Original Research Article

To study the changes in platelets both qualitative and quantitative in all pregnant and compare with nonpregnant women of same age group

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ABSTRACT

Background & Methods: 400 consecutive blood samples of pregnant women's as study group and 400 consecutive blood samples of non-pregnant women's as control group, were included in the study. Each blood sample was mixed well and then approximately 20 μL was aspirated by allowing the analyzer's sampling probe into the blood sample and depressing the start button.
Result: Significant difference was seen between the pairs first trimester - second trimester; and second trimester -third trimester, while non-significant difference was seen between first trimester – third trimester pair. One-Way ANOVA test was used. F value = 14.79, P value = 0.000, Significant. The F value obtained was 14.79 with a P value of < 0.05, which is statistically significant. Thus, lymphocyte values in all the three groups are statistically different. One-Way ANOVA test was used. F value = 2.96, P value = 0.053, Not Significant. The F value obtained was 2.96 with a P value of > 0.05, which is statistically not significant. Thus, onocytes values in all the three groups is comparable. As the ANOVA value was found to be non-significant, Post-hoc Tukey test has not been applied.
Study Designed: Observational Study.
Conclusion: The estimation of anemia prevalence is an important step for health policy makers, as hemoglobin estimation is most important parameter to start supplementation of iron or removing other cause of anemia to prevent unfavorable outcome. 5. In order to get better pregnancy care more accurate and reliable figures, uniform and standard methods and study designs are also recommended for primary studies at the national level.

1. Introduction

Pregnancy is related with typical physiological changes that help the sustaining and endurance of the embryo. Biochemical boundaries mirror these versatile changes in most organ framework and are unmistakably particular from the non-pregnant state.[1] However, these progressions become vital in case of difficulties. Pregnancy entanglements may incorporate sickliness, hyperlipidemia, hypertension, diabetes and preeclampsia.[2] Each year, as per the WHO, medical affliction because of pregnancy is capable (once in a while forever) by in excess of 20 million ladies around the globe. Moreover, the "existences of 8,000,000 ladies are compromised, and in excess of 500,000 ladies are assessed to have kicked the bucket because of makes related pregnancy and childbirth.[3]

Fruitful result of pregnancy requires regular checking of biochemical and hematological boundaries to stay away from complexities all through the trimesters of pregnancy. A few creators have been accounted for aggravations in sugar metabolism,[4] lipid profile,[5] protein profile,[6] liver capacity and kidney function,14 during pregnancy. Hematological changes were additionally documented.[7]

Iron deficiency is the most well-known hematological issue in pregnancy, trailed by thrombocytopenia. The Leukocytosis is quite often connected with pregnancy.[8]

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2. Materials and Methods

400 consecutive blood samples of pregnant women's as study group and 400 consecutive blood samples of non-pregnant women's as control group, were included in the study. Each blood sample was mixed well and then approximately 20 μL was aspirated by allowing the analyzer's sampling probe into the blood sample and depressing the start button. Results of the analysis were displayed after about 30 seconds, after which the analyzer generated a paper copy of the results on thermal printing paper.

2.1. Inclusion criteria

1. Women's of 20 to 40 years attending antenatal clinic.
2. Women's giving urine pregnancy test positive or are positive for live fetus in ultrasonography was included in our study as study group and who are negative for the same was taken as control group.

2.2. Exclusion criteria

Patient with

1. Bleeding disorders
2. Splenomegaly
3. Connective tissue disease such as systemic lupus erythematosus
4. Hypertension
5. Human immunodeficiency virus (HIV)
6. Hepatitis B infection
7. Women on non-steroidal anti-inflammatory drugs such as aspirin were also excluded

3. Results

Table 1: Comparison of Mean Platelet between the groups (N=400)

Parameter	First Trimester (n=156) (Mean ± SD)	Second Trimester (n=155) (Mean ± SD)	Third Trimester (n=89) (Mean ± SD)
Platelet	2.02 ± 0.69	1.92 ± 0.70	2.05 ± 0.69

One-Way ANOVA test was used. F value = 1.27, P value = 0.282, Not Significant

The F value obtained was 1.27 with a P value of > 0.05, which is statistically not significant. Thus, platelet values in all the three groups is comparable. As the ANOVA value was found to be non-significant, Post-hoc Tukey test has not been applied.

Significant difference was seen between the pairs first trimester - second trimester; and second trimester - third trimester, while non-significant difference was seen between

Table 2: Comparison of Mean Lymphocytes between the groups (N=400)

Parameter	First Trimester (n=156) (Mean ± SD)	Second Trimester (n=155) (Mean ± SD)	Third Trimester (n=89) (Mean ± SD)
Lymphocytes	23.68 ± 6.35	19.47 ± 6.81	21.75 ± 7.66

first trimester – third trimester pair. One-Way ANOVA test was used. F value = 14.79, P value = 0.000, Significant

The F value obtained was 14.79 with a P value of < 0.05, which is statistically significant. Thus, lymphocyte values in all the three groups are statistically different.

Table 3: Comparison of Mean Monocytes between the groups (N=400)

Parameter	First Trimester (n=156) (Mean ± SD)	Second Trimester (n=155) (Mean ± SD)	Third Trimester (n=89) (Mean ± SD)
Monocytes	3.56 ± 1.29	3.20 ± 1.28	3.49 ± 1.65

One-Way ANOVA test was used. F value = 2.96, P value = 0.053, Not Significant. The F value obtained was 2.96 with a P value of > 0.05, which is statistically not significant. Thus, onocytes values in all the three groups is comparable. As the ANOVA value was found to be non-significant, Post-hoc Tukey test has not been applied.

4. Discussion

Red platelet check, hemoglobin substance and hematocrit esteem were fundamentally lower in pregnant ladies contrasted with non-pregnant ladies. Mean corpuscular volume and MCH were not extraordinary while MCHC showed progressive huge decline in pregnant ladies. Comparable outcomes were reported (James et al., 2008 and Chandra et al., 2012).[9] During pregnancy, an expanded plasma volume with the absence of a satisfactory expansion in erythrocytes mass outcomes in a reduction in hemoglobin level and the advancement of paleness, which is characterized as weakening frailty.[10] Furthermore the overall lessening in various blood records is almost certain clarified by expanded necessities during pregnancy. In this manner, the increment in these blood files is an impression of sufficient iron stock bringing about expanded hemoglobin creation. Notwithstanding, the part of nourishment and additionally iron supplementation was not assessed (Papadopol et al., 2001).[11]

Platelet include was continuously diminished in pregnant ladies contrasted with non-pregnant ladies as the pregnancy progressed. Critical reductions in platelet check of pregnant

ladies contrasted with non-pregnant ladies (P value<0.05) in concurrence with study announced that: despite the fact that platelet includes stay in the ordinary pregnant reach in most ladies during simple pregnancies mean platelet tallies of pregnant ladies might be marginally lower than in solid non pregnant women.[12]

The most successive hematologic complexity during pregnancy is paleness. Various ordinary physiologic cycles happen during pregnancy prompting the expression "physiologic iron deficiency of pregnancy". The plasma volume expands (40–half) comparative with red cell mass (20–30%) and represents the fall in hemoglobin focus. Be that as it may, if the hemoglobin falls under 11 gm/dL an assessment for iron inadequacy paleness (IDA) ought to be started since iron lack is liable for most of anemias analyzed during pregnancy. Frailty auxiliary to press inadequacy is the most continuous hematologic difficulty and is effectively treated with oral iron plans, anyway care should be taken not to miss different reasons for paleness, for example, sickle cell disease.[13]

Garn and et al morbidogenic nature of low hemoglobin and haematocrit levels during pregnancy and furthermore showed the disavantages of high maternal hemoglobin and haematocrit regarding pregnancy outcome.[14] Additionally Yip showed that moderate paleness is frequently connected with poor perinatal results.

One should take care to try not to accomplish high iron stores since certain reports recommend prophylactic supplementation might be destructive to pregnant ladies that are not iron inadequate. Weakness adds to intrauterine development limitation, preterm work, early terminations and it is likewise an essential driver of low insusceptibility of both the mother and the infant, which makes them inclined for a few hazardous diseases. Hemoglobin assessment is the main boundary to begin supplement of iron or eliminating different reasons for frailty to forestall horrible pregnancy outcomes.[15]

5. Conclusion

The estimation of anemia prevalence is an important step for health policy makers, as hemoglobin estimation is most important parameter to start supplementation of iron or removing other cause of anemia to prevent unfavorable outcome. 5. In order to get better pregnancy care more accurate and reliable figures, uniform and standard methods and study designs are also recommended for primary studies at the national level.

6. Source of Funding

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7. Conflict of Interest

The authors declare they have no conflict of interest.

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