ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

"A STUDY OF FETOMATERNAL OUTCOME BEYOND 28 WEEKS OF PREGNANCY WITH SEVERE ANEMIA IN LABOUR AT TERTIARY CARE CENTRE SOUTH -EAST RAJASTHAN"

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ABSTRACT

Introduction: Anaemia in pregnancy is associated with potential risk to fetus or mother. The current study was an attempt to study fetomaternal outcome in severe anaemia with labour pain. Anaemia in pregnancy is considered one of the major risk factors contributing to maternal and perinatal morbidity and mortality in developing countries. **Material and methods:** The study was a prospective observational study conducted in patients in the Department Of Obstetrics And Gynaecology , Jhalawar Medical College, Jhalawar, Rajasthan.. A total 190 participants with severe anaemia beyond 28 weeks in labour presenting in emergency OPD , were admitted and included in the study. **Results:** Number of deliveries during the study period was 4911. Out of 4911 deliveries 190 (3.87%) were severely anaemic. Maximum women were < 25 years of age group (59.5%), Hindu (90%), illiterate (56.3%), House wife (63.7%), unbooked (67.4%),low socioeconomic status (49.5%) and multipara (60%) . Mostly delivered by LSCS (58.4%). In our study, out of the 190 participants, maximum 68 had preterm labour (35.8%) followed by 27 (14.2%) had preeclampsia, APH was found in 20 (10.5%), PPH in 17 (8.9%), IUGR in 14 (7.4%), abruptio placentae in 17 (8.9%), placenta previa in 12 (6.3%) and sepsis in 5 (2.6%) participants. In our study, out of the 190 participants, most common fetal complication was prematurity in 41(21.6%), NICU admission was required in 79 (41.6%) and respiratory distress was found in 23(12.1%), MSL in 18 (9.5%) and IUD was in 8 (4.2%) participants. **Conclusion:** Anemia in pregnancy is a major health problem in developing countries, contributing significantly to fetomaternal morbidity and mortality. Efforts 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 and neonatal mortality.

INTRODUCTION

Anaemia is the most common nutritional deficiency in the world. Globally, anaemia affects 1.62 billion people which constitute to 24.8% of the total population and the group with the greatest number of individuals affected being pregnant women (41.8%). The condition is prominent in Southeast Asian countries where about half of all global maternal deaths are due to anemia and India contributes about 80% of the maternal death due to anaemia in South Asia. There is marginally decrease in prevalence of anemia in pregnant women in India from 58% in NFHS-3 (National Family Health Survey-2005-06) to 50 % in NFHS-4 survey (2015-16)[1].

Anaemia in pregnancy is one of the most common medical problem encountered by obstetricians, especially in developing countries. World Health Organization has reported, 35% to 75% (56% on average) of pregnant women in developing countries and 18% of women from industrialized countries are anemic[2]. Many of these women were already anemic at the time of conception.

The prevalence of anemia is high in central Asia and has been reported as 62-85% in India [3-6]. The centre of disease control and prevention (1990) defined anaemia as less than 11 gm/dl in first and third trimester and less than 10.5 gm/dl in second trimester[7].

WHO defines anaemia in pregnancy as hemoglobin concentration of less than 11 gm% (7.45 mmol/L) and hematocrit less than 33%[8].

Category	Anaemia severity	Hb level in gm/dl
1	Mild	9-10.9
2	Moderate	7-8.9
3	Severe	<7

Anaemia is further classified into mild, moderate and severe by ICMR depending upon the levels of hemoglobin[9].

Category	Anaemia severity	Hb level in gm/dl
1	Mild	10-10.9
2	Moderate	7-9.9
3	Severe	4-6.9
4	Very severe	<4

Severe anemia is defined as hemoglobin levels less than 7 gm/dL[4]. These women have decreased oxygen carrying capacity of blood. Severe anemia in women who are already in labour is a critical situation for the obstetrician with the risk of adverse feto-maternal outcomes. It is responsible for 20-40% of direct and indirect maternal deaths because of increased susceptibility to cardiac failure, sepsis and association with preeclampsia, antepartum haemorrhage, postpartum haemorrhage association with preeclampsia, antepartum haemorrhage, postpartum haemorrhage and thrombo-embolism [3,10,11]. Risk of preterm delivery, low birth weight, prematurity, intrauterine growth retardation, intrauterine death and birth asphyxia is increased causing increased perinatal morbidity and mortality in neonate [3,10,12,13]. Anemia has multifactorial etiology .Nutritional anemia is more common i.e. inhibitors of iron absorption, dietary deficiency of iron, folic acid and vitamin B12. During pregnancy, fetal and placental growth and larger amount of circulatory blood leads to the increased demand for nutrients, especially iron and folic acid. Other factors are pregnancy iron deficiency, teenage pregnancy, lack of appropriate spacing between pregnancies, parasitic infestation (e.g. malaria, hookworm infestation), poor environmental and personal hygiene[14].

AIM AND OBJECTIVES:

To study women with gestational age beyond 28 weeks

presenting in the emergency OPD with severe anemia in labour and to find out its feto-maternal outcome and negative impact on fetus and maternal health status.

Case Study
This is prospective study conducted for six months from February 2021 to July 2021 in the Department of Obstetrics and Gynaecology at tertiary care hospital Jhalawar. Data was collected from bed side medical records. 190 women were studied, they were fulfilling inclusion and exclusion criteria.

Inclusion Criteria:
- Patients in labour with gestational age>28 weeks with severe anemia (Hb< 7g/dl)
- Singleton pregnancy

Exclusion Criteria:
- Patients with low haemoglobin levels whose pregnancy <28 weeks excluded from the study.
- Women with chronic illness like-kidney disease, liver disease.
- Patients with hemoglobinopathy- like sickle cell anemia, thalassemia.
- Multiple pregnancy
- Women with bone marrow disorder.
- Women with bleeding disorder
- Patients whose pregnancy >28 weeks gestational age but haemoglobin levels >7g/dl.

Medical records of patients fulfilling the inclusion were studied for maternal age, parity, booking status, gestational age, preeclampsia, low birth weight, NICU admission, fetal demise, postpartum hemorrhage, maternal intensive care, maternal mortality.

RESULTS:
Number of deliveries during the study period was 4911. Out of 4911 deliveries 190 (3.87%) were severely anaemic. Maximum women were < 25 years of age group (59.5%), Hindu (90%), illiterate (56.3%), House wife (63.7%), unbooked (67.4%),low socioeconomic status (49.5%) and multipara (60%) . Mostly delivered by LSCS (58.4%). In our study, out of the 190 participants, maximum 68 had preterm labour (35.8%) followed by 27 (14.2%) had preeclampsia, APH was found in 20 (10.5%), PPH in 17 (8.9%), IUGR in 14 (7.4%), abruptio placentae in 17 (8.9%), placenta previa in 12 (6.3%) and sepsis in 5 (2.6%) participants.

In our study, out of the 190 participants, most common fetal complication was prematurity in 41(21.6%), NICU admission was required in 79 (41.6%) and respiratory distress was found in 23(12.1%), MSL in 18 (9.5%) and IUD was in 8 (4.2%) participants.

Table 1 : Baseline characteristic

	Frequency	No. of women
Age group		
≤ 25 years	113	59.5
25-30 years	53	27.9
31-35 years	14	7.4
>35 years	10	5.3
Religion		
Hindu	171	90.0
Muslim	19	10.0
Education		
Illiterate	107	56.3
Primary school	40	21.1
Secondary school	28	14.7
Graduate and above	15	7.9
Occupation		
Farmer	21	11.1
House wife	121	63.7
Labor	30	15.8
Student	18	9.5
Socioeconomic status		
Lower	94	49.5
Middle	88	46.3
Upper	8	4.2
Booking status		
Unbooked	128	67.4
Booked	62	32.6
Parity		
Primi	76	40.0
Multi	114	60.0
Mode of delivery		
LSCS	111	58.4
Vaginal	79	41.6
Gestational age		
28-32 weeks	15	7.9
33-36 weeks	74	38.9
>37	101	53.2

Table 2: Maternal complications:

Maternal complications	Frequency	Percent
Preterm labour	68	35.8
PE	27	14.2
APH	20	10.5
PPH	17	8.9
IUGR	14	7.4
Sepsis	5	2.6
Abruptio placentae	17	8.9
Placenta previa	12	6.3

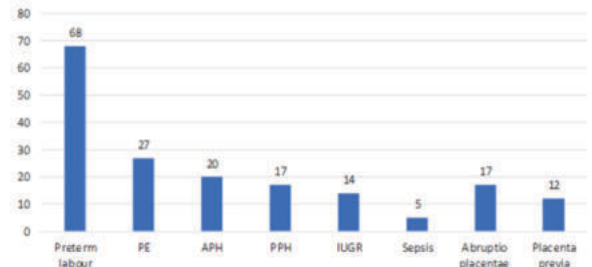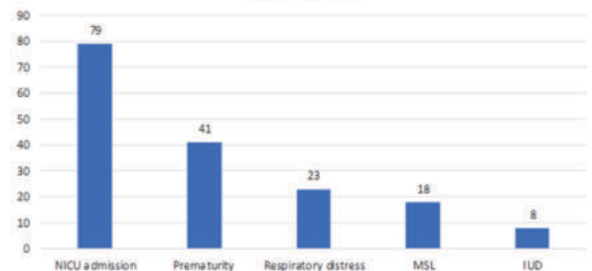Fig 1: Distribution of participants according to maternal complications

Table 3: Fetal complications:

Fetal complications	Frequency	Percent
NICU admission	79	41.6
Prematurity	41	21.6
Respiratory distress	23	12.1
MSL	18	9.5
IUD	8	4.2

Fig 2: Distribution of participants according to fetal complications

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. Anemia in pregnancy is the major health issue in rural part of India due to various reasons like poverty, illiteracy, lack of awareness about the need for

antenatal care and presence of superadded infections. Anemia in pregnancy is the risk factor for preterm labour, intrauterine growth restriction, cardiac failure, puerperal sepsis, sub-involution and failure of lactation[15]. Severe anemia in pregnancy has a significant impact on maternal and perinatal outcomes. Severity of anemia is an independent risk factor for preeclampsia, low birth weight[16].

In our study, mean age of study participants was 25.3±5.7 years and out of the 190 participants, maximum 113 (59.5%) were < 25 years age followed by 53 (27.9%) in age of 25-30 years, 14 (7.4%) in age of 31 - 35 years and 10 (5.3%) in age of more than 35 years.

A similar study was done by Singh S et al in this study a total 210 deliveries with severe anaemia were included and maximum participants were in age of 20-24 years (42.8%)[17].

In our study, out of the 190 participants, 171 (90%) were Hindu participants and 19 (10%) were Muslim participants. this distribution could be explained on the bases of population ratio. Study by Singh R et al also found similar kind of results and most of the participants were belongs to Hindu religion[18].

In this study, out of the 190 participants, maximum 107 (56.3%) were illiterate followed by 40 (21.1%) were educated up to primary school, maximum 121 (63.7%) were housewife followed by 30 (15.8%) were engaged in labor work and maximum 94 (49.5%) belongs to lower socioeconomic status followed by 88 (46.3%) belongs to middle class. This distribution could be explained because our centre is a tertiary care centre and most of the study participants are rural, referred and unbooked. The cause of high prevalence of anaemia could be explained on basis of poor nutrition because of lack of awareness regarding ANC care. Study by Singh S et al revealed that maximum women belonged to low socioeconomic status (87.14%), living in rural area (72.8%)[17].

In our study, out of the 190 participants, 128 (67.4%) were unbooked pregnancy, 114 (60%) were multipara, 111 (58.4%) delivered by LSCS and 79 (41.6%) by vaginal delivery, and mean gestational age at the time of delivery was 36.6±2.8 weeks and maximum 101 (53.2%) had gestational age >37 weeks followed by 74 (38.9%) had 33-36 weeks at the time of delivery and 15 (7.9%) had 28-32 weeks.

A similar study was done by Singh S et al in this study multipara were 60.4% and maximum 57.6% had gestational age >37 at the time of delivery[17].

In this study, mean Hb of study participants was 6.4±0.56 gm%. In our study, out of the 190 participants, 98 (51.6%) had any kind of maternal morbidity and maximum 68 (35.8%) had preterm labour followed by 27 (14.2%) had preeclampsia, APH was found in 20 (10.5%), PPH in 17 (8.9%), IUGR in 14 (7.4%), abruptio placentae in 17 (8.9%) and placenta previa found in 12 (6.3%) participants.

Singh S et al[17] revealed that 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%), abruptio placentae in 3.3%, placenta previa (2.3%), cardiac failure in 1.4%. Maternal mortality was seen only in one case (0.47%). Cause of maternal mortality was decompensated cardiac failure due to severe anaemia superimposed with severe preeclampsia. Anaemia prevalence was also significantly high in pregnant women from low socioeconomic status (87.6%) compared to those from middle socioeconomic status (12.4%).

In this study, out of the 190 participants, neonatal mortality was found to be in 10 (5.3%) and neonatal morbidity was found to

be in 87 (45.8%) and among them NICU admission was required in 79 (41.6%) and prematurity was found in 41(21.6%) , respiratory distress was found in 23 (12.1%), MSL in 18 (9.5%) and IUD was in 8 (4.2%) participants.

Ruchika Singh et al[18] also did a similar study and found that Mean birth weight was more in without anemia group (p value 0.002). Birth asphyxia and NICU admissions were more in severe anemia group neonates (p value 0.012, 0.017 respectively).

CONCLUSIONS

Anemia in pregnancy is a major health problem in developing countries, contributing significantly to fetomaternal morbidity and mortality. Proper Antenatal care should be made accessible and affordable to both urban and rural areas. Proper antenatal counselling regarding diet, birth spacing, regular antenatal checkups and regular intake of iron supplements to be done in all antenatal clinics. 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.

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