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Original Research Article

Retrospective study on prevalence of severe anemia in pregnant women and its outcome

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ABSTRACT

Background: Anemia is one of the most common nutritional deficiency disorders affecting the pregnant women in the developing countries. Anemia during pregnancy is commonly associated with poor pregnancy outcome and can result in complications that threaten the life of both mother and fetus. The study aimed at analyse the maternal and perinatal outcome of pregnant women with severe anemia (Hb <7 gm%) in pregnancy. Aim and objective were to study the prevalence of anemia among pregnant women and to determine its association with maternal and fetal outcomes.
Methods: A hospital-based retrospective study on the prevalence of anemia among the antenatal women for 6 months duration from February 2022 to July 2022 in department of obstetrics and gynecology Cheluvamba hospital, Mysore Medical College and Research Institute, Mysore.
Results: Out of 4291 deliveries during the study period 76 (1.7%) patients were severely anaemic. There were 55 (72.3%) multigravida. Maternal complications were preterm labour 15 (16.8%), pre-eclampsia and eclampsia 10(13.1%), abortions 22 (28%). Neonatal outcome was analysed in terms of prematurity (16.8%), LBW (22.4%), NICU admission (17.9%), still birth (0.03%), neonatal deaths (0.05%).
Conclusions: Severe anemia during pregnancy is associated with adverse maternal and perinatal outcome. It is one of the preventable indirect causes of maternal mortality. Education to adolescents, regular antenatal check-ups, early diagnosis and treatment, prevention of too late too early too frequent too many pregnancies. Educating the women regarding safe abortion services available thus avoiding unwanted pregnancies. Promotion of good nutrition practices thus reaching optimum haemoglobin before conception. Along with these active participation of health workers at grass-root level might help in bringing down the prevalence.

Keywords: Complications, Prematurity, Prevalence, Severe anemia

INTRODUCTION

Anemia is the leading cause of maternal morbidity and mortality in developing countries.[1] It also has a significant impact on the fetus leading to low birth weight and increased perinatal morbidity and mortality. Nutritional anemia is the most common cause of anemia in pregnancy.[2] The prevalence of anemia during pregnancy is 18% in developed countries as against 56% in developing nations.[3,4] The prevalence of anemia during pregnancy in India is 65 to 75% which is quite high.[5,6]

World Health Organization defines anemia as haemoglobin less than 11 gm/dl in 1st and 3rd trimester and less than 10.5 gm/dl in 2nd trimester.

Anemia is further classified into mild, moderate and severe by ICMR depending upon the levels of hemoglobin: 1) mild: Hb% 10-10.9 gm%, 2) moderate: Hb% 7-10 gm%, 3) severe: Hb% 4-7 gm%, 4) very severe: Hb% less than 4 gm%.

Anemia has multifactorial etiology. Nutritional anemia is more common in pregnancy. Socio demographic factors faulty dietary habits, increased iron demand, low immunity, compounded by physiological changes of pregnancy contribute to anemia in pregnancy. In rural areas social and socio-demographic factors predominantly contribute to anemia. It is also associated with increased risk of miscarriage, prematurity, stillbirth, low birth weight, and consequently perinatal mortality.[7,8]

Majority of iron transfer to the fetus occurs during the second and third trimester. The average daily requirement of iron has been calculated as 0.8 mg/day in the first trimester and increases to 7.5 mg/day in the third trimester. The average daily absorption from Indian diet varies from 0.8 mg/day to 4.5 mg/day depending on the type of staple used.[9]

Anemic women presenting at the time of labour is a challenge for the treating obstetrician because even a little blood loss at the time of delivery might prove life threatening. Moreover, if it is diagnosed early in pregnancy corrective measures can be taken.

METHODS

A hospital-based retrospective study on the prevalence of severe anemia among the antenatal women for 6 months duration from February 2022 to July 2022 in department of gynecology and obstetrics Cheluvamba hospital, Mysore Medical College and Research institute Mysore.

Inclusion criteria

Women with singleton pregnancy having severe anemia (Hb% <7gm%) admitted in labour in early and late pregnancy during 6 months period (February 2022-July 2022). All pregnant women with severe anemia from 18 years to 35 years.

Exclusion criteria

Pregnant women with hemolytic anemia were excluded from the study. All pregnant women <18 years.

Patients admitted to labour room were main sources of study samples. Our samples were patients who had admitted to labour room for anemia correction, severe anemia due to incomplete abortion, severe anemia due to PPH, severe anemia due to pre-eclampsia. Study sample were selected according to inclusion and exclusion criteria. Perinatal complications in terms of LBW, prematurity, NICU admission, still birth were considered.

Statistical analysis

After sample collection according to inclusion and exclusion criteria, data collected was arranged in MS Excel sheet. Statistical analysis was done using percentage. Conclusions were drawn on same.

RESULTS

Results of the study were analysed. Out of 4291 deliveries during the study period 76 (1.7%) patients were severely anaemic.

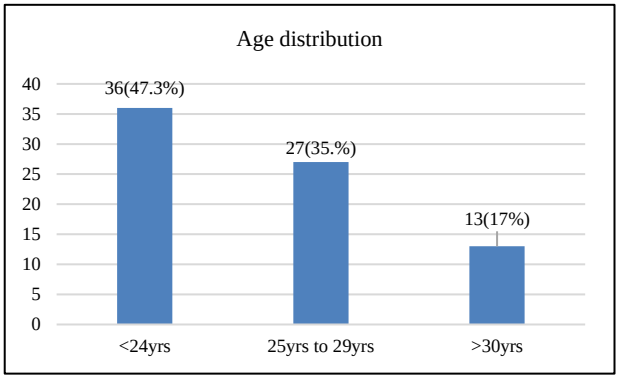

Figure 1: Case distribution according to age.

Out of 76 cases 36 (47.3%) cases were less than 24 years of age group 27 (35%) cases between 25 to 29 years, 13 (17%) cases were more than 30 years of age (Figure 1).

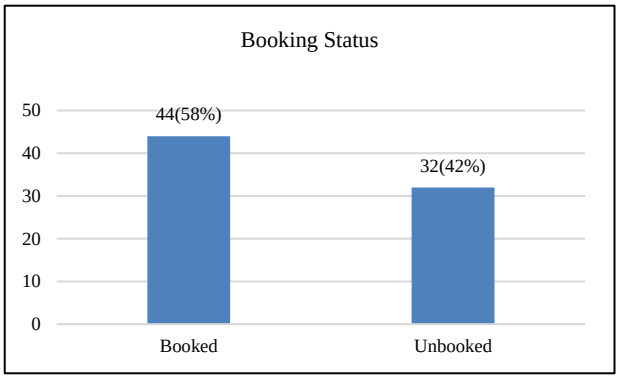

Figure 2: Case distribution according to booking status.

Majority were booked cases that corresponds to 44 (58%) cases, unbooked cases were 32 (42%) (Figure 2).

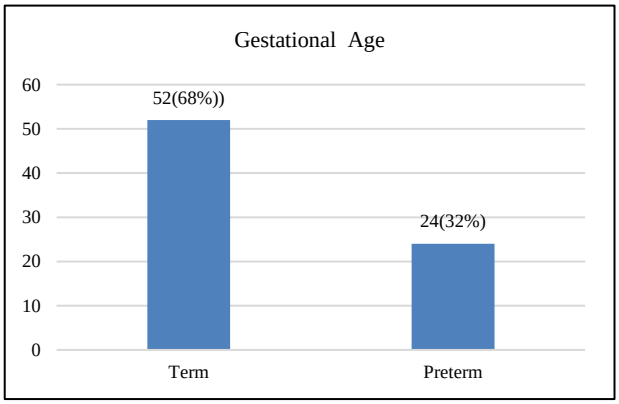

Figure 3: Case distribution according to gestational age.

Out of 76 cases 52 (68%) were term gestation 24 (32%) belongs to preterm gestation (Figure 3).

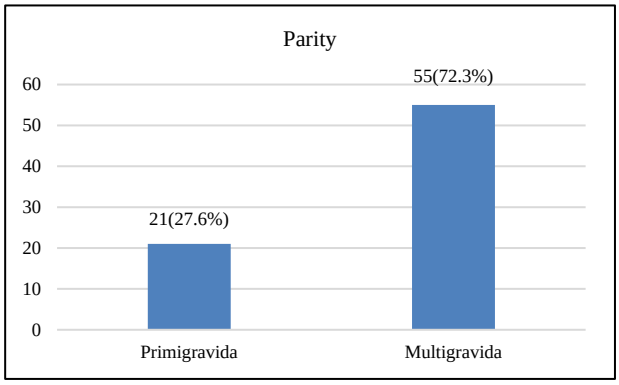

Figure 4: Case distribution according to parity.

Majority were multigravida i.e. 55 (72.3%) primigravida being 21 (27.6%) cases (Figure 4).

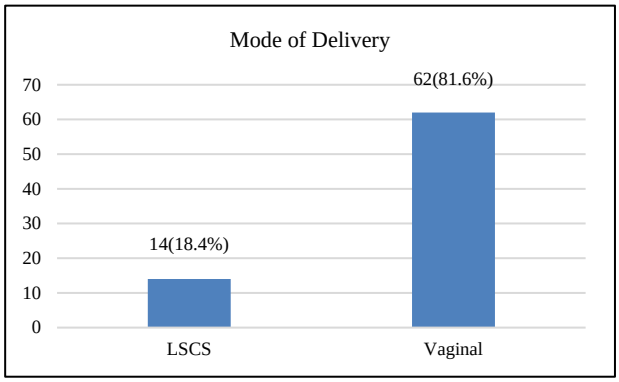

Figure 5: Case distribution according to mode of delivery.

Majority cases i.e. 62 (81.6%) cases had vaginal delivery, 14 (18.4%) cases underwent ceserean section (Figure 5).

Table 1: Percentage of neonatal complications.

Neonatal complications	N (%)
Prematurity	15 (19.7)
LBW	20 (26.3)
NICU admission	16 (21)
Stillborn	3 (0.03)
Death	4 (0.05)

Out of 76 women 15 (19.7%) patients presented with pre-term labour, 20 (26.3%) patients had low birth weight, 16 babies (21%) patients needed NICU care and 3 babies (0.03%) were still born, 4 (0.05%) babies died after delivery (Table 1).

Out of 76 cases 15 (19.7%) cases had preterm labor,10 (13.1%) cases had pre-eclampsia, Majority 22 (28.9%) cases had abortion. There were 3 (0.3%) cases of PPH. 13 cases needed ICU care (Table 2).

Table 2: Percentage of maternal complications.

Maternal complications	N (%)
Preterm labour	15 (19.7)
Pre eclampsia	10 (13.1)
Abortion	22 (28.9)
PPH	3 (0.03)
ICU admission	13 (17.1)

DISCUSSION

Anemia in pregnancy is a major health problem in rural part of India due to illiteracy, poverty, lack of awareness about the need for regular antenatal care and presence of super added infections.[10] It is a risk factor for preterm labour, intrauterine growth restriction, cardiac failure puerperal sepsis, sub-involution and failure of lactation.[10] Severity of anemia is an independent risk factor for LBW, pre-eclampsia.

Table 3: Other studies.

Authors	Percentage
Singhal et al[17]	5.7
Vemulapalli et al[11]	6.28
Suryanarayana et al[19]	0.6
Ahmed et al[18]	18

Vemulapalli et al reported a prevalence of (6.28%) whereas study by Suryanarayana et al observed a very low prevalence of 0.6% and study by Ahmed et al observed a high prevalence of 18%.[11,18,19] The prevalence of anemia of 47.3% was observed in the under 24 years age group which is comparable with the study by Sharma et al (38%) whereas in a study by Suryanarayana et al in Kashmir the prevalence of anemia of 93.67% (Table 3).[12,19] Early age at marriage and poor iron stores contributes to high prevalence in this age group. A prevalence of 58% was observed in booked patients which could be due to non-compliance with iron therapy and lack of frequent hemoglobin estimation.

Abortion was more common in this study followed by Preterm labour and pre-ecclampsia. Results of this study correlate well with study by Devi et al.[13]

Time of ANC visit also plays an important role in reducing maternal anemia. 1st trimester visit with prescription of proper diet, iron and folic acid supplements have reduced severe anemia remarkably in our study which is like study done by Mangla et al.[14]

There is a substantial amount of evidence showing that maternal iron deficiency anemia early in pregnancy can result in LBW subsequent to preterm delivery.[15] In the present study, around 26.3% of women delivered low birth babies.

Studies in India demonstrated that the high proportion of maternal deaths are due to anemia in pregnant women, whereas in the present study there were no maternal deaths.[16]

The study was conducted with a small sample size in a hospital which increases the possibility of error. If it would have been a longitudinal study rather than cross-sectional, then a better association between anemia and its risk factors could have been assessed. Mother's status of anemia could not be traced at different trimesters of pregnancy because of short duration of the study period.

CONCLUSION

A high prevalence in developing countries is an indicator that a more aggressive approach is warranted at all levels of healthcare in managing this problem. Severe anemia in pregnancy imparts more risk to the pregnant mother and the fetus in utero. Awareness and educating adolescent girls, promote contraception method to increase the inter pregnancy intervel, education on early antenatal booking to pregnant women, regular iron intake and continuous antenatal care be the goal in tackling anemia in pregnancy. Active participation of ASHA workers at grass root level should also be stressed.

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