

PREVALENCE OF ANEMIA IN PREGNANCY AT A TERTIARY CARE CENTRE

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Abstract

Background: Anemia is one of the most prevalent problems involving nutritional deficiency in pregnant women. Anemia is responsible for 20% of maternal deaths in the third world countries. The prevalence of anemia varies from 65% to 75% (as per WHO). The incidence of anemia¹ widely ranges from 40-80% in tropics compared to 10-20% in developed countries. The aim is to find the prevalence of anemia, to evaluate the risk factors and various measures for prevention. **Materials and Methods:** This was a retrospective observational study done on pregnant women attending antenatal clinic at government maternity hospital, in the department of obstetrics and gynaecology, Siddhartha medical College, Vijayawada, Andhra Pradesh. over a period of one year (from January 2022 to December 2022). Inclusion criteria- All women attending antenatal clinic diagnosed to be having anemia, irrespective of gestational age. Exclusion criteria- Women having bleeding per vaginum, rectum, women with chronic renal and hepatic disorders. **Result:** Out of total antenatal women registered 74.5% were anemic. Majority of women with anemia are of 20 to 25 years (52%) followed by women of 25-30 years (31%). In the present study lower class women (62%), middle class of 36.5% and upper class of 1.5% were anemic. Majority of women constitute moderate anemia (49.6%). 24.9% women have mild anemia and 10% of women have severe anemia. **Conclusion:** Treatment of anemia is vital for improving maternal and perinatal outcome.

INTRODUCTION

Anemia is one of the most prevalent problems due to nutritional deficiency in pregnant women. Maternal anemia results in significant perinatal mortality and morbidity. The prevalence of anemia varies from 65% to 75% (as per WHO).^[1]

The incidence of anemia widely ranges from 40-80% in tropics compared to 10-20% in developed countries. Anemia is responsible for 20% of maternal deaths in the third world countries.^[1]

Effects of anemia in pregnancy.^[1]

Maternal effects include preterm birth, hypertensive disorders and susceptibility to infections.

Fetal effects – Effects on the fetus do not manifest unless the anemia is moderate to severe. Moderate anemia is associated with increased risk of low birth weight, prematurity and perinatal mortality. Recent

studies have shown that maternal anemia is associated with autism, spectrum disorder, attention deficit hyperactive disorder and intellectual disability in the offsprings.^[1]

Diminished intake of iron and increased demand with advancing pregnancy, and altered metabolism along with the factors like socio-economic status, illiteracy, early age of marriage associated with increased susceptibility to infectious diseases like hookworm infestations may serve to be underlying factors associated with increased prevalence³ of anemia during pregnancy.^[1-5]

These women were categorized into different groups as per WHO criteria as follows:

Normal- hemoglobin > 11 mg/dl

Mild anemia - hemoglobin 10 – 10.9 mg/dl

Moderate anemia – hemoglobin 7- 9.9 mg/dl

Severe anemia – hemoglobin < 7 mg/dl.^[2]

Aim of the Study

Aim of the study is to find the prevalence³ of anemia, to evaluate the risk factors and various measures for prevention.

MATERIALS AND METHODS

Retrospective observational study done on women⁵ attending antenatal clinic at government maternity hospital, department of obstetrics and gynecology, Siddhartha medical College, Vijayawada, Andhra Pradesh over a period of one year (from January 2022 to December 2022). Antenatal clinic is conducted daily basis. Relevant history and examination of the antenatal women is done at first antenatal visit.^[5] Screening of anemia,^[1] thyroid profile, viral markers, GCT were performed routinely for all antenatal women.^[2] Initial hemoglobin estimation was done manually by sahli's haemoglobinometer.^[2] Hemoglobin estimation is done in all the three

trimesters of pregnancy including the first booking visit. Complete blood picture along with peripheral smear was done to detect the type of anemia and the cause of anemia.^[1]

Inclusion Criteria

All women attending antenatal clinic diagnosed to be having anemia irrespective of gestational age.^[1]

Exclusion Criteria

Women having bleeding per vaginum, rectum., women with chronic renal and hepatic disorders.

RESULTS & DISCUSSION

A total of 8120 antenatal women were included in the study over a period of one year (from January 2022 to December 2022).^[5]

Table 1:

Total no. of ANC registrations	8120
No. of cases with anemia	6049
Percentage	74.5%

Out of total cases 6,049 -74.5% were anemic.^[1]

Table 2: Age groups.

Age group (in years)	<20	20-25	25-30	>30
No. of cases	484	3146	1875	545
Percentage	8%	52%	31%	9%

Majority of antenatal women with anemia are of 20 to 25 years (52%) followed by women of 25-30 years (31%). 8% of anemic women are <20 years of age and 9% are >30 years.^[1,5]

Table 3: Socio economic status.

Socio economic status	Lower	Middle	Upper
No of cases	3751	2208	91
Percentage	62%	36.5%	1.5%

Lower socioeconomic status group are those whose gross annual income is less than 60,000 per annum. Whereas middle class are those with 60,000 to 5 lakh per annum. And upper class are those with >5 lakh per annum. In the present study majority of women with anemia belong to lower class (62%), middle class women constitute 36.5% and upper class constitute 1.5%.

Table 4: Trimesters of pregnancy

Trimester of pregnancy	1st trimester	2nd trimester	3rd trimester
No. of cases	405	2480	3164
Percentage	6.7%	41%	52.3%

Most of the women diagnosed as anemia were in second and third trimesters of pregnancy.

Table 5: Severity of anemia

Hemoglobin	<7	7-9.9	10-10.9
No. of cases	604	3001	1506
Percentage	10%	49.6%	24.9%

In the present study most of the women belong to the group of moderate anemia (49.6%), 24.9% women have mild anemia and 10% of women have severe anemia.^[1]

Table 6: Parity of pregnancy

Parity of women	Total ANC's	Anemia	Percentage
Primi	3926	2473	36%
Multi	4194	2684	64%

Out of 3926 primi cases 2473 were anemic (36%) and out of 4194 multiparous women 2684 were anemic (64%). Incidence of anemia is more in multigravida than in primi gravida.

Table 7: Discussion

Age	Sinha et al(2021)	Sarala V et al (2020)	Present study(2022)
<20 years	44%	13%	8%
20-30 years	54.5%	83.87%	83%
>30 years	1.5%	3.72%	9%

In the present study, incidence of anemia is highest (83%) in 20-30yrs. Similar results were observed in Sarala V et al (83.87%).

In the present study 8% of anemic women were < 20 years of age as the incidence of marriage in teenage is due to upper limit of age for marriage is raised to 21 years by the government of India.

Table 8:

Socio economic status	Sinha et al (2021)	Sarala V et al (2020)	Present study
Lower	57.5%	63.75%	62%
Middle	42%	32.62%	41%
Upper	0.5%	3.625%	52.3%

Most of the patients coming to government hospital belong to low socioeconomic status and they have dietary deficiencies, worm infestation and chronic infections like malaria. Hence the incidence of anemia is increased among them.

1. Severely anemic women (HB=<5%) were immediately admitted and correction done by packed cell transfusion irrespective of gestational age.
2. Physician referral was done in women not responding to oral iron therapy for identifying the type of anemia and appropriate management.
3. In some cases special investigations like hemoglobin electrophoresis and iron studies were done.
4. A total of five cases of sickle cell anemia were diagnosed during study period and one among them has sickle cell anemia along with beta thalassemia combined disease. One case of aplastic anemia was diagnosed during screening of anemic women.

Recommendations

Based on our study, we have the following recommendations to prevent or decrease the severity of anemia among pregnant women:^[1]

1. Adolescent girls should be educated about the importance of nutrition before marriage.
2. Pre-conceptional counseling for women of child bearing age.
3. Family counseling and health education regarding complications of anemia¹ for pregnant women and aim for its correction by proper nutritional supplementation.
4. Fortification of food with essential vitamins and minerals is essential. Iron fortification is done in salt and sugar. Mere cooking of food in cast iron utensil may reduce the severity of anemia.^[1]

CONCLUSION

There was high prevalence of anemia in pregnancy.^[6-9]

Management of anemia¹ in pregnant women is vital for improving maternal and perinatal outcome and for reducing perinatal Morbidity and mortality.

Iron supplementation for all antenatal women, routine de-worming, screening for infections like asymptomatic bacteriuria and malaria will go a long way in prevention of anemia.

Anemia mukt bharat- intensified Iron-plus Initiative aims to strengthen the existing mechanisms and foster newer strategies for tackling anemia.^[1] It focusses on six target beneficiary groups, through six interventions and six institutional mechanisms to achieve the envisaged target under the POSHAN Abhiyan.

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