

Prevalence of Anemia in Pregnancy: A Retrospective Study at Tertiary Care Hospital in Sivagangai, Tamilnadu, India

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Abstract: ***Objective:** Anemia in pregnancy is a major health problem with adverse maternal and foetal outcome worldwide specially, developing countries like India. The aim of the present study was to understand the prevalence of anemia among the pregnant women and its deleterious effects on pregnancy outcome. **Material and Method:** This is a retrospective observational study done at a tertiary care hospital Govt.sivagangai Medical College, sivagangai over a period of one years from December2017 to November2018. **Result:** A high prevalence of anemia, 43% was observed among pregnant women. Average literacy rate of sivagangai for the year (2011-2017)79.8%.The current study shows 383(20%) cases of mild anemia, 843(44%) cases of moderate anemia , 594(31%) cases of severe anemia and 97(4.3%) cases of very severe anemia.Majority of patients belonged to low socioeconomic group and of age below 24yrs. Maternal complications were preterm labour (44%), preeclampsia- eclampsia (51%), cardiacfailure (0.39%) and PPH (2%), . Perinatal morbidity and mortality is also high in severe form of anemia. **Conclusion:** Anemia in all form is associated with adverse maternal and perinatal complications. It is directly proportional to parity, less spacing between pregnancy, low socio-economic conditions and illiteracy. It is one of the preventable indirect cause of maternal mortality. Effective guidelines regarding girl child education, regular antenatal checkups, and regular intake of iron folic acid tab and availability of health facilities to rural population upto the grass root level might help in bringing down the prevalence.*

Keywords: Anemia, Maternal outcome, Perinatal outcome, Pregnant women, Rural health.

1. Introduction

Anemia is the major cause of maternal morbidity and mortality in developing countries.¹ According to WHO, prevalence of anemia among pregnant women in developed countries is about 14% ,whereas it is still as high as 51% in the developing countries.²India contributes to 80% of all global maternal deaths due to anemiaoccur in South Asian countries.³ The prevalence of anemia during pregnancy in India is 87% which is quite high.^{4,5}Ghimire and Ghimire from Nepal have found co-relation between severe anemia and poor perinatal outcome.⁶

WHO defines anemia hemoglobin less than 11gm/dl in first trimester and third trimester and less than 10.5gm/dl in second trimester .Anemia is further classified into mild, moderate and severe by ICMR depending upon the level of hemoglobin.

- Mild Hb%-10-10.9gm%
- Moderate Hb%-7-10gm%
- Severe Hb% 4-7gm%
- Very severe: less than 4gm Hb%

Anemia has multifactorial etiology.⁷Nutritional anemia is more common , i.e. inhibitors of iron absorption, dietary deficiency of iron,folic acid and vit B12 .During pregnancy, foetal and placental growth and larger amount of circulatory blood leads to an increased demand for nutrients, especially iron and folic acid due to either younger age of marriage. Other factors are pregnancy iron deficiency, teenage pregnancy, lack of appropriate spacing between pregnancies, parasitic infestation (ex. malaria, hookworm), open defecation, poor environmental and personal hygiene.

Anemia during pregnancy can cause premature labour, postpartum hemorrhage, puerperal sepsis and thromboembolic phenomenon in the mother, and subsequently prematurity, IUGR & low birth weight in the neonates.⁸ This study aimed to understand the prevalence of anemia in pregnant women coming to tertiary care hospital and its effect on pregnancy outcome.

2. Material and Method

This is a retrospective observational study done at Govt. Sivagangai Medical College Hospital, Sivagangai, Tamilnadu over one year period from December 2017- November 2018.. Govt. Sivagangai Medical College Hospital is a tertiary care center in Tamilnadu which caters majority of rural population..

Inclusion criteria

Women with pregnancy after fetal viability having anemia admitted in hospital in labour.

Exclusion criteria

Pregnant women with hemolytic anemia were excluded from the study. Pregnant women with anemia due to acute blood loss (APH) were excluded from the study .Pregnant women with medical disorders like hypertension, diabetes , cardiac disease were excluded.

Medical records of all patients were completed with maternal age ,parity ,antenatal check -up , gestational age, pre-eclampsia, LBW, prematurity, NICU admission , foetal demise , PPH, maternal Intensive care , and maternal mortality.

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3. Observation & Result

There are 6855 admissions in obstetrics department during the one year study period. Out of 4459. Women delivered, 1917 anemic patients were taken as study group. The prevalence of anemia was found 43%. Among the patients who delivered in that period. The range of hemoglobin in present study group was in between 2gm% to 10gm%. Maximum patients had hemoglobin in the range of 7-10 gm% (65%) followed by (35 %) with hemoglobin<7gm%. (Table-1)

Table 1: Types of anaemia and correlation with age

Age	Mild		Moderate		Severe		Very severe	
	N	%	N	%	N	%	N	%
<24 yrs n=920	180	20%	318	35%	369	41%	52	5%
25-29 yrs n=671	125	19%	354	51%	173	27%	32	4%
30& above yrs n=326	78	25%	181	56%	52	16%	14	3%
Total	383	20%	843	44%	594	31%	97	4.3%

The above table shows that mild (20%), moderate (34%), severe anemia(41%)and very severe anemia

(5%) were more prevalent in age group of <24 years. In the present study,1572 (82%) pregnant women were coming from rural population when compared to345(18%) pregnant woman from urban population.

Table 2: Patient characteristics

Hb%	No of patients(4538)
7-10gm%	1246(65%)
4-7gm%	594(31%)
2-4gm%	77(4%)
Age group	
<24	920(48%)
25-29	671(35%)
30 and above	326(17%)
Gestational status	
37-42	1035(54%)
34-37	460(24%)
<34	422(22%)
Gravida	
1	633(33%)
2-5	1074(56%)
5 and above	210(11%)
Rural/Urban	
Rural	1572(82%)
Urban	345(18%)
Socio-economic status	
Low socio-economic	1687(88%)
Middle socio-economic	230(12%)

Table 3: Obstetrics outcome

Mode of delivery	
Vaginal	901(47%)
LSCS	1016(53%)

Out of 3389 women,1830 (54%) had presented in labour at term followed by813 (24%) women in gestational age group of 34-37 weeks, 746(22%)women presented at less than 34 weeks of gestation.

Table 4: Maternal complications

Pre-term labour	843(44%)
IUGR	805(42%)
Pre-eclampsia/Eclampsia	978(51%)
IUFD	153(8%)
Post-operative wound sepsis/septicaemia	38(2%)
PPH	38(2%)
ICU admission	8(0.4%)
Cardiac failure	6(0.39%)
Maternal death	0

In the present study, majority of the pregnant patient had a caesarean delivery. Out of 1917, 843 (44%) patients were came with preterm labour, 805 (42 %) patients had intrauterine growth restriction, 978 patients had(51 %) presented with pre-eclampsia , 153 (8%) had foetal demise at the time of admission. 8 (0.4 %) pregnant women were needed ICU admission &.479 (25 %) newborn were admitted to NICU.

4. Discussion

Anemia during pregnancy is a major health problem especially in India due to many contributing factors like increased iron demand of body, increased appetite and other social factors and type of family. The present study revealed that prevalence of anemia is 43%.These findings are similar to the findings documented by National Family Health Survey-3 .In our study , we found a un usually high prevalence of anaemia (82 %) in rural area Which is similar to NFHS-3(2005-06).SayeedUnisa et al found 74% of pregnant women with anaemia.⁹ This is due to pre-pregnant anemia (due to nutritional deficiency , and worm infestation), lac of regular antenatal visit, , poverty, illiteracy and social taboo.

Low socio-economic conditions and illiteracy has direct impact on occurrence of anemia in pregnancy. 88% of anemic pregnant women belonged to lower socioeconomic status class. Noronha et al in their study conducted in Udupi found that 54.27% of pregnant women belonging to low socio-economic group.¹⁰ The prevalence of anemia of 48% was observed in the under 24 years of age group which is comparable with study by Sharma et al .Early age of marriage and poor iron stores contributes to high prevalence in this age group.

Anemia is the direct or indirect causes of the maternal death in India. There is 8-10 fold increase in MMR when Hb% falls below 5gm/dl .Early detection and effective management of anemia in pregnancy can contribute substantially to reduction in maternal mortality .the most common outcome was newborn of low birth weight followed by preterm delivery .The risk of the preterm delivery was more common in severely and very anemic group from 40% to 70% which was observed in several studies.

5. Conclusion

There is a high prevalence of anemia among pregnant women in Sivagangai, Tamilnadur, India. 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 .It is highly recommended that more effective guidelines regarding educating girl child screening programme, awareness campaign, frequent visits by anganwadi workers to pregnant women, early ANC booking, regular iron folic acid tablets intake, birth control for proper spacing,deworming of such patients. Such measures surely helps to reduce the burden of anemia among pregnant women in our country.

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