females who were having any of co-morbidities such as hypertension, acute/chronic illness, gestational diabetes, diabetes, any previous history of blood transfusion and obesity were excluded from the study. The questionnaires were containing socio-demographic data in which age, education and socioeconomic status, any past medical illness or having any complication during the pregnancy, obstetric history and blood investigation.

The purpose of the study was explained to the participants before the informed consent. The questionnaire was describing into their first language. Data was collected, tabulated and statistically analyzed using IBM SPSS 21.0 and the P value was considered <0.05

RESULTS:

Out of 350 women 220 met the inclusion criteria and participated. Results showed that out of the total, majority of the women were in age group 31-40 years whereas 41% were in age range 18-29 years. 64% women were not educated and 33% had some knowledge about education. Many of the pregnant women were belonged to lower class where as 86% of them were belonging to middle class and only 14% belonged to upper class.

According to Parity and trimesters:

According to the trimesters, females were divided into different categories of their trimester such as 47.5% were in 3rd trimester, 37.4% were in second trimester whereas 14% were in their first trimester.

According to Ferritin level:

To evaluate the authentic figures of anemic pregnant women additional investigations were required to perform on those who were having hb level less than 11 g/dl. Categories were specified according to the serum ferritin level. Of 220 women 46.2% were having ferritin level less than 12 mg/dl whereas 45.3% were having serum ferritin level ranging from 12-3 mg/dl. Remaining 17.1% were having 31-300 mg/dl ferritin level whereas 1.2% was in the last category

According to HB level:

Out of 350, 220 women were anemic while rest of them were normal

According to severity of Anemia

Anemic people were grouped according to the severity; mild, moderate and severe. In mild category, hemoglobin level was 9.7% and no of participants falling in this category was 140. Whereas in moderate category, hb level was 7-20

and 71 participants were in them while rest 6 participants were in severe category having hb level less than 10.

DISCUSSION:

The most prevalent micro nutrient is iron deficiency combined with anemia in pregnant women with serious health issues. is often associated with other nutritional disorders (particularly folic acid, zinc, vitamin A), and frequently has a secondary cause or association [12]. The prevalence is greater in parous women and in multiple pregnancies. The causes of ID and IDA in the developing world are often different from those in developed countries. Appraisal of iron stores in pregnancy is problematic because of complex physiological changes [13]. Iron deficiency anemia during pregnancy is linked with intrauterine growth retardation, premature birth, low birth weight, increased labor time, higher risk of infection, elevated maternal and prenatal mortality, muscle dysfunction, and low physical capacity. The birth weight is affected by a complex and independent factor in addition to maternal Hb and serum ferritin. The anthropometry of the mother and her nutritional intake are thought to be among the most important [13][14][15]

The most reliable available current diagnostic test for ID is a low serum ferritin. Concentrations <20 µg/L are a very good index of ID. Dietary intake alone to maintain iron stores in pregnancy is unlikely to succeed because of the increased requirements for iron during pregnancy. Oral supplements at a low dose (40 mg elemental iron per day), starting from at least mid-gestation, can ameliorate ID and IDA and improve neonatal outcome and maternal wellbeing. Intermittent oral treatment regimens (weekly or twice weekly) are an alternative therapeutic option, particularly in areas of limited supply or access [16][17]. Over-treatment with iron in pregnancy may be associated with an increased risk of prematurity and infant mortality.

Intravenous iron has a role in the treatment and avoidance of ID and IDA, particularly in women who present late, and/or display severe deficiency or anemia, or who are intolerant of oral iron [158]. It was observed that the etiology of iron deficiency remains the same over the decades. Multiparity, short birth spacing, poor socio-economic statuses, lack of education were responsible for high prevalence of IDA. Besides this, it was observed that majority of women attended clinic during the 2nd trimester of pregnancy. So they had lack of iron intake at the time of conception [19] [20] [21]. Non-compliance of iron supplementation was also observed to be an important contributory factor.

Almost all the South Asian countries including Pakistan have national level anemia control programs but this problem still persists. This study will provide a base upon which strategies against the eradication of IDA will be made. Intervention only with iron and folic acid supplements is not adequate to combat this problem but this issue requires a multi-faceted approach. Besides regular screening of hematological parameters during pregnancy, nutritional education and counseling should as a part of anemia eradication plan. Researchers should concentrate on preventive supplements and food fortification approaches.

A detailed health data could be acquired such as parity, menstrual characteristics, infections, previous iron or blood transfusions, etc. The Government needs to take solid steps to improve the quality of education and socioeconomic status of females, increase the number of health care providers and intensify public education. Health behavior's need to be changed and adherence to the prescribed programs by the government is needed. Providing long term iron supplementation and dietary modification starting from adolescence may improve the hemoglobin levels and later on prevent anemia in pregnancy.

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