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Original Research Article.

Prevalence of Anemia among Pregnant Women at the Time of Delivery

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ABSTRACT

Background: Anaemia remains a major public health challenge across the world. Prevalence of anaemia among adolescent girls, pregnant women and lactating mother remains very common in developing countries. It varies from 25 to 75%. Pregnancy itself results into a higher demand of iron intake and results into a higher prevalence. It affects the outcome of pregnancy. Hence, the health of pregnant women demands attention.

Objective: To assess the sero-prevalence of anaemia in third trimester of pregnancy and the different variables affecting the Hb% level.

Methods: The present study was an observational study which was conducted for a period of six months from the month of January to June 2018 at UHTC of MGM Medical College, Jamshedpur. A total of 602 pregnant women reporting to labour room for delivery were included in the study. The data were collected regarding age, parity, caste, and parity. The blood sample was analysed with cynahemoglobinometer. The diagnosis of anaemia was made when the Hb% level was below 11 gm% as per WHO criteria for pregnant women.

Results: The present study showed a very high prevalence of anaemia (98.5%) among pregnant women. Most of them were mildly anaemic (55.5%). The prevalence of anaemia was more on 2nd gravid and primiparous pregnant women.

Conclusions: A high level of anaemia was found among pregnant women in third trimester. Most of them were mildly anaemic. Women with second gravida were more anaemic than the others.

Key words: Pregnancy, Anaemia, Parity, Third Trimester.

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INTRODUCTION

Anemia is a major global public health challenge. WHO estimates the global prevalence of anemia among pregnant women is 55.9%.[1] Prevalence of anemia in South Asian countries is among the highest in the world. India has the highest prevalence of anaemia among the South Asian countries[2] contributing to 80% of the maternal deaths in South Asia. [3] Various studies and surveys showed the prevalence of anemia ranges from 33% to 89% among pregnant women with wide variations in different regions of the country. [4] National Nutrition Monitoring Bureau[5], District Level Health Survey[6] and ICMR[7] surveys showed that over 70 per cent of pregnant women and adolescent girls in the country were anaemic. Anemia begins in childhood, worsens during adolescence in girls and gets aggravated during pregnancy. Data from DLHS showed that prevalence of moderate and severe anemia was high even among educated and higher income groups. Prevalence of anemia is high in all the States, though there are considerable variations between States in prevalence of moderate and severe anemia.[6]

NFHS-4 estimates an overall national prevalence of anemia 50.3% among pregnant women between 15-49 years of age with a higher rural prevalence (52.1%) than urban prevalence (45.7%). There is a higher prevalence of anemia was reported in Jharkhand among pregnant women (62.6%) in NFHS-4 survey.[8] Hence, the study was planned.

AIMS AND OBJECTIVES

1. To study the prevalence of anaemia among pregnant women in third trimester of pregnancy UHTC.
2. To study the various factors influencing among the anaemic groups.

METHOD

Study Design

The present study was a cross-sectional study conducted at Urban Health Training Centre of MGM Medical College, Jamshedpur.

Study Period

The study period was of six months from January 2018 to June 2018.

Sources of Data

Selection of participants and Inclusion Criteria: Pregnant women admitted for delivery at UHTC.

Sample Size – 600 samples on the basis of the formula

n = 4 p q/l2

p = Percentage of the study participants with anaemia = 60%

q = Percentage of the study participants without anaemia = (100-p) = 40%

l = Allowable error (taken as 6.67% of this study) = 4

Hence, n = $\frac{4x60x40}{4x4}$ = 600

List of Variables

Apart from HB% level, Age, Caste, Religion and parity was also recorded among study subjects.

Data Collection

The Hb% level was estimated with cynaehaemoglobinometer. Anaemia was classified as per the World Health Organization (WHO) grading criteria is taken to be 11 g/dL. WHO further divides anaemia in pregnancy in to mild anaemia (haemoglobin 10-10.99 g/dl), moderate anaemia (haemoglobin 7.0-9.99 g/dl) and severe anemia (haemoglobin <7 g/dL).

Statistical Analysis

The SPSS software was used for data analysis. Mean±SD, Proportion were calculated for data analysis.

RESULTS

The present study was a cross-sectional study which was conducted at Urban Health Training Centre, Community Health Centre in a Municipal area. A total number of 602 females were enrolled as study subjects. The overall prevalence of anaemia among pregnant women in third trimester was 98.5%. Only 9 out of 602 pregnant women had varying severity of anaemia. Hb% level was normal only in 1.5% pregnant women during third trimester of pregnancy. Out of the 602 pregnant women, 334 (55.5%) were mildly anaemic, 198 (32.9%) were moderately anaemic and 61 (10.1%) were severely anaemic.

• The range of haemoglobin among the participants was 4.3-13.0gms/dl.

• The mean haemoglobin level among the pregnant women was 9.75±1.04. gms/dl.

A majority (63.5%) of the pregnant women were in the age group of 18-24 years. 30.2%pregnanat women were in the age group of 25-29 years. The mean age of pregnant women with standard deviation was 23.32±3.633 years. There were no participants in the below the age group of 18 years.

Out of 602 pregnant women, most of them (63.5%) were between the age group of 18-24 years of age followed by 30.2% were in the age group of 25-29 years. Only 6.3% were above the age of the 29 years. One pregnant woman was of 40 years of age.

There were 236 (39.2%) tribal pregnant women. There was no difference among tribal vs. non-tribal group regarding the prevalence of anaemia. Four (1.69%) of them were having a normal Hb% above 11gm%. Most of them (54.24%) were mildly anaemic whereas approximately one-third (30.93%) were moderately anaemic. Only 13.14% of tribal women were having severe anemia.

The severe anaemia was more common among pregnant women with more than 2nd gravida (12.35%) whereas mild anaemia was more common among primi (61.11%). All the multi gravid pregnant women were anaemic.

Table 1: Haemoglobulin level in relation with parity

Sl. No	Parity	Normal	Mild	Moderate	Severe	Total
1	Primi	4(2.02%)	121(61.11%)	59(27.98%)	14(7.07%)	198(32.9%)
2	Gravida 2	5(2.07%)	128(52.89%)	82(33.88%)	27(11.16%)	242(40.2%)
3	Gravida>2	0(0%)	85(52.46%)	57(35.19%)	20(12.35%)	162(26.9%)
Total		9(1.5%)	334(55.5%)	198(32.98%)	61(10.1%)	602(100%)

DISCUSSION

The prevalence of anaemia in pregnant women of UHTC of Medical College was very high (98.5%) among the 602 study subjects of Pregnant women. The similar study was done on pregnant women in rural Maharashtra; one of the developed states of India registered a prevalence of 56.4%.[9] Similar reports from WHO shows that up to 56% of all women living in developing countries are anaemic.[1] Rajamouli J et al reported the prevalence of 58.63% Anaemia in RHTC of CAIMS teaching hospital at Karimnagar, Telangana.[10]

National Nutritional Anaemia Prophylaxis Programme (NNAPP) was initiated in 1970 with the aim to reduce the prevalence of anaemia to 25 percent.[11] The recent National Family Health Survey -4 (2015-16) shows that 52.1% of pregnant women in rural and 45.7% pregnant women in urban areas are anaemic.

The present study showed that maximum participant of pregnant women was in the age group of 18 to 29 years (93.7%) at UHTC of Medical College. The similar study was conducted in Aurangabad city, India by Pushpa O Lokare, found that maximum (87.2%) subjects were between ages above 20 to 30 years.[11]

Mild anaemia (55.5%) was observed more than the moderate (32.9%) form of anaemia in this study. Even 10% of pregnant women reported severe form of anaemia. There was no difference in the pattern of anaemia among tribal pregnant women in comparison with the tribal groups. Higher prevalence of anaemia was observed in second gravida (40.2%). Although all the multigravida pregnant women (gravid >2) were anemic, but the mild form of anaemia was observed more in primiparous were as severe form of anemia was more in multigravida (gravid >2). Similarly, higher prevalence of anaemia (43.9%) seen in second gravid was reported by Rajamouli J et al.[10]

CONCLUSION

The present study has shown a very high prevalence (98.5%) of anemia among pregnant women in third trimester at the time of

delivery. The present study showed that there was no difference among severity and pattern of anaemia among tribals in comparison to non-tribal group. All the pregnant women with more than two gravida were anemic. Few pregnant women were severely anemic.

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