

Study the Incidence and Types of Anemia in Pregnant Women in Baghdad Province.

*Abdul Razzak Jabbar AL- Shawi** Jinan Ali Obaid** Mays R. Mohammad*** Noor Harith Mohammed



*AL-Yarmouk University College

**Medical Technical Institute - AL-Mansor

*** Baghdad University, College of Science, Biotechnology Department

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ABSTRACT

Four hundred twenty six (426) pregnant women were tested for the diagnosis of anemia and its types. The study was done in AL-Alwaha hospital for birth in Baghdad province. The study showed two hundred thirty six (236) pregnant women effected with anemia at percentage (55.4%) as follow: first trimester (1-3 months) 46 cases (10.8%), second trimester (4-6 months) 69 cases (16.2%), third trimester (7-9 months) 121 cases (28.4%). Also the result showed the percentage of anemia between pregnant women who take prophylactic drugs (iron, folic acid, vit. B12) was (21.8%) lower than pregnant women who not take it (33.6%). The percentage of anemia between women who primigravida (9.6%), lower than pregnant women multipart gravid (45.8%). The forms of anemia in this study was between mild, moderate to severe anemia, the most type of anemia was mild anemia (35.5%) followed by in less degree moderate anemia (15.7%), then severe anemia (4.2%). The most common type of anemia is microcytic & hypochromic anemia.

Introduction

Anemia is defined as decreased hemoglobin level, or circulating red blood cells and it is the most common hematological disorder during pregnancy. Inadequate intake or absorption of iron in conjunction with blood loss during pregnancy may contribute to anemia (1).

Anemia in pregnancy is an important public health problem worldwide. WHO estimates that more than half of pregnant women in the World have a hemoglobin level indicative of anemia (< 11.0g/dl), the prevalence may however be as high as 56 to 61% in developing countries (2). Women often become anemic during pregnancy because the demand for iron and other vitamins is increased due to physiological burden of pregnancy.

The inability to meet the required level for these substances either as a result of dietary deficiencies or infection give rise to anemia (3). The degree of anemia graduated from mild, moderate to severe, the WHO pegs

the hemoglobin level for each of these types of anemia in pregnancy at 10.0-10.9 g/dl (mild anemia), 7-9.9 g/dl (moderate anemia) and < 7 g/dl (severe anemia) (4). In pregnancy, anemia has a significant impact on the health of the fetus as well as that of the mother 20% of maternal death in Africa have been attributed to anemia (5). Fetuses are at risk of preterm deliveries, low birth weights, morbidity and parental mortality due to the impairment of oxygen delivery to placenta and fetus (6).

Iron deficiency and consequent anemia during pregnancy could be associated with severe complications like increased risks of maternal mortality and morbidity, premature delivery, and low birth weight. Thus, routine screening tests for anemia are recommended in pregnant women (7). Iron deficiency anemia (IDA) is the most common and primary cause of anemia. IDA prevalence indicates the nutritional status of a community. Considering the effects of IDA on maternal and fetal mortalities, physical function and child growth and development, it is regarded as one of the main health indicators. On the other hand, the World Health Organization (WHO) has reported the prevalence of anemia in pregnant women of Eastern Mediterranean

_____ * Corresponding author at: AL-Yarmouk University College. E-mail address:

countries to be 44.2% (8).Iron deficiency anemia during pregnancy was reported 80% in India where 16% percent of maternal mortalities have been related to anemia (9). It is necessary to protect pregnant women against any disease resulting a good, healthy baby and due to increase incidence of many types of anemia in Iraq so have been think deeply with this problem so we do this research that will enable the physician to find out the incidenceand types of anemia among pregnant women in the province, which representshealth problem in the present time and in order to be a first step towards theprevention and treatment.

Patients & Methods

Hemoglobin was measured in 426 pregnant women in AL-ALwaya hospital for birth in Baghdad province. Cyanomethaemoglobin method is used to determining the amount of Hemoglobin (10) by using spectrophotometer. Useddrabkin solution as diluents with standard solution at concentration 57.5 mg/dl to determine the amount of Hemoglobin at this formula:

$$Hb (g/dl) = \text{Optical Density (test)} / \text{Optical Density (standard)} * 250/1000 * \text{Conc. of Standard}$$

Anemia was classified as a hemoglobin concentration less than 12 g / dl for non--pregnant women and less than 11 g / dl for pregnant women (11).Count R.B.C. and determineP.C.V.& M.C.V.&M.C.H.& M.C.H.C. of all cases of anemia. Blood smears were done for all cases,staining them byleishmane stain and examined under light microscope to study the morphology of R.B.C.during pregnancy. Thetimes of pregnancies were recorded, as well as recording whether a pregnantwoman dealing with iron and vitamin B 12 and folic acid or do not take.

Results

The result showed that number and percentage of anemic cases among pregnant women in Baghdad province is 236cases at (55.4%) and according to period of gestation, the number of anemic pregnant women in first trimester (1-3 months) is 46cases at (10.8%), in(4-6 months) is 69cases at (16.2%) and in third trimester (7-9 months) 121cases at (28.4%), as in figure (1).

The result referredto the number and percentage of anemic women who take prophylactic drugs (iron. Folic acid, vit.B12) was (21.8%) that lower than pregnant women who didn't take it (33.6%), as table (1).

Table (2), appear the number of anemic pregnant women who primigravidaat (9.6%), that lower than pregnant women multipart gravida (45.8%).

Four types of anemiaseen between anemic cases in different months of gestation, the most common one was microcytic & hypochromic followed by in less degree macrocytic, then normocytic & normochromic and finally microcytic & macrocytic anemia in table (3).

Table(4) showed the number and percentage of anemic pregnant women suffering from different forms of anemiastarting from mild, moderate to severe one, the most common type of anemia was mild anemia followed by in less degree moderate anemia then severe anemia.

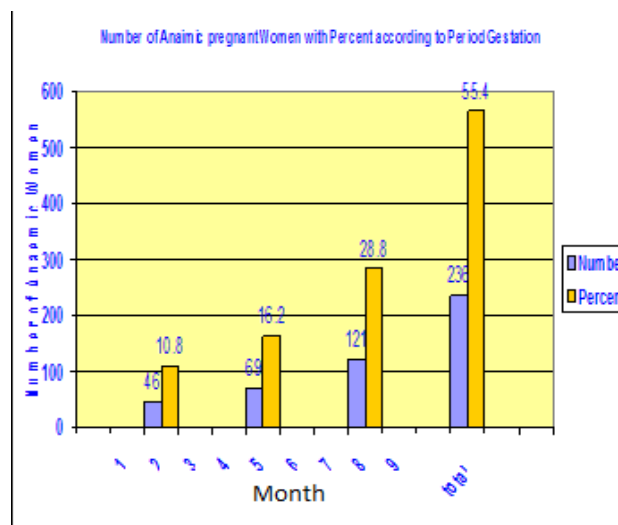


Figure (1): The number of anemic cases among pregnant women & its percentage according to period of gestation.

Table (1): The number of anemic pregnant women who take prophylactic drugs (iron, folic acid, vit.B12) and other who not take it with their percentage.

Groups of pregnant Women	Num	Number of anemic women	Percent of anemic women
Pregnant women who take prophylactic drugs(iron, folic acid, vit.B12)	256	93	21.8%
Pregnant women who not take it	170	143	33.6%
Total	426	236	55.4%

Table (2): The number and percentage of anemic women who primigravida and multiparagravida.

Groups of pregnant women	Number	Number of anemic women	Percent of anemic women
Primigravida	97	41	9.6%
Multipara gravid	329	195	45.8%
Total	426	236	55.4%

Table (3): Types of anemia in anemic pregnant women in different months of gestation.

Anemia	Preg. wom.no. in 1-3 months	Preg.wom.no in 4-6months	Preg.wom.no. in 7-9 Month
Microcytic & Hypochromic	36	50	91
Macrocytic	3	13	25
Normocytic & Normochromic	4	4	4
Microcytic & Macrocytic	3	2	1
Total no.	46	69	121

Table (4): The forms of anemia in anemic pregnant women and their percentage.

Anemia	Number of anemic women	Percentage of anemic women
Mild anemia(10.0- 10.9g/dl)	151	35.5%
Moderate anemia (7.9- 9.0g/dl)	67	15.7%
Severe anemia <7 g/dl	18	4.2%
Total	236	55.4%

Discussion

This study was one of the important topics which affect and was related to the health of pregnant women. Anemia in pregnant women consider as the major health problems with the greatest impact on the safety of the pregnant woman and her fetus also study the incidence of anemia among pregnant women, as well as types of anemia in Iraq needed more careful now.

The results of this study showed the incidence of anemia among pregnant women in Baghdad province had 236cases at (55.4%), this ratio is above the normal average. This was due to malnutrition or poor motivation among the majority of pregnant women or incorrect use of drugs. Louis&Jack (1970) stated the recommends that pregnant women are susceptible to anemia because of the weakness of their resistance to infection as well as increased need for iron and folic acid (12).The percentage of anemia among women is less than the ratio found by the Wasit (13), who found the incidence of anemia among pregnant women in Wasit province was 65.6%, but is equal to thatin Basrah (14), which show the incidence of anemic cases among pregnant women in the province of Basra was 57%. They also showed us the study that the incidence of anemia in pregnant women increased with pregnancy where at its height in the final stage of pregnancy and this is consistent with the study carried out byAbdul-Hussein (1996) & Mohammed (990)revel that the reason

for this is due to increased depletion of iron by developing fetus.

The study appear that anemia is more common inmultipravid, due to the depletion of inventories of iron because of recurrent delivery and who did not recover and compensate seconds (13& 14).

They also showed us the results of this study that the incidence of anemia in pregnant women who take iron and folic acid and vitamin B₁₂ was lower than in pregnant women who do not take this prophylactic drug. The emergence of anemia in pregnant women who take these drugs may be due to the non-use these prophylactic drugs are complete and correct. The highest percentage of types of anemia revealed by this study is microcytic & hypochromic anemia. These types of anemia were identified depending on the morphology of cells which in most cases is iron deficiency anemia. The poverty of iron deficiency is one of the most common reasons leading to anemia in the world where the ratio of occurrence in tropical regions with less consumption of meat and which infested as well as intestinal parasites, as the developing fetus drains 500 mg of iron during pregnancy, even if the mother has of iron deficiency (15).The iron deficiency is not the only reason in cases of anemia, but there is food and other essential materials contribute to the process of red blood cell formation, including vitamin B₁₂ and folic acid (16).

The study also showed that the occurrence of another type of anemia among pregnant women, but to a lesser extent, macrocytic anemia or megaloblasticanemia. This type of anemia is a group of disorders characterized by the existence of formal manifestations characteristic of red blood cells formed in the bone marrow and the reason is lack of vitamin B₁₂ or folic acid. This type of anemia may result from disorder in the metabolism of these vitamins or because of mistakes in the process of formation of the DNA, which is not related to vitamin B₁₂ or folic acid (17). The daily requirement of vitamin B₁₂ is 2 micrograms and the body's normal stocks from 2-5 mg. While the body needs folic acid is 100 micrograms, and stocks from the body is 5-10 mg. Therefore, the nutritional deficiencies of vitamin B₁₂ needs to be several years before the occurrence of anemia. Stocks, while the folic acid no longer is more than two months where it appears deficiency in the absence of dealing with this acid (18). This means that the deficiency of

folic acid is the reason of megaloblastic anemia. The result obtained in this study is the average incidence of anemia among pregnant women, which amounted to 55.4% , but still need to reduce this ratio must conduct the necessary by prepare good nutrition, preventive medicine, vitamins and folic acid compensatory to pregnant.

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دراسة حدوث فقر الدم وانواعها في النساء الحوامل في منطقة بغداد

عبدالرزاق جبار الشاوي جنان علي عبيد ميسر رعد محمد نورحارث محمد

الخلاصة

فحصت في هذه الدراسة (426) امرأة حامل لغرض تشخيص مرض فقر الدم وانواعه المتعددة. اجريت الدراسة في مستشفى العلوية للولادة في محافظة بغداد. اظهرت الدراسة اصابة (236) امرأة حامل بمرض فقر الدم بنسبة اصابة (55.4) وكمالي: في الاشهر الثلاثة الاولى (1-3 شهر) 46 حالة (10.8%) وفي الاشهر الثلاثة الثانية (4-6 شهر) 69 حالة (16.2%) وفي الاشهر الثلاثة الاخيرة (7-9 شهر) 121 حالة (28.4%). بينت النتائج ايضا ان نسبة الاصابة بمرض فقر الدم بين النساء الحوامل اللاتي تناولن ادوية وقائية (الحديد، حامض الفوليك و B12) بلغت (21.8%) وهي اقل من مثيلتهن اللاتي لم يتناولن ولهذه الادوية حيث بلغت (33.6%). كانت نسبة فقر الدم بين النساء اللواتي لمرة واحدة (9.6%) وهي اقل من النساء اللواتي لمرة عديدة (45.8%). تراوحت انواع فقر الدم في هذه الدراسة بين النوع الخفيف، المتوسط ثم الحاد. وكانت معظم الحالات من النوع الخفيف بنسبة (35.5%) يليها وبدرجة اقل من النوع المتوسط (15.7%) ويتبعها النوع الحاد (4.2%). ان النوع الشائع من مرض فقر الدم في هذه الدراسة هو فقر الدم الصغير الخلية القليل الصبغة.