

Pattern of anemia during pregnancy among patients in selected hospital in Bangladesh

Abstract

Background: Anemia in pregnancy is a common health problem. In developing countries, nearly half of all women and children are anemic. Anemia reduces work productivity and places at risk for poor pregnancy outcomes including increased risk of maternal mortality, perinatal mortality, premature births, spontaneous abortions and low birth weight.

Objective: The aim of this study was to assess pattern of anemia during pregnancy.

Methods: A cross sectional observational study was conducted among purposively selected 200 women attending in the outpatient department (OPD) of Obstetrics and Gynecology and Clinical Pathology department, BSMMU. Hemoglobin was measured by appropriate method. Descriptive statistics were used to analyze data.

Results: About 55%, 33% and 12% women suffered from anemia at 2nd trimester, 3rd trimester and 1st trimester of gestational period respectively. About 12% respondents had mean hemoglobin percentage of 55.83 in 1st trimester. In 2nd trimester 55% respondents had mean hemoglobin percentage 55.40 and remaining 33% had mean hemoglobin percentage 53.25 in 3rd trimester. About 49%, 44% and 7% of the women were multipara, primipara and grand multipara respectively. Mean hemoglobin level was lower in multipara than in primipara. Mild, moderate and severe anemic was 70%, 27% and 3%.

Conclusion: The mean hemoglobin level declines with the number of pregnancies of the respondents.

Keywords: anemia, pattern, pregnancy

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Abbreviations: OPD, outpatient department; CDC, centers for disease control and prevention; BSMMU, bangabandhu sheikh mujib medical university; WHO, world health organization

Introduction

Anemia during pregnancy is a public health problem all over the world. According to WHO, prevalence of anemia is 56 % in developing country and 18% in developed country among the pregnant women.¹ Anemia affects 25% to 50% of the world population and 50% of pregnant women.² Prevalence of anemia in pregnant women of Bangladesh was reported as 50% & 59% according to two different surveys conducted on 1999 and 1998.³ Iron deficiency anemia is the predominant cause of anemia in pregnancy and it causes various problems like preterm delivery, low birth weight baby, high maternal and perinatal mortality, morbidity and delayed physical recovery following pregnancy. So early detection of iron deficiency is very essential.⁴ Centers for Disease Control and Prevention (CDC) recommend routine screening for iron deficiency anemia in pregnant women. During pregnancy the hemoglobin concentration declines during the first and second trimesters because of an increase in blood volume.⁵ Again most of the women enter pregnancy with low iron reserve that frequently ends in iron deficiency anemia.⁶ In a normal pregnancy with single fetus, women need 800 mg iron; 500mg for maternal hemoglobin mass expansion and 300mg for fetus and placenta. Another 200mg more is shed through gut, urine & skin. So a total 1000 mg iron is needed by a single pregnancy.⁷ If this requirement is not met or if the woman is previously iron depleted then iron deficiency anemia develop. About 95% of anemia during pregnancy is due to iron deficiency.⁸ Iron deficiency anemia is the most common

during pregnancy.⁹ According to a study conducted in Bangladesh, anemia during pregnancy is the commonest medical disorder that occurs in developing country and it directly causes maternal death for about 20% and act as a predisposing factor for another 20%. Perinatal mortality is higher in anemic women and cardiac failure during labor due to severe anemia is an important cause of mortality. Anemia also affects maternal weight gain, immune status, more chance of infection and delayed wound healing.¹⁰ Correction of anemia is important because anemic women poorly tolerate blood loss.¹¹ Anemia also has significant effect on the fetus. Maternal anemia may impair oxygen delivery to fetus and interfere normal growth of baby. Consequences of anemia increase the burden of health services. This study aimed to estimate the prevalence of anemia in pregnant women and will help to take appropriate measures for the policy makers to reduce the anemia in our women population.

Materials and methods

Study site

This was a cross sectional observational study.

Study period

This study was carried out during the time period from September 2011 to January 2012.

Study place

Study was conducted in the outpatient department (OPD) of Obstetrics and Gynecology and Clinical Pathology department, Bangabandhu Sheikh Mujib Medical University (BSMMU). It was purposively selected.

Study population

All Pregnant women attending Obstetrics & Gynecology outdoor for antenatal visit within the study period were included in the study population.

Sample size

Total 200 pregnant women were included conveniently in this study.

Data collection instruments

Structured questionnaire was used.

Hemoglobin measurement

Blood was drawn by finger prick with lancet after sterilization of the site with 70.0% alcohol. The hemoglobin test was done by using Sahli's haemometer. Anemic was determined according to World Health Organization (WHO) standard. Anemic respondents were divided into 3 groups according to their hemoglobin level i.e. Mild anemia (hemoglobin less than 11gm/dl), moderate anemia (hemoglobin less than 8gm/dl) and severe anemia (hemoglobin less than 6gm/dl).

Data processing

After collection, data were checked thoroughly for consistency and completeness. Data were checked after collection of data to exclude any error or inconsistency.

Ethical issue

All ethical issues, which were related to the research involved with human subjects, were followed according to the guideline of ethical review committee. First of all I had to submit protocol with questionnaire to ethical review board. After taking permission from board research was conducted. Verbal consent was taken from every respondent. Detail procedure was explained before data collection and voluntary participation was ensured. Confidentiality was also maintained.

Results

(Figure 1), (Table 1 & 2).

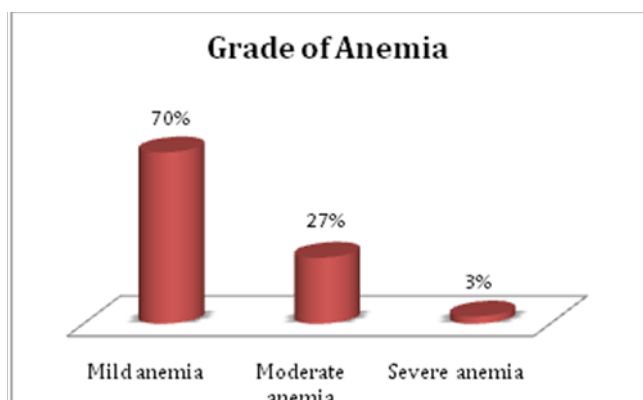


Figure 1 Distribution of anemia according to different grade. Majority (70%) had mild anemia and 27% had moderate anemia. The rest 3% had severe anemia.

Table 1 Duration of pregnancy and mean hemoglobin percentage (n=200)

Duration of pregnancy	No. of respondents	Percentage	Mean hemoglobin percentage
First Trimester	24	12	55.83
Second Trimester	110	55	55.4
Third Trimester	66	33	53.25
Total	200	100	

About 12% respondents had mean hemoglobin percentage of 55.83 in 1st trimester. In 2nd trimester 55% respondents had mean hemoglobin percentage 55.40 and remaining 33% had mean hemoglobin percentage 53.25 in 3rd trimester.

Table 2 Parity and mean hemoglobin percentage (n=200)

Parity	No. of respondents	Percentage	Mean hemoglobin percentage
Primi	88	44	57.26
Multi	98	49	56.86
Grand Multi	14	7	53.57
Total	200	100	

Relation between parity and mean hemoglobin percentage shows that 44% and 49% primipara and multipara had mean hemoglobin percentage of 57.26 and 56.86. About 7% grand multipara had mean hemoglobin percentage 53.25.

Discussion

Study revealed that among the respondents majority had mild anemia. This may be due to low intake of nutritive food. In first trimester about 12% respondents had mean hemoglobin percentage of 55.83. Vomiting tendency and nausea may be responsible for this situation. Study conducted in Nigeria showed that the prevalence of anemia in pregnancy is 24.5%. About 55% respondents had mean hemoglobin percentage 55.40 and remaining 33% had mean hemoglobin percentage 53.25 in second and third trimester respectively. In case of parity and mean hemoglobin percentage study revealed that 44% and 49% primipara and multipara had mean hemoglobin percentage of 57.26 and 56.86. Imbalance of food distribution and poverty may be the cause of it. One showed that adolescent primigravidae had the lowest mean hemoglobin concentration and the highest prevalence of anemia followed by adult primigravidae, adult multigravidae and adolescent multigravidae.¹²

Conclusion

The mean hemoglobin level declines with the number of pregnancies of the respondents.

Acknowledgements

None.

Conflict of interest

The author declares no conflict of interest.

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