



A STUDY OF FETO-MATERNAL OUTCOME IN ANAEMIA COMPLICATING PREGNANCY

Obstetrics & Gynaecology

Dr. Tulika Das

Senior Resident

**Dr. Vidya Manoj
Jadhav***

Professor & HOD *Corresponding Author

ABSTRACT

Pregnancy anaemia is a significant public health concern and a major contributor to poor outcomes for both mothers and their unborn children, particularly in developing nations. A diagnosis of anaemia during the prenatal period was defined by the World Health Organisation (WHO) as having a haemoglobin level less than 11 g/dl and a haematocrit lower than 33%. In many populations, it varies in prevalence, aetiology, and degree of severity. The most typical nutritional shortfall in pregnancy is iron deficiency anaemia, which is followed by folate deficiency anaemia. The prevalence of anaemia was found to be 84% and 84.9% among pregnant women, respectively, according to studies conducted in 2020 by the Nutrition Foundation of India and the Indian Council of Medical Research (ICMR) Task Force. Pre-eclampsia, preterm labour, sepsis, and postpartum haemorrhage are all conditions that can result from anaemia during pregnancy. Both direct and indirect mortality from heart failure, haemorrhage, infection, and preeclampsia are brought on by it. Additionally, premature births, intrauterine growth restriction, poor iron reserves, iron deficiency anaemia, and newborn cognitive and affective disorders all result in an increase in perinatal mortality and morbidity.

KEYWORDS

Crumb Rubber, Utilization, Compressive Strength, Low Cost, Sustainable

INTRODUCTION

Anemia according to WHO is Hb concentration less than 11g/dl(7.45mmol/L) & a hematocrit of less than 33%. Anemia in pregnancy can be categorized as:Mild anaemia-9-10.9g/dl, Moderate anaemia-7-8.9g/dl, Severe anaemia-<7g/dl and Very severe (decompensated)-<4g/dl.

Anemia in pregnancy is one of the most common problems faced by obstetrician, especially in developing countries. India is among the countries with highest prevalence of anemia in the world. Prevalence of Iron deficiency anemia among pregnant woman is 58% & among non-pregnant, non-lactating is 50% & among adolescent girls it is 56% according to National Family Health Survey-3.(1)

It is estimated that about 20-40% of maternal deaths in India are due to anemia. Anemia contributes to about 50% of Global Maternal deaths.(2) The total iron needed during pregnancy is about 1000 mg. The daily requirements for iron, as well as folate are 6 times greater for a woman in the last trimester of pregnancy than for a non pregnant woman.(5)

In India, it is frequently severe and contributes to maternal mortality and reproductive health morbidity. Recently lots of programmes have been focussed on safe motherhood but maternal anaemia remains a problem of great concern. Among all causes of anaemia, nutritional anaemia is of greatest concern, 90% due to iron deficiency(4). Multipara, multiple pregnancy, blood donors and persons with a diet low in meat / vegetarian are more prone for anemia(6). The complications of anemia in woman are many as it adversely affects both their productive & reproductive capabilities. Among pregnant woman due to extreme demands of growing fetus, which is approximately 4-6 times demands in non pregnancy state, the prevalence is higher(7) Anemia in pregnancy can impair oxygen delivery to fetus & interfere with normal intrauterine growth resulting in IUGR, still births, low birth weight babies & neonatal deaths along with obstetric complications like uterine inertia, PPH, cardiac failure & shock (8). Present study was conducted with the aim of to study maternal and fetal outcome in anaemia complicating pregnancy.

MATERIALANDMETHODS

This is a Retrospective study carried out in Department of Obstetrics and Gynecology of Bharati Vidyapeeth (Deemed to be) University Medical College and Hospital, Sangli. The study was started after approval of institutional ethical committee. Total 30 cases were archived in duration of 4 months. Those patients' records who were admitted in Obstetrics & Gynecology Department with Anemia in pregnancy were included in the study. Patients with low haemoglobin levels whose pregnancy ended in an abortion or turned out to be a molar pregnancy, gastrointestinal disorders like hyperacidity, peptic ulcer, hepatic & renal diseases were excluded.

RESULTS

The mean age of 30 mothers was 26 ± 5.6 years, ranging from 18 to 34 years. It was observed that 26.7% of the mothers were aged less than 20 years (Table 1). Mean hemoglobin of these 30 mothers was 7.1 ± 2.2 gm%, ranging from 2 to 11 gm%. It was observed that mild anemia was present in 23.3%, moderate anemia was observed in 33.3% and rest 43.3% of the mothers had severe anemia (Table 2). The most common maternal complication was preterm labor (30%). Other maternal complications are mentioned in table 3. No complication was observed in 6 mothers (20%) (Table 3). There were two maternal deaths (Table 3). Mean birth weight of the neonates was 1.85 ± 0.57 kgs, ranging from 0.7 to 3 kgs. It was observed that according to birth weight, 60% were low birth weight and 23.2% were very low birth weight (Table 4). Prematurity was observed in 33.3% of the neonates and there were 4 perinatal deaths (13.3%) mentioned in Table 4. We observed a significant association of the severity of anemia with any maternal complications, perinatal mortality and low birth weight. Among those with severe anemia (n=13), all of the mothers had some form of maternal complication (p value < 0.001), 30.8% perinatal mortality was observed (p value < 0.05) and all neonates had low birth weight (p value < 0.01). Maternal mortality and prematurity was not found to be significantly associated with the severity of anemia (Table 5). Additionally, birth weight of the neonate was found to have a significant positive correlation with maternal hemoglobin (Pearson's correlation= 0.45, p value < 0.05).

Table 1: Table showing distribution of maternal age

Age Group (Years)	Frequency	Percentage(%)
<20	8	26.7
21 to 25	5	16.7
26 to 30	6	20
31 to 34	11	36.7

Table 2: Prevalence of anemia in pregnancy

Degree of anemia	Number of cases	Percentage (%)
Mild	7	23.33
Moderate	10	33.33
Severe	13	43.33
Total	30	100

Table 3: Associated obstetrical complications in patients of anemia

Maternal outcome	No. of cases	Percentage(%)
Preterm labour	9	30
Surgical site infection	6	20
Post partum hemorrhage	4	13.33
Prolonged labour	3	10
Congestive cardiac failure	2	6.7
None	6	20
Maternal mortality	2	6.7

Table 4: Fetal outcome in anemia patients

Birth weight	Frequency	Percentage(%)
Normal (≥ 2.5 kg)	5	16.7
LBW (< 2.5 kg)	18	60
VLBW (< 1.5 kg)	7	23.2
Premature	10	33.3
Perinatal mortality	4	13.3

Table 5: Association of maternal and fetal complications with severity of anemia

Variables		Severity of anemia			Total	p value
		Mild	Moderate	Severe		
Any maternal complication	N	1	10	13	24	< 0.001
	%	14.30%	100.00%	100.00%	80.00%	
Maternal mortality	N	0	0	2	2	0.49
	%	0.00%	0.00%	15.40%	6.70%	
Perinatal mortality	N	0	0	4	4	< 0.05
	%	0.00%	0.00%	30.80%	13.30%	
Premature	N	0	5	5	10	0.07
	%	0.00%	50.00%	38.50%	33.30%	
Low birth weight	N	1	10	13	24	< 0.01
	%	14.30%	100.00%	100.00%	80.00%	
Total	N	7	10	13	30	
	%	100.00%	100.00%	100.00%	100.00%	

DISCUSSION

In this study it was observed that maternal mortality was seen in cases of severe anemia 15.4%. Bhatt Rohit V et al. states that anemia was the cause of maternal death in 64.4% of cases. Perinatal mortality was also seen in cases of severe anemia 30.8%. Das S. Gupta et al(16) found severe anemia was responsible for 13% of perinatal mortality cases. Khatana, A and colleague (9) found that the incidence of perinatal mortality was 42% in severe anaemia which is comparable with our study. Congestive cardiac failure usually occurs in 3rd trimester of pregnancy due to increased workload on heart. Very high incidence of CCF of 78% was observed by Satyanarayan et al(10), Rosario et al(11) and Rathee et al(12) reported incidence of 18.75% and 15.19% respectively. This study reports 6.7% incidence of CCF. Pandya et al(15) observed surgical site infection in 11.8%, this study presented slightly higher incidence of 20%. Anaemia is not only dangerous for mother but also threatens life and well being of fetus. Chatterjee et al(13) and Rangnagar et al(14) reported highest incidence of prematurity being 35.5% and 82.4% in severe anaemia respectively. Least incidence of 24% was reported by Satyanarayan et al(10), in present study incidence of prematurity being 38.5 % in severe anaemia. Rangankar et al(14) and Pandya et al(15) reported high incidence of LBW babies being 82.4%, 78.48%, 79.5% respectively. While Rathee et al(12) and Rosario et al(11) have reported incidence of 61.75% and 65.5%. Birth weight of the neonate was found to have a significant positive correlation with maternal hemoglobin.

CONCLUSION

It can be concluded from present study that anemia is associated with high maternal and fetal morbidity and mortality. It is also associated with high incidence of complication like preterm labor, prolonged labor, Post Partum Hemorrhage, surgical site infection, congestive cardiac failure, low birth weight. Present study of anemia has shown that there is increased incidence of maternal and fetal mortality associated with severe anemia if adequate measures are taken to improve the maternal nutrition status from early weeks of pregnancy and supplementation of essential haemopoietic factor can at least minimize the severity of anemia if cannot prevent it completely. Thus reducing the incidence of maternal and fetal mortality remarkably, to achieve goal of safe motherhood.

REFERENCES

- Andrews, N. C. (1999). Disorders of iron metabolism. New England Journal of Medicine, 341(26), 1986-1995.
- Bayoumeu, F., Subiran-Buisset, C., Baka, N. E., Legagneur, H., Monnier-Barbarino, P., & Laxenaire, M. C. (2005). Iron therapy in iron deficiency anemia in pregnancy: intravenous route versus oral route. European Journal of Obstetrics & Gynecology and Reproductive Biology, 123, S15-S19.
- Murphy JF, Newcombe RG, O'riordan J, Coles EC, Pearson JF. Relation of haemoglobin levels in first and second trimesters to outcome of pregnancy. The Lancet. 1986 May 3;327(8488):992-5.
- TAYLOR DJ, MALLIN C, McDUGALL NE, LIND T. Effect of iron supplementation

- on serum ferritin levels during and after pregnancy. BJOG: An International Journal of Obstetrics & Gynaecology. 1982 Dec;89(12):1011-7.
- Chopra JG, Noe E, Matthew J, Dhein C, Rose J, Cooperman JM, Luhby AL. Anemia in pregnancy. American Journal of Public Health and the Nations Health. 1967 May;57(5):857-68.
- Thompson, W. G. (1988). Comparison of tests for diagnosis of iron depletion in pregnancy. American journal of obstetrics and gynecology, 159(5), 1132-1134.
- Fenton V, Cavill I, Fisher J. Iron stores in pregnancy. British Journal of Haematology. 1977 Sep;37(1):145-9.
- Massey A. C. (1992). Microcytic anemia. Differential diagnosis and management of iron deficiency anemia. The Medical clinics of North America, 76(3), 549-566.
- Khatana, A., & Yadav, K. (2017). Study of fetomaternal outcome in patients of moderate and severe anaemia in > 28 week pregnancy. J Med Sci Clin Res, 5, 25071-6.
- Alli, R., & Satyanarayana, M. (1985). Anemia complicating pregnancy. J Obstet Gynecol India, 35(2), 335-8.
- RosARIO, Y. P. THE OBS'ETRICAL BEHAVIOUR OF THE ANAEMIC PREGNANT WOMAN.
- Rathee S, Khosa A. (1987): J. of Obstet. and Gynae. of India, 37: 478-480.
- Chatterjee (1970) J. of Obstet. and Gynae. of India, 20: 329.
- Rangnekar, Darbari (1993). J. of Obstet. and Gynae. of India, 43: 172-176.
- Pandya P, Hazra M.N. (1993). J. of Obstet. and Gynae. of India, 43: 5-10.
- Dasgupta S, Saha I, Lahiri A, Mandak Ak. (1997). India Medical Association; 95(3): 789.