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Research Article

Severe anemia and adverse pregnancy outcome

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ABSTRACT

Background: Anaemia is commonest medical disorder in pregnancy with 88% prevalence in India mainly due to ignorance, poverty and gender bias 40-60% of maternal deaths in developing countries. The aim of the study was to determine the association between severe anemia, maternal and perinatal complications.

Methods: Case control study was done in department of obstetrics and gynecology, Government Medical College Nagpur, India from September 2011 to February 2012. 50 pregnant women, admitted for delivery and having severe anemia were studied and compared with 100 non anemic women of similar demographic features. Maternal and perinatal complications were observed. Pearson, chi-square and Fischer exact tests were used to calculate significance of results.

Results: Of the severely anemic mothers, 36% babies were low birth weight ($p=0.042$) and 20% were small for gestational age ($p = 0.026$), as compared to 18% and 10% of controls, respectively.

Conclusions: Severe maternal anemia carries significant risk of hemorrhage and infection in the mother. It is also associated with preterm birth, low birth weight.

Keywords: Severe anemia, Hemorrhage, Preterm birth, Low birth weight

INTRODUCTION

Anemia is commonest medical disorder in pregnancy with 88% prevalence in India mainly due to ignorance, poverty and gender bias 40-60% of maternal deaths in developing countries.¹ It causes direct as well as indirect deaths from cardiac failure, hemorrhage, infection and pre eclampsia.² It is defined by WHO as haemoglobin level less than 11 grams % in pregnancy. It is divided in to three degree mild degree (9.0-10.9 gm%), moderate degree (7.0-8.9 gm%) and severe degree (< 7.0 gm%). It carries a lot of threats to the mother as well as baby.³ Current knowledge indicates that iron deficiency anemia in pregnancy is a risk factor for preterm delivery and subsequent low birth weight, and possibly for inferior neonatal health.⁴ Data are inadequate to determine the extent to which maternal anemia might contribute to maternal mortality.⁵ This deserves further exploration because of the tendency of infants to develop complications. Pregnant women with significant anemia may have an increased risk for poor pregnancy outcomes,

particularly if they are anemic in the first trimester.⁶ The aim of the study was to determine the association between severe anemia, maternal and perinatal complications

METHODS

Case-control study was done at Department of Obstetrics and Gynaecology, GMC, Nagpur, India from September 2011 to November 2011. Study population of 100 (50 cases and 50 controls) were taken for the study. All patients admitted for delivery with hb% < 7 g/dl were taken as inclusion criteria. Population having mild and moderate anemia (8-10 g/d), K/c/o haemoglobinopathes like thalesemia, antipartum hemorrhage due to placenta previa, hemolytic anemia like SCD were excluded from the study.

50 pregnant women, admitted for delivery, having severe anemia were studied and compared with 100 non-anemic women of similar demographic features. Maternal and

perinatal complications were observed, pearson, chi-square and fischer exact tests were used to calculate significance of results.

RESULTS

There were 1082 deliveries at GMC Nagpur, India. 725 (69%) women had anaemia and 53 (6.9%) had severe anemia.

Table 1: Characteristics of cases and controls of patients.

Characteristics	Cases	Controls
Booked patients	12	32
Unbooked	38	18
Emergency admission	40	26
OPD admission	10	24
<20 year old	6	5
>20 year old	43	45
Primigravida	17	8
Mutigravida	33	26
Gestational age <37 week	17	8
Gestational age >37 week	33	42
Mean Hb%	6.2±0.6	116±0.6
Mean blood loss	427±386	252±128
Blood transfusion <5 points	33	1
Blood transfusion 1-5	17	0
No blood transfusion	0	49
Hospitalisation <8 days	26	42
Hospitalization >8 days	24	8

Table 2: Maternal complications.

Complications	Cases	%	Controls	%	P-value
Post-partum haemorrhage	17	34	2	4	0.001
Abruption placenta	5	10	3	6	0.712
Wound infection	9	18	1	2	0.02
Maternal morbidity	24	48	5	10	0.024
Maternal death	4	8	0	0	0.126

Post-partum hemorrhage occurred in 34% (17) of cases as compared to 4% (2) of controls ($p=0.001$). Frequency of infection of surgical wound was 10% (5) in cases and 2% (1) in controls ($p=0.002$). Preterm birth was seen in 34% (17) cases and 16% (8) controls ($p=0.036$). Of the severely anemic mothers, 36% (18) babies were low birth weight ($p=0.042$) and 20% (10) were small for gestational age ($p=0.026$), as compared to 18% and 10% of controls, respectively. Frequency of maternal mortality was 8% (4) in cases and none in controls ($p=0.002$). Morbidity was 28% (14). Perinatal death was seen in 4% (2) cases and none in controls ($p=0.036$).

Table 3: Perinatal complications.

Complications	Cases	%	Controls	%	P-value
Preterm birth	17	34	8	16	0.036
low birth weight infants	18	36	9	18	0.042
Small for gestational age infants	10	20	5	10	0.26
APGAR score <7	4	08	2	04	0.67
In-utero death	1	02	2	04	1
Perinatal death	2	04	0	00	0.036

DISCUSSION

Ali AAA, et al conducted retrospective case-control study at Kassala hospital, eastern Sudan. pregnant women with severe anemia (Hb) < 7 g/dl, n = 303) who delivered from January 2008 to December 2010 with 2.3 times risk of LBW, 3.4 times risk of preterm, 4.3 times risk stillborns, concluded as greater the severity of the anaemia during pregnancy, the greater the risk of preeclampsia, preterm delivery, LBW and stillbirth.⁷

Karalahin E, et al studied association between maternal anaemia and perinatal outcome at Gulhane Military Medical Academy, Department of Obstetrics and Gynecology, Ankara.⁸

Kavle JA, et al found strong association of severe anemia with post-partum hemorrhage. Wandabwa J et al has also indicated chronic anemia as a predictor for post-partum hemorrhage.

CONCLUSION

Severe maternal anaemia carries significant risk of hemorrhage, infection, morbidity and mortality in mother. It also associated with preterm birth, low birth weight and perinatal mortality.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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