

Research Article



INTERNATIONAL RESEARCH JOURNAL OF PHARMACY

www.irjponline.com

ISSN 2230-8407 [LINKING]

A PROSPECTIVE CLINICAL RESEARCH ASSESSING THE FREQUENCY OF SEVERE ANAEMIA AND RELATED FETO-MATERNAL OUTCOMES IN WOMEN REFERRED FOR LABOUR

Dr. Pratibha Singh

Associate Professor, Department of Obstetrics & Gynecology, Lord Buddha koshi medical college and hospital Saharsa, Bihar

Address for correspondence

Email: drpratibhasingh65@gmail.com

How to Cite: Singh P. A Prospective Clinical Research Assessing The Frequency Of Severe Anaemia And Related Feto-Maternal Outcomes In Women Referred For Labour. International Research Journal of Pharmacy, 2023,14:4:18-22.

Doi: 10.56802/2230-8407.1303244

ABSTRACT

Background: Pregnant women are more likely to have anaemia due to a number of factors, including close spacing between pregnancies, multiparity, inadequate prenatal care, poor socioeconomic position, ignorance, and illiteracy.

Aim: The purpose of this study was to determine the prevalence of severe anaemia in pregnant women with haemoglobin levels below 7% and to evaluate the effects of this anaemia on the foetus after birth.

Methods: Anaemia was assessed in a sample of one thousand pregnant participants. The feto-maternal outcomes of the pregnant females with a Hb% of less than 7g% during labour were assessed.

Results: Among the subjects with severe anaemia, 2.46% (n=2), 2.46% (n=2), 8.64% (n=7), 7.40% (n=6), 2.46% (n=2), and 7.40% (n=6) experienced wound gaping, episiotomy, lactation failure, sepsis, and pyrexia, respectively. Among the subjects with very severe anaemia, the rates were 12.12% (n=4), 3.03% (n=1), 15.15% (n=5), 18.18% (n=6), 6.06% (n=2), and 9.09% (n=3). 3.03% (n=1) of the subjects with extremely severe anaemia died. In 27.16% (n=22) of the participants with severe anaemia and 45.45% (n=15) of the subjects with very severe anaemia, morbidity was seen. The research individuals' foetal outcomes were also assessed. In 7.40% (n=6) of the patients with severe anaemia and 6.06% (n=2) of the cases with very severe anaemia, low birth weight was observed.

For individuals with severe anaemia, the rates of neonatal death and morbidity were 1.23% (n = 1) and 13.58% (n = 11), respectively, and for those with very severe anaemia, the rates were 6.06% (n = 2) and 24.24% (n = 8). Birthaplasia was seen in 1.23% (n=1) and 3.03% (n=1) of the subjects with severe and very severe anaemia, respectively, sepsis in 1.23% (n=1) and 3.03% (n=1) of the subjects with severe and very severe anaemia, and IUGR in 1.23% (n=1) of the subjects with severe anaemia in the current research.

Conclusion: The current study comes to the conclusion that active participation from a range of governmental and non-governmental organisations can aid in the provision of inexpensive and easily available prenatal care as well as nutritional support to enhance the outcomes for foetuses.

Keywords: Anemia, Maternal Deaths, multigravida, Neonatal Morbidity, Preterm low-birth

INTRODUCTION

Anaemia is one of the main and most prevalent hematologic issues that affect women worldwide. Usually, pregnant women are diagnosed with it. Anaemia is quite common among pregnant Indian women; up to 80% of them have the condition. In India, anaemia ranks as the second most prevalent cause of maternal mortality, accounting for about 40% of all recorded cases.¹

Females of reproductive age, adolescents, and small children are the most often affected patients with anaemia. More cases of anaemia in pregnant women than not are caused by malnutrition; iron deficiency accounts for half of these occurrences. Infections that cause substantial blood loss, such as parasite and hookworm infections, can also cause iron deficient anaemia.²

Additionally, dietary intake, absorption, and the extraction and storage of minerals, including iron, can all be negatively impacted by bacterial and viral infections. Additionally, it causes the conception date to rise, which

frequently results in pregnancy and delivery. In expectant mothers who have severe anaemia, bacteriuria more often, sepsis, infection susceptibility, premature labour, and/or antepartum haemorrhage.³ Maternal mortality, maternal tiredness, and uterine inertia are enhanced in anaemic patients during labour. Puerperal infections, thromboembolic events, delayed wound healing, and a greater risk of lactation failure are all present during this time. Poor perinatal outcomes, perinatal mortality, stillbirths, low birth weights, low APGAR scores at delivery, intrauterine growth constraints, and low birth parameters are among the adverse impacts observed in foetuses.⁴

Anaemia is one of the most frequent causes of maternal and perinatal illness, however there are other variables as well. The main goal of prenatal care is to avoid anaemia throughout pregnancy in order to protect the health of the unborn child, the puerperium, and the safety of labour. Anaemia is more common among Indian women due to a number of factors, including multiparity, inadequate prenatal care, low socioeconomic position, and a smaller gap between the pregnancies.⁵

In order to determine the prevalence of severe anaemia in pregnant women with haemoglobin levels less than 7% and to evaluate the fetal outcomes in cases of severe anaemia, the current prospective clinical investigation was carried out.

MATERIALS AND METHODS

The present prospective clinical study was conducted to assess the incidence of severe anemia with having hemoglobin of less than 7gm% in pregnant females and to assess the fetal outcomes following delivery in females having severe anemia. The study was carried out at.....from....to.....after obtaining clearance from the concerned Ethical committee. The study population was comprised of the subjects visiting the Department of Obstetrics and Gynecology of the Institute.

Pregnant participants, subjects with any parity, subjects with haemoglobin levels less than 7%, and subjects who agreed to participate in the study were the inclusion criteria. The study's exclusion criteria included people with haemoglobin levels more than 7%, those with a history of anaemia before to conception, anaemia caused by heavy bleeding, and subjects unwilling to take part in the research. All subjects gave their verbal and written informed permission after being fully told about the study's design. The individuals were split into two groups: those with extremely severe anaemia (haemoglobin less than 4%), and those with severe anaemia (range 4–7%).

The studies included 2D echo, ECG, ultrasonography, HIV, HCV, and HbsAg; urine examinations (microscopy, globulin, and albumin); and hematologic measures, such as blood group type, peripheral smear, serum proteins, and complete hemogram, were performed on all of the participants.

The degree of anaemia was evaluated in every research participant. One thousand pregnant individuals in all underwent anaemia screening. The fetomaternal outcomes of the pregnant females with a Hb% of less than 7g% during labour were assessed. Medical condition, birth spacing, age, parity, socioeconomic status, prostatic hypertension, retained placenta, surgical intervention, delivery style, and gestational age were among the details noted. Lower LSCS wound gaping, episiotomy wound gaping, lactational failure, subinvolution, puerperal sepsis, and pyrexia were evaluated as puerperal sequelae.

The evaluation of foetal outcomes included birth weight, NICU hospitalisation, IUGR, stillbirths, and live births. The morbidity and mortality of mothers and foetuses were also evaluated. Using SPSS software version 21 (Chicago, IL, USA) for statistical assessment and one-way ANOVA and t-test for result formulation, the gathered data were examined. The data were presented as a mean, standard deviation, percentage, and number. At $p < 0.05$, the significance threshold was maintained.

RESULTS

The current prospective clinical investigation was carried out to determine the prevalence of severe anaemia in pregnant women with haemoglobin levels less than 7% and to evaluate the foetal outcomes in these women.

A total of 1000 pregnant subjects were screened for anemia where only 998 were included in the study where 81 had severe anemia and 33 subjects had very severe anemia leaving the final sample size of 124 subjects. The fetomaternal outcomes of the pregnant females with a Hb% of less than 7g% during labour were assessed. The age range of the research participants was 17–36 years old, with a mean age of 24.4 ± 4.26 years.

The retained placenta was observed in 3.03% ($n=1$) of the anaemic subjects with very severe anaemia, cardiac failure in 2.46% ($n=2$) and 3.03% ($n=1$) of the severe and very severe anaemia subjects, obstructed labour in 2.46% ($n=2$) and 6.06% ($n=2$) of the severe and very severe anaemia subjects, maternal exhaustion in 7.40% ($n=6$) and 21.21% ($n=7$) of the severe and very severe anaemia subjects, and prolonged labour in 13.58% ($n=11$) and 24.24% ($n=8$) of the severe and very severe anaemia subjects, respectively.

In 75.30% ($n=61$), 8.64% ($n=7$), and 23.45% ($n=19$) of the participants with severe anaemia, spontaneous vaginal birth, aided vaginal deliveries, and LSCS were performed, correspondingly, and in 72.72% ($n=24$), 3.03% ($n=1$), and 24.24% ($n=8$) of the subjects with very severe anaemia, respectively. Table 1 shows that of the participants with severe anaemia, 74.07% ($n=60$) lost 300–500 ml of blood after vaginal birth, and 4.12% ($n=4$) lost more than 500 ml ($n=4$).

The current study's findings indicate that among the subjects with severe anaemia (n = 2), 2.46% (n = 2), 8.64% (n = 7), 7.40% (n = 6), 2.46% (n = 2), and 7.40% (n = 6) wound gaping, episiotomy, lactation failure, sepsis, and pyrexia were observed. Among the subjects with very severe anaemia (n = 4), 3.03% (n = 1), 15.15% (n=5), 18.18% (n=6), 6.06% (n = 2), and 9.09% (n = 3) subjects, respectively, showed these puerperal complications. Mortality was seen in 3.03% (n=1) subject with very severe anemia. Morbidity was seen in 27.16% (n=22) subjects with severe anemia and in 45.45% (n=15) subjects with very severe anemia as shown in Table 2.

The research individuals' foetal outcomes were also assessed. In 7.40% (n=6) of the patients with severe anaemia and 6.06% (n=2) of the cases with very severe anaemia, low birth weight was observed. For individuals with severe anaemia, the rates of neonatal death and morbidity were 1.23% (n = 1) and 13.58% (n = 11), respectively, and for those with very severe anaemia, the rates were 6.06% (n = 2) and 24.24% (n = 8). Birthaplasia was seen in 1.23% (n=1) and 3.03% (n=1) of the subjects with severe and very severe anaemia, respectively, sepsis in 1.23% (n=1) and 3.03% (n=1) of the subjects with severe and very severe anaemia, and IUGR in 1.23% (n=1) of the subjects with severe anaemia in the current research. None of the subjects had congenital abnormalities (Table 3).

DISCUSSION

The age range of the research participants was 17–36 years old, with a mean age of 24.4±4.26 years. The anaemic subjects exhibited the following complications: 3.03% (n=1) of the subjects with very severe anaemia had retained placenta; 2.46% (n=2) and 3.03% (n=1) of the subjects with severe and very severe anaemia had cardiac failure; 2.46% (n=2) and 6.06% (n=2) of the subjects with severe and very severe anaemia had obstructed labour; 7.40% (n=6) and 21.21% (n=7) of the subjects with severe and very severe anaemia had maternal exhaustion; and 13.58% (n=11) and 24.24% (n=8) of the subjects with severe and very severe anaemia had prolonged labour, respectively.

In 75.30% (n=61), 8.64% (n=7), and 23.45% (n=19) people with severe anaemia, respectively, spontaneous vaginal birth, aided vaginal deliveries, and LSCS were performed; in 72.72% (n=24), 3.03% (n=1), and 24.24% (n=8) subjects with extremely severe anaemia, similarly. 74.07% (n=60) of the participants with severe anaemia lost 300–500 ml of blood after vaginal birth, whereas 4.12% (n=4) of the subjects with extremely severe anaemia lost more than 500 ml. These findings aligned with the research conducted by Singh S et al. (2018) and Khandail WD et al. (2001), in which participants reported comparable maternal problems to those found in this study. According to the current study's findings, wound gaping, episiotomy, breastfeeding failure, sub involution, sepsis, and pyrexia were among the puerperal problems seen in 2.46% (n=2), 2.46% (n=2), 8.64% (n=7), 7.40% (n=6), 2.46% (n=2), and 7.40% (n=6) subjects respectively in severe anemia group, and in 12.12% (n=4), 3.03% (n=1), 15.15% (n=5), 18.18% (n=6), 6.06% (n=2), and 9.09% (n=3) subjects respectively with very severe anemia. 3.03% (n=1) of the individuals with extremely severe anaemia died. Of the participants with severe anaemia (n = 22) and very severe anaemia (n = 15), morbidity was seen in 27.16% of the subjects. These findings corroborated those of studies by Rohilla M et al. (2008) and Alka Batar et al. (2015), whose authors reported similar rates of morbidity and mortality as those found in the current investigation. The research individuals' foetal outcomes were also assessed. In 7.40% (n=6) of the patients with severe anaemia and 6.06% (n=2) of the cases with very severe anaemia, low birth weight was observed. With severe anaemia, 1.23% (n=1) and 13.58% (n=11) of the individuals had neonatal mortality and morbidity, and with very severe anaemia, 6.06% (n=2) and 24.24% (n=8) of the subjects had it.

Birthaplasia was seen in 1.23% (n=1) and 3.03% (n=1) of the subjects with severe and very severe anaemia, respectively, sepsis in 1.23% (n=1) and 3.03% (n=1) of the subjects with severe and very severe anaemia, and IUGR in 1.23% (n=1) of the subjects with severe anaemia in the current research. No subjects had congenital abnormalities observed. The foetal outcomes seen in the research conducted by Upadhyay C et al. (2013) and Devi BN et al. (2015) were similar to the results of the current study in terms of foetal mortality, morbidity, and outcomes.

CONCLUSION

The current study, within the constraints of its methodology, finds that multiparity, tight spacing between births, appropriate prenatal care, poor socioeconomic position, ignorance, and illiteracy are the main causes of the high prevalence of anaemia in Indian females.

The active involvement of various non-governmental and governmental organizations can help in providing affordable and accessible antenatal care and nutritional care to improve the fetomaternal outcomes. However, the present study had a few limitations including a small sample size, short monitoring period, and geographical area biases. Hence, more longitudinal studies with larger sample size and longer monitoring period will help reach a definitive conclusion.

REFERENCES

1. Agarwal P, Chaturvedi B. Clinical study of fetomaternal outcome in pregnant anaemic patients. *Obs and Gynecol Today* 2004;9:426-28.

2. Anamika Awasthi, R. Thakur, A.Dave, VanithaGoyal .“ Maternal and perinatal outcome in cases of moderate to severe anaemia”. Journal of obstetrics and gynaecology India 2001;51:62-5.
3. Matah M, Mukherjee P, Matah A, Matah P. Anaemia in pregnancy. In: Principles and practice of obstetrics and gynecology. Chapter 7. 3rd edn. Jaypee Publications. 69-99.
4. Ashram Khatana. Study of Fetomaternal Outcome in Patients of Moderate and Severe Anaemia in > 28 Week Pregnancy JMSCR Volume 05 Issue 07 July 2017 Page 25071.
5. NeerjaBhatla, ReetaMukhopadhyay, ReetaYadav. Ian Donald’s practical obstetric problems, Chapter-10.
6. Shalini Singh. Maternal outcome in cases of severe anaemia in labour. International Journal of Reproduction, Contraception, Obstetrics and Gynecology Singh S et al. Int J Reprod Contracept Obstet Gynecol. 2018;7:1201-1204
7. Khandail WD, KramMR, Vasudeo ND. Risk factors for anaemia in pregnancy. J ObstetGynecol India 2001;51:42-44.
8. Rohilla M, Raveendran A, Dhaliwal LK, Chopra S “Severe anaemia in pregnancy: a tertiary hospital experience from northern India”. J ObstetGynaecol. 2010;30:694-6.
9. AlkaBatar, Anuradha Salvi. Maternal and perinatal outcome of pregnancy with severe anaemia: Department of Obstetric and Gynaecology, Zenana Hospital, SMS Medical College, Jaipur, Rajasthan. International Journal of Biomedical and Advance Research 2015;6:611-6.
10. ChinthanUpadhyay, RatnaBulusu, Nisha Shah. A prospective study of prevalence and management of anaemia in pregnancy with perinatal outcome. Journal of Evolution of Medical and Dental Sciences 2013;2:6664- 72.
11. B. Nirmala Devi, Jyothirmayi, Lahari N. Maternal outcome in pregnancy with severe anaemia: Prospective study in tertiary care hospital in Andhra Pradesh IDSR Journal of Dental and Medical Sciences (IOSR – JDMS) 2015;14:6-10.

Parameters	Severe anemia % (n=81)	Very severe anemia % (n=33)
Complications		
Retained placenta	0	3.03 (1)
Cardiac failure	2.46 (2)	3.03 (1)
Obstructed labour	2.46 (2)	6.06 (2)
Maternal exhaustion	7.40 (6)	21.21 (7)
Precipitate labour	3.70 (3)	9.09 (3)
Prolonged labour	13.58 (11)	24.24 (8)
Delivery mode		
Vaginal (spontaneous)	75.30 (61)	72.72 (24)
Assisted vaginal	8.64 (7)	3.03 (1)
LSCS	23.45 (19)	24.24 (8)
Blood Loss in vaginal delivery (ml)		
300-500	74.07 (60)	3.03 (1)
>500	3.70 (3)	12.12 (4)

Table 1: Maternal complications seen in the study subjects

S. No	Variable	Severe anaemia % (n=81)	Very severe anaemia % (n=33)
1.	Puerperal complications		
a)	Wound gaping	2.46 (2)	12.12 (4)
b)	Episiotomy	2.46 (2)	3.03 (1)
c)	Lactation failure	8.64 (7)	15.15 (5)

d)	Sub involution	7.40 (6)	18.18 (6)
e)	Sepsis	2.46 (2)	6.06 (2)
f)	Pyrexia	7.40 (6)	9.09 (3)
2.	Mortality	0	3.03 (1)
3.	Morbidity	27.16 (22)	45.45 (15)

Table 2: Puerperal complications and mortality seen in the study subjects

S. No	Fetal outcomes	Severe anemia % (n=81)	Very severe anemia % (n=33)
1.	Low birth weight <1000 gm	7.40 (6)	6.06 (2)
2.	Neonatal Mortality	1.23 (1)	6.06 (2)
3.	Neonatal Morbidity	13.58 (11)	24.24 (8)
4.	Perinatal death	2.46 (2)	12.12 (4)
5.	Complications		
a)	Congenital abnormalities	0	0
b)	Birthaplasia	1.23 (1)	3.03 (1)
c)	Sepsis	1.23 (1)	3.03 (1)
d)	IUGR	1.23 (1)	0

Table 3: Fetal complications seen in the study subjects