FREQUENCY OF ANEMIA AMONG PREGNANT WOMEN AND ITS EFFECT ON INTRAUTERINE GROWTH OF THEIR NEWBORN BABIES

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ABSTRACT

Background: Anemia in study can affect mothers as well as newborns.

Objective: To enlist the risk factors and severity of iron deficiency anemia in pregnant women diagnosed in third trimester and effect on intrauterine growth of their newborn babies.

Methodology: Study design: Cross sectional study. Place and Duration of Study: This study was conducted from 1st June to 30th April 2015 at Aziz Bhatti Shaheed Teaching Hospital Gujrat and Naseem Private Hospital Gujrat. A total of 112 consecutive pregnant women were selected for study who were having anemia in third trimester of pregnancy. Anemia was diagnosed on history, examination and investigations. Hemoglobin, RBCs indices, peripheral smear and serum ferritin was advised to diagnose the iron deficiency anemia. All pregnant women who were having anemia other than iron deficiency anemia were excluded from the study. After the diagnosis, anemic pregnant women were classified as mild, moderate and severe on the basis of hemoglobin level. Mild anemia was labeled from 10-10.9 g/dl, moderate anemia, 7-9.9 g/dl and severe anemia, 4-6.9 g/dl. Risk factors of anemia in pregnant women and outcome of newborn was analyzed. Data was entered in SPSS version 16 and analyzed.

Results. Out of 112 pregnant, twenty two (19.64%) women were 16-25 years old, 64 (57.14%) women were 26-35 years old, twenty six (23.21%) were 36-45 years. Eighty six (76.78%) women were from low socioeconomic status group and twenty six (23.21%) were from high socioeconomic group. Severely anemic women were only 14 (12.50%), forty two (37.50%) were mildly anemic and a large number of women 56 (50%) were moderately anemic. All the newborns were delivered full term in mildly anemic and moderately anemic women. Twelve newborns (21.42%) of moderately anemic women were having IUGR (intra-uterine growth retardation). Severely anemic pregnant women delivered 3 (21.42%) full term, 11 (78.5%) preterm and 14 (100%) IUGR newborns. Dietary deficiency 112 (100%), Noncompliance 101 (90.17%), Poverty 86 (76.78%), illiteracy 78 (70%) and short birth interval 67 (59.82%) were commonly observed risk factors of anemia in pregnancy.

Conclusion: Anemia in pregnancy can result in morbidity and mortality for both mother and newborn. This study shows that majority of women in third trimester of pregnancy were anemic and many of the moderately anemic mothers and all of the severely anemic mothers have newborn with intrauterine growth retardation. Early detection of risk factors and its prevention or proper treatment may help in better prognosis of mother and newborn.

Keywords: Anemia, pregnancy, IUGR, Risk Factors.

INTRODUCTION

Among child bearing females have low iron levels and reserves is quite common. Physiologically in the world the most frequent problem in the life of female is anemia.[1] Anemia is decrease in hemoglobin (Hb) concentration, hematocrit (Hct) or RBC count due to decrease in absolute number of circulating red blood cells. According to WHO, anemia is defined on the basis of trimester of pregnancy. In first trimester Hb <11g/dl, in second trimester Hb < 10.5g/dl and in third trimester <11g/dl.[2] There are many causes of anemia in pregnancy but most commonly seen are iron deficiency, nutritional deficiency, hook worm infection, H.pylori infection, hemoglobinopathies and other micronutrient deficiency like folic acid, vitamin B12 deficiency.[3] It has been observed that severe anemia in pregnancy may effect on myelination in infants, which may impair the mental development and may decrease child learning capacity.[4] Due to anemia there may be decreased oxygen delivery to the maternal organs like brain, uterus, kidney and kidney. As there is decreased supply of oxygen to the uterus that's why it may affect the fetus as well.[5,6] This study may help to eliminate the modifiable risk factors for anemia in pregnancy and may change the outcome of pregnancy. This study was conducted to enlist the risk factors and severity of iron deficiency anemia in pregnant women in third trimester and effect on their newborn.

METHODOLOGY

A total of 112 consecutive pregnant women were

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selected for this cross sectional study, who were having anemia in third trimester of pregnancy. Study duration: 1st June to 30th April 2015. Study Site: Aziz Bhatti Shaheed Teaching Hospital, Gujrat. Anemia was diagnosed on history, examination and investigations. Hemoglobin, RBCs indices, peripheral smear and serum ferritin was advised to diagnose the iron deficiency anemia. All pregnant women who were having anemia other than iron deficiency anemia were excluded from the study. After the diagnosis, anemic pregnant women were classified as mild, moderate and severe on the basis of hemoglobin level. Mild anemia was labelled from 10-10.9 g/dl, moderate anemia 7-9.9 g/dl and severe anemia as 4-6.9 g/dl. Treatment was given according to the classification of anemia. If needed pregnant women were admitted for blood transfusion. Oral or intravenous iron therapy was given to each anemic pregnant woman according to classification of anemia. At term newborns were delivered by normal delivery or by caesarean section. Each newborn was examined by pediatrician and treatment was given accordingly if needed. Descriptive statistics was calculated for age, risk factors and outcome of newborn. Risk factors of anemia in pregnant women and outcome of newborn was analyzed. SPSS 16 was used for data entry and analysis.

RESULTS

A total of 112 pregnant women were included in this study. studied. Pregnant women of 16-45 years of age were included in the study. Twenty two (19.64%) women were 16-25 years old, 64 (57.14%) women were 26-35 years old, twenty six (23.21%) were 36-45 years.

Table I: Grades of anemia and pregnant women. (n=112)

Grades of Anemia	Anemic Pregnant Women (No)	Percentage
Mild Anemia	42	37.50%
Moderate anemia	56	50.00%
Severe anemia	14	12.50%
Total	112	100%

Eighty six (76.78%) women were from low socioeconomic status group and twenty six (23.21%) were from high socioeconomic group. Severely anemic women were only 14 (12.50%), 42 (37.50%) were mildly anemic and a large number of women 56 (50%) were moderately anemic (Table II).

Table II: Gestational age and body outcome (n=112)

Anemia	Full term	Preterm	IUGR
Mild Anemia (n=42)	42 (100 %)	(0%)	(0%)
Moderate Anemia (n=56)	56 (100%)	(0%)	12 (21.42%)
Severe Anemia (n=14)	3 (21.42%)	11(78.5%)	14 (100%)

All the newborns were delivered full term in mildly anemic and moderately anemic women. Twelve newborns (21.42%) of moderately anemic women were Intra-Uterine Growth Retardation. Severely anemic pregnant women delivered 3 (21.42%) full term, 11 (78.5%) preterm and 14 (100%) IUGR newborns. (Table II)

Dietary deficiency 112 (100%), Non compliance to medicines 101 (90.17%), Poverty 86 (76.78%), illiteracy 78 (70%) and short birth interval 67(59.82) were commonly observed risk factors of anemia in pregnancy. (Table III)

Table III: Risk factors of anemia among pregnant women. (n=112)

Risk factors	No of anemic pregnant women	Percentage
Dietary deficiency	112	100 %
Poverty	86	76.78 %
Non-Compliance to Medicine	101	90.17 %
Short birth interval	67	59.82 %
Chronic Blood loss	11	9.82 %
Infections	13	12 %
Illiteracy	78	70 %
GIT side effects of oral iron	28	25 %
Absence of marital partner	44	39.28 %

DISCUSSION

In this study many risk factors were observed in pregnant woman with anemia, suggesting that in our study it was observed that only prescription of folic acid and iron is not enough to deal with anemia in pregnancy. In a study, in 2010 by Lazarou and Kapsou, it was observed that only folic acid therapy cannot explain the lower incidence of anemia in pregnant woman.[7] Proper intake of food and nutrients will decrease chances of depression and deficiency.

In our study, it was observed that if life partner is absent during pregnancy then there may be more

chances of anemia of pregnancy. As it was observed that life partners of most anemic woman were out of country for earning.

Raatihainen, in 2005 observed that absence of partner during pregnancy will lead to decreased optimal health care prior and after pregnancy.[8] More over in 2013, Alio and Lewis studied that absence of father during pregnancy is associated with change in maternal behavior and it may affect neonatal outcome as well.[9] In our study it was observed that woman with low socioeconomic status were having anemia more than in woman with high socioeconomic status. In 2014, Kassebaum and Jasrasaria with friends observed that anemia is more common in patients with low socioeconomic status.[10]

In our study, iron deficiency was observed in most of the pregnant women. Due to lack of proper food, iron deficiency is common in pregnant woman with low socioeconomic status.

Saunders and Craig in 2012 observed that iron deficiency is the most common form of anemia in pregnant women.[11] Moreover, it was also observed that iron fortification and proper food may decrease chances of iron deficiency anemia.[11]

In our study, pregnant women with mild anemia delivered normal healthy full term babies. In moderately anemia pregnant women, all the babies were delivered full term and it was observed that few babies were IUGR (Intrauterine Growth Retardation). In severely anemic pregnant women babies were delivered premature as well as with IUGR. In 2009, Gonzales and others observed that low maternal haemoglobin level may affect the fetal outcome.[12]

In our city though life partner may be out of country for earning and this may be the additive factor but still dietary deficiency was found in 100% pregnant women. Non compliance 90.17% was also a major factor of iron deficiency anemia. Non compliance may be due to lack of education, about the iron therapy, and GIT disturbances due to iron tablets. Others factors like worm infestation, blood loss may also affect the hemoglobin level in pregnant women.

CONCLUSION

Anemia in pregnancy can result in morbidity and mortality for both mother and newborn. This study showed that majority of women in third trimester of pregnancy were anemic and many of the moderately anemic mothers and all of the anemic mothers have newborn with intrauterine growth retardation. Early detection of risk factors and its prevention or proper treatment may help in better prognosis of mother and newborn.

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