

Maternal & Perinatal outcome of Pregnancy with severe anaemia



Gynaecology

KEYWORDS: Severe anaemia and pregnancy, Maternal Outcome, Perinatal Outcome

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ABSTRACT

Background: Anaemia is a major contributor to maternal death in developing countries.

Objective: To study the association between severe anaemia and maternal and perinatal complications.

Design: It is a prospective hospital based study conducted in OBGY department SMS Medical College Jaipur from February 2013 to September 2014

Material and methods: About 130 pregnant women admitted for delivery and having severe anaemia were studied and compared with 130 non anaemic women matched for age, parity and gestational age. During this study maternal (preterm labour, pre-eclampsia, sepsis) & perinatal outcomes (still Birth, IUGR, Birth asphyxia etc.) were noted.

Results: Compared to non exposed women, exposed women had increased risk of adverse outcomes in the mother and neonate. We concluded that there is a significant association of maternal anaemia with maternal and fetal complications.

INTRODUCTION

Anaemia is the most common nutritional deficiency disorder in world. WHO has estimated that prevalence of anaemia in pregnant women is 14% in developed 51% in developing countries 65-75% in India.¹ About 1/3 of global population (over 2 billion, are anaemic.)² In India anaemia ante dates pregnancy, is aggravated by increased requirements during pregnancy and blood loss at delivery, infections in the antenatal and postnatal periods, and the early advent of next pregnancy perpetuates it.³ According to ICMR standards anaemia is classified as⁴ mild (Hb 10.0 – 10.9 gm/dl); moderate (Hb 7.0 – 9.9 gm/dl); severe (Hb < 7.0 gm./dl) and very severe (Hb < 4.0 gm./dl) According to ICMR, the relative prevalence of mild, moderate & severe anaemia are 13%, 57% & 12% respectively in India.

Women with chronic mild anaemia are well compensated. Women with moderate anaemia have substantial reduction in work capacity & may find difficult to cope with household chores and child care.

Maternal morbidity rates are higher in women with Hb below 8gm/dl. They are more prone to infections and premature birth. Anaemia directly causes 20% of maternal deaths & indirectly accounts for another 20% of maternal deaths.⁵

There is usually a 2 to 3 fold increase in perinatal mortality rate when maternal haemoglobin level falls below 8gm/dl.⁶ 8 to 10 fold increase when maternal haemoglobin levels falls below 5.0 gm/dl. A significant fall in birth weight due to increase in prematurity rate and intra uterine growth retardation has been reported when maternal haemoglobin levels were below 8.0 gm/dl.

MATERIAL & METHODS

The hospital based prospective study was conducted in Department of Obstetrics and Gynecology, SMS Medical College, Jaipur.

The study included pregnant women in Labour during Nov2015-October 2016 proposed to study the maternal & perinatal outcome in pregnancy with severe anaemia. This involved maternal outcomes in terms of preterm labour, preeclampsia, sepsis, CHF, PPH / retained placement & maternal mortality and perinatal outcomes in terms of low birth weight, Apgar score < 7 Neonatal Hb < 14gm/dl, still birth, IUGR and birth asphyxia, admission in NICU, early neonatal death. 260 pregnant women with singleton live pregnancy were divided into two groups on the basis of Haemoglobin level.

Group A:- (n-130) severe Anaemia group. (Hb < 7.0 gm/dl)

Group B:- (n-130) Normal Haemoglobin group. (Hb > 11.0 gm/dl)

A detailed history was taken and thorough general, abdominal and pelvic examination was done. The sample of maternal venous blood was taken and sent to laboratories where CBC, maternal serum Ferritin estimation and sample for fetal Hb estimation was taken from cord. The women were followed up throughout the labour & upto discharge.

DISCUSSION:-

Mean maternal Haemoglobin in Group A was $5.645.64 \pm 0.96$ and in Group B 12.03 ± 0.63 and the difference was statistically significant similarly mean maternal serum Ferritin levels in Group A and Group B was 5.86 ± 1.23 and 44.31 ± 19.30 respectively and this difference was statistically significant. (Table-1) Riffat et al¹⁰⁶ (2008) concluded that mean Hb of women in severe anaemia group was 6.1 ± 0.6 gm/dl. and in normal Hb Group was 11.6 ± 0.6 gm/dl. Dhananjay et al¹⁰⁷ (2013) found that mean maternal serum ferritin level in anaemia group was 21.8 ± 17.4 mg/ml & in non anaemia group was 96.8 ± 44.7 mg/ml.

All 130 women in Group A received blood transfusions. In Group B only 2 women received blood transfusions. The difference was statistically significant. (Table-2)

Maternal complications were more in Group A than in Group B. (Table-3) Results of our study was comparable with ghimire et al⁽⁸⁾ (2013) in which he concluded that anaemic women had an increased risk of pregnancy induced hypertension with odds ratio of 5.06, Preterm labour, PPH, and sepsis. Jain Preeti et al⁽⁹⁾ (2013) found a significant correlation between anaemia and development of preeclampsia eclampsia & preterm labour (p value < 0.05).

The mean birth weight was 2.49 ± 0.56 kg in Group A and 2.93 ± 0.33 kg in Group B and the difference was statistically significant (P < 0.0015) (Table-4) Owais et al¹⁰ (2011) concluded that the number of low birth weight neonates was statistically more significant (P < 0.001) in the women of anaemic group (64%) than the non-anaemia group (10%).

Perinatal complications were more in Group A as compared to Group B and the differences were statistically significant. (Table-5) Levy et al¹¹ (2004) concluded that among the cases of anaemic group the incidence of asphyxia was in 40%, and intra uterine growth retardation was in 38%. Naushaba et al¹² (2013) concluded that perinatal mortality was seen in 2.3% and intrauterine death in 8.9% in anaemic group.

CONCLUSION

This study had shown significant association of maternal anaemia with maternal and fetal complications. The burden of anaemia in pregnant population is still high. Hence preventive measures need to be implemented at community level. Public awareness regarding Prepregnancy haemoglobin status and importance of antenatal check up, should be initiated. We propose that routine iron-folic acid supplementation should be given during pregnancy and post partum. Iron supplementation may improve lymphocytic stimulation & thus decrease the risk of intra partum & postpartum infection.

TABLES

TABLE-1

Distribution of cases according to Mean Maternal Haemoglobin and S. Ferritin

	Mean Standard Deviation		P-value LS	
Maternal Haemoglobin (gm/dl)	5.64	0.96	12.03	0.63
S. Ferritin (ng/ml)	5.86	1.23	44.31	19.30
				<0.001 S

TABLE-2

Distribution of cases according to Blood transfusion (No. of units)

Blood transfusion (No. of units)	Group A		Group B		P Value LS
	No.	%	No.	%	
2	37	28.46	2	1.53	<0.001S
3 - 4	92	70.76	0	0	
5	1	0.76	0	0	
Mean S.D.	2.89	0.707	0.02	0.124	<0.001S

TABLE-3

Distribution of cases according to Maternal Morbidity and Mortality

Maternal Outcomes	Group A		Group B		Total No.	P Value LS
	No.	%	No.	%		
Preterm Labour	55	42.31	20	15.38	75	<0.001S
Preeclampsia	29	22.31	4	3.08	33	<0.001S
Sepsis	13	10.00	0	0.00	13	<0.001S
CHF	8	6.15	0	0.00	8	0.012S
Third Stage Complications (PPH / Retained placenta)	14	10.77	2	1.54	16	0.005S
Maternal Mortality	4	3.08	0	0.00	4	0.131NS

TABLE-4

Distribution of cases according to Neonatal Birth Weight

Weight (in Kg)	Group A		Group B		P Value LS
	No.	%	No.	%	
< 2.5	62	47.69	19	14.62	81
2.5	68	52.31	111	85.38	179
Total	130	100.00	130	100.00	260

TABLE-5

Distribution of cases according to Perinatal Morbidity and Mortality

Weight (in Kg)	Group A		Group B		Total	
	No.	%	No.	%	No.	P Value LS
Neonatal Hb (<14 gm/dl)	89	68.46	3	2.31	92	<0.001S
Still Birth	6	4.62	0	0.00	6	<0.039S
IUGR	15	11.54	3	2.31	18	<0.007S
Birth Asphyxia	16	12.31	0	0.00	16	<0.001S
Early Neonatal Death	7	5.38	1	0.77	8	<0.073NS
Admission in NICU	56	43.08	16	12.31	72	<0.001S

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