



## MATERNAL AND PERINATAL OUTCOME IN CASES OF SEVERE ANAEMIA IN LABOUR

Khushpreet Kaur., Arvinder Kaur\* and Preetkanwal Sibia Shalini Singh

Government Medical College, Patiala, Punjab, India

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### ABSTRACT

Anaemia is the commonest medical disorder in pregnancy and severe anaemia is associated with poor maternal and perinatal outcome. The study was done to analyse the characteristics of hospitalized pregnant women with severe anaemia (Haemoglobin < 7gms %) at the time of delivery and to find out maternal and perinatal outcome. It was a prospective study done at Rajindra hospital, Patiala, Punjab, India over a period of one year from February 2016 to January 2017. Results were analysed. Out of 3784 deliveries 210 (5.54%) cases were severely anaemic at the time of delivery. Out of 210 women with severe anaemia 184(87.6%) patients belonged to low socioeconomic category, 177 (84.2%) were unbooked cases, 152(72.4%) cases from rural area and 119 (57.6%) cases were multi gravidas. The maternal complications were Pre-eclampsia and eclampsia (16.1%), intercurrent infections (3%), abruption placentae (3.3%), heart failure (1.4%), preterm labours (42.8%), intrauterine deaths (10.9%) and postpartum haemorrhage (10.4%). Fetal complications were fetal growth restriction 9.0%, preterm birth 42.8%, fetal distress 10.9%, still birth 10.9%, low birth weight 3.4% and NICU admission 14.7%. Severe anaemia during pregnancy is associated with maternal and perinatal morbidity and mortality so effective preventive measures in the form of regular antenatal check-ups and iron supplementation will prevent complications of anaemia in pregnant women

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### INTRODUCTION

Anaemia is the commonest medical disorder in pregnancy and has a varied prevalence, etiology and degree of severity in different populations being more common in non-industrial countries<sup>[1]</sup>. WHO defines anaemia in pregnancy as a haemoglobin concentration of less than 11 g/dl and a haematocrit of less than 0.33<sup>[2]</sup>. It uses the following haemoglobin cutoffs - 10.0 to 10.9 g/dl for mild anaemia, 7.0 to 9.9 g/dl for moderate anaemia and lower than 7.0 g/l for severe anaemia. In India, more than 90% of anaemia cases are estimated to be due to iron deficiency because high iron requirement during pregnancy are not easily fulfilled by dietary intake especially when iron bio-availability is poor<sup>[3]</sup>. Estimates of the WHO report that from 35% to 75% (56% on average) of pregnant women in developing countries and 18% of women from industrialized countries are anaemic<sup>[4]</sup>. Anaemia is not only responsible for increase in maternal and perinatal morbidity and mortality but also severely affects economic and social status of the country.

### MATERIALS AND METHODS

It was a prospective study done at Government Medical College, Patiala over a period of one year from February 2016

\*Corresponding author: **Arvinder Kaur**

Government Medical College, Patiala, Punjab, India

to January 2017, conducted on women in labour with severe anaemia (haemoglobin < 7g /dl). Exclusion criteria-Women who have severe anaemia at the time of delivery due to acute bleeding with antepartum hemorrhage, multiple pregnancy and with blood dyscrasias. Inclusion criteria was women with singleton pregnancy with severe anaemia (Hemoglobin <7gm%). Detailed history and examination was done after proper counselling and consent and data was recorded in a predesigned proforma. Maternal and perinatal outcome were analysed.

### RESULTS

Number of deliveries during the study period was 3784. Out of 3784 deliveries 210(5.54%) were severely anaemic.

Maximum women belonged to low socioeconomic status (87.14%), living in rural area (72.8%). Severe anaemia was commonly seen in multiparous women and severity of anaemia increased with increase in gestational age.

The commonest complication of severe anaemia observed in the present study was preterm labour showing highest incidence of 89 cases (42.8%) followed by preeclampsia (16.1%), intrauterine growth restriction (9.0%), intrauterine death (8.5%), sepsis (3.8%), abruption placentae in 3.3%, placenta previa (2.3%), cardiac failure in 1.4%. Maternal mortality was seen only in one case (.47%).

**Table 1** Different factors of severely anaemic women

Characteristics	No of women (%)
<b>Age Group</b>	
<20 years	19(9.0)
20-24 years	90(42.8)
25-29 years	68(32.3)
30 and above	33(15.7)
<b>Socioeconomic status</b>	
Lower	183(87.14)
Middle	27(12.8)
<b>Booked Status</b>	
Booked cases	32(15.2)
Unbooked cases	178(84.7)
<b>Residence</b>	
Rural	153(72.8)
Urban	57(27.1)
<b>Parity</b>	
Primigravida	83(39.5)
Multigravida	127(60.4)
<b>Gestational Age</b>	
>37 weeks	121 (57.6)
34-37 weeks	56(26.6)
<34 weeks	33(15.7)

**Table 2** Severe anaemia-Associated maternal complications

Perinatal complications	No.of women(%)
Preterm Birth	42.8%
Fetal Growth Restriction	9.0%
Fetal Distress	10.9%
Still Birth	10.9%
Low Birth Weight	55.2%
NICU admission	14.7%

Cause of maternal mortality was decompensated cardiac failure due to severe anaemia superimposed with severe preeclampsia.

**Table 3** Severe anaemia-associated perinatal complications

Complications	No. of women (%)
Preterm labour	89(42.8)
Preeclampsia	34(16.1)
Post partum haemorrhage	22(10.4)
IUGR	19(9.0)
IUFD	18(8.5)
Sepsis	8(3.8)
Abruptio placentae	7(3.3)
Placenta previa	5(2.3)
Cardiac failure	3(1.4)
Mortality	1(47)

**Table 4** Severe anaemia-maternal complication in different study group

Sr no	Parameter	Awasthi et al (2001)	Ranju Agarwal et al (2002)	Singhal et al (2007)	B Nirmala Devi et al (2008)	Riffat jaleel study (2008)	M.Rohilla et al (2010)	Present Study (2017)
1	Preterm Labour	9.5%	22%	32%	44.68%	23.5%	18.75%	42.8%
2	Preeclampsia	28%	7.1%	19.33%	25.33%	-	17.7%	16.1%
3	Abruptio	-	-	10.8%	8.5%	5.9%	3.12%	3.3%
4	Placenta Previa	-	-	10.8%	2%	-	-	2.3%
5	Abruptio with placenta previa	10.5%	0.68%	-	-	-	-	-
6	PPH	7.5%	0.4%	7.6%	6.4%	9.8%	25.5%	10.4%
7	IUGR	37.5%	-	6.62%	12.77%	27.8%	33.33%	9.0%
8	CHF	-	-	4.97%	1.06%	1.9%	9.37%	1.4%
9	Mortality	-	-	-	1.06%	1.9%	6.25%	0.47%

Most common perinatal complication was low birth weight (55.2%) followed by preterm birth (42.8%), fetal distress (10.9%), still birth (10.9%) and fetal growth restriction (9.0%).

**DISCUSSION**

In India it is not uncommon to see patients with severe anaemia late in pregnancy with no prior antenatal visits especially in low socioeconomic settings and the same is evident from our study. Worldwide, it is estimated that 58.27 million women are anaemic during pregnancy, of whom 55.75 million (95.7%) live in developing countries. In present study the prevalence of severe anaemia (Haemoglobin < 7 gms%) was 5.54% whereas study by Singhal *et al*<sup>[5]</sup> observed the prevalence of 5.7% and Riffatjaleel reported 4.8% of severe anaemia in pregnant women<sup>[6]</sup> The age group 20-24 years had the highest prevalence of anaemia (68.4%) which agrees with the findings of Rajeshwari and Ashok Kumar,<sup>[7]</sup>and Rajaratnam<sup>[8]</sup>*et al*. Anaemia prevalence was also significantly high in pregnant women from low socioeconomic status (87.6%) compared to those from middle socioeconomic status (12.4%). Studies from Allen *et al*<sup>[9]</sup>, Rajaratnam *et al* and ME Bentley<sup>[10]</sup> also reported the same observations. Women with low socioeconomic status may not afford or have access to good maternal health care services because of lack of education or financial constraints. They are therefore more prone to the deleterious effects of poor nutrition, malaria, diarrhoeal diseases and chronic infections. Increased risk of anaemia was observed in the pregnant women who were unbooked at the time of the delivery as compared to thebooked pregnant women.

Boniface *et al*<sup>[11]</sup> also reported that obstetricrisks were more in unbooked pregnant women compared to booked ones. There may be expected decline in haemoglobin level due to haemodilution, increasing fetal demand, underlying maternal infection and untreated anaemia in early pregnancy may also get worse with advancing pregnancy. The booked patient benefits from focused antenatal care objectives, which is proven to reduce maternal and fetal morbidity/mortality, have obvious benefits in terms of risk assessment, active management, correction of modifiable conditions, and boosting the psychological support and family preparedness for a new child.

Preterm labour was more common in present study with 42.8%. Incidence in Singhal *et al*<sup>[5]</sup> study it was 32.59% , 22% in RanjuAgarwal<sup>[12]</sup> study, 9.5% in Awasthi *et al*<sup>[13]</sup> study 23.5% in RiffatJaleel study and 18.75% in M.Rohilla *et al*<sup>[14]</sup> .

Pregnancy induced hypertension in present study was 16.1%, In Singhal *et al* study it was 19.33%, Awasthi *et al* studyit was 25.33% and M.Rohilla *et al* study it was 17.7%. The results of

present study correlate well with Singhal *et al* study and B Nirmala Devi *et al* study<sup>[15]</sup>.

**Table 5** Severe anaemia-Perinatal complication in different study groups

Perinatal outcome	M. Rohilla et al (2007)	Singhal et al(2007)	B Nirmaladevi et al (2008)	Present Study(2017)
Preterm Birth	18.75%	32.59%	47.9%	42.8%
Fetal Growth Restriction	33.33%	6.62%	12.77%	9.0%
Fetal Distress	26.04%	-	-	10.9%
Still Birth	16.66%	4%	16.7%	10.9%
Low Birth Weight	-	-	53.15%	55.2%
NICU admission	29.16%	15.46%	12.8%	14.7%
Early Neonatal Death	4.16%	8.06%	5.7%	-

The findings of our study were comparable with B.Nirmala Devi *et al*<sup>[15]</sup> and observed a very high incidence of low birth weight (55.2%), preterm birth (42.8%) and still birth (10.9%). No early neonatal death was observed in our study.

## CONCLUSION

Anaemia in pregnancy is a major health problem in developing countries. Anaemia contributes significantly to maternal and perinatal morbidity and mortality. By keeping this in view, it is recommended that good antenatal care should be made available, accessible and affordable to all pregnant women through partnership between all tiers of government and non-governmental organizations. New and innovative strategies are needed, particularly those that improve the overall health and nutrition status of adolescent girls before they enter their reproductive years. Early marriages and teenage pregnancies are better avoided. Awareness created regarding dietary habits, small family norms, birth spacing, regular antenatal check ups and regular intake of iron. Efforts therefore need to be directed not only to correct anaemia but to prevent anaemia, so that we can achieve the millennium development goal of reducing the maternal mortality rate by three quarters.

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