

PREVALENCE OF ANEMIA IN PREGNANCY & IT'S EFFECTS ON NEONATAL BIRTH IN PREGNANT WOMEN -A PROSPECTIVE OBSERVATIONAL STUDYDr. M. Manasa^{1*}, A. Divya², G. Himasagar³, M. Jennifer⁴ and K. Thulasi⁵

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ABSTRACT

Background: Anemia during pregnancy is one of the most common “Nutritional deficiency disorder”. World Health Organization defines anemia in adults as hemoglobin levels less than 13g/dl for males and less than 12g/dl for females. Anaemia is not one disease, but condition which results from a number of different pathologies. It can be defined as a reduction from normal of the quantity of haemoglobin in the blood. **Aims and Objectives:** The main aim of the study is to access the prevalence of anemia & impact of anemia on neonatal birth in pregnant women’s To assess the prevalence of patient with anemia during pregnancy, the neonatal outcome among Anemic pregnant women & improve maternal & fetal health, by primary health care. **Settings and Design:** This study design was a Prospective observational study. **Methodology:** The study was conducted on 90 anemia pregnancy women who attended the ANT care. Clinic at Government general secondary Health care Hospital Madanapalle from October 2022 to March 2023. **Results and Discussion:** The significant maternal outcome in anemic pregnant was C-section 73 (81.1%), LSCS 73(81%), PPH 39 (43.3 %) and followed by preterm delivery 3 (3.3%). Pre-eclampsia, postpartum depression polyhydramnios were also less commonly associated adverse effects of maternal anemia. The significant fetal outcomes that were associated with maternal anemia are low birth weight 36 (0.4%), jaundice 37 (0.41%) birth asphyxia 29 (0.32%). Seizure, cord around neck was also less commonly associated adverse effects of maternal anaemia. **Conclusion:** The significant maternal outcome in anemic pregnant in C-section & NVDare 73(81.1%), LSCS73 (81%), PPH 51(56.6%) and followed by preterm delivery 4 (0.4%). Pre eclampsia, postpartum depression, Oligohydramnios 20(22.2%), polyhydramnios were also less commonly associated adverse effects of maternal anaemia. The significant Fetal outcomes that were associated with maternal anemia are low birth weight 43(47.7%), jaundice43(47.7%)birthasphyxia35(38.8%). Seizure,cord around neck were also less commonly associated adverse effects of maternal anaemia.

KEYWORDS: Pregnancy, Prevalence of Anaemia, Neonatal Outcomes, Maternal Outcomes.**1. INTRODUCTION**

Anemia during pregnancy is one of the most common “Nutritional deficiency disorder”. World Health Organization defines anemia in adults as hemoglobin levels less than 13g/dl for males and less than 12g/dl for females. Anaemia is not one disease, but condition which results from a number of different pathologies. It can be defined as a reduction from normal of the quantity of haemoglobin in the blood.^[1]

Anemia in pregnancy is defined as low hemoglobin concentration resulting in decrease in oxygen carrying capacity of blood. The CDC (Centre for Disease Control, USA) defines anemia in pregnancy Hb concentration of less than 11 g/dl in first and third trimester and less than 10.5 g/dl during the second trimester of pregnancy. Using 11 g/dl as cut-off for definition of anemia is

probably too high for India and Federation of Obstetric and Gynecological Societies of India (FOGSI), has suggested a cut- off of 10g/dl for India. But Practically a Hb concentration of < 11 g/dl is taken for anemia.

1.1 SEVERITY OF ANEMIA

According to ICMR & WHO, severity of Anemia is classified as mainly 4 types

Mild Anemia (ICMR, 10 to 10.9), (WHO, 9 to 10.9)

Moderate anemia (ICMR, 7 to 9.9), (WHO, 7 to 8.9)

Severe Anemia (ICMR, 4 to 6.9), (WHO, < 7.0)

Very severe (ICMR, <4.0)

*ICMR – Indian Council of Medical Research

*WHO – World Health Organization.^[2]

Thus, the decreased concentration of haemoglobin during pregnancy is due to the combined effects of Negative

iron balance & haemodilution. Anemia is normocytic & normochromic in type. Normal blood values in pregnant & non pregnant state are.

Normal blood values in pregnant & non pregnant women's.^[3]

Table 1: Normal blood values in pregnant & non pregnant women's.

Blood cells	Pregnant Women	Non pregnant women
Haemoglobin	11 -14 g/100 ml	14.8 g/100 ml
Red blood cell	4-4.5 million cells/mm ³	5 million cells/ mm ³
Packed cell volume (Haematocrit)	32 to 36%	39 to 42%
Mean cell haemoglobin (MCH)	26 to 31 pg	28 to 32 pg
Mean cell volume (MCV)	75 to 95 cubic microns	75 to 100 cubic microns
Mean cell haemoglobin concentration (MCHC)	30 to 35%	32 to 36%
Serum iron	65 to 100 mg/100 ml (slightly lowered)	60 to 120 mg/dl
Total Iron Binding capacity (TIBC)	300 to 400 mg/100 ml Increased	300 to 350 mg/dl
Serum ferritin	15 mg/L	20 to 30 mg/L
Saturation percentage	Less than 16%	30%

1.2 EPIDEMIOLOGY

The global prevalence of anemia in pregnancy is estimated to be approximately 41.8%, varying from a low of 5.7% in the USA to a high of 75% in The Gambia. As per National family health survey 4 (NFHS4) (2015-2016), Overall incidence of anemia in pregnancy in India was 23.1 to 61.4 % with 23.6 to 61.7 % in urban areas and 19.6 to 58.1 % in rural areas.^[4]

The prevalence of anemia in pregnancy has been reported as 29.9% globally.^[5]

1.3 ETIOLOGY

A normal balanced diet will usually contain enough iron for your body's needs. The low dietary intake of iron, folic acid and food stuffs that promote iron absorption, coupled with poor bioavailability of iron are the major factor responsible for very high prevalence of anaemia. Poor iron stores at birth, low iron content of breast milk and low dietary iron intake through infancy and childhood results in high prevalence of anaemia in childhood.

The low haemoglobin level that defines anemia results from two different mechanisms

A. Increased haemoglobin loss due to either.

Haemorrhage (red cell loss) or
Haemolysis (red cell destruction).

B. Reduced haemoglobin synthesis due to either.

- Lack of nutrients or
- Bone marrow failure.

Reduced haemoglobin synthesis leads to either reduced proliferation of precursors or defective maturation of precursors or both. It is not unusual to find more than one cause in a single patient.

Some of the more common anaemias.

- I. Microcytic anaemias.
 - a) Iron deficiency anemia
 - b) Sideroblastic anemia
- II. Megaloblastic anaemias:
 - a) Folate deficiency
 - b) Vitamin B12 deficiency
- III. Hemolytic anaemias:
 - a) Sickle cell disease
 - b) Thalassemia
 - c) Aplastic anemia
 - d) Glucose-6-phosphate dehydrogenase deficiency^[6]

1.4 COMPLICATIONS

Amniotic fluid Complications

Too much Amniotic fluid (Polyhydramnios), or too little amniotic fluid (Oligohydramnios) in the sac around the foetus may be sign of a problem with pregnancy. The condition Polyhydramnios result in, too much fluid can put too much pressure on the mother's uterus, it leads preterm labour & also cause pressure on the mother's diaphragm this can lead to breathing difficulties. Fluid tends to build up in case of uncontrolled diabetes & birth defects. The condition (Oligohydramnios) too little fluid may be a sign birth defects, growth retardation, still birth.

Bleeding Complications

Bleeding in pregnancy may be a sign of preterm labour, cervical infection, vaginal infection, or placental complications. Pregnant women who bleed in late pregnancy may more greatly risk of losing the foetus & bleed excessively.^[7]

Post partum haemorrhage complications

According to the World health organization (WHO), postpartum haemorrhage (PPH) is defined as the blood loss of more than 500 mm following a Normal vaginal delivery (NVD) or more than 1000 mm following cesarean section. Also, it is defined as any amount of

vaginal bleeding following delivery that causes, loss of 10% hemoglobin from the baseline.

PPH is the major cause of maternal mortality and morbidity across the world, responsible for more than 25% of deaths annually. WHO statistics suggested that 60% of maternal deaths in developing countries were due to PPH, accounting for more than 100,000 maternal deaths per year worldwide.

PPH is termed as primary when it occurs within 24 h of delivery, whereas termed late or secondary PPH when it occurs after 24 h to 6 weeks of delivery.^[8]

Pre-eclampsia or eclampsia complications

Preeclampsia is also formerly called "Toxemia" is characterized by pregnancy – induced high blood pressure (Pregnancy induced HTN). It is accompanied by presence of protein in the urine. Eclampsia is the more form of this problem This can lead to seizures, coma, or even death.

The causes of preeclampsia are unknown, but it is more common in first pregnancies. Other risk factor for preeclampsia includes.

- ❖ A pregnant woman with high blood pressure (HTN), Diabetes, or renal disease before she became pregnant.
- ❖ A pregnant woman older than 40,
- ❖ A pregnant woman who is obese with a BMI greater than 30,
- ❖ A teenage mother,
- ❖ A woman carrying multiple fetuses.
- ❖ The condition preeclampsia may affect about 5 to 8% of all pregnant women.

Pre term delivery

Preterm birth has been defined as any birth before 37 weeks completed weeks of gestation.

The World Health Organization (WHO) defines preterm birth as any birth before 37 completed weeks of gestation, or fewer than 259 days since the first day of the woman's last menstrual period (LMP).

This is further subdivided on the basis of gestational age (GA).

- Extremely preterm (<28 weeks);
- Very preterm (28–<32 weeks);
- Moderate or late preterm (32–<37 completed weeks Of gestation)

Causes of preterm birth are complex and the pathophysiology that triggers preterm birth is largely unknown, however, contributing maternal, foetal and placental predisposing factors have been identified. The most common of these include: antepartum hemorrhage or abruption; mechanical factors such as uterine over-distention and cervical incompetence; hormonal changes; and, bacterial infection and inflammation.^[7]

2. AIM AND OBJECTIVE

Aim Of The Study: The main aim of the study to assess the Prevalence of anemia & it's effect on neonatal birth in pregnant women attending antenatal clinic at Government General Secondary Health Care Hospital Madanapalle.

OBJECTIVES OF THE STUDY

Assess Hb level & to rule out anemia in pregnant women

- ❖ To assess the Prevalence of patients who are suffering anemia during pregnancy.
- ❖ To assess the Neonatal outcomes & it's effect.
- ❖ To ensure early detection & management of complications of anemia in pregnant women.
- ❖ To improve maternal & fetal outcome.

3. METHODOLOGY

Study Design: A Prospective cohort & Observational Study will be carried out in Government General Secondary Health care Hospital, Madanapalle, Annamayya dist.

Study Population: Pregnant Women with anemia and its effects.

Study Site: The study will be conducted in Govt General Secondary health care hospital, Madanapalle, Annamayya dist.

Sample Size: 200 study participants, & in this study who are anemic during their pregnancy were included (90 Members) remaining sample size of non anemic patient were excluded in the study (110 members).

Study Period: The study is planned over a period of 6 months.

Study Criteria

Inclusion Criteria: • Pregnant women with anemia • Patient who are willing to participate in the study • Pregnant women with >18 years of age group.

Exclusion criteria: Pregnant women with 50 years of age group • Patient who are not willing to participate in the study should be excluded. • Non-Anemic pregnant women.

SOURCE OF DATA: Patient case sheet o Patient laboratory report o Direct patient interview.

Patient Data Collection Forms: - Data collection was done by using the following document Annexure (Patient data collection form) The data collection form consists of Demographic details of participants which includes name, age, Weight, height, BMI, Socio economic status, & present illness of pregnant women, duration of pregnancy in weeks & trimester at 1st antenatal visit, gravida, pregnant women with birth interval in years, Hb profile, Types of delivery, complications of pregnant women during delivery, complications of infants.

STATSTICAL ANALYSIS: Microsoft Excel & graph pad prism is used for recording the data (study results Descriptive analysis and T test is used for data analysis. A P-value is less than 0.05 was considered as Significant.

4. RESULTS

In our study total screened cases were 154 pregnant woman’s among the 90 were diagnosed as anemic and the prevalence of anemia in pregnant woman’s was found that 58.44%.

4.1 Subjects distribution according to age

Table 4.1: Subjects distribution according to age.

S. No	Age Group	Normal [%]	C-section [%]
1.	20 and below	5(0.5%)	7(0.7%)
2.	21 to 35	11(12.2%)	66(0.73%)
3.	35 to 45	1(0.1%)	-----

Among 90 anemic pregnant women below 20 years age group are 5 (0.5%) and 21 to 35 age groups are 11(12.2%), 35 to 45 years age group are 1(0.1%) were undergone Normaldelivery.

Among 90 anemic pregnancy women below 20 years age group of 7 members (0.7%), 25-35 age group of 66 members (0.73) were undergone C-section.

4.2 Subjects Distribution Based On Type Of Delivery

Table 4.2: Subjects Distribution Based On Type Of Delivery.

S. No	Type of delivery	n	%
1.	Normal	17	18.8%
2.	C- Section	73	81.1%

Among 90 anemic pregnant women 73 were undergone c- section (81%) and only 17 (18.8%) were undergone normal vaginal delivery.

4.3 Distribution based on BMI of pregnant womans

Table 4.3: Distribution based on BMI of pregnant woman’s.

S. No	BMI	C- Section	Normal
1.	Underweight	0	2(0.2%)
2.	Normal weight	34(37.7%)	3(0.3%)
3.	Overweight	29(32.2%)	10(11.1%)
4.	Mild thinness	4(0.4%)	1(0.01%)
5.	Obesity	6(0.6%)	1(0.1%)

Among 90 anemic pregnant women Overweight 10(0.1%) Normal weight 3(0.03%), Underweight 2 (0.02%), Mild thinness 1 (0.01%), Obesity class I 1 (0.01%) were undergone normal delivery.

Among 90 anemic pregnant women Overweight 29 (32.2%), Normal weight 34 (37.7%), Mild thinness 4 (0.4%), Obesity class I 5 (0.5%), Obesity class II 1(0.1%) wereundergone C-section.

4. 4. Subjects distribution according to gravida

Table 4.4: Subjects distribution according to gravida.

S. No	Gravida	C-section (%)	Normal (%)
1.	Primary	39(43.3%)	13(14.4%)
2.	Second gravida	21(23.3%)	4(0.4%)
3.	Multi gravida	13(0.14%)	0

Among 90 anemic pregnant women G1 13 members (14.4%), G2 4 members (0.4%)were undergone Normal delivery

Among 90 anemic pregnant women G1 39 members (43.3%) and G2 21 members (23.3%) and G3 4members (0.4%), G4 9 members (1%) were undergone c- section.

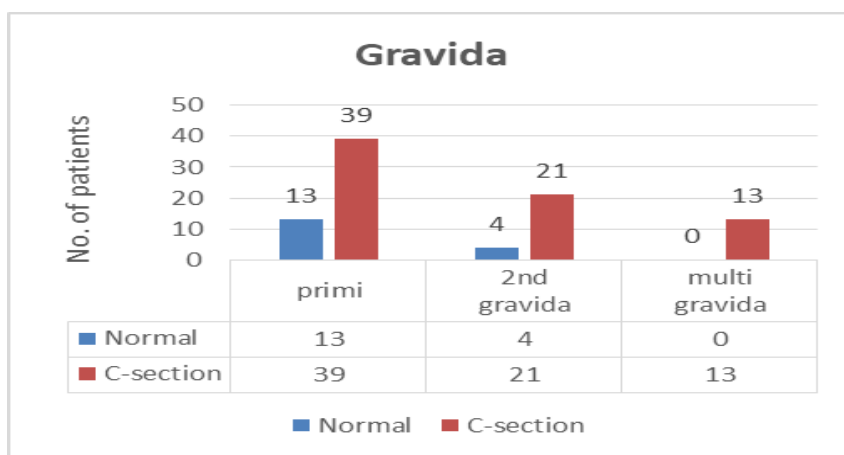


Figure 4.1: Subjects distribution according to gravida.

4.5. Subject distribution based on type of family

Table 4.5: subject distribution based on type of family.

S. No	Type of family	C- section (%)	Normal (%)
1.	Joint family	49(54.4%)	12(13.3%)
2.	Nuclear family	24(26.6%)	5(0.5%)

Among 90 anemic pregnant women the joint family 12(13.3%) and nuclear family 5(0.5%) were undergone Normal delivery.

Among 90 anemic pregnant women the joint family 49 (54.4%) and nuclear family24(26.6%) were undergone c-section.

4.6. Socioeconomic Status of the subjects

Table 4.6: Socioeconomic Status of pregnant womans.

S. No	Family status	C-section (%)	Normal (%)
1.	Upper	0	1(0.1%)
2.	Middle	64(71.1%)	13(14.4%)
3.	Lower	9(1%)	3(0.3%)

In socioeconomic status the middle class 13 (14.4%), lower class 3(0.3%), upper class1(0.1%) were undergone Normal delivery.

In socioeconomic status the middle class 64(71.1%), lower class 9(1%) were undergoneC-section.

4.7. Complications of new born babies of anemic pregnant.

Table 4.7: Complications of new born babies of anemic pregnant.

Sl.No.	Complications of new bornbabies	Normal (%)	C-section (%)
1.	Low birth weight	7(0.7%)	36(4.0%)
2.	Jaundice	6(0.6%)	37(41.0%)
3.	Cord around neck	0	2(0.2%)
6.	Birth asphyxia	6(0.6%)	29(32.0%)
7.	Seizures	0	1(0.1%)

Among 90 anemic pregnant women, the complications of new born babies include Low birth weight 7 (0.07%), Jaundice 6 (0.06%), Birth asphyxia 6 (0.06%) were undergone normal delivery.

new born babies include Low birth weight 36 (0.4%), Jaundice 37 (0.41%), Cord around neck 2 (0.02%), Birth asphyxia 29 (0.32%), Seizures 1 (0.01%) were undergone C-section.

Among 90 anemic pregnant women, the complications of

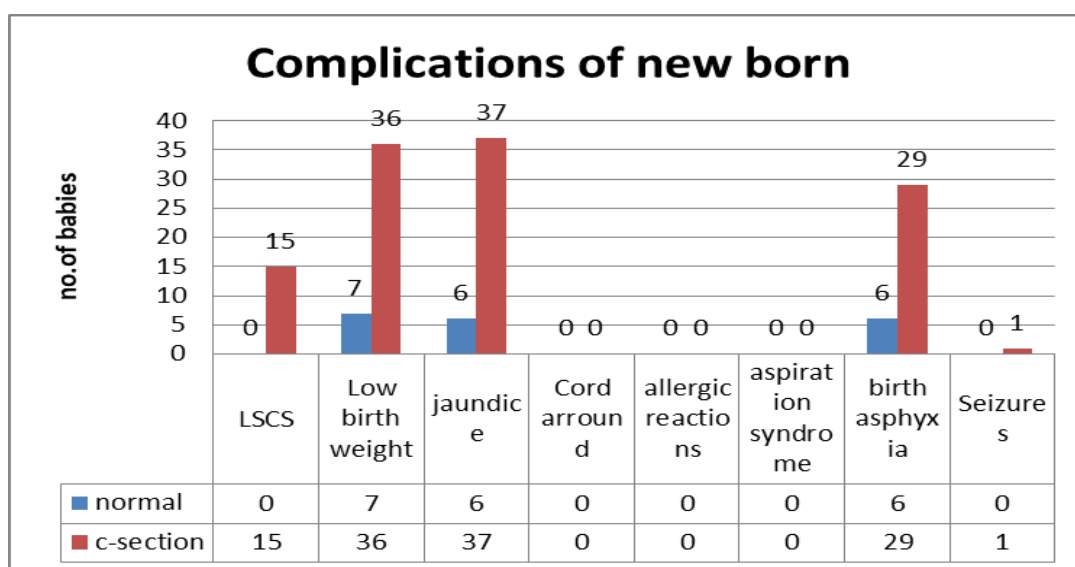


Figure 7: Complications of new born babies of anemic pregnant's.

4.8. Complications of anemic pregnancy women during delivery

Table 8: Complications of anemic pregnancy women during delivery.

Sl.No	Complication of pregnancy women	Normal delivery (%)	C-section (%)
1	LSCS	0	73(81.1%)
2	PPH	12(13%)	39(43%)
3	Pre-eclampsia	1(0.1%)	5(0.5%)
4	Preterm delivery	1(0.1%)	3(0.3%)
5	Post partum depression	0	5(0.5%)
6	Obstructed labour	0	2(0.2%)
7	Polyhydramnios	0	1(0.1%)
8	Oligohydramnios	0	20(20.2%)

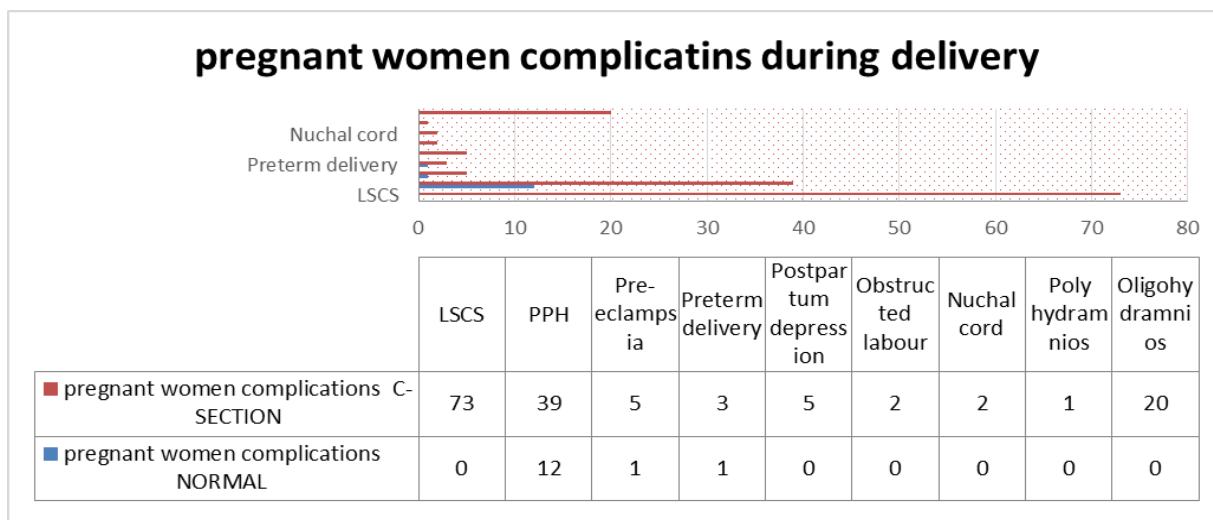


Figure 8: Complications of anemic pregnancy women during delivery.

Among 90 anemic pregnant women, the complications of pregnancy women include PPH 12 (0.13%), Pre-eclampsia 1 (0.01%), Preterm delivery 1 (0.01%) were undergone normal delivery.

Oligohydramnios 20 (0.22%) were undergone C-section. Prevalence = Total Number of Cases (Pregnancy with anemia) at time 't' / Total Number of Study population at time 't' Prevalence = 90/200 = 45%.

Among 90 anemic pregnant women, the complications of pregnancy women include LSCS 73 (0.81%), PPH 39 (0.43%), Pre-eclampsia 5 (0.05%), Preterm delivery 3 (0.03%), Post partum depression 5 (0.05%), Obstructed labour 2 (0.02%), Polyhydramnios 1 (0.01%),

In the present study prevalence rate of Anemia was 45%. In this present study who were anemic during their pregnancy are included (90 members), remaining study populations are excluded from the study (110 members).

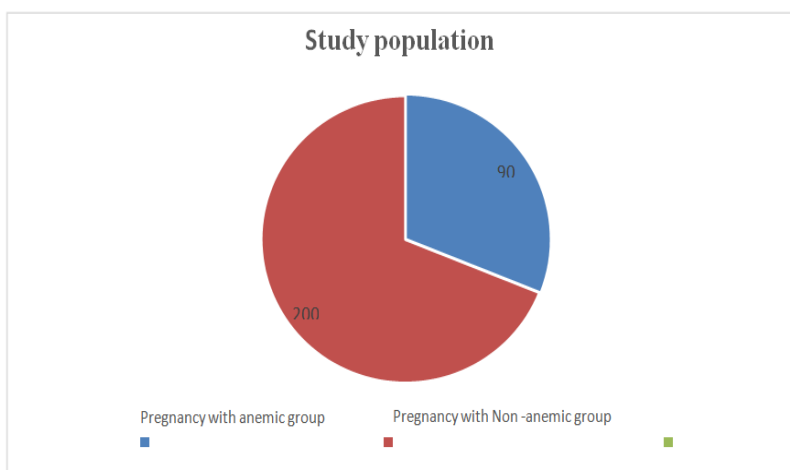


Figure 9: Study population.

9. Prevalence of Anemia according to Sociodemographic status of the study participants & Analysis of risk factor in anemia & it's Fetal outcomes, Maternal Outcomes

Table 10: Prevalence of Anemia according to Sociodemographic status of the study participants & Analysis of risk factor in anemia & it's Fetal outcomes, Maternal Outcomes.

Sl.No.	Characteristic	NVD	C-section	N &%	P value
1	Age group				
	20 & below	5	7	12(13.3%)	0.517
	21 to 35	11	66	77(85.5%)	<0.001
	35 to 45	1	0	1(0.1%)	0.776
2	BMI				
	Mild thinness	1	4	5(0.5%)	0.778
	Underweight	2	0	2(0.2%)	<0.001
	Normal weight	3	34	37(41.1%)	<0.001
	Over weight	10	29	39(43.3%)	<0.001
	Obesity	1	6	7(0.7%)	0.167
3	Gravida				
	Primary	13	39	52(57.7%)	<0.001
	Second gravida	4	21	25(27.7%)	<0.001
	Multi gravida	0	13	13(14.4%)	0.001
4	Types of Family				
	Joint family	12	49	61(67.7%)	<0.001
	Nuclear family	5	24	29(32.2%)	0.001
5	Socioeconomic status				
	Upper class	1	0	1(0.1%)	0.776
	Middle class	13	64	77(85.5%)	<0.001
	Lower class	3	9	12(13.3%)	0.101
6	Neonatal complications				
	LBW	7	36	43(47.7%)	<0.001
	Jaundice	6	37	43(47.7%)	<0.001
	Nuchal cord	0	2	2(0.2%)	0.571
	Allergic reaction	0	0	0	
	Birth Asphyxia	6	29	35(38.8%)	
	Seizures	0	1	1(0.1%)	<0.001
	Aspiration syndrome	0	0	0	-
7	Maternal complications				
	LSCS	0	73	73(81.1%)	<0.001
	PPH	12	39	51(56.6%)	<0.001
	Pre-eclampsia	1	5	6(0.6%)	0.264
	Preterm delivery	1	3	4(0.4%)	0.571
	Post partum depression	0	5	5(0.5%)	0.167
	Obstructed labour	0	2	2(0.2%)	0.571
	Polyhydramnios	0	1	1(0.1%)	0.776
	Oligohydramnios	0	20	20(22.2%)	<0.001

5. DISCUSSION

In the present study was carried out with total participants of 200 members & in these study who are non anemic during their pregnancy were excluded (110 members), remaining participants of 90 members who are anemic during pregnancy are included in the study, and pregnancy with anemia patients of 90 members in Government General Secondary Health Care Hospital Madanapalle, Indian Council of Medical Research surveys showed that over 70% of pregnant women in the country were anemic. Similar prevalence rate of anemia (45%) in pregnant women was observed in the present study.

And all 90 patients with 73 patients were undergone C-section, & 17 patients were undergone Normal Vaginal

Delivery (NVD) & all of the patients were anemic during pregnancy. The result's were analyzed by taking the patients Age group, BMI, Gravida, Type of Family, Socioeconomic Status, Type of Delivery, & Maternal & Fetal outcomes.

The Result's of this study shows anemia during pregnant women (Maternal Outcomes), who were undergone C-section are having the maternal outcomes of Post partum hemorrhage (PPH) 39 (43.3%), (P= 0.001), Lower Segment Cesarean Section (LSCS) 73(81.1%) (P= 0.001), Oligohydramnios 20(22.2%), (P = <0.001) pre eclampsia 5(0.5%), Preterm delivery 3(0.3%), Obstructed labour 2(0.2%), Polyhydramnios 1(0.1%), Post partum depression 5(0.5%). & Who were undergone Normal Vaginal Delivery (NVD) outcomes are PPH

12(13.3%), Preeclampsia 1 (0.1%) preterm delivery 1 (0.1%), & the Fetal outcomes & its effects on who were undergone C- section are having the Neonatal Effects of Low birth weight (LBW) 36 (40%) (P=<0.001) Jaundice 37 (41.1%) (P= <0.001) Cord around neck (Nuchalcord) 2 (0.2%), Birth Asphyxia 29 (30%) (P=<0.001), seizures 1 (0.1%), Aspiration syndrome 1 (0.1%), Allergic reaction 1. (0.1%), & who were undergone Normal Vaginal Delivery (NVD) are having the Neonatal Effect's of Low birth weight (LBW) 7 (0.7%) Jaundice 6(0.6%), Birth Asphyxia 6 (0.6%), Characteristic on Age distribution Among 90 anemic pregnant women below 20 years age group are 5(0.5%) and 21 to 35 age groups are 11(12.2%), 35 to 45 years age group are 1(0.1%) were undergone Normal delivery.

Among 90 anemic pregnancy women below 20 years age group of 7 members (0.7%), 25-35 age group of 66 members (73.3%)(P=<0.001) were undergone C-section . Characteristic based on BMI, Among 90anemic pregnant women Overweight 10(1.1%) Normal weight 3(0.3%), Underweight 2 (0.2%), Mild thinness 1 (0.1%), Obesity class I 1 (0.1%) were undergone normal delivery.

Among 90 anemic pregnant women Overweight 29 (32.2%) (P=<0.001), Normal weight 34 (37.7%) (P=0.001), Mild thinness 4 (0.4%), Obesity class I 5 (0.5%), Obesity class II 1(0.1%) were undergone C-section. Characteristic on Gravida, Among 90 anemic pregnant women G1 13 members (14.4%), G2 4members (0.4%) were undergone Normal delivery Among 90 anemic pregnant women G1 39 members (43.3%) and G2 21 members (23.3%) and G3 4members (0.4%), G4 9 members (1%) were undergone c- section. In socioeconomic status the middle class 13 (14.4%), lower class 3(0.3%), upper class 1(0.1%) were undergone Normal delivery.

In socioeconomic status the middle class 64(71.1%), lower class 9(1%) were undergone C-section.

And the study results provide evidence that who were anemic during their pregnancy is associated with poor Maternal & Fetal outcomes.

And the present study results was compared with the result of Diederike Geelhoed et al. Acta Obstet Gynecol Scand. 2006. Anemia in pregnancy contributes to poor outcome for mother and child in low- income countries. This study analyzes adverse maternal and fetal outcome for anemia in pregnancy in rural Ghana. Compared to nonexposed women, exposed women had an increased risk of maternal death (5/157 versus 0/152). Fetal outcome did not significantly differ between the study groups, although perinatal mortality was increased with exposure to Hb < 7.0 g/dl (OR 3.1; 95% CI 1.0-9.4), and low birth-weight was increased with exposure to Hb < 6.0 g/dl (OR 2.5; 95% CI 1.2-5.4). Overall fetal outcome was significantly better when hemoglobin prior to childbirth was at least 8.0 g/dl (OR 3.9; 95% CI 1.6-9.6),

body mass index at least 20 kg/m² (OR 2.8; 95% CI 1.5-5.3), and number of antenatal visits at least 4 (OR 2.0; 95%CI 1.1-3.7).

6. CONCLUSION

The prevalence of anemia in pregnant women is a constant problem in public health. Anemia in pregnancy has effects on maternal and Fetal outcomes.

In this study it was confirmed that type of family and socioeconomic status play a crucial role in poor nutrition supplementation and prevalence of anaemia.

The significant maternal outcome in anemic pregnant in C-section & NV Dare 73(81.1%), LSCS 73(81%), PPH 51(56.6%) and followed by preterm delivery 4(0.4%). Pre eclampsia, postpartum depression, Oligohydramnios 20(22.2%), polyhydramnios were also less commonly associated adverse effects of maternal anaemia.

The significant Fetal outcomes that were associated with maternal anemia are low birth weight 43(47.7%), jaundice 43(47.7%) birthasphyxia 35(38.8%). Seizure, cord around neck were also less commonly associated adverse effects of maternal anaemia.

Anemia in pregnancy has a recognizable association with increased incidence of adverse maternal and Fetaloutcomes.Accurateandearlydiagnosisofanemiadurin gpregnancyisrecommended. In general it is suggested that efforts are needed to ensure all pregnant women have ANC follow-up, antenatal care and adequate maternal nutritional status may play a key role in reducing maternal and neonatal morbidities.