

Prevalance And Outcome Of Anaemia In Pregnancy

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Abstract:

Objectives: Anaemia is associated with negative impact on both the mother and the newborn. Fetal anaemia, low birth weight, preterm birth and still birth have been associated with anaemia. This study is planned with aim to identify prevalence of anaemia in specified population and to know various adverse consequences of anaemia in mother and child.

Materials And Methods: The present study was carried out at Yenepoya Medical College, Mangalore. All pregnant women delivered at our hospital during the time period of April 2015 TO- September 2015 were evaluated.

Results: In the present study 636 patients were studied, in which 234(36.7%) are primigravidas, 402(63.2%) were multigravidas. 599patients(94.18%) were in age group 20-34, 18 were teenage pregnancies(2.83%), 19 patients were in age group >35yrs(2.99). 288(45.28%) patients were found to be anemic, in which majority were mild anemic(38.20%), followed by moderate(6.28%), and 0.79% were severe anaemic.

In non anaemic group 50% of newborn were found to have birthweight 2-3kgs, <2 were 2.59%, 39.37% were between 3-3.5kg, 8.04% were >3.5kgs.

In anemic group 2.7% of new born have birthweight <2kg, 54.69% have birthweight 2-3 kg, 76% have 3-3.5kg, in 7.48% have birthweight >3.5kg.

In non anaemic group 10 .05% were preterm deliveries, in anemic group 12.5% were preterm deliveries, 2.5% were with poor appgar score in non anaemic group, 3.7% were with low appgar in anaemic group.

Conclusion: In developing countries like India prevalence of anaemia is very high which adversely affect both maternal and foetal outcome. Anaemia is directly linked to low birth weight, prematurity, poor APGAR score and neonatal death and maternal morbidity and mortality. To combat all these problems there is a need to prevent incidence of anaemia in pregnant women biron and food supplements, better antenatal care and by giving health education. These measures are affordable and easily available in in our country and by effective implementation of these we can improve life of both mother and child.

I. INTRODUCTION

Women of child bearing age group are at the maximum risk for development of anaemia. Anaemia is the most common nutritional deficiency disorder in the world. WHO has estimated that prevalence of anaemia in developed countries is 14 % and in developing countries is 51 % in

pregnant women. Prevalence of anaemia in India is 65-75% in pregnant women [1].

Specially Iron deficiency anaemia is important public health problem for pregnant women, living in developing countries, affecting 2/3rd of pregnant women and contributes to maternal morbidity and mortality and to low birth weight [2-3]. High prevalence is directly associated with poor health

status, poverty, poor socioeconomic status, multiparty, less birth spacing and many more. Anaemia is defined by WHO as Haemoglobin (Hb) less than 11gm in pregnancy, and is divided into three degrees mild (10.9-9.0 gm %), moderate (8.9-7.0 gm %) and severe degree (<7.0 gm %) [4] and we used these parameter in study. Most of the studies have demonstrated a strong association between maternal anaemia and adverse outcome such as low birth weight, preterm delivery and intrauterine growth retardation [5-9]. This study is planned to find the prevalence of anaemia in pregnant mother in specified population and to investigate their adverse outcome in mother and new born baby.

II. METHODOLOGY

This is a prospective case control study done on all women getting delivered at our hospital during study period, who will fulfill the inclusion criteria were be included in the study. Complete blood count was performed to assess Hb level. Hemoglobin estimation is done by 'Sahli's' method .The babies are weighed immediately after birth without any clothing on an electronic weighing machine.

MATERIALS AND METHODS

The present study was carried out Yenepoya Medical College, Mangalore. All pregnant women delivered at our hospital under the time period of April 2015 TO- September 2015 were evaluated.

INCLUSION CRITERIA

Pregnant women who delivered in our institute during study period were included.

EXCLUSION CRITERIA

- Multiparty (5 and above)
- Hypertensive disorders in pregnancy
- Pregnancy with diabetes mellitus
- Ante partum haemorrhage
- Pregnancy with chronic medical illness
- Multiple gestations
- HIV/HBsAg/VDRL positive cases

III. OBSERVATION AND RESULTS

Age group	Number of patients	percentage	PRIMI	MULTI
<19yrs	18	2.83	17	1
20-34 yrs	599	94.18	216	383
>35yrs	19	2.99	1	18
Total number	636	100	234	402

Table 1: Age wise distribution of patients

In the present study, 599 Cases were in age group 20 - 34 years, which comprises 94.18% of total, number of teenage pregnancies were 18 (2.83%) in the study. 2.99% of pregnancies were more than 35 years of age. 36.79% of cases were primigravidae and 63.21% were multigravidae.

Hb	Non anemic	mild	moderate	severe	
primigravida	129	90	13	2	N =234
multigravida	219	153	27	3	N=402
Total no.	348	243	40	5	
percentage	54.72	38.20	6.29	0.79	

Table 2: Incidence & Severity of Anaemia in study population

In the present study, 243 cases had mild anaemia giving an incidence of 38.20%, 40cases in the study group had moderate anemia with an incidence of 6.29%, 5 cases had Hb<7gm giving an incidence of 0.79% which are severely anaemic. 44.87% of primigravidae were anemic while 45.52% of multigravida have anemia.

Birth weight	Non anemic	mild	moderate	severe	
<2kg	9(2.59%)	6(2.47)	37(2.5)	1(20)	N =17
2-3kg	174(50)	123(50.61)	20(50)	3(60)	N= 320
3-3.5kg	137(39.37)	86(35.4)	16(40)	1(20)	N 240
>3.5kg	28(8.04)	28(11.52)	3(7.5)	0	N=59

Table 3: Comparison of birth weight between non-anaemic and anaemic groups

In non anaemic group 50% of newborn were have birthweight 2-3kgs, <2 were 2.59%, 39.37% were between 3-3.5kg, 8.04% were >3.5kgs.

In anemic group 2.7% of new born have birthweight <2kg, 54.69% have birthweight 2-3 kg, 34.76% have 3-3.5kg, in 7.48% have birthweight >3.5kg.

VARIABLES	NON ANEMIC	MILD	MODERATE	SEVERE
PRETERM DELIVERY	35(10.05%)	29(11.93%)	5(12.5%)	2(40%)
POOR APGAR	9(2.59%)	9(3.70%)	0	0

Table 4: Comparison of neonatal outcome between non-anaemic and anaemic groups

Pre term delivery in non-anaemic group was 10% while it was 2% and 2.5 %more in mild- moderately anaemic group and 4 times more severely anaemic group respectively.

Poor APGAR score (taken at 5 minutes <7) was 2.59% in non-anaemic group and it was increased to 3.07% in mild.

IV. DISCUSSION

In our study 45.28% of study population were anaemic in which majority have mild (38.20%) anaemia as per WHO guidelines.

Incidence of anaemia is more in multigravida as compared to primigravida.

In our study the risk of low birth weight is more in anaemic group and it increases with severity of anaemia. In mild- moderate anaemic group about 50% of new born baby have birth weight 2-3kg. But in severely anaemic group 20% of new born baby have birth weight <2kg, and 60% between 2-3kgs.

A similar condition was observed in Pakistan in which majority of the cases had mild anaemia (75.0%), moderate anaemia (14.8%) and severe anaemia (0.7%) [12]. Similarly, report from India in 2010 also showed the majority (50.9%) of patients having moderate anaemia followed by mild (30.17%) and severe anaemia (18.9%) respectively [6,13].

Low birth weight babies are more commonly associated with severe Anemia. These results are similar to studies done previously by Rani KU et al [14], Jain P. et al [5] and Levy et al [6].

In our study risk of preterm delivery is more in anaemic group and which increases with severity of anaemia upto 40%.these results shows similarity with study done by Dayal S, Dayal A et al(10), Rani KU et al [14], Jain P et al [5] and Umber et al [9].

There are many studies showing that maternal iron deficiency anaemia early in pregnancy can result in low birth weight subsequent to preterm delivery. One study on welsh women who were first diagnosed with anaemia (haemoglobin <10 g %) at 13–24 wk of gestation had a 1.18–1.75-fold higher relative risk of preterm birth, low birth weight, and prenatal mortality [15]. After controlling for many other variables in a large Californian study, Klebanoff et al showed a doubled risk of preterm delivery with anaemia [16].

In our study preterm and low birth weight among anaemic women was 2.5% more than non-anaemic group and is seen in 40%cases of severe anemia. Study done by Umber et al [9] that has showed risk of preterm and low birth weight were 3.4 and 1.8 times more in anaemic group. They have taken two group for study, anaemic <11 gm% Hb and non-anaemic >11 gm% Hb. They have also shown poor APGAR score in anaemic group which supports our study.

An association between maternal anaemia and lower infant APGAR scores was reported in some study done by Rusia et al [8] in 102 Indian women in the first stage of labour, higher maternal haemoglobin concentrations were correlated with better APGAR scores and with a lower risk of birth asphyxia.

V. CONCLUSION

In developing countries like India prevalence of anaemia is very high which adversely affect both maternal and foetal outcome.

Anaemia is directly linked to low birth weight, prematurity, poor APGAR score and neonatal death and maternal morbidity and mortality.

To combat all these problems there is a need to prevent incidence of anaemia in pregnant women by giving, iron tablet, food supplements, better antenatal care and by giving health education.

These measures are affordable and easily available in our country and by effective implementation of these we can save many lives of both mother and child.

REFERENCES

- [1] DeMayer EM, Tegman A. Prevalence of anaemia in the World. *World Health Organ Qlty* 1998; 38: 302-16.
- [2] Pasricha SR, Caruana SR, Phuc TQ, Casey GJ, Jolley D, Kingsland S, et al. Anemia, iron deficiency, meat consumption, and hookworm infection in women of reproductive age in northwest Vietnam. *Am J Trop Med Hyg.* 2008 78(3):375- 81.
- [3] Baig-Ansari N, Badruddin SH, Karmaliani R, Harris H, Jehan I, Pasha O, et al. Anemia prevalence and risk factors in pregnant women in an urban area of Pakistan *Food Nutr Bull*, 2008; 29(2):132-9.
- [4] Marahatta R. Study of anaemia in pregnancy and its outcome in Nepal Medical College Teaching Hospital, Kathmandu, Nepal. *Nepal Med Coll J*, 2007; 9:270-4.
- [5] Jain Preeti, Kural M, Joshi Tulika. Maternal and fetal outcome in cases of severe anaemia with pregnancy in rural set up. *Int J Med Appl Sci.* 2013; 2(3):318-33.
- [6] Levy a, Fraser D, Katz M, Mazor M, Sheiner E. Maternal anaemia during pregnancy is an independent risk factor for low birth weight and preterm delivery. *Eur J Obstet Gynecol Reprod Biol.* 2005; 122(2):182-6.
- [7] Hussein L. Kidanto, Ingrid Mogren, Gunilla Lindmark, Sirel Massawe, Lennarth Nystrom. Risks for preterm delivery and low birth weight are independently increased by severity of maternal anaemia. *South African Med J.* 2009; 99(2):98-102.
- [8] Rusia U, Madan N, Agarwal N, Sikka M, Sood SK. Effect of maternal iron deficiency anaemia on foetal outcome. *Indian J Patho Microbiol.* 1995; 38:273-9.
- [9] Umber Jalil Bakhtiar, Yasmeen Khan, Razia Nasar. Relationship between maternal haemoglobin and perinatal outcome. *Rawal Med J.* 2007; 32(2):102-4.
- [10] Dayal S, Dayal A. Prevalence & Consequences of Anaemia in Pregnancy. *Int J Med Res Rev* 2014;2(4):296-299.
- [11] Baig-Ansari N, Badruddin SH, Karmaliani R, Harris H, Jehan I, Pasha O, Moss N, McClure EM, Goldenberg RL. Anemia prevalence and risk factors in pregnant women in an urban area of Pakistan. *Food Nutr Bull* 2008; 29:132-1399.
- [12] Vijaynath 1, Jitendra 1, Ramesh P, Abhishek P. Prevalence of anemia in pregnancy. *Indian Journal of Applied Basic Medical Sciences* 2010; 12:23-35.
- [13] U., Gupta J, Gupta R, Aggarwal K. Maternal anaemia and its severity: an independent risk factor for preterm delivery and adverse neonatal outcome. *Int J Reprod Contracept Obstet Gynecol.* 2014 Jun;3(2):325- 329
- [14] Murphy JF, O’Riordan J, Newcombe RJ, Coles EC, Pearson JF. Relation of hemoglobin levels in first and second trimesters to outcome of pregnancy. *Lancet* 1986;1:992–5.

[15] Klebanoff MA, Shiono PH, Selby JV, Trachtenberg AI, Graubard BI. Anemia and spontaneous preterm birth. Am

J Obstet Gynecol 1991;164:59–63.

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