Some Parameters of Anemia during Pregnancy of Women in Tikrit Teaching Hospital

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Abstract
Anemia is a common disease in 95 % of the women during pregnancy. The factors for producing iron deficiency anemia during pregnancy generally are the diet iron content.
One hundred subjects included in this study, these subjects were distributed as follows: 25 as control group (impregnate women), 25 pregnant first period,25 pregnant second period& 25 pregnant third period .Blood analysis was carried out for all of them which included hemoglobin concentration, white blood cells' erythrocyte s sedimentation rate (ESR) & packed cell volume (PCV). The results of present study showed that (PCV) & hemoglobin in pregnant first period were less than control group , there was no significant difference in WBC count between first period & control groups . As for the other groups, PCV & hemoglobin were lower than that of control group, while WBC was equal or little :

Introduction:
Anemia is estimated to affect nearly two thirds of the pregnant women in developing countries (1). Iron deficiency anemia is responsible for 95% of the anemia's during pregnancy (1-3).The factors for producing iron deficiency anemia during pregnancy generally are diet poor in iron content coupled with menstrual losses and a rapid succession of pregnancies in which supplemental iron was not provided (1). Most women begin their pregnancy with partially or completely depleted iron reserves. Thus the severity of the anemia is inversely related to the amount of iron reserves (3). During pregnancy, there is a great demand for iron to meet the requirement of red blood cells mass expansion in the mother, fetal and placental blood and blood loss at delivery (1-2). In pregnancy, iron deficiency is exaggerated because of the ability of fetus to extract its requirement in obligatory one way direction even from iron deficient mothers (2).This is aggravated by poor absorption of iron due to adverse effects of pregnancy on the gastrointestinal tract, which include nausea and vomiting motility disorder with reflux esophagi is and indigestion (1-2).
In underdeveloped countries, anemia is a major contributory factor to maternal morbidity and mortality (4).Inadequate antenatal care along with poor knowledge of dietary needs of pregnant woman ,and overall poor socio-economic conditions are all responsible for this in our country (5-7) Other countries of the Asian region like Indonesia (8).And India(9).Also report high prevalence of IDA in pregnancy and associated maternal and fetal loss .It is also associated with high prenatal mortality rate in our region (6-9). A recent study reported a fetal mortality rate of 50% at 7month , 28% at 7 months and 24% at 9months of gestation (10-15). The aim of this study was to assess the severity of anemia in group of pregnant women at Tikrit Teaching Hospital.

Patients And Methods:
A total of 100 subjects were included in this study, 25 non-pregnant women of same age as control groups and 75 pregnant divided in to 3 periods control group, consist of 25 control group (CG),25 pregnant first period (FP),25 second period was pregnant (SP), &25 third period pregnant (25). The study was conducted from October 2007 to March 2008 in the Tikrit teaching hospital were checked to see the relationship between group pregnant periods .The control group consist of (25) subjects their ages ranged from 20 -40 years. The control group was chosen randomly from healthy non pregnant women out for of same age the following in formations which collected from each patient included age ,sex ,occupation .Examination of wealth. Packed cell volume (PCV), hemoglobin concentration ,white blood cells count and erythrocytes sedimentation rate (ESR). Were measured according to standard procedures (16). All data were presented as a mean and standard deviation (S.D). Comparisons were performed by using student t-test .A probability (P) value ($p<0.05$) was considered statistically significant (12).

Results :
The mean value for pcv in blood of control group was 42.89 ± 3.06%,whil the mean value for first period was 36.46± 6.86 while the mean value for second period was 40.13± 6.59%, while the mean value for third period was 36.96± 5.25table(1) the first period has the mean value which arranges between 40.55±2.95. The pcv content of blood of control group was higher than the first period the other groups reached the significant level between control group and other groups ($p<0.05$). &tab (1). The mean value for Hb % in blood of control group was 13.08 ± 0.99gm/dl, while the mean value for second was 11.44 ±1.86, the mean value for first group was 12.35±1.62 gm/dl, while the mean value for second group was 11.51±1.51 tired has the mean while the third group mean of %Hb was value which was 12.39± 0.92 gm /dl.TheHb content of blood of control group was higher than the first group and other groups but it reaches the significant level between control and other groups ($p<0.05$)(this was shown in) 7 tab (1).However, the mean value for WBC in blood of control group was 6.72 ±1.23 cu.mmwhile the mean value for first was 6.32±2.43 cu .mm the mean value for second was 5.54 ±2.56 cu .mm while the mean value for third arranges was 7.94±3.7 cu. mm second group has the mean value which was 6.35±2.79 cu. mm the WBC content in blood of control group was slightly higher than the other groups but less lower than third group but it reached the significant level between the control and other groups ($p<0.05$).& tab (1). The mean value for ESR in blood for control group was 14.5±7.2mm/hrwhile the mean value for first group was 23.15±21.46 mm/hr, the mean value for second was 12.54 ±10.61 mm/hr while the mean value for third group was 21.46±23.1 mm/hr second has the mean value arranges between 12.52±12.71 the ESR content of control group was less than other groups except first which was closed to it but it reaches significant level and other groups.

Table (1): The mean & S.D of PCV ,Hb ,WBC &ESR concentration in blood of five groups.

Variable	CG(25)M,S	FP(25)M,S	SP(25)M,S*	TP(25)M,S
PCV%	42.89±3.63	36.46±6.86	40.13±6.59*	36.96±5.25
Hb g/dl	13.08±0.19	11.44±1.86	12.35±1.62*	11.51±1.51
WBC cu.mm	6.72±1.23	6.32±2.43	5.54±2.56*	7.94±3.77

Significant statistical & S D*

Table (2): The rang of four groups ,control non pregnant women & 1st,2nd, 3rd, period pregnant women

Parameters	CG control	FP 1st period	SP 2nd period	TP 3rd period
PCV%	37-54	10-50	22-90	27-5o
Hb g/dl	11.6-15.1	6-15.1	7.5-15.1	8.1-15.1
WBC cu.mm	5.1-9.4	3.4-9.6	3.2-9.8	3.4-20.2
ESR mm/hr	4-34	2-80	3-43	2-90

Discussion:

In the present study, blood parameters (PCV,Hb ,WBC &ESR).Due to effect of pregnancy on plasma volume, there was a decrease in Hb, hematocrit and red blood cells count but MCV remains unaffected (2).It followed dramatically in second and third trimester, presumably because of hem dilution effect(1).

In the present study ,PCV value in the first period was lower than the control group .The second and the third group had the same concentration ,yet they were lower than the control group .The third group has the same concentration with first group .The findings (14,15). In the present study, Hb concentration in first and second patients had the same value but they were much lower than the control group .Also the second and third had the same value which was little lower than the previous groups ,yet ,they were lower than the control group.

The finding of the present study were in agreement with the previous findings (14) and WBCs result indicated that workers to lead are suffering from anemia. Previous findings stated that Hb is more sensitive & accurate than hematocrit in detecting anemia & this was in agreement with the present study (15,16).

In this study ,WBC concentration in first , second & third have nearly the same level which is lower than the control croup .But WBC value in second is higher than the control group . The present study finding indicate that workers have a decrease in number of WBC . In the present study ,ESR value in first and second period have the same level but little lower than the control group .The first & the second have higher level than the control group.

This increase occurs mainly during the latter half of pregnancy, the cause of the increased volume is mainly hormonal because both aldosterone and estrogens , which are greatly increased in pregnancy , cause increased fluid retention by the kidneys. Also, the bone marrow becomes increasingly active and produces extra red blood cells to go with the excess fluid volume. Therefore ,at the time of birth of the baby , the mother has about 1 to 2 liters of extra blood in her circulatory system. Only about one fourth of this amount is normally lost through bleeding during delivery of the baby there by allowing a considerable safety factor for the mothe

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الملخص

فقر الدم مرض شائع في ٩٥ % من النِساءِ أثناء الحملِ. إنّ العواملَ لنقصِ الحديدِ أثناء الحملِ على العموم هي الحمية الغذائية القليلة الحديد. تضمن البحث مئة شخصٍ ، هؤلاء الأشخاص توُزّعواْ كالتّالي: ٢٥ كمجموعة السيطرة (نِساء ملقّحات)، ٢٥ فترة أولى للحمل، ٢٥ فترة ثانية للحمل & ٢٥ فترة ثالثة للحمل. تم تحليل الدم لكل المجاميع متضمنا تركيزَ الهيموغلوبينِ، و خلايا الدم البيضاء ونسبة erythrocytes sedimentation و (PCV).

نَتائِج هذا البحث أظهرت بأنّ (بي سي في) وهيموغلوبين في الفترةِ الأولى للحمل كَانتْ أقل مِنْ مجموعة السيطرة. لم يكن هناك اختلاف هامً في إحصاءِ خلايا الدم البيضاء بين الفترةِ الأولى ومجموعة السيطرة. أما بالنسبة إلى المجموعاتِ الأخرى،فان (PCV) و الهيموغلوبين كَانَت اقل مِنْ مجموعة السيطرة بينما خلايا الدم البيضاء كانت كَانتْ مساويةَ أَو أقل.