“TO ASSESS THE HEMATOLOGICAL PROFILE AND SEVERITY OF ANEMIA IN PREGNANCY”

THESIS SUBMITTED FOR THE DEGREE OF

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MR. YOGESH KUMAR

NIMS UNIVERSITY RAJASTHAN, JAIPUR
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6. SUMMARY

In our study, a total period two years on 389 pregnant women from the April 2017 to march 2019 with four progress report deposited after every six month. This study was experimenting study cross - section type at NIMS University Rajasthan and samples collected from NIMS Medical College and Hospital in Jaipur. The results were interpreted and summaries were drawn:

1. In our study, the highest number of subjects found in 21-25 years of age group that was 210 (53.98%), age group > 35 years shows the lowest number of subject having pregnancy that was 01 (0.25%).
2. This study showed weight group < 35 kg, the lowest number of pregnant women that was 03 (0.77%), and the highest number of subjects found in 51-55 kg of weight group that was 122 (31.36%).
3. In trimester based results, we found 179 (46.01%) pregnant women in Second Trimester, whereas 1st and 3rd trimester's pregnant subjects were although similar 107 (27.50%) and 103 (26.49%) correspondingly.
4. On gravidae based distribution, here the study showed that the decreased incidence of gravidae from G-1 to G-6 as 132 (33.93%), 139 (35.73%), 81 (20.82), 22 (5.65%), 10 (2.57%) and 05 (1.28%) correspondingly.
5. In our finding 328 (84.32%) pregnant women belong to rural areas whereas only 61 (15.68%) pregnant women belong to urban areas because of our study centre located in rural area.
6. On food eating habits of study population, we found that the 285 (73.26%) pregnant women vegetarians (most of them Hindus) whereas 104 (26.73%) pregnant women were non-vegetarian (most of Mohd. Population).

7. According to infection our study concluded that 359 (92.29%) pregnant women have no infection and history of infection during pregnancy because of > 50% women take antenatal visit in first trimester, whereas only 30 (7.71%) pregnant women suffered or suffering from infection (commonly UTI) due to unhygienic condition in rural areas .
8. For medicine intake, 246 (63.23%) subjects taking medicine either for anemia or for infection during their pregnancy because of antenatal visit and 143 (36.77%) subjects do not take any type of medicine during pregnancy this is due to anemia prevalence is less than. 63.23%.
9. Our results states that the prevalence of anemia is 55.22% because of poor nutrition especially in economical poor families and marriage of female. Where-as 44.78% women showed the normal hemoglobin mainly due to the hemo-concentration because of many women doing their house-hold works (food cooking) with smoky environment. The incidence of anemia found as 77 (19.79%) mild, 118 (30.33%) moderate anemia and 20 (5.1%) with severe anemia.
10. Distribution of hemoglobin in different trimester showed that the 174 women have the normal Hb, higher number of women found with moderate anemia in 2^{nd} trimester i.e. 58 (14.9%).
11. Hemoglobin association with gravidae demonstrated that the incidence of anemia enlarged with increased number of gravidae.
12. In comparison of socio-economic status our study showed that the rural women are more anemic than the urban population.

13. Our finding associated that the vegetarian food habits pregnant women are more anemic than the non-vegetarian food habitual women, there is direct relational with dietary nutrient with meat for hemoglobin synthesis.
14. There is no relationship found with severity of anemia in infection during pregnancy. Because of our study having most of the women (having infectious) belongs with Urinary Tract Infection (none of found with malaria or any hemolysis causing organism).
15. Severity of anemia with medicine intake is lower than those are intake medicine during their gestational period.
16. R-B-Cs count in pregnant women showed that approximate ¾ of study population belongs with normal 285 (73.2%) R-B-Cs count. and only 61 (15.6%) pregnant women anemic as according R-B-Cs count.
17. R-B-Cs count in G-1 and G-2 gravidae showed the similar, there is no such correlation with R-B-Cs population with gravidae.
18. Urban pregnant women are less anemic according to R-B-Cs count than the rural pregnant women,
19. In a comparison of vegetarian and non-vegetarian food habitual women showed that the vegetarian women have more anemic 53 (13.6%) than the non-vegetarian 08 (2%) pregnant women.
20. There is no relationship found between R-B-Cs count and infection and/or history of infection during gestation period.
21. In our study, only 42 (10.7%) pregnant women having anemia according to R-B-Cs count and having medicine for recovery of anemia.
22. In our study, we found that the Leukocyte populations are proportionally increased with progression of trimesters of pregnancy.

23. White blood cells count in pregnancy is not significantly with primi-gravida, multi-gravida and multi-grand gravida.
24. Total leukocyte count in gestation period is not radically with socio-economic status of the pregnant women, however we found here rural women have high TLC 31 (7.9%) than the urban women.
25. There is direct relationship between that the non-vegetarian (high protein diet) food habitual women have slightly more leukocyte than the vegetarian food habitual women.
26. In our study, 30 pregnant women shows infection or history of infection, only of the women (13) showed leukocytosis especially in UTI cases.
27. In our study, we found that the medicine intake women showed the leukocytosis.

8. CONCLUSION

Anemia in gestational time is the major health difficulty throughout on the earth especially in un-developed and under-development countries. Our study "To Assess the Hematological Profile and Severity of Anemia in Pregnancy" summaries and concluded were drawn as following:

1. Hematological profile was found to be disturbed in pregnancy due to physiological anemia.
2. In our study the occurrence of anemia in 2nd trimester of pregnancy was almost related with another region study.
3. There were moderate-anemia problem in gestational period subjects specially those belongs to rural region.
4. The main causative risk factor for all of 3 classes was reduce socio-economic environment, little protein food and daily ingestion of-caffeine in the variety of tea.[57]
5. Anemia is directly comparative to earliest age for pregnancy, parity due to low socio-economic status and too less gap between pregnancies, this should be avoided by adopting suitable family planning actions.
6. The high occurrence of anemia point out the altitude of unawareness and unresponsiveness to fitness requirements of pregnant females.
7. Infection during pregnancy and medicine ignorance is most common with those, who had low education status.
8. One and the most commonly reasons for anemia were poverty and social deprivation in the rural region of the study.

9. Our results also stated that the 44.73% women showed the normal hemoglobin mainly due to the hemo-concentration because of many women doing their house-hold works (food cooking) with smoky environment.
10. Assessing of hematological profile is the important step to start iron supplementation of iron or removing other cause of anemia to prevent unfavorable outcome and prevalence of anemia help for health policy makers.[71]
11. Hemoglobin is decreasing usually with growth of pregnancy months until last two months where it goes back to increase.[65]
12. Our result also suggests that the advance research on micro-nutrient grade of the pregnant subjects is required to recognize additional precise etiological issues.

9. RECOMANDATION

- This is extremely suggested that extra efficient strategy regarding girl child education (reproductive age group), extending valuable awareness regarding pregnancy specially in rural region.
- Universal screening for iron deficiency anemia with hematological profile (CBC with PBF) is recommended for all gestational period women at the first antenatal visit,[103] this investigation is cheapest detect the anemia and its type at the initial stage of pregnancy.
- In case of microcytic and hypochromic anemia, serum ferritin and C-reactive protein (CRP) is suitable to distinguish thalassemia from anemia of long term disease and anemia due to deficient iron quantity.[103]
- Gestational period women have to ensure proper antenatal health check-up (hematological profile testing), perinatal and post-natal care and follow applicable medical advice.
- For prevent the chances of neural rube defect, government should mandatory supplementation program for Vitamin B-12 under the supervision of health educator, this will help for those who ignore medicine during their gestation life.
- Albendazole dose is usually suggested after the first trimester to keep away from soil-transmitted helminthic infestation.[103]
- Combined zinc and iron supplementation 60-100 mg and 500 ug of folic acid should be recommended to all pregnant women (also non-anemic), specially those with anemia.[98]

- Parenteral iron is also suggested for gestational women with severe anemia who required quick renovation of iron stores in the 2nd and early 3rd trimester of gestation.
- For severe anemic gestational women, Leuco-depleted Packed Red Blood Cells (LD-PRBC) should be held in reserve.

I hope that my country of origin, the Republic of India, will benefit from a full survey study covering all Indian cities.

In the last: Above all, I thank the Almighty God, for giving me the inner strength and ability to accomplish this study.