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PREVALENCE AND SOCIODEMOGRAPHIC FACTORS ASSOCIATED WITH ANAEMIA IN PREGNANCY: A CROSS SECTIONAL STUDY

Dr. Twinkle Sood[1] and Dr. Divya Dhiman*[2]

[1]M.S. Obstetrics and Gynaecology, Indira Gandhi Medical College Shimla, Himachal Pradesh.
[2]M.D. Paediatrics, Dr. Rajendra Prasad Government Medical College Tanda, Himachal Pradesh.

Corresponding Author: Dr. Divya Dhiman
M.D. Paediatrics, Dr. Rajendra Prasad Government Medical College Tanda, Himachal Pradesh.
Email ID: dvydman93@gmail.com, Ph no: +91-7649912870

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ABSTRACT

Background: Anaemia in pregnancy is an important public health problem in developing countries like India. According to World Health Organization, prevalence of anaemia among pregnant women in developed countries is about 14%, whereas it is still as high as 51% in the developing world. This study aims to determine the prevalence and factors associated with anaemia in pregnant women attending antenatal clinic at our tertiary care centre. **Methods:** This was cross-sectional observational study conducted over a period of 6 months. Haemoglobin estimates from pregnant females attending the out-patient department of civil hospital, Palampur, Himachal Pradesh from 1st October 2021 till 31st March 2022 were obtained. The incidence of anaemia and its associated socio demographic factors was studied and statistical analysis was done. **Results:** A total of 200 participants were included in the study and a prevalence rate of anaemia in pregnancy was 75%. Majority of the populations had moderate anaemia (82%), were illiterate (36%), belonged to rural class (70%) with low income (82%) and large family (80%). 45.3% of the population developed anaemia in second trimester (45.3%), were multigravida (70), with <2 years of inter pregnancy interval (48%) and 92% of were not compliant in taking iron folic acid tablets in antenatal period. **Conclusions:** There is a significantly high prevalence of anaemia among pregnant women. Our study has also enlisted a few socio demographic factors that contribute to such high prevalence of this disease. Programs focused on target population need to be planned and implemented with active participation of locals.

KEYWORDS: Pregnancy, Anaemia, Prevalence, Sociodemographic factors.

INTRODUCTION

Anaemia is a severe public health problem affecting both developed and developing countries with major consequences for human health as well as socioeconomic development. It occurs at all stages of life but is more prevalent in pregnant women and young children. According to World Health Organization, prevalence of anaemia among pregnant women in developed countries is about 14%, whereas it is still as high as 51% in the developing world. In India the prevalence of anaemia among pregnant women is about 65-75%.[1] The condition is even worse in Southeast Asia. About half of all global maternal deaths due to anaemia occur in South Asian countries, out of which India contributes to 80%.[2] Anaemia has been known to be responsible for a number of maternal and foetal complications.[3] Apart from decreasing the woman's reserve to tolerate bleeding either during or after child birth, it has been known to be associated with low birth weight, premature delivery, intra uterine growth retardation and thus increased perinatal mortality.[4] Anaemia has also been found to be associated with increased risk of birth asphyxia and low APGAR score at birth.[5] A recent metaanalysis showed that the risk of maternal mortality decreases by 20% for every 1 g/dl increase in the haemoglobin concentration. This decline is continuous between Hb levels between 5 and 12mg/dl but not linear.[6] India became the first developing country to take up the National Nutritional Anaemia Control Programme to prevent anaemia among pregnant women. The Government of India recommends 100 mg of elemental iron+500 µg of folic acid for prophylactic supplementation for minimum of 100 days starting in the second trimester and double this dose for the treatment of anaemia, that is, 200 mg of elemental iron+1000 µg of folic acid. Thus treating anaemia has major health implications in pregnancy and would go a long way in improving maternal and foetal outcome.[7]

AIMS AND OBJECTIVES

The aim of this study was to assess the following:

1. Prevalence of anaemia among pregnant women attending antenatal clinic in a secondary care centre**.**
2. To assess socioeconomic and obstetric-related factors associated with anaemia in pregnant women

MATERIAL AND METHODS

This was a cross sectional observational study conducted over a period of 6 months at civil hospital, Palampur,

Himachal Pradesh from October 1st, 2021 to March 31st, 2022. Any woman with an Hb level of less than 11mg/dl was considered anaemic. The levels of haemoglobin used for classification of anaemia in pregnant women as mild, moderate and severe anaemia were those recommended by the Indian Council of Medical Research (ICMR).

- Mild: Hb 10.0mg/dl-10.9 mg/dl.
- Moderate: Hb 7.0mg/dl-10.0 mg/dl
- Severe: Hb less than 7mg/dl.
- Very severe: Hb less than 4mg/dl

The data was collected using predesigned and pretested structured questionnaire and the results were summarised in numbers and percentages.

RESULTS

A total of 200 patients were enrolled out of which 150 patients were found to have Hb<11mg/dL. Thus, in this study the overall prevalence of anaemia among pregnant women was 75%. Out of these, 3.3% (5), 82% (123) and 14.7% (22) of them were identified as severely, moderately and mildly anaemic. Hence majority of patients had moderate anaemia (Table 1). High prevalence of anaemia was observed in subjects of >25 years of age 68% (102), rural residents 70% (105), were illiterate 36% (54), living in family size >2 80% (120), employee by occupation 54% (81), and with <10,000 monthly income 82% (123) (Table 2). Based on obstetric history prevalence of anaemia was found to be higher in multigravida 70% (105), who were in the second trimester 45.3% (68), with inter pregnancy interval ≤2 years 48% (72), and had no history of abortion 68% (102) About 92% (138) of subjects did not take iron folic acid (Table 3).

Table 1: Prevalence of anaemia with associated sociodemographic factors.

Degree of anaemia	Number of cases (%)
Mild	22(14.7%)
Moderate	123(82%)
Severe	5(3.3%)

Table 2: Prevalence of anaemia with associated sociodemographic factors.

Sociodemographic factor		Number of cases (%)
Age (years)	<20	6(4%)
	20-25	42(28%)
	>25	102(68%)
Residence	urban	45(30%)
	rural	105(70%)
Income	<10,000	123(82%)
	10,000–20,000	15(10%)
	>20,000	12(8%)
Occupation	Housewife	51(34%)
	Labourer	18(12%)
	Employee	81(54%)
Level of education	Illiterate	54(36%)
	Primary	51(34%)
	Secondary	36(24%)
	Tertiary	9(6%)
Family size	≤2	30(20%)
	>2	120(80%)

Table 3: Prevalence of anaemia with associated obstetric factors.

Obstetric factors		Number of cases (%)
Gestational age (weeks)	<12 weeks	33(22%)
	12-28 weeks	68(45.3%)
	>28 weeks	49(32.7%)
Parity	Primigravida	45(30%)
	Multigravida	105(70%)
Interpregnancy interval	Primigravida	33(22%)
	≤2 years	72(48%)
	>2 years	45(30%)
H/o abortion	Yes	48(32%)
	No	102(68%)
Iron and folic acid intake	Yes	138(92%)
	No	12(8%)

DISCUSSION

In this study, the overall prevalence of anaemia among pregnant women was 75%. A study by Nutrition Foundation of India[8] and ICMR Task Force[9] observed the prevalence of anaemia as 84% and 84.9% among pregnant women, respectively. Similar results were obtained in a study by Lokare et al[10] (87.2%). In the present study, all patients were divided according to the severity of anaemia. It has been found moderate anaemia account for 82% of the cases. The result is higher than a study conducted by the WHO,[11] Desalegn[12] and Lokare et al[10] where moderate anaemia accounted for 68%, 74.3% and 54.5%, respectively. In the present study, majority of anaemic patients belonged to the age group of >25 years of age years (68%). It is comparable to the studies by Ayano and Amentie,[13] Obai et al,[14] and Getahun et al.[15] 70% of anaemic subjects' belonged to rural population which is similar to Mihiretie et al.[16] (62%) and Weldemariam[17] (65.9%). The reason for higher burden of anaemia in the rural population may be related to inaccessibility of health-care centres. Prevalence of anaemia was more in subjects (82%) having monthly income <10,000 per capita, this may be due to the reason that the low socioeconomic class was likely to be poorly educated and often has financial constraints. It closely correlates with a study by Lokare et al.[10] The proportion of anaemia was significantly more among employed participants which was noted to be 54%. They tend to forget intake of iron quite frequently. Similar findings were suggested by Obai et al[14] and Getahun et al.[15] Anaemia was found to be more prevalent in illiterate patients (36%). The present study was in concurrence with the study conducted by Dutta et al[18] who showed a direct relationship between impact of literacy and anaemia. Anaemia was more prevalent among the subjects who have family size >2 (70%). Sharma et al[19] also showed higher incidence of anemia in family size >2.

In the present study, majority of anaemic subjects (45.3%) belonged to the second trimester. Similar results were seen in a study conducted by Bekele et al[20] (36.5%). Due to the physiological haemodilution which peaks during the second trimester, high prevalence of anaemia during this period can be explained. It has been found in our study that 70% of patients of anaemia were multigravida. Study by Ayano and Amentie[13] also concluded that multiparous women had higher risk of anaemia. About 48% of subjects had anaemia with interpregnancy interval of ≤2 years as compared to 30% of subjects with interpregnancy interval of >2 years. This is in comparison to the study conducted by Gautam *et al.*[21] In the present study, 92% of pregnant women were found anaemic who did not take iron and folic acid tablets in antenatal period. Our study is in agreement Weldemariam et al.[17]

CONCLUSION

The present study concludes that the prevalence of anaemia among the women attending antenatal clinic for the 1st time is 75% which is a serious public health problem. To improve maternal and foetal outcome it is recommended that primary health care has to be strengthened. So, the only way is early screening for anaemia and giving proper, effective treatment and counselling about the same. Some of the interventions that can be done are screening programs for anaemia, awareness campaigns, frequent visits by anganwadi workers to pregnant women, cooking in iron utensils, fortification of food and salt with iron and folic acid, birth control for proper spacing of pregnancies, deworming of such patients.

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