



ISSN: 2319-6505

Available Online at <http://journalijcar.org>

International Journal of Current Advanced Research
Vol 4, Issue 8, pp 296-299, August 2015

International Journal
of Current Advanced
Research

ISSN: 2319 - 6475

RESEARCH ARTICLE

ANAEMIA IN PREGNANCY-A CROSS SECTIONAL STUDY IN GOVERNMENT GENERAL HOSPITAL, ANANTAPURAMU

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ARTICLE INFO

Article History:

Received 22th, July, 2015

Received in revised form 31th, July, 2015

Accepted 20th, August, 2015

Published online 28th, August, 2015

Key words:

Anaemia, Pregnancy, Iron Supplementation

ABSTRACT

Aims and Objectives: To study of the prevalence of anaemia complicating pregnancy in women delivering in GGH, Ananthapuramu. To assess the severity, type, identify the cause and to study maternal and perinatal outcome in these women.

Methodology: The study was done in Dept. of Obstetrics & Gynaecology, Govt. General Hospital, Ananthapuramu from April, 2013 to March, 2014 to know the prevalence of anaemia in pregnancy. 2000 women who came in labour to General Hospital, Ananthapuramu labour room were subjected to detailed history, clinical examination and haemoglobin estimation by cyanheamoglobin method.

Results: About more than half of the study group were second or third gravid. About 46% of the patients had no antenatal care, about 55% women with antenatal care were anaemic. About 78% of the study group belonged to low socioeconomic status, majority of the women had deficiency in diet intake. Microcytic hypochromic peripheral smear picture was the commonest finding followed by dimorphic anemia. Puerperal fever, postpartum haemorrhage, neonatal admission to NICU were more in the anaemic women. There was significant difference in the incidence of low birth weight babies between the anaemic and non anaemic groups, being more in the anaemic group.

Conclusions: This study confirms that there is very high prevalence of anaemia among pregnant women. Iron deficiency is the commonest cause of anaemia. Antenatal care does not seem to reduce the occurrence of anaemia. It is necessary to identify the reason of such prevalence in spite of antenatal care. It may be useful to give intermittent parenteral iron to reduce the prevalence.

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INTRODUCTION

Anaemia is the most common medical disorder in pregnancy. Iron deficiency is the most common nutritional disorder. Pregnant women are at especially high risk for iron deficiency anaemia¹. It affects around 50% of pregnant women globally and is 3-4 times higher in non-industrialised countries when compared to industrialised countries². The incidence of anaemia during pregnancy varies between 40-70% in India³. In India, anaemia antedates pregnancy due to pre-existing negative iron balance⁴. This pre-existing anaemia is aggravated by increased requirements during pregnancy, blood loss at delivery, infections in the antenatal and postnatal periods.

Anaemia contributes to 40-60% of maternal deaths in India, 20% of which is directly due to anaemia and the rest due to indirect causes like cardiac failure, haemorrhage, infections and pre-eclampsia⁵. Anaemia also increases perinatal mortality and morbidity consequent to preterm deliveries, IUGR, low iron stores, iron deficiency anaemia and affective dysfunction in the infant⁶. Iron deficiency anaemia constitutes around 90% of cases of anaemia during

pregnancy⁷. Eradication of anaemia in pregnancy is a key component of safe motherhood programme in our country.

Aims and Objectives

To study the prevalence, severity, type of anemia, maternal and perinatal outcome in anaemia complicating pregnancy in women delivering in the Dept. of OBG, Govt. General Hospital, Ananthapuramu.

MATERIALS AND METHODS

The study was done in Dept. of Obstetrics & Gynaecology, Govt. General Hospital, Ananthapuramu from April, 2013 to March, 2014 to know the prevalence of anaemia in pregnancy.

Detailed history of antenatal care, socio-economic status, diet, iron intake, history of haemorrhoids, worm infestations, gastrointestinal disturbance, menorrhagia preceding this pregnancy, history of easy fatiguability, exertional breathlessness, palpitations etc were taken. Clinical examination findings like pallor, signs of hypovitaminosis, oedema, lung signs and others were noted in 2000 women.

Haemoglobin estimation and peripheral smear detailed study was done in 300 women who had haemoglobin level of <8 g/dl.

The patients were considered anaemic if the haemoglobin level was <11g%. The maternal factors like age, parity, period of gestation, antenatal care, dietary, socioeconomic status, iron prophylaxis, clinical features, laboratory findings, possible causes, associated conditions, mode of delivery, maternal complications were studied.

Foetal birth weight, apgar score, meconium aspiration, admission to nursery and any other conditions was recorded.

The group of patients was divided in to anaemic and non anaemic group and the above mentioned various factors were compared between the two groups.

Chi-square test, Mantel-Haenszel test were used to compare the anaemic and non anaemic groups for various factors.

Observations

This was a descriptive study among 2000 women admitted to the labour room of GGH, Ananthapuramu from April, 2013 to March, 2014.

Most of the patients (98%) were in the age group of 18-30 years. Half of the women belonged to 21-25 years age group. More than one third of the patients were primigravida and rest second or third gravida. About 8% of the women were preterm at the time of delivery. As expected, majority of the patients belonged to low socio economic status. More than three fourths of the women had deficiency in dietary intake.

Patients who had at least three antenatal visits, two of which were in third trimester were considered as booked. One fifth of the patients had been booked in our institution. About 46% of the patients had no antenatal care.

Table 1 Iron supplementation

Iron intake	Number (n=2000)	Percentage
No supplementation	893	44.7%
1 month	921	46.1%
1 – 3 months	186	9.3%

About half the women had not taken iron at all and nearly another half had irregular (probably inadequate) supplementation. Only less than 10% of the women had adequate supplementation.

Table 2 Symptoms

Symptoms	Number (n=2000)	Percentage
Easy fatiguability	561	28.05%
Exertional Breathlessness	398	19.9%
Palpitations	254	12.7%
Swelling of feet	248	12.4%
Giddiness	106	5.3%

Table 3 Possible causes of anaemia from history

Cause	Frequency	Percentage
? Deficient iron intake	1151	57.6%
Worm infestation	380	19%
Haemorrhods	77	3.9%
Chronic Diarrhoea	51	2.6%
Menorrhagia	51	2.6%

Easy fatiguability (28%) and breathlessness (20%) were the common complaints among the women.

Worm infestations were found in about 20% of women.

Table 4 Associated obstetric conditions

Associated Condition	Number	Frequency
Premature rupture of membrane / Oligohydramnios	228	11.4%
Pre-eclampsia / eclampsia	176	8.8%
Previous caesarean section	136	6.8%
Abnormal presentations	34	1.7%
Antepartum haemorrhage	30	1.5%
Twins	18	0.9%
Rh. Incompatibility	15	0.75%
Diabetes / epilepsy	7	0.35%

Hypertensive disorders was found in about 9% of women.

Table 5 Severity of anaemia

Severity	Number (n=2000)	Percentage
Mild >8 to <11 g %	1147	64.01%
Moderate <6.5 to 8 g %	540	30.13%
Severe <6.5 g %	105	5.86%

Nearly 90% of women were anaemic with a haemoglobin level of less than 11g%.

Microcytic hypochromic picture was seen in 70%, suggesting iron deficiency anaemia was the commonest finding followed by dimorphic anaemia. 40% of the women were hypoproteinemic. Urinary infection, Worm infestations and amoebiasis were seen in a significant number of women.

Most of the patients in the anaemic group belonged to the low socioeconomic group and had definite evidence of dietary inadequacy. Surprisingly, booking status, parity and iron supplementation did not make any difference as far as anaemia is concerned.

Vaginal delivery, both spontaneous and instrumental were similar in both the anaemic and non anaemic groups, but there were more caesarean sections in the non anaemic group.

Table 6 Maternal complications

Complications	Anaemic (n=1792)	Non anaemic (n=208)	Significance
PROM	172 (9.5)	12 (5.76)	N.S. (0.07)
PIH	167 (9.3)	9 (4.32%)	S (0.016)
Puerperal fever	142 (7.92%)	7 (3.3%)	S (p 0.017)
Wound infection	95 (5.3%)	12 (0.66%)	N.S. (p 0.777)
Blood Transfusions	92 (5.13%)	6 (2.88%)	
1 unit	24 (1.33%)	Nil	N.S. (p 0.15)
> 2 units			
Post partum haemorrhage	75 (3.75%)	3 (1.44%)	S (p 0.05)
Puerperal sepsis	31 (1.72%)	1 (0.48%)	N.S. (p 0.17)
Maternal Death	1 (0.055%)	Nil	

There were more maternal complications in the anaemic group of women when compared to the non anaemic group, though this was not statistically significant as far as wound sepsis, blood transfusion and puerperal sepsis are concerned. Preeclampsia, puerperal fever and postpartum haemorrhage were significantly more in the anaemic group.

There were more low birth weight babies in the anaemic women when compared to non-anaemic women. Mean birth weight among the anaemic group was 2.6+0.6008 kg against 2.7+0.60.34 kg. in the non anaemic group.

Table 7 Neonatal complications

Complications	Anaemic (n=1792)	Non anaemic (n=208)	Significance
Admission to NICU	459 (25.6%)	8 (3.8%)	S (p 0.000)
Neonatal deaths	68 (3.70%)	5 (2.46%)	N.S. (P- 0.31)
Birth asphyxia	48 (2.67%)	3 (1.44%)	N.S. (p 0.284)
Neonatal sepsis	42 (2.34%)	2 (0.96%)	N.S. (p 0.19)
Meconium aspiration syndrome	22 (1.22%)	1 (0.48%)	N.S. (p 0.33)

More babies from the anaemic groups were admitted in Neonatal Intensive Care Unit. There were no stillbirths in either group. No significant difference in neonatal deaths was noted between both the groups.

DISCUSSION

Anaemia in pregnancy is one of the leading causes responsible for maternal and perinatal morbidity and mortality.

Age

There was no significant difference in age distribution between the anaemic and the non anaemic women. In adolescent pregnancy, increased growth requirement of the mother and growing fetus with inadequate diet intake, which may lead to anaemia. Increased parity with inadequate spacing may be additional factors.

Parity

More than half of the women in our study were second or third gravid. Multiparity with pregnancies at shorter intervals leaves no time to replenish decreased iron stores in initial pregnancy, resulting in anaemia⁵.

Booking status

One third of the patients in our study had been booked in our institute. They may not be consuming iron though they may claim to. About 46% of patients had been unbooked. There was no statistical significant difference in the booking status among the anaemic and non anaemic women. Non-compliance to iron supplementation remains a major problem in anaemia control.

Socioeconomic status

Majority (77%) of our women belonged to low socioeconomic status. Singh et al observed that multiparous women of lower socioeconomic status who tend to book late in pregnancy were found to have the highest risk of anaemia⁸.

Diet intake

About 78% of the present study had deficient diet intake. Significant difference was noted in diet intake among the anaemic and non anaemic women. Sharma et al showed high prevalence of anaemia during pregnancy in Delhi, probably due to very low frequency of meat eating in India^{2,5}. About 45% of the women had not taken iron supplementation. There was no difference between the anaemic and the non anaemic group of women as far as iron supplementation is concerned.

Symptoms

Anaemic women were found to be more symptomatic than non anaemic women. Easy fatigability (28%) and exertional breathlessness (20%) were the most common symptoms observed in our study. Often patients may present with non specific complaints attributable to anaemia such as fatigue, decreased exercise tolerance, weakness, palpitations, irritability and headache⁴.

Possible causes of anaemia from history

History of worm infestations were found in about 20% in our study group. Iron deficient diet may be the cause other women. Khandait et al observed association between worm infestations and anaemia, hence considered worm infestations as risk factor of anaemia in pregnancy³.

Prevalence and severity of anaemia

About 90% of our study groups were anaemic with a haemoglobin less than 11g%. Singh et al observed the prevalence of anaemia with a haemoglobin <11g% in National University Hospital, Singapore was 15.3%⁸.

Type of anaemia

Peripheral blood smear was taken to type the anaemia in women whose haemoglobin was less than 8g%. Most common type was microcytic hypochromic anaemia in 70.7% and Dimorphic anaemia 14.3%. Aswasthi et al also showed that most common type of anaemia was microcytic hypochromic (66.5%) followed by dimorphic anaemia (22%)⁹. Sharma and co-workers study showed higher incidence of dimorphic anaemia (60.7%) followed by microcytic hypochromic anaemia (26.2%)².

Mode of delivery

In our study significant difference was noted in caesarean section rates, about 15% among anaemic women compared to 22% of non anaemic women. Instrumental deliveries were similar in both the groups. Fetal distress was the most common indication for operative deliveries in both the groups.

Aswasthi and co-workers showed that the incidence of delivery by outlet forceps in 6.5% of anaemic women against 2% among non anaemic women. In their study caesarean rate among the anaemic women was higher⁹.

Maternal complications

In our study hypertensive disorders were found among 9% of women. Statistically significant different was observed in preeclampsia, about 9.3% in anaemic women compared to 4.3% of non anaemic women.

Aswasthi et al found the incidence of preeclampsia of pregnancy to be 23% in moderate anaemia and 28% in severe anaemia⁹.

Postpartum haemorrhage was found in 3.75% of anaemic

women against 1.44% of non anaemic women in our study. Lowenstein et al reported 11% incidence of PPH in anaemic patients. They opined that uterine inertia is the most common cause of PPH in anaemic patients⁴. About 7.54% cases the severe anaemia group had PPH in the study by Aswasthi and co-workers⁹. Sharma and co-workers studied about 8.3% incidence of PPH in severe anaemic group².

There was more puerperal fever (7.9%) among anaemic women when compared to non anaemic women (3.3%). However, no significant difference was noted in puerperal sepsis, wound infection and rate of blood transfusions received between the two groups. Sharma and co-workers showed that 9.5% of sepsis, among severely anaemic women compared to 0.9% in moderately anaemic group².

Neonatal outcome

Birth weight

In our study anaemic women had more low birth weight babies compared to non anaemic women. Sharma et al observed incidence of low birth weight babies as 64.3% in severe anaemic group compared to 37.2% in moderate anaemia². Study by Malhotra et al showed severe anaemia was associated with increased low birth weight babies¹⁰. Singh et al showed no significant difference in incidence of low birth weight babies in anaemic women⁸. School and Hediger showed that iron deficiency anaemia at entry of antenatal care had been associated with increased risk of low birth weight¹¹.

In our study more number of neonatal admission to NICU (25.6%) was noted in anaemic group compared to 3.6% in the non anaemic group. However, incidence of neonatal sepsis, birth asphyxia, meconium aspiration syndrome were similar among the anaemic and non anaemic groups.

Mola et al found a still birth rate of 9.4% with haemoglobin <6g/dl and 3% in moderate anaemia group¹². We had no still births in our study. Singh et al found no difference in neonatal deaths between anaemic and non anaemic groups⁸.

Sharma and co-workers reported higher incidence of complications like fever, jaundice, pneumonia, respiratory distress syndrome in the early neonatal period in infants of women with severe anaemia compared to those with moderate anaemia. They found no significant difference in neonatal deaths between anaemic and non anaemic group.

CONCLUSIONS

This study confirms that there is very high prevalence of anaemia among pregnant women.

Iron deficiency is the commonest cause of anaemia. Antenatal care does not seem to reduce the occurrence of anaemia. It is necessary to identify the reason of such prevalence in spite of antenatal care. It may be useful to give intermittent parenteral iron to reduce the prevalence. Apart efforts from health sector, social efforts may also have to be strengthened to improve the situation.

Acknowledgement

Authors acknowledge the immense help from the urban and rural mothers and the scholars whose articles are cited and included in references of this manuscript.

References

1. Agarwal N and Kriplani A. Anaemia in pregnancy-A Review. *Asian J. of Obs & Gynae Practice* 1999; 3:10-20.
2. Awasthi A, Thakur R, Dove A, Goyal V. Maternal and Perinatal Outcome in cases of moderate and severe anaemia. *J. Obst & Gyn Ind* 2001; 51: 62-65.
3. Bhatt RA. Iron and The Indian Women. *J obstet. Gynaecol of Ind* 1998; (49): 2:27-31.
4. Horn E. Iron and folate supplements during pregnancy: Supplementing everyone treats those at risk and is cost effective. *BMJ* 1998; 297: 1325-1327.
5. Kaltreider DF, Johnson JW. Patients at high risk for low-birth-weight delivery.: *Am J Obstet Gynecol.* 1976; 124 (3): 251-6
6. Lops VR, Hunter LP, Dixon LR. Anemia in pregnancy. *Am Fam Physician.* 1995; 51(5):1189-97.
7. Metha BC, Jhaveri K, Patel JC. Anaemia in pregnancy: A study of 210 cases. *Indian J Med Sci* 1971; 25: 301-7.
8. Mungen E. Iron supplementation in pregnancy. *J.Perinat Med.*, 2003; 31(5): 420-6.
9. Nelson- Piercy C, Williamson C. Medical Disorders in Pregnancy. In: Chamberlain G, Steer PJ, Breart G, Johnson M, Chang A, Neilson JP (eds) *Turnbulls Obstetrics* 3rd ed. Churchill Livingstone London. 2001; 257-299.
10. Park JE. Nutrition and Health. In: Park and Park A textbook of Preventive and Social Medicine 17th ed.- Banarasidas Bhanot Jabalpur. 2002; 412-459.
11. Sharma JB. Nutritional anaemia during pregnancy in non-industrialised countries. In studd J. (ed) *Progress in Obstetrics and Gynaecology*, Vol 15, Edinburgh: Churchill livingstone. 2003; 103-120.
12. Singh K, Fong YF, Arulkumaran S. Anaemia in pregnancy-a cross sectional study in Singapore. *Eur J Clin Nutr*, 1998; 52(1):65-70.
