

MATERNAL AND FETAL OUTCOME FOLLOWING SEVERE ANAEMIA IN PREGNANCY: RESULTS FROM NOBEL MEDICAL COLLEGE TEACHING HOSPITAL, BIRATNAGAR, NEPAL.

Ram Hari Ghimire and Sita Ghimire

Abstract:

Background: anaemia is a major contributor to maternal death in developing countries. Since it reduces resistance to blood loss, death may occur from bleeding associated with normal delivery.

Objective: To explore the association between anaemia and maternal and perinatal complications.

Study Design: Retrospective cohort study.

Materials and Methods: 100 pregnant women admitted for delivery and having severe anaemia were studied and compared with 100 non anaemic women matched for age, parity, and gestational age. Adverse outcomes analysed were: pregnancy induced hypertension, Postpartum haemorrhage hypertension, Abruptio Placenta,, Infection, Maternal Mortality, Low Birth Weight, and Perinatal mortality.

Results : Compared to nonexposed women, exposed women had an increased risk of pregnancy induced hypertension with odds ratio of 5.06 . Postpartum haemorrhage, incidence of wound infection,Intermediate care unit admission were statistically significant in exposed group .However there was no significant difference in maternal mortality among study group.APGAR score <7 in 5 minutes was 18%in exposed group and 5% in non exposed group (p=0.0039). Intrauterine fetal death was 6% in cases and none of respondents from control group had Intrauterine fetal death (p=0.0128). Frequency of low birth weight was 22% in exposed group and 9% in non exposed group(p=0.011).

Conclusions: The burden of anemia in pregnant population is still high in eastern region of Nepal. Severe anemia in pregnancy carries significant risk to mother and fetus. Hence preventive measures need to be implemented at community level. Public awareness regarding pre-pregnancy hemoglobin status and importance of antenatal checkup relating with maternal and fetal adverse pregnancy outcome should be initiated.

Key words: *Severe anemia in pregnancy, maternal outcome, fetal outcome, Nepal*

Introduction

Anaemia is the commonest medical disorder in pregnancy. It is specially more common in

developing countries, because of poor nutritional and high prevalence of parasitic infestation.^{1,2} Anaemia is defined by WHO as “haemoglobin level less than 10 gms

percentage in pregnancy. It is divided into three degree viz mild degree (9-10.9 gm %), moderate degree (7.0- 8.9 gm %) and severe degree (less than 7.0 gm %).⁵

Prevalence of anaemia among pregnant women in developing countries average 56 % with a range of 35 % to 100 % among various region of the world.³ A study of Dreyfuss et al showed that the prevalence of anaemia to be 73 % in the plain of Nepal with 88.9 % of the women infected with helminths.⁴ Anaemia in pregnancy is considered one of the major risk factors contributing to maternal death in developing countries.⁶ Haemorrhage, eclampsia and infection being the three major causes of maternal death in Nepal.⁷

An association of anaemia with adverse maternal outcome such as puerperal sepsis, antepartum haemorrhage, postpartum haemorrhage and maternal mortality is no longer a debatable issue.^{8,9,10} Pre conceptional counseling for carrying pregnancy minimum 8 gm percent haemoglobin must be present. That is why early diagnosis and treatment of anaemia is very important. Though there are many studies on anaemia in pregnancy in Nepal showing a high prevalence but relatively few studies has been done in the maternal and fetal outcome.

Keeping all this in view, this study was conducted to find out maternal and fetal outcome after severe anaemia in pregnancy.

Materials and methods

This study was carried out in obstetric and gynaecology department of Nobel Medical College from 15 April 2011 to 14 April 2012. All women admitted for delivery and having a haemoglobin level less than 7 gm % were studied. Control was selected from the every

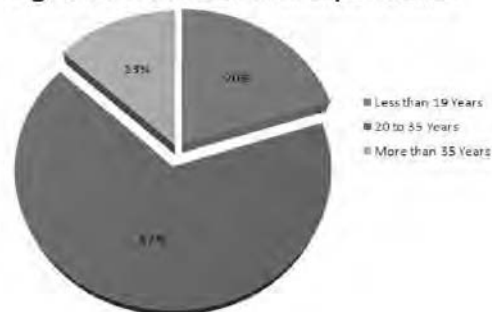
second woman admitted for delivery and having matching criteria age, parity, and period of gestation and whose haemoglobin level is more than 11 gm %. The observation was made for maternal complications like anti partum haemorrhage, PPH, pregnancy induced hypertension, infection, and maternal death. Perinatal outcome like small for gestational age, low birth weight, APGAR score, and Perinatal Deaths were also noted.

Data were entered and analysed using SPSS 17 and Epi-Info 7. The odds ratio was calculated by contingency table (Tables 1, 2, 3).

Results

The total number of patients delivered during the study period were 2754 live births. Incidence of severe anemia was found to be 7%. The mean haemoglobin of cases were 6.2 gm%.

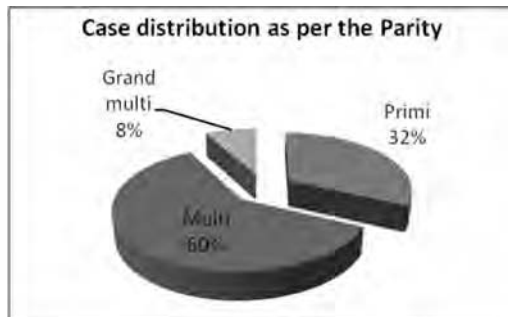
Age distribution of the respondents



Most of the respondents were from the age groups 20 – 35 Years i.e. 67 % and 20 % were from the age group < 19 years of age.

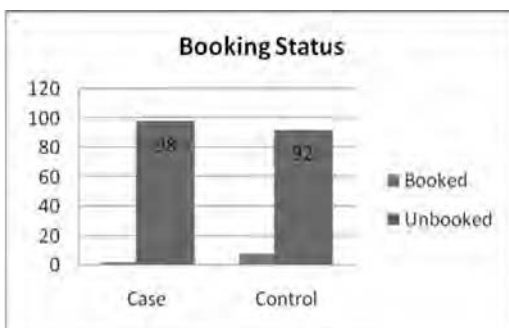
Though primigravida were common in total no of deliveries, severe anaemia was found to be more common in multi gravida.

In this study it was revealed that 60 % of the respondents were multigravida.



Majority of respondents were unbooked in both the exposed and non exposed group reflecting the public awareness regarding antenatal check up during pregnancy in eastern region of Nepal.

Although all complications were more common in exposed group, but statistical



significant differences were observed in Pregnancy induced hypertension, postpartum haemorrhage, infection and in terms of intensive care admission, APGAR score, in utero death and low birth weight.

Discussion

In Nepal it is commonly met patients with anemia in late pregnancy without prior antenatal care. The same is evident in this study where a vast majority of respondents were unbooked. Jallel R and Khan A found that 69.9% pregnant women were anemic and 4.8% were severely anemic.¹¹ Marhatha R

⁵ reported 2.2% severely anemic pregnant women in Kathmandu which is comparable to our study 3.8%. This study has demonstrated a causal relationship between severe anemia and various maternal and perinatal complication.

Complications	Case %	Control %	Odds Ratio	P-Value
Pregnancy induced hypertension	36	10	5.06	0.00001
Post Partum Hemorrhage	14	5	3.09	0.0299
Abruptio Placentae	3	1	3.06	0.3124
Infection	16	5	3.61	0.0111
Mode of Delivery C/S	22	5	5.35	0.0004
ICU admission	14	1	16.11	0.0004
Maternal Death	3	0	MLE - 1	0.0809
Booked	2	8	0.23	0.0511
Unbooked	98	92	4.26	0.0515

We have found that pregnancy induced hypertension is five times more common in severe anemia.

In our study, significant proportion of patients had postpartum haemorrhage. Wandabwa J has also indicated severe anemia as a predictor of postpartum haemorrhage.¹² We also observe that severe anemic patients developed wound infection in 16% cases, which is higher than study done by Riffat Jallelet al where it is only 7.8% but it is very minimal in comparison with study done by Dare FO and colleague 69.2%.¹³

We found severe anemia significantly increases the risk of neo-natal complication. In this study the prevalence pre term delivery was 34% which is comparable with study done in south Africa.¹⁴ Regarding APGAR score we observed 18% of neo-nate had less than seven in five minutes in women with haemoglobin level of <7 gm%, which is higher than 11.2% of Jallel R and Khan A.¹¹ Lone FW and colleagues¹⁵ have observed risk of low birth weight and small for gestational age in new born, In severely anemic women it was 4.22 and 1.9 in compared to non anemic women, which is comparable to 2.85 and 2.87 of our study. Geelhoed D had also observed similar result¹⁶

Complication	Case %	Control %	Odd Ratio	P-Value
APGAR Score <7	18	5	4.17	0.0039
Intra uterine fetal death	6	0	MLE -1	0.0128
Small for Gestational Age	20	8	2.87	0.0144
Low Birth Weight	22	9	2.85	0.011
Peri Natal Death	11	5	2.34	0.1178

This study had shown significant association of maternal anemia with maternal and fetal complication. However this study included only those women who came to our hospital and were aware of hospital delivery. So, the results cannot be generalized in the country. Various strategies have been tried in the world including Nepal where cooking in iron pots was tried and showed a significant

reduction in iron deficiency anemia in women.¹⁷ To improve the scenario of anemia, iron intake in the form of dietary supplement along with prescribing iron tablets in routine antenatal check up have been suggested.

Conclusion

The burden of anemia in pregnant population is still high in eastern region of Nepal, as it carries significant risk to mother and fetus. Hence preventive measures need to be implemented at community level. Public awareness regarding pre-pregnancy hemoglobin status and importance of antenatal checkup relating with maternal and fetal adverse pregnancy outcome should be initiated.

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Address of correspondence: Ram Hari Ghimire, Lecturer, Department of Internal Medicine Nobel Medical College, Biratnagar-5, E-mail: drsita42@yahoo.com