

Evaluation of Haemoglobin Level in Pregnant Women in Rural Population Visited at a Tertiary Care Centre

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ABSTRACT

Background: Physiologically, haemoglobin concentration drops during gestation. Anaemia is an eminent cause of morbidity and mortality among pregnant women and about 40% of all maternal deaths during parturition. The present study was conducted to assess haemoglobin level in pregnant women in rural population.

Materials and Methods: This hospital based cross-sectional study was conducted on 400 normal singleton term pregnant women who visited the hospital for delivery over a period of 6 months. The participants of age ranging from 20 to 50 years were included in the study. Complete history was taken. After through clinical examination, haemoglobin estimation was done by automated analyzer. The degrees of anaemia studied were mild anaemia, moderate anaemia, and severe anaemia. Data was compiled and data analysis was performed using the SPSS windows version 21.0 software. A p value of <0.05 will be considered to be statistically significant.

Results: In the present study total pregnant women were 400 in which 47.25% were of age group 20-30yrs, 30.25% were of age group 31-40 yrs and 22.5% were of age group 41-50. Prevalence of anaemia was mild in 24.5% pregnant women, moderate in 48.5% pregnant women, severe in 15.75% pregnant women. Mild anaemia was present maximum in the

age group 31-40 yrs (28.09%), moderate anaemia was present maximum in the age group 20-30yrs (51.85%), severe anaemia was present maximum in the age group 31-40yrs (19.83%).

Conclusion: The study concluded that prevalence of anaemia was mild in 24.5% pregnant women, moderate in 48.5% pregnant women, severe in 15.75% pregnant women.

Keywords: Mild Anaemia, Moderate Anaemia, Severe Anaemia, Pregnant Women.

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INTRODUCTION

Pregnancy is a unique experience in every mother's life. The thought of a growing foetus in the mother's womb, indeed is nature's way of expressing the attributes of motherhood.¹ Iron-deficiency anaemia is a health problem that often goes untreated, especially in pregnant women living in developing countries, where it can be most dangerous. The World Health Organization (WHO) estimates that an average of 56% of pregnant women in developing countries are anemic.² Anaemia, as defined by the world health organization (WHO), is a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet the physiologic needs.³ The haemoglobin (Hb) concentration of less than 11 g/dl, among pregnant women residing at an altitude of 1000 m or below, is considered as anaemia.⁴

Iron deficiency during pregnancy is thought to be caused by combination of factors such as previously decreased iron supply, the iron requirements of the growing fetus, and expansion of maternal plasma volume.⁵ While plasma volume and red blood cell mass are both known to expand during pregnancy, plasma volume grows to a greater extent, therefore diluting the maternal haemoglobin concentration (Hb).⁶

The main causes of Anaemia in the developing countries in Antenatal women includes low dietary intake of iron and folic acid, poor bioavailability of iron and fiber rich Indian diet, poor absorption of iron due to hook worms infestation and blood loss during delivery and heavy menstrual blood loss.^{7,8} Hence, the present study was conducted to assess haemoglobin level in pregnant women in rural population.

MATERIALS AND METHODS

This hospital based cross-sectional study was conducted on 400 normal singleton term pregnant women who visited the hospital for delivery over a period of 6 months. The participants of age ranging from 20 to 50 years were included in the study. Before the commencement of the study ethical approval was taken from the Ethical Committee of the institute and informed consent was signed by the Pregnant women who agreed to participate in the study. Pregnant women with History of chronic illness (respiratory disease, cardiac disease, diabetes mellitus, hypertension, endocrine disorders) were excluded from the study. Complete history was taken. After through clinical examination, haemoglobin estimation was done by automated analyzer. Anaemia in pregnancy is defined by WHO as a haemoglobin concentration below 11g/dl. The degrees of anaemia studied were mild anaemia (10-10.9g/dL), moderate anaemia (7.0-9.9g/dL), and severe anaemia (less than 7.0g/dL).^{9,10} Data was compiled and tabulated

using Microsoft Excel and then data analysis was performed using the SPSS windows version 21.0 software. The values included in the results will be tabulated and percentage changes were calculated. Data was analyzed using paired t-test. A p value of <0.05 will be considered to be statistically significant.

RESULTS

In the present study total pregnant women were 400 in which 47.25% were of age group 20-30yrs, 30.25% were of age group 31-40 yrs and 22.5% were of age group 41-50. Prevalence of anaemia was mild in 24.5% pregnant women, moderate in 48.5% pregnant women, severe in 15.75% pregnant women. Mild anaemia was present maximum in the age group 31-40 yrs (28.09%), moderate anaemia was present maximum in the age group 20-30yrs (51.85%), severe anaemia was present maximum in the age group 31-40yrs (19.83%).

Table 1: Distribution of pregnant women according to age group

Age group (yrs)	N(%)
20-30	189(47.25%)
31-40	121(30.25%)
41-50	90(22.5%)
Total	400(100%)

Table 2: Prevalence of anaemia

Degrees of anaemia	N(%)
Normal	45(11.25%)
Mild	98(24.5%)
Moderate	194(48.5%)
Severe	63(15.75%)
Total	400(100%)

Table 3: Prevalence of anaemia according to age group

Age group	Normal	Mild	Moderate	Severe	Total
20-30	22(11.64%)	43(22.75%)	98(51.85%)	26(13.75%)	189(47.25%)
31-40	15(12.39%)	34(28.09%)	48(39.66%)	24(19.83%)	121(30.25%)
41-50	8(8.88%)	21(23.33%)	48(53.33%)	13(14.44%)	90(22.5%)
Total	45(11.25%)	98(24.5%)	194(48.5%)	63(15.75%)	400(100%)

DISCUSSION

Anaemia is the most common nutritional deficiency disorder in the world. Inadequate intake or absorption of iron in conjunction with blood loss may contribute to anaemia. Anaemia during pregnancy is a major problem especially in India due to many contributing factors like increased.¹¹

In the present study total pregnant women were 400 in which 47.25% were of age group 20-30yrs, 30.25% were of age group 31-40 yrs and 22.5% were of age group 41-50. Prevalence of anaemia was mild in 24.5% pregnant women, moderate in 48.5%

pregnant women, severe in 15.75% pregnant women. Mild anaemia was present maximum in the age group 31-40 yrs (28.09%), moderate anaemia was present maximum in the age group 20-30yrs (51.85%), severe anaemia was present maximum in the age group 31-40yrs (19.83%). 4 survey conducted in 2012-13 showed a prevalence of only 59.6% in Haryana, with rural areas showing slightly higher prevalence of 60.5%.^{12,13} Nutrition Foundation of India had observed the overall prevalence of anaemia as 84% among Pregnant women.¹⁴

"Indian Council of Medical Research (ICMR) task force multicenter study" revealed that the overall prevalence of anaemia among pregnant women from 16 districts was 84.9% .¹⁵

National Family Health Survey 2005-06 (NFHS- 3), showed Haryana to be second, only after Assam in terms of prevalence of anaemia.¹⁶

CONCLUSION

The study concluded that prevalence of anaemia was mild in 24.5% pregnant women, moderate in 48.5% pregnant women, severe in 15.75% pregnant women.

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