

## HEMATOLOGICAL DISORDERS IN PREGNANT WOMEN IN AL-HAMDANYIA PROVINCE

\*Mohib Fawzy Najeeb and Suhair Abd-Ghafar

Hamdanyia Ninvah 58001.

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\*Corresponding Author: Dr. Mohib Fawzy Najeeb

Hamdanyia Ninvah 58001.

### ABSTRACT

Some hematological disorders are so common during pregnancy. In this study large proportion of pregnant ladies suffer from iron deficiency with or without apparent anemia irrespective of age, gestational age or parity. No sever changes in white blood cells or platelets was observed.

**KEYWORDS:** Pregnancy, Hematological changes, Hamdanyia province.

### INTRODUCTION

Pregnancy places extreme stresses on the hematological system and an understanding of the physiological changes that result is obligatory in order to interpret any need for therapeutic intervention (Moss, 2016, p. 347).

### Aim of the Study

The aim of this study is to know some of the hematological disorders in pregnant women in AL-Hamdanyia province. This could direct the obstetricians and other medical staffs for early diagnosis and treatment of such cases.

### PATIENTS AND METHODS

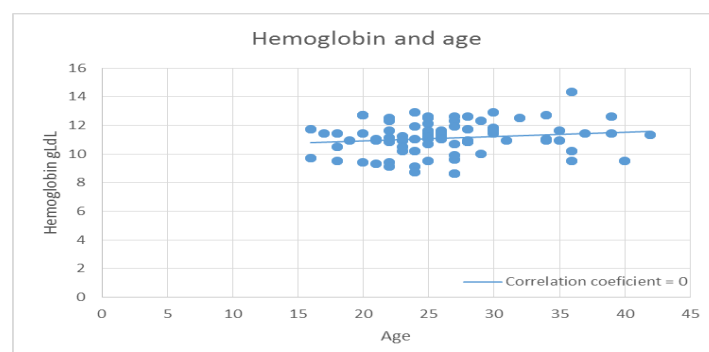
One-hundred and sixty-six pregnant women were included in the study. CBC were measured with reticulocyte count and serum ferritin. GUE was also included in the study as it is a common problem during

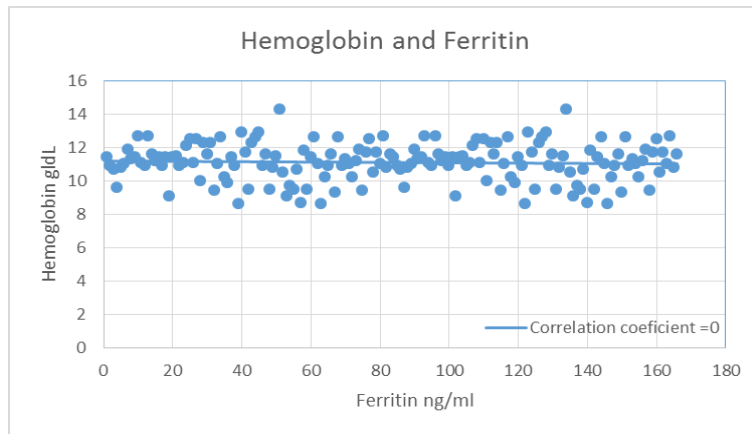
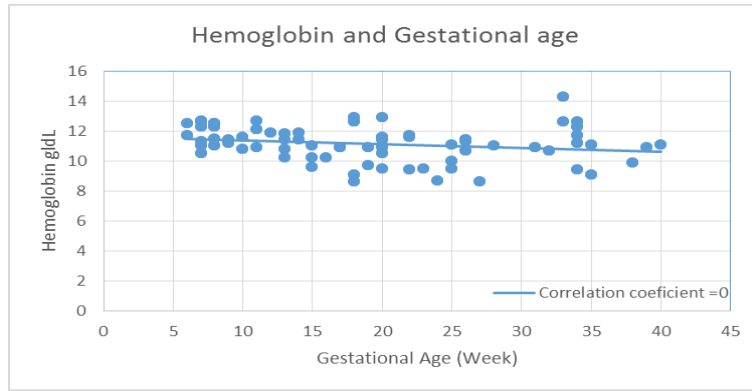
pregnancy that may cause anemia of chronic disorders. Age, gestational age and parity were also included.

### RESULTS

The total number of pregnant women included in the study was 166. Their age ranged from 16 to 42 years with a mean of 26. Forty-tow pregnant women (25.3%) were anemic with iron deficiency (hemoglobin level below 11 g/dl with ferritin level below 14 ng/ml). Thirty-eight women (22.8%) were iron deficient without having clear anemia. This means that 80 women (48.1%) were iron deficient. Twenty-six women (15.6%) were anemic with normal serum ferritin level, (non-iron deficiency anemia).

There was no positive relationship between hemoglobin level and age, gestational age, parity, reticulocyte count, and even serum ferritin as shown by correlation coefficient results.



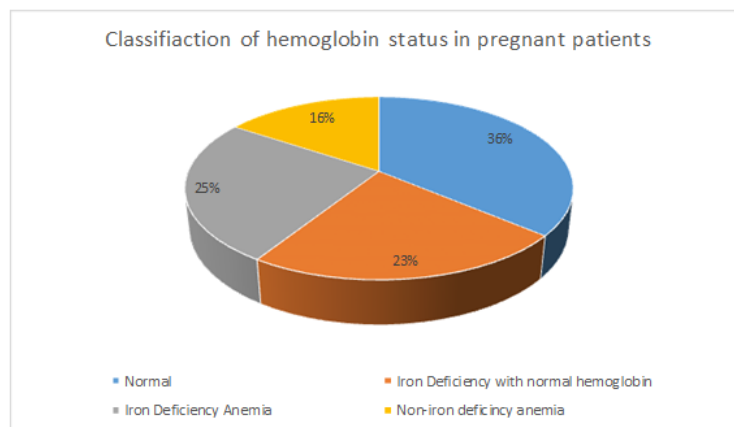


There was no relationship between hemoglobin level and urinary tract infection as shown by a P-value of 0.81.

Leukocytosis (total white blood cells more than  $11.0 \times 10^9/l$ ) were evident in 14 women (8.4%).

Other hematological findings include thrombocytopenia in 12 patients (7.2%), none of them were sever.

Reticulocyte count was elevated in 20 patients (12.0%). Urinary tract infection was observed in 70 patients (42.1%).



**DISCUSSION**

Up to 600 mg iron is required for the mother’s increase in red cell mass and a further 300 mg for the fetus. Despite an increase in iron absorption, few women avoid depletion of iron reserves by the end of pregnancy.

hemoglobin level less than 4g/dl is very severe necessitating urgent treatment to prevent the development of congestive heart failure. (World Health Organization, 2001, p. 114).

According to the World Health Organization (WHO), anemia is hemoglobin level less than 11g/dl. It is classified as severe, when less than 7g/dl and

In this study 48.1% of pregnant women were iron deficient, only 18.0% were anemic. This result was not related to other factors included in the study as shown by statistical tests. This means that large percentage of

pregnant women may have depleted iron stores and at risk of developing iron deficiency anemia during some stage of their pregnancy. The low serum ferritin level observed in even non anemic women may reflect early iron stores depletion and the negative correlation with the hemoglobin level which could be normal in some patients.

Thrombocytopenia is usually asymptomatic or mild, tends to present without a prior history and has been described in about 5% of pregnancies in other studies (Burrows RF, 1993, pp. 1463-1466). In this study thrombocytopenia was observed in 7.2% of pregnant ladies and none of the cases was severe.

Erythropoietin levels are 50% higher due to the higher metabolic oxygen requirement and this accounts for the moderate bone marrow erythroid hyperplasia and elevated reticulocyte count (Madsen H, 1984, pp. 399-402). Elevated reticulocyte count was observed in 20 patients (12.0%). This lower than expected reticulocyte response to the increased demand for red cell production may be due to empty iron reserve in the bone marrow which affects the erythropoiesis.

A moderate leukocytosis of up to  $15 \times 10^9/l$  is common during pregnancy, owing to a neutrophilia, with the peak in the second trimester (S. Mitchell Lewis, 2006). None of the included women had a WBC count higher than  $15 \times 10^9/l$ .

## CONCLUSIONS

- Large number of the study group were anemic and even larger number were iron deficient.
- Less than quarter of the patients were anemic with normal iron status.
- No significant leukocytosis or thrombocytopenia were found.

## RECOMMENDATIONS

- Checking serum ferritin status is highly advised in pregnant women irrespective of the hemoglobin level. This may allow for early treatment of iron deficiency and prevent the occurrence of overt anemia. This also prevents the unwanted side effects of iron therapy when it may be given unnecessarily as routine practice.
- Women who have anemia with normal serum ferritin have to be managed and diagnosed properly and treated according to the cause.
- Urinary tract infection looks to be common in pregnant women, early diagnosis and proper treatment is important.

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