The Burden of Anaemia amongst Antenatal Women in the Rural Population of Northern India

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Abstract

Background: Nutritional anaemia in pregnant women is one of the India’s major public health problems and is major factor responsible for low birth weight. Out of total maternal deaths in world most of them occur due to anaemia.

Objectives: To check prevalence of anaemia in pregnant women and its association with literacy status, dietary factors and BMI.

Material & Methods: The study was conducted in village Khera at RHTC, Rama Medical College Hospital and Research Centre, Hapur, Uttar Pradesh. It is cross sectional study.

The study was carried from Oct 2012 to June 2013. A total of 321 pregnant women with gestational period between 12 to 20 weeks were registered. The detail clinical examination including measurement of weight and height was carried out. Hemoglobin was estimated and peripheral smear examination was done. Data was analyzed by using Chi-Square Test. P-value less than 0.05 were considered significant.

Results: A high prevalence of anaemia (79.75%) was observed in antenatal women. Majority of the antenatal women were moderately anaemic (58.38%) and were under 20 years of age. Occurrence of anaemia in antenatal women was found to be inversely proportional to the literacy status. Statistically significant association (P <0.05) were found amongst anaemic antenatal women with their literacy status and BMI however statistically significant association was not found in various dietary factors.

Keywords: Antenatal Women, Anaemia, Basal Metabolic Index, Literacy Status

INTRODUCTION

Anaemia is the most common nutritional deficiency worldwide. It leads to reduced work capacity in adults and leads impact on mental development in children and adolescents. There is some evidence that anaemia affects cognition in adolescent girls and causes fatigue in adult women. Anaemia may affect visual and auditory functioning and is weakly associated with poor cognitive development in children.¹

In India, anaemia contributes directly to 20% maternal death and indirectly to further 20%².³ 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.⁴⁻⁶ Iron deficiency & Anaemia during antenatal period are associated with low birth weight babies, premature birth, increase perinatal and neonatal mortality. Anaemia increases the risk of maternal morbidity & mortality and adverse maternal outcome such as ante partum haemorrhage, post-partum haemorrhage & puerperal sepsis.⁷⁻⁹ National Nutritional Anaemia prophylaxis programme (NNAPP) was initiated in 1970 during the fourth five year plan with the aim to reduce the prevalence of Anaemia to 25%.¹⁰ After subsequent evaluation it was seen that there was no change in situtaion. Since 1992 the daily dosage of elemental iron for prophylaxis and therapy has been increased to 100 mg & 200 mg, respectively under Child Survival and Safe Motherhood Programme (CSSM Programme).

This current study was carried out to find out the prevalence of the Anaemia in antenatal women and to determine the association with their literacy status, dietary factors and BMI.
MATERIAL AND METHODS

Present community based, cross sectional study was carried out at Rural Health Training Centre, Khera, Rama Medical College Hospital. Research centre Hapur, Uttar Pradesh from October 2012 to June 2013. Total 321 antenatal women with gestational period 12-20 weeks, visiting at antenatal clinic were registered for the study. Antenatal women giving history of worm's infestation, bleeding disorder and bleeding in last pregnancy were excluded from the study.

The antenatal women were interviewed by using pre-structured, pre-tested performa. Prior consent was obtained from the subjects. Detail clinical examination was done at Khera, RHTC. Weight and Height measurement of the subject were taken with pre-standardized weighing machine and Height scale. BMI was calculated by the formula weight in Kgs/Height in meter square. Haemoglobin estimation was done by Sahli's method. Anaemia was classified as per WHO criteria.11 Haemoglobin below 11 gm/dl in Labeled as anaemia during antenatal period. Typing of anaemic was done as per standard peripheral smear examination.12 Literacy status was assessed according to modified B.G. Prasad Classification.13-14 Severely anaemic pregnant women were referred to Rama Medical College Hospital, Hapur for further management. Data was analyzed by using Chi-Square Test. P-value < 0.05 were considered significant.

RESULTS

In this observational study, 47.97% of subjects were from joint family, 39.25% from muscle family and 12.77% from the extended family. Majority of the antenatal women belonged to Hindus religion (75.70%) followed by Muslims (12.14%), Christians (3.73%) and other caste (8.41%) respectively.

As shown in Figure 1, Pie diagram, 79.75% subjects were found anaemic. The prevalence of mild, moderate and severe anaemia was 20.56%, 44.23% and 14.97% respectively. Majority of them were moderately anaemic.

Table no. 1 shows 94.81% and 91.66% of Antenatal women were belonged to illiterate and primary school category. Moderate anaemic was seen amongst middle school (52.12%) and high school category (65.62%). Severe anaemia was detected in illiterate (29.31%) and primary school (23.33%) category. Lower percentage of anaemia was found in higher education category viz: intermediate (40%), Graduate (27.77%) and post graduate (28.5%) subjects. Statistically significant difference were observed ($x^2 = 47.05, P <0.05$)

Table no. 2 shows 34.89% antenatal women were vegetarian and 65.11% were on mixed diet. The percentage of mild anaemia (22.32%) moderate anaemia (44.42%) and severe anaemia (16.07%) were higher amongst vegetarian as compared to those on mixed diet subjects where mild, moderate & severe anaemia was detected as 19.61%, 43.06% & 14.35% respectively.

Table no. 3, shows that majority of the anaemia subject belonged to category of BMI <18.5 kg/m² viz: mild anaemia (21.37%), moderate anaemia (48.38%) and severe anaemia (16.93%) respectively. 31.14% of moderate anaemia was seen in the subjects of BMI category 18.5 – 24.9 kg/m² and 33.33% mild anaemia was seen in...
education & dietary counseling is recommended by nutritionist.

- Supplementation of iron & folic acid should be implemented to all the antenatal women in rural area.

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