



“EFFECTS OF OLIGOHYDRAMNIOS IN PREGNANT WOMEN AND ITS PERINATAL OUTCOME – A PROSPECTIVE OBSERVATIONAL STUDY”

**ALURI PRANEETHA¹, K.VENKATA YUKTHASRI², VETRIVEL
SOWMYA², Dr.CHANDU BABU RAO⁴**

1. Asst.Professor, Department of Pharmacy practice, Priyadarshini institute of Pharmaceutical Education and Research, 5th mile, Guntur.
2. Department of Pharmacy practice, Priyadarshini institute of Pharmaceutical Education and Research, 5th mile, Guntur.
3. Principal, Department of Pharmacy, Priyadarshini institute of Pharmaceutical Education and Research, 5th mile, Guntur.

ABSTRACT:

Oligohydramnios is defined as a disorder of amniotic fluid which resulting in decreased amniotic fluid volume for certain gestational age. It also have some effects on maternal health. This condition may occur due to late pregnancies, ruptured membranes, placental dysfunction and fetal abnormalities which can lead to poor perinatal outcomes. There are so many methods available for antepartum and intrapartum surveillance of fetus. They are NST, VAST, doppler velocimetry, FAST, BPP, FHR tracing, foetal stimulation test and foetal scalp blood pH estimation. Even it is useful there are some advantages and disadvantages. Low amniotic fluid disorder is associated with an increased risk for fetal and neonatal death, which may be related to the underlying cause of the decreased AFI, AFV, the sequelae of reduced AFI, or both. AFI is preferred in sonographic evaluation because, it will assess the total amount of fluid in the cavity and not a single pocket. Oligohydramnios is a complication in approximately 4.4% of all pregnancies and severe oligohydramnios is a complication in 0.7% of pregnancies. Oligohydramnios is more common in pregnancies beyond term, as the AFV normally decreases at term. A prospective observational study conducted at maternal hospital with the sample size of 130 reveals perinatal outcome with decreased AFI results in birth asphyxia, NICU admission, low birth weight, umbilical cord compression, still birth, meconium stain, fetal distress, new born babies having low APGAR scores. Evaluation of Amniotic fluid index levels in 130 pregnant patients reveals AFI levels are low in 9% of the study population with the least value of 2cm. Following that 11% population are with 3cm AFI, 32% are

with 4cm, 35% are with 5cm, 10% of population have 6cm AFI and finally 3% of population has 7cm AFI in our study. Although oligohydramnios in low-risk pregnancies is an abnormal finding, there is not enough data to determine the optimal timing of delivery to reduce the risk of adverse outcomes. Complicated pregnancies with oligohydramnios should be managed based on the comorbid conditions.

INTRODUCTION:

Oligohydramnios is defined as a disorder of amniotic fluid which resulting in decreased amniotic fluid volume for certain gestational age. Low amniotic fluid volumes can be the result of various maternal, fetal and placental complications which can lead to poor perinatal outcomes. It also have some effects on maternal health. This condition may occur due to late pregnancies, ruptured membranes, placental dysfunction and fetal abnormalities. Amniotic fluid is a water like fluid which surrounds the baby in uterus. It protects the baby from infection, umbilical cord compression and cushions their movements while the baby is in uterus. Amniotic fluid also helps in developing baby's respiratory system and digestive system, as well as regulates temperature. The fetal prognosis depends on numerous factors, majorly the underlying cause, severity (reduced versus no amniotic fluid), and gestational age at occurrence. Because a sufficient amount of AFV is critical to normal fetal movement and also contribute to second-trimester lung, kidney and other organ development, for cushioning the fetus. Pregnancies complicated by oligohydramnios from any cause are at risk for pulmonary hypoplasia, fetal deformation (if prolonged oligohydramnios), and compression of umbilical cord. Low amniotic fluid disorder is associated with an increased risk for fetal and neonatal death, which may be related to the underlying cause of the decreased AFV, the sequelae of reduced AFV, or both.

Amniotic fluid is a type of liquid in which the fetus floats in. Amniotic fluid contains nutrients, antibodies, hormones and other fluids to help to protect the fetus and keep. The fetus swallows the amniotic fluid then urinates it out leading to constant circulation. Low amniotic fluid or more amniotic fluid can cause problems in pregnant patient and also for the fetus.

Amniotic fluid is **thin, clear and odourless**. Sometimes it can be of colors like brown, green but yellow are most common.

Amniotic fluid is 75% water for the first weeks of pregnancy. After about 20 weeks of pregnancy, fetus's pee makes up the amniotic fluid.

It is diagnosed by ultrasound examination, Ultrasound helps in measuring the amniotic fluid. Healthcare providers may measure pockets of amniotic fluid in specific areas of the amniotic sac, then the total volume of fluid is calculated. Preferably based on an objective measurement which includes amniotic fluid index (AFI) ≤ 5 cm or single deepest pocket (SDP) < 2 cm, but a subjective assessment of reduced AFV is also acceptable.

Those conditions could affect development of the baby in uterus and can cause complications during or before labor and delivery.

There are so many methods available for antepartum and intrapartum surveillance of fetus. They are NST, VAST, doppler velocimetry, FAST, BPP, FHR tracing, foetal stimulation test and foetal scalp blood pH estimation. Even it is useful there are some advantages and disadvantages.

Studies have stated that **AFI** is an accurate and most important criterion for estimating adequate placental function. Amniotic fluid volume varies with gestational age. Any increase or decrease in volume of amniotic fluid can lead to complications in pregnancy.

METHODOLOGY:

STUDY DESIGN : A Prospective observational study

STUDY SITE : At Maternity hospital” SRI BALAJI NURSING HOME”,VINUKONDA ,GUNTUR

STUDY PERIOD : The study was conducted in department of Obstetrics and Gynaecology, Sri BalajiNursing Home, Vinukonda, for a period of six months.

SAMPLE SIZE : 130

RESULTS

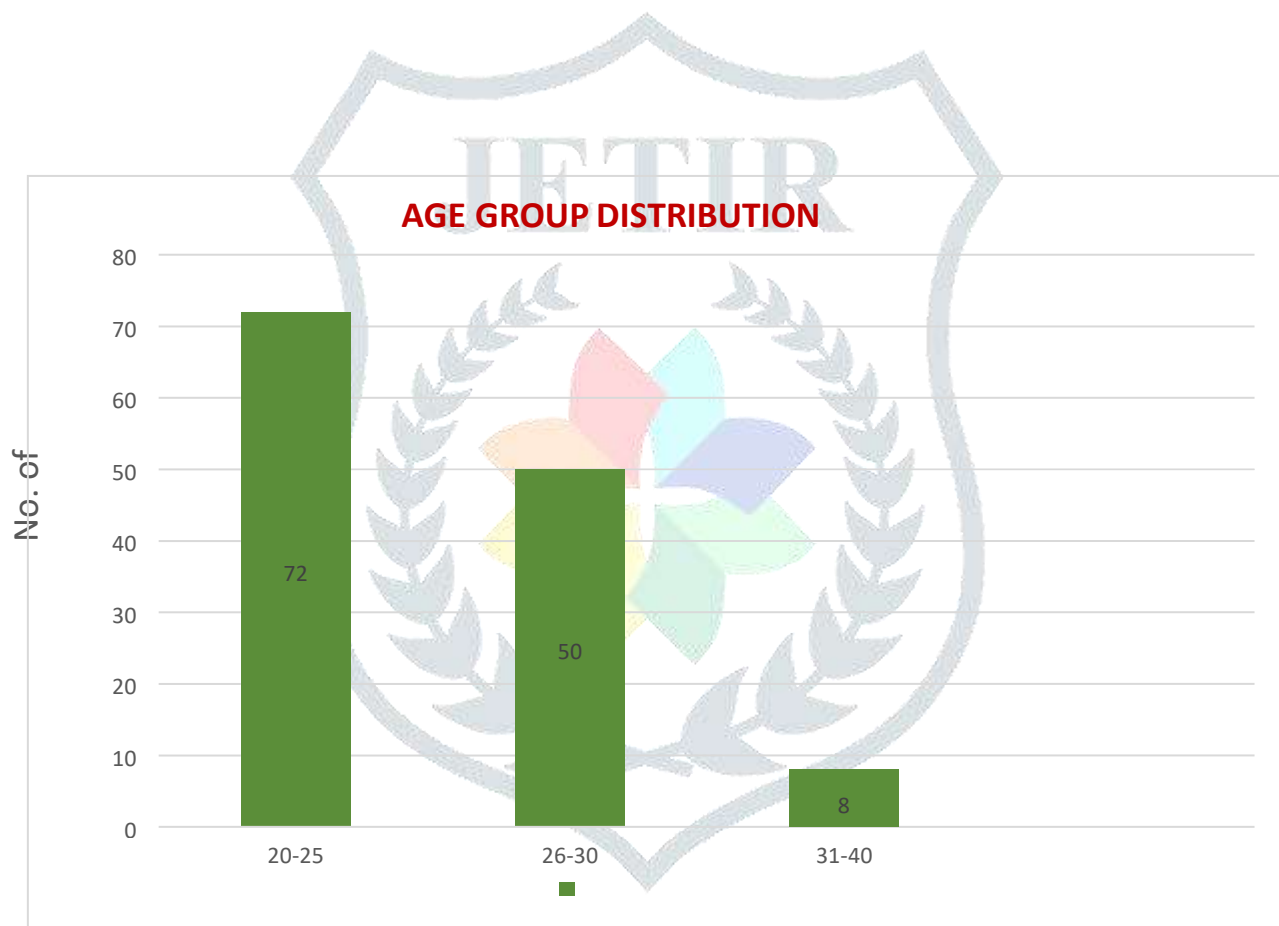


Figure 30 : DIAGRAM SHOWING AGE GROUPS DISTRIBUTION

In our study the age groups from 20 – 25 years old are 72 members, 26 – 30 years old are 50 members, 31- 40 years old are 8 members. The highest members from the age groups between 20 – 25.

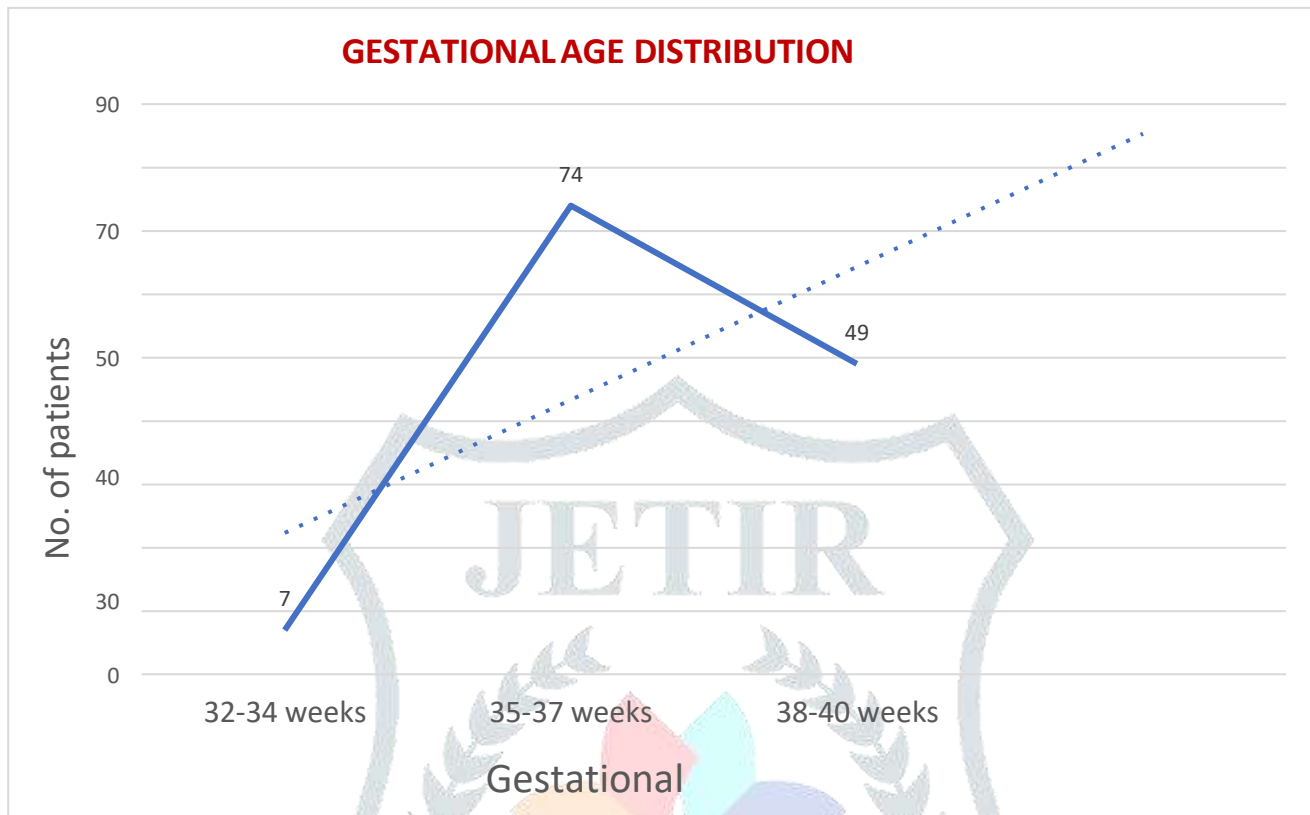


Figure 31 : FIGURE SHOWING GESTATIONAL AGE DISTRIBUTION

Most of the patients are in their gestational age of 35 – 37 weeks

No of patients in their 32 – 34 weeks gestational age are 7 members, 74 patients are having gestational age between 35 – 37 weeks and 49 members are in their 38 – 40 weeks of gestational age.

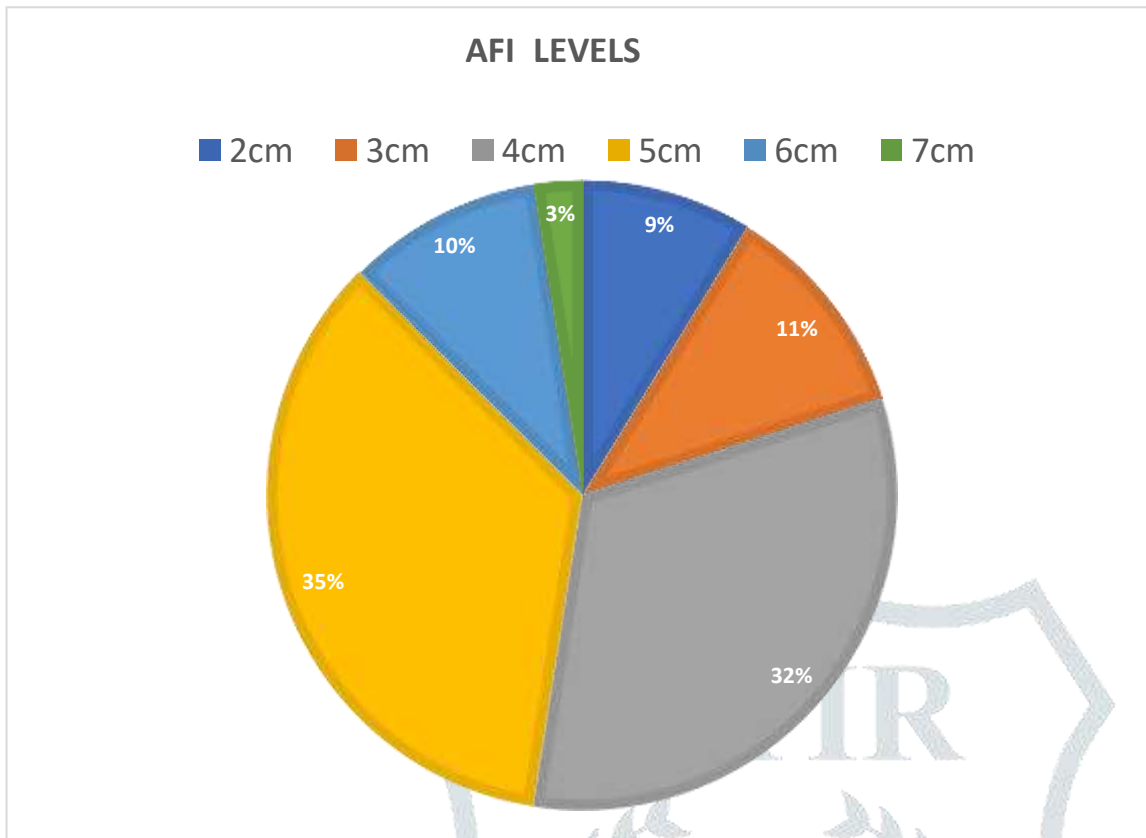


Figure 32 : PIECHART SHOWING AMNIOTIC FLUID INDEX LEVELS

Amniotic fluid index levels are low in 9% of the study population with the least value of 2cm. Following that 11% population are with 3cm AFI, 32% are with 4cm, 35% are with 5cm, 10% of population have 6cm AFI and finally 3% of population has 7cm AFI in our study.

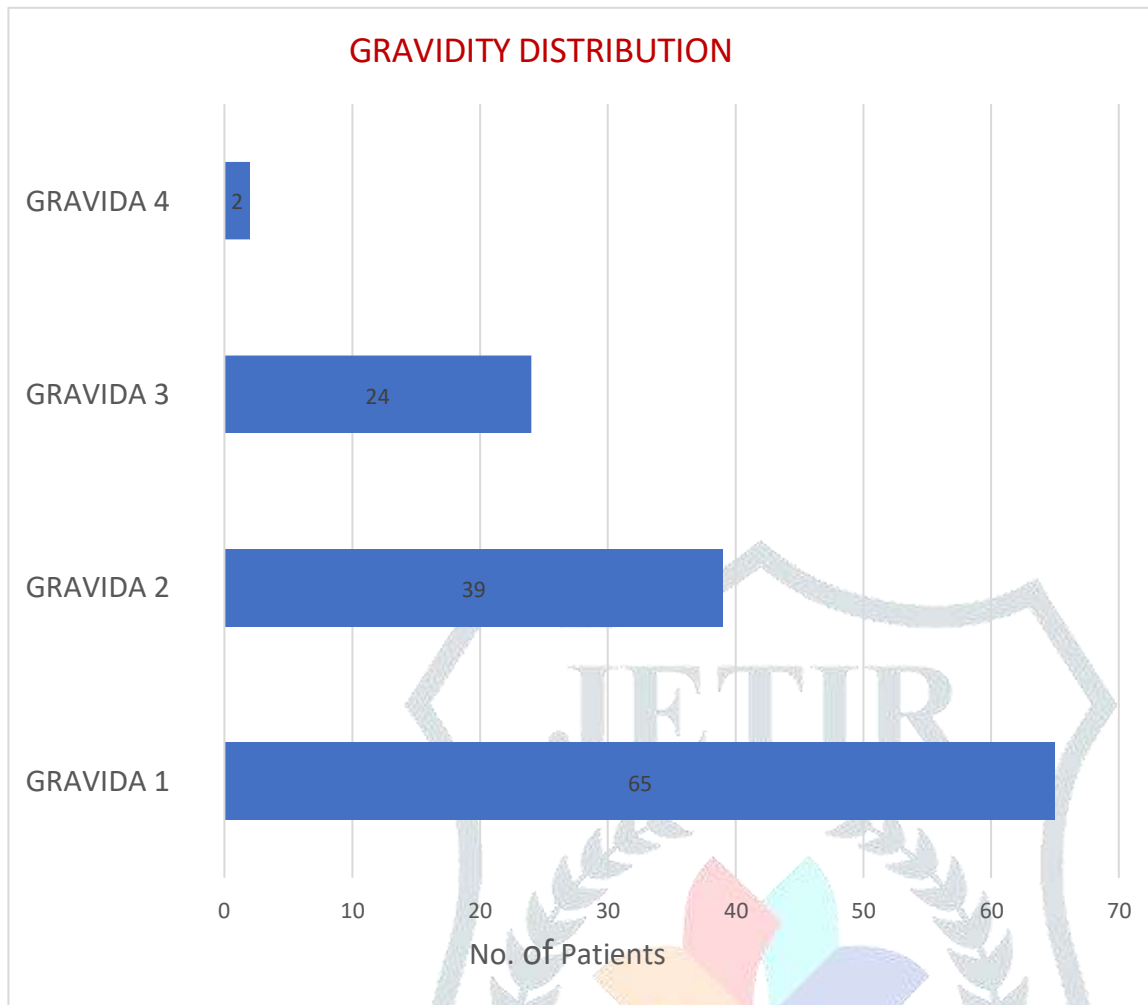


Figure 33 : BAR CHART SHOWING GRAVIDITY DISTRIBUTION

In our study, Primi patients are 65, gravida 2 are 39 members, gravida 3 are 24 members and gravida 4 are 2 members. Highest no of patients are bearing their first pregnancy [primi].

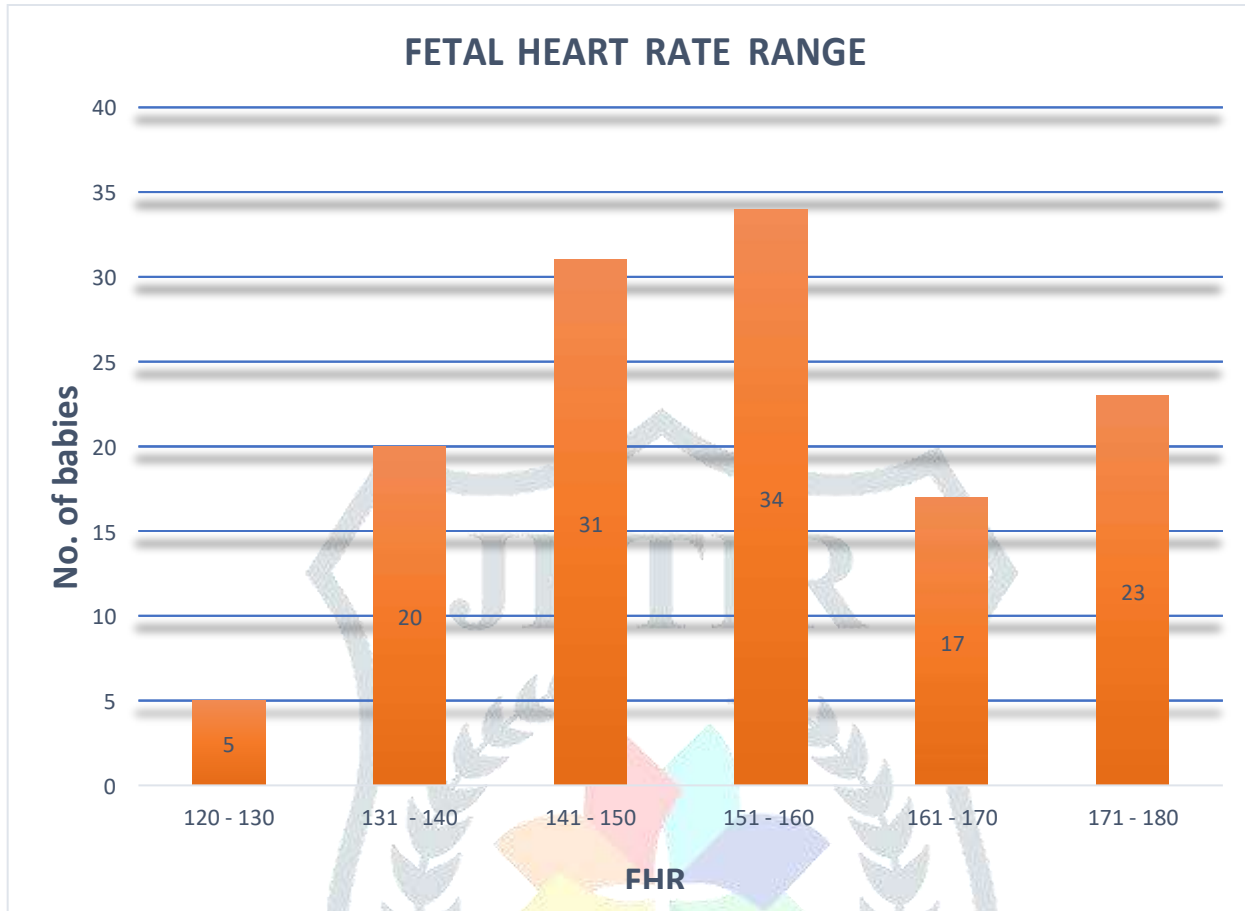


Figure 34 : DIAGRAM SHOWING FETAL HEART RATE RANE

In our study, Fetal heart rate ranges of new born babies are from 120 – 180. No.of babies having FHR between 120 – 130 are 5, No.of babies having FHR between 131 – 140 are 20, No.of babies having FHR between 141 – 150 are 31, No.of babies having FHR between 151 – 160 are 34, No.of babies having FHR between 161 – 170 are 17, No.of babies having FHR between 171 – 180 are 23.

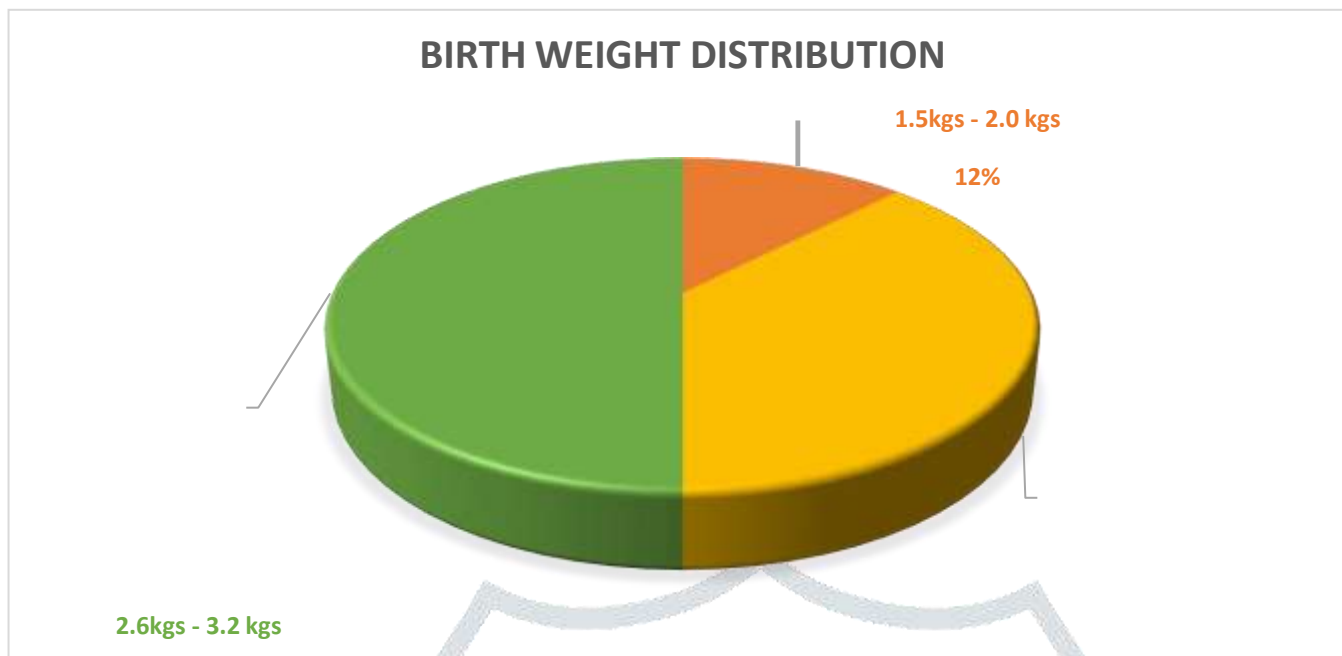


Figure 35 : DIAGRAM SHOWING BIRTH WEIGHT DISTRIBUTION

The birth weights of new born babies are categorised into 3 categories. 50% of the population are having birth weights between 2.6 kgs – 3.2kgs, 38% of population are having birth weights between 2.1kgs – 2.5kgs, 12% are between 1.5kgs – 2.0kgs.

APGAR SCORE	
SCORE	No. of babies
10	
7	5
4	

Figure 36 : TABLE SHOWING APGAR SCORES OF NEW BORN BABIES

APGAR scores of new born babies in our study are listed above. They are between 0 to 10. APGAR score of 12 babies are 0. There are no babies having APGAR score between 1 – 4. There are 105 babies having APGAR scores between 5 – 7. 13 no.of babies are having APGAR scores between 8 – 10.

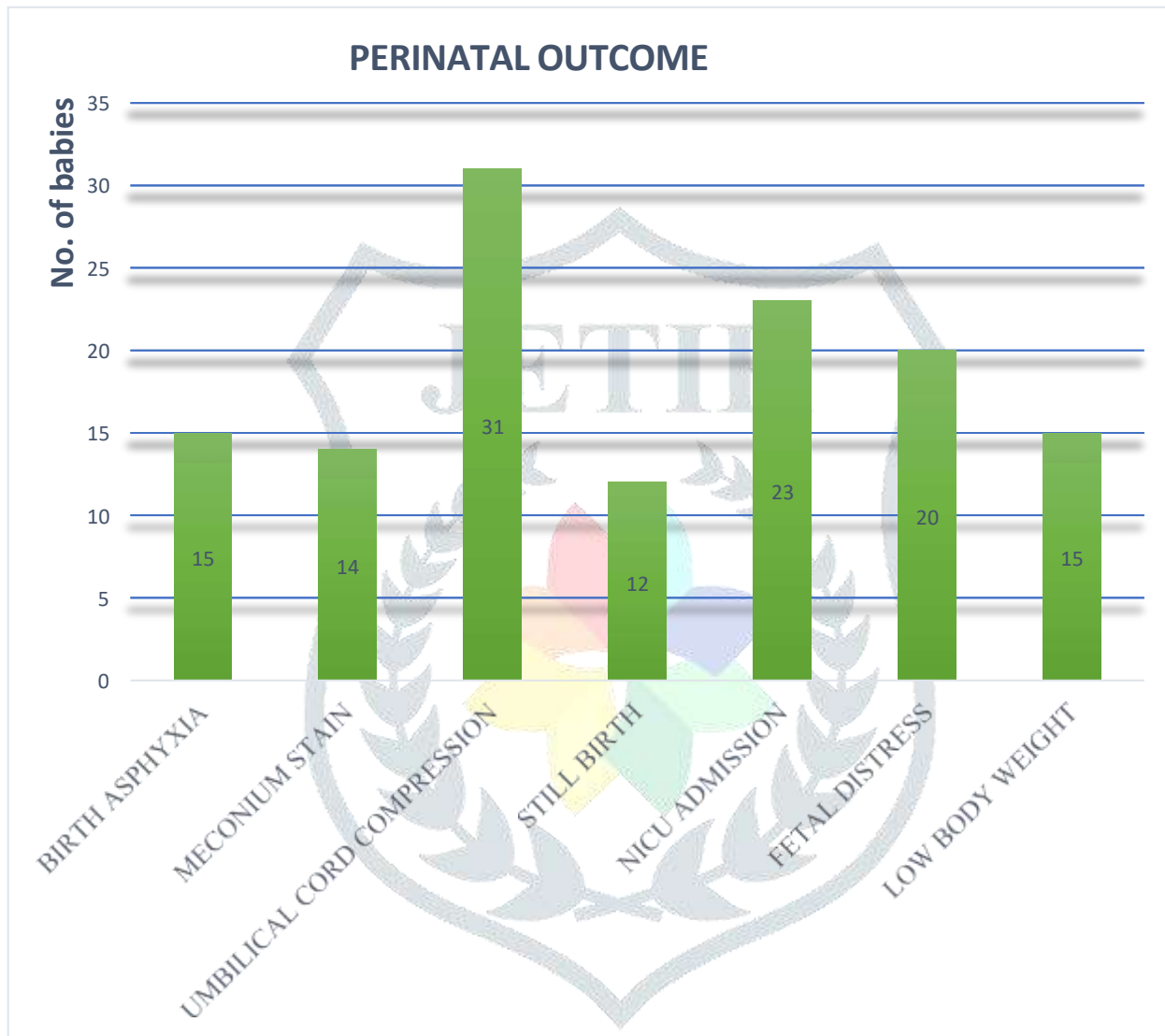


Figure 37 : BAR GRAPH SHOWING DIFFERENT PERINATAL OUTCOME

No. of babies having birth asphyxia are 15, no. of babies having meconium stain are 14, no. of babies having umbilical cord compression are 31, no. of babies having still birth are 12, no. of babies having NICU admission are 23, no. of babies having fetal distress are 20, no. of babies having low body weight are 15.

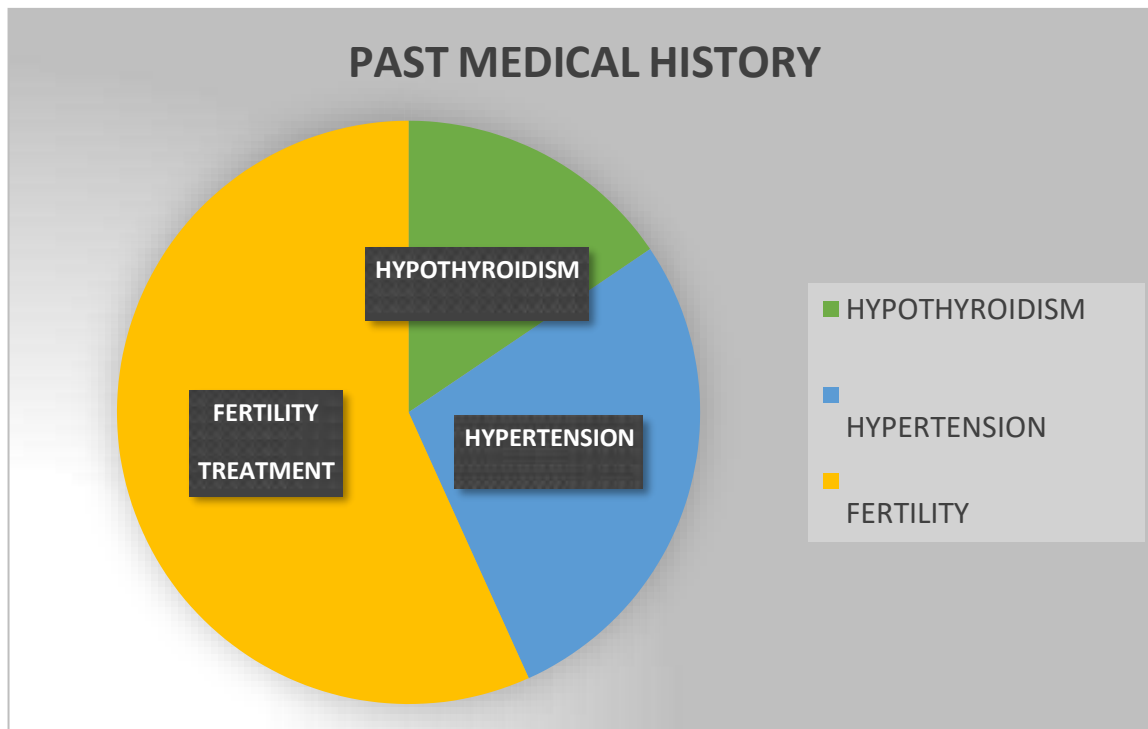


Figure 38 : PIECHART SHOWING % OF PAST MEDICAL HISTORY OF MOTHERS

In our study, % of patients having past medical histories. 15% of population has hypothyroidism, 28% of population has hypertension and 57% of patients underwent fertility treatment.

DISCUSSION :

It is well established that oligohydramnios is associated with high risk adverse perinatal outcomes. On the other hand, oligohydramnios is a poor predictor for adverse outcomes.⁴ But oligohydramnios is often used as an indicator for delivery. So assessment of amniotic fluid volume in antenatal period is a helpful tool in determining who is at risk for potentially adverse perinatal outcome.

In our study the maximum no. of women who have oligohydramnios are from the age groups between 20 – 25. The other age groups have less percentage of occurrence of oligohydramnios.

Gestational age distribution of the population have higher incidence of oligohydramnios are in term pregnancies. No of patients in their 32 – 34 weeks gestational age are 7 members, 74 patients are having gestational age between 35 – 37 weeks and 49 members are in their 38 – 40 weeks of gestational age.

Evaluation of Amniotic fluid index levels in 130 pregnant patients reveals AFI levels are low in 9% of the study population with the least value of 2cm. Following that 11% population are with 3cm AFI, 32% are with

4cm, 35% are with 5cm, 10% of population have 6cm AFI and finally 3% of population has 7cm AFI in our study.

In our study, Fetal heart rate ranges of new born babies are from 120 – 180. The highest FHR noted in 34 fetuses are between 151 – 160. No. of babies having FHR between 120 – 130 are 5, No. of babies having FHR between 131 – 140 are 20, No. of babies having FHR between 141 – 150 are 31, No. of babies having FHR between 151 – 160 are 34, No. of babies having FHR between 161 – 170 are 17, No. of babies having FHR between 171 – 180 are 23.

Gravidity distribution of 130 maternal mothers reveals that the highest no of patients are bearing their first pregnancy [primi] and distribution of other gravida is as follows, Primi patients are 65, gravida 2 are 39 members, gravida 3 are 24 members and gravida 4 are 2 members.

The birth weights of new born babies are categorised into 3 categories. 50% of the population are having birth weights between 2.6 kgs – 3.2kgs, 38% of population are having birth weights between 2.1kgs – 2.5kgs, 12% are between 1.5kgs – 2.0kgs

APGAR scores of new born babies are also low in some babies. They are between 0 to 10. APGAR score of 12 babies are 0. There are no babies having APGAR score between 1 – 4. There are 105 babies having APGAR scores between 5 – 7. 13 no. of babies are having APGAR scores between 8 – 10.

In our study, some % of patients are having past medical histories. 15% of population has hypothyroidism, 28% of population has hypertension and 57% of patients underwent fertility treatment.

Finally the perinatal outcomes are poor in babies whose mothers were suffered with mild to severe oligohydramnios.

CONCLUSION :

Oligohydramnios is one of the most common complications during the pregnancy which can cause maternal mortality and morbidity. But if it is diagnosed in early stage and treated properly we can reduce the maternal and fetal complications.

In conclusion, isolated oligohydramnios in full term pregnancies is associated with an increased risk of both fetal and maternal complications.. The current literature does not really provide further information in understanding the significance of oligohydramnios at a particular gestational age, in terms of both the pathophysiology and the management.

Early detection of oligohydramnios and its management may help in reduction of perinatal morbidity and mortality in one side and decreased caesarean deliveries on the other side.

- In presence of borderline oligohydramnios, the occurrence of non reactive NST, abnormal FHR tracings during labour, meconium stained liquor, development of foetal distress, the rate of LSCS, low birth weight are high.
- Determination of AFI can be used as an adjunct to other foetal surveillance methods. It helps to identify those infants at risk of poor perinatal outcome.
- Due to adverse outcomes in patients with borderline AFI and there was nosufficient evidence and specific decision regarding delivery based on borderline AFI, there should be close observation and they will need antepartum surveillance.

Although oligohydramnios in low-risk pregnancies is an abnormal finding, there is no enough data to determine the optimal timing of delivery to reduce the risk of adverse outcomes. Future research looking specifically at perinatal mortality associated with oligohydramnios is needed. Complicated pregnancies with oligohydramnios should be managed based on the comorbid conditions.

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