

Oligo Hydramnios: Its Etiological Factors, Maternal and Fetal Outcome

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Abstract:

Aim: To study the etiological factors of oligohydramnios

Objectives To study the etiological factors

To study the maternal outcome in the form of operative delivery and induced labour

To study the foetal outcome in the form of IUGR, IUFD, Congenital anomalies, foetal distress, meconium stained liquor. Perinatal and neonatal morbidity and mortality

Result: The present study includes 138 women with oligo hydramnios (AFI<5) above 34 weeks of gestation of obstetrics and gynaecology admitted in antenatal ward or lab or ward in the department of Obstetrics and gynaecology, Siddhartha medical college, Vijayawada from January 2018 to June 2019

The incidence of oligohydramnios is 1-5% of pregnancies at term. In the present study the incidence is 1.2%. Majority of the study group were in age between 20-25 years. Demographic factors like age, parity, religious and gestational age were comparable in both groups. In present study 88% of cases in study group were booked. The incidence of oligohydramnios was 86% in primigravida in present study. Chronic placental insufficiency is the main underlying mechanism, leading to oligohydramnios. In present study pre-eclampsia was seen in 27.53% cases in study group.

Conclusion

Amniotic fluid volume is a predictor to identify pregnancies at risk of poor perinatal outcomes and its decrease is associated with increased risk of perinatal morbidity and mortality. In this study amniotic fluid index < 5 cms was commonly associated with increased caesarean section rates, intrauterine growth restriction, Non reactive NST and abnormal umbilical artery Doppler velocimetry studies

Key Words: Oligohydramnios, Amniotic fluid index, Nonstress test, Perinatal outcome

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I. Introduction

Successful outcome of obstetric wellbeing is assessed by obtaining healthy mother and child in modern obstetrics. Amniotic fluid provides a protective milieu for the growing foetus, cushioning effect against biological and mechanical injury. Clinical assessment of amniotic fluid index by ultrasound and clinically is an initial step to identify the high risk pregnancies. Oligohydramnios is defined as AFI less than or equal to 5 cm and 5.1 to 8 as marginal or border line oligoamnios. Oligoamnios is correlated with increased risk of congenital anomalies IUGR, IUFD, AND Meconium aspiration syndrome, low APGAR score, severe birth asphyxia and increased incidence of LSCS.

II. Materials And Methods

Design : Prospective study analysis

Sample size : all pregnant woman of 34 weeks and above admitted in the antenatal ward and labour room in the department of obstetrics and gynaecology government general hospital, Siddhartha medical college, Vijayawada.

Study period : January 2018- June 2019

Method of collection of data:

After taking written and informed consent and fulfilling the inclusion criteria and approval of ethical committee of Siddhartha medical college, Vijayawada patients are included in the study.

Inclusion criteria:

Gestation age of 34 weeks and above

Singleton pregnancy with vertex presentation

Amniotic fluid index 5cm or less

Exclusion criteria

Gestation age of less than 34 weeks.

Ruptured membranes
 Multiple pregnancy
 Malpresentations

Parameters that have been taken into consideration for foetal outcome:

Neonatal
 APGAR score
 Asphyxia
 NICU admission
 Birth weight
 Others
 Me conium stained liquor

Methods of study:

A detailed history of the pregnant women included in the study was taken and thorough clinical examination including recordings of vital parameters, systemic and obstetrics examination was carried out at booking or admission. All preliminary investigations including ultrasound were done.

Real time ultrasound scanning was performed using a 3.5MHZ sector probe and general survey of foetus was done and presentation noted. The volume of amniotic fluid was measured according to the four quadrant technique described by Phelan et al. With the patient in supine position, uterus was divided into four quadrants by two imaginary lines.

The vertical line corresponding to line alba and transverse eqi distant from the pubic symphysis to the top of the fundus .The transducer was held vertically along the maternal longitudinal axis.AFI was obtained by summing up the depths of largest vertical pockets, which is cord free in all 4 quadrants .An AFI of >5 was considered normal and less than or equal to 5 was considered as oligohydramnios. Etiological factors of oligohydramnios ,maternal and perinatal outcome was observed and interpreted.

III. Results and Observation

Table 1 Distribution of Booked and Un booked cases

ANC	No of cases
No of anc visits	16(11.59%)
Less than3 visits	69(50%)
More than3 visits	53(38.41%)
total	138

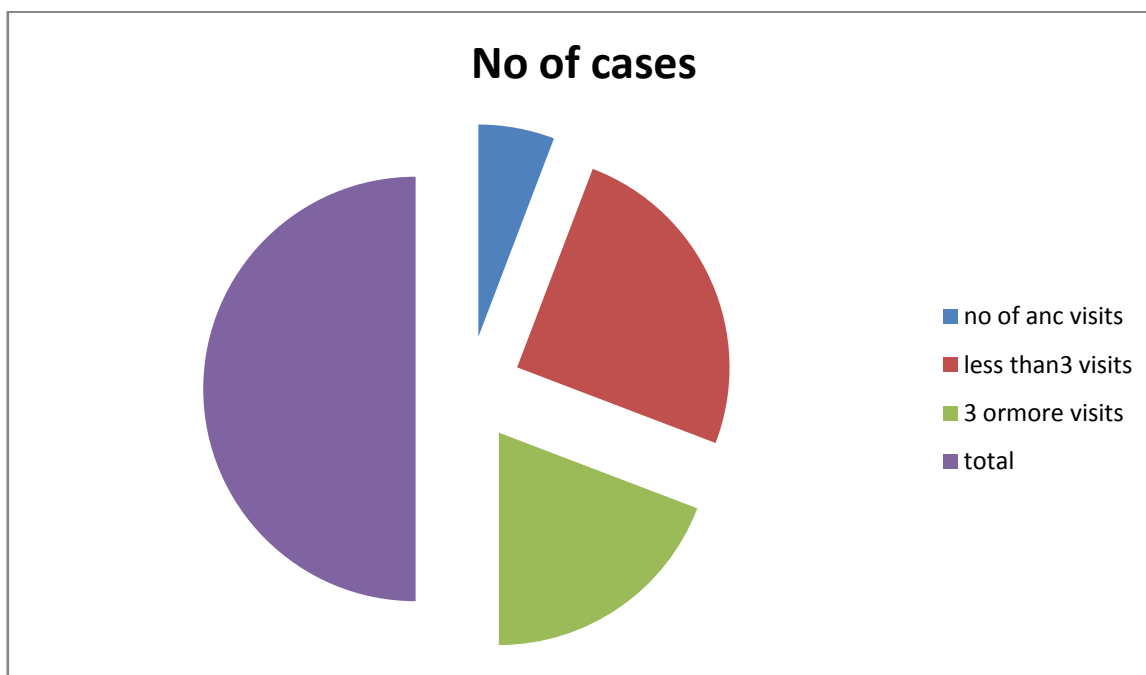


TABLE 2 Age distribution

Age in years	Total no of cases
15-20	18
20-25	88

25-30	26
30-35	6
total	138

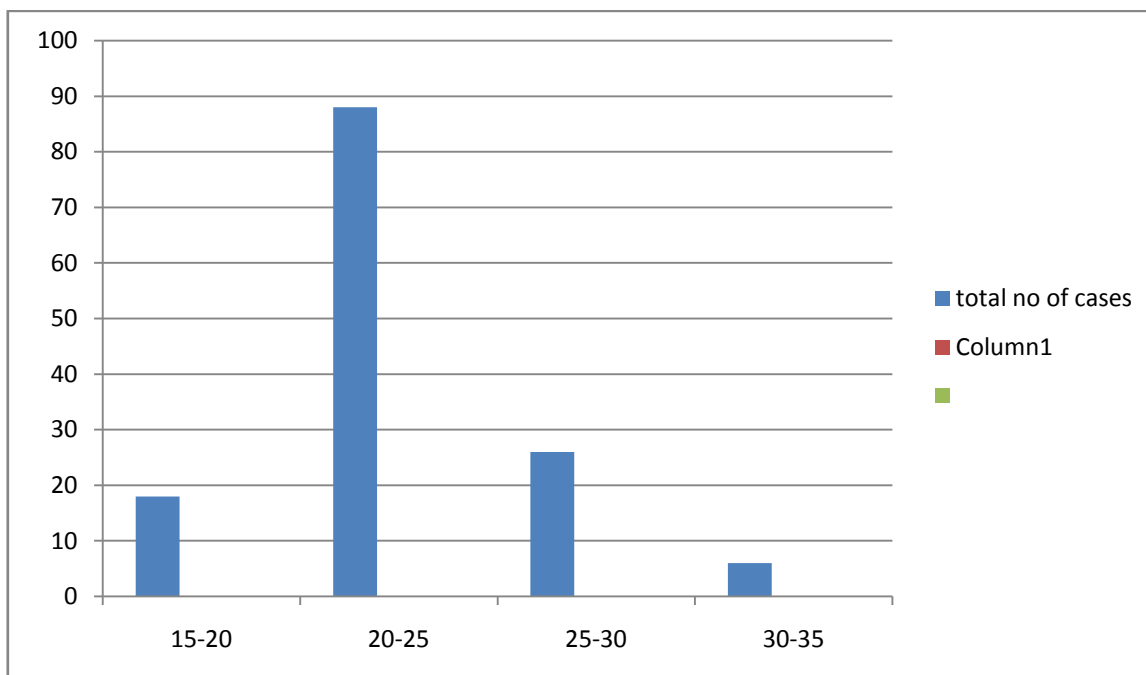


Table 3 Gravida Distribution

Gravida	No of cases %
primigravida	86 (62.31%)
2 nd Gravida	33 (23.96%)
3 ^r Gravida	14 (10.14%)
4 th Gravida	4(3.6%)
total	138

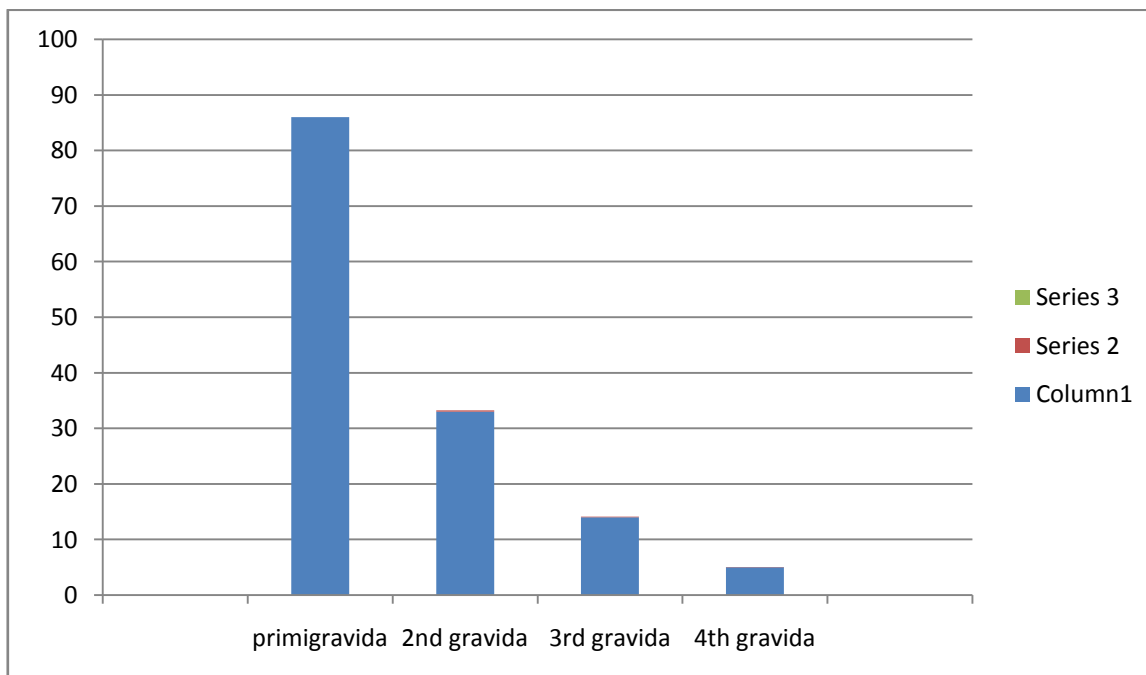


Table 4 Distribution of cases according to gestational age

Gestational age	No of cases %
34-35 wks	24 (17.39%)
36-37wks	71(51.44%)
38-39wks	25 (18.11%)
40-41 wks	18(13.04%)
Total	138

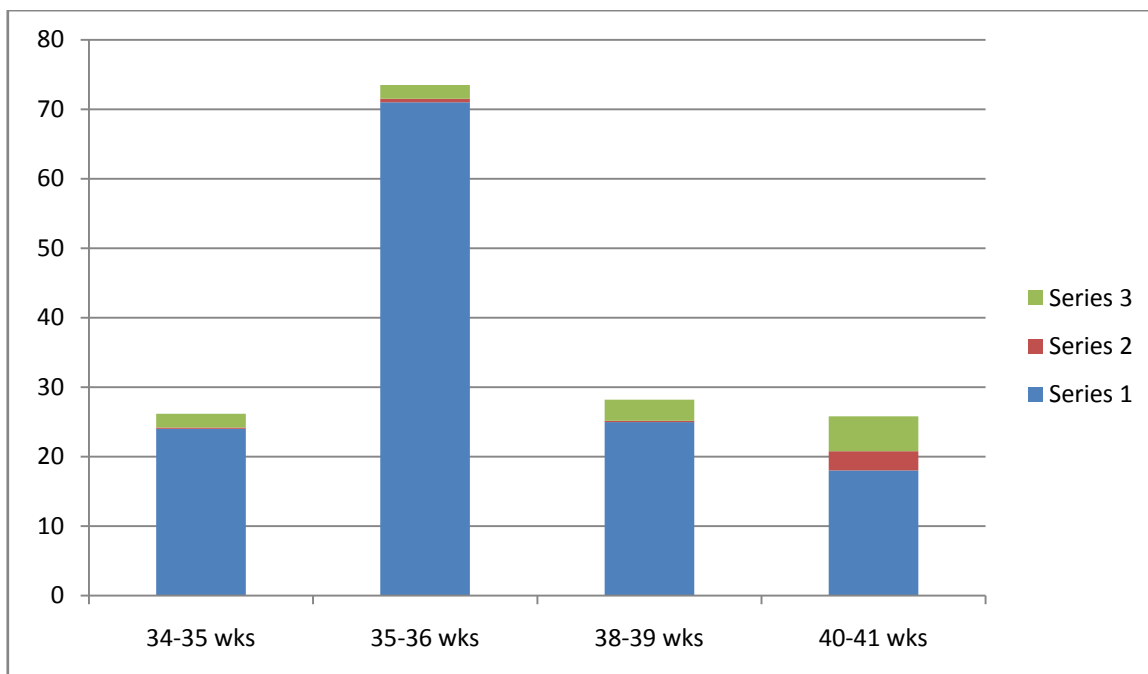


Table 5 Distribution of cases according to NST

NST	%	NO OF CASES
Normal NST	73.91%	102
Non reassuring NST	26.08%	36
TOTAL		138

Table 6 Distribution of cases according to DOPPLER

DOPPLER	No of cases	%
Normal	121	87.68%
Abnormal	17	12.31%
total	138	

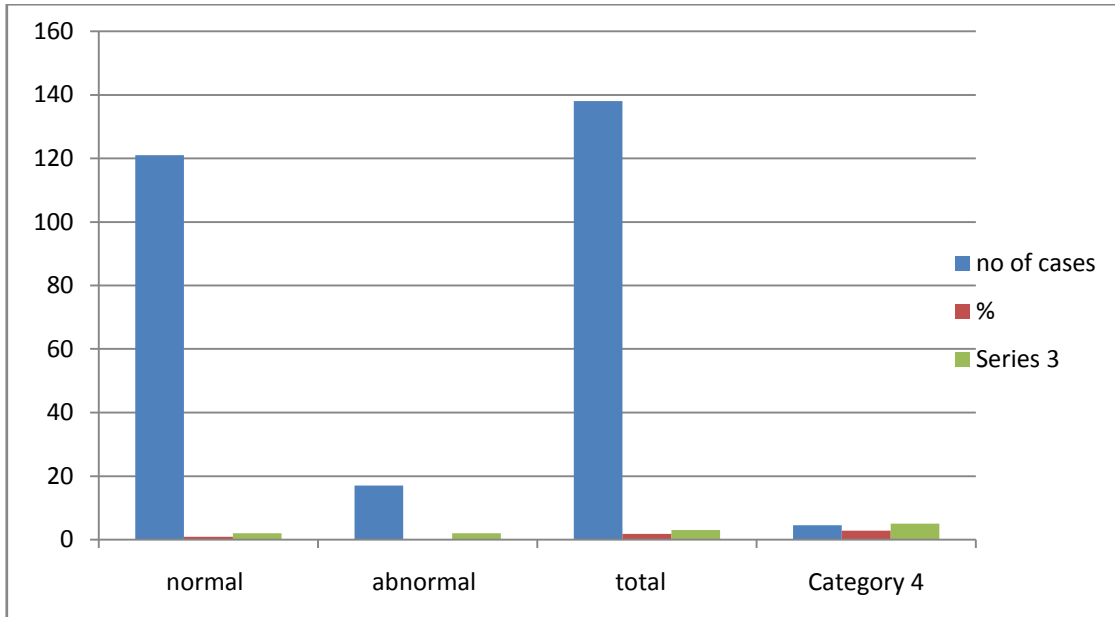


Table 7: Distribution of cases according to etiological factors

Maternal etiological factor	No of cases	%
Idiopathic	74	53.62%
Hypertension	38	27.53%
Prolonged pregnancy	18	13.04%
GDM	5	3.62%
Others	3	2.1%
Total	138	

Table 8 Distribution of cases according to mode of delivery.

Mode of delivery	No of cases	%
Normal vaginal delivery	35	25.36%
Induced	10	
Augmented	21	
Spontaneous	4	
Instrumental forceps	6	4.3%
LSCS	97	70.2%
Primary emergency	65	
Primary elective	18	
Repeat emergency	14	
Repeat elective	0	
total	138	

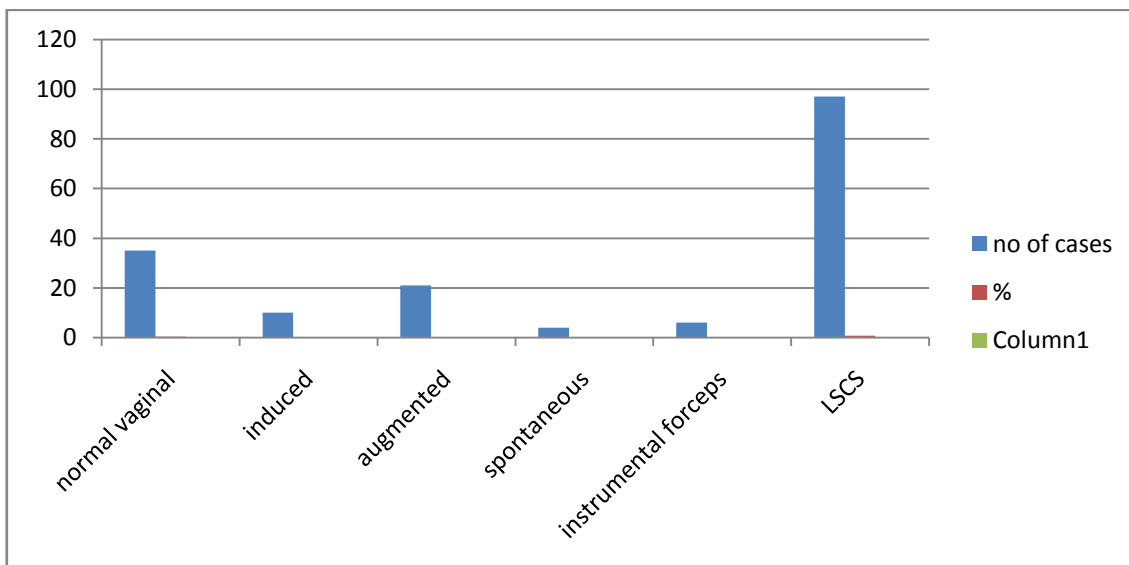
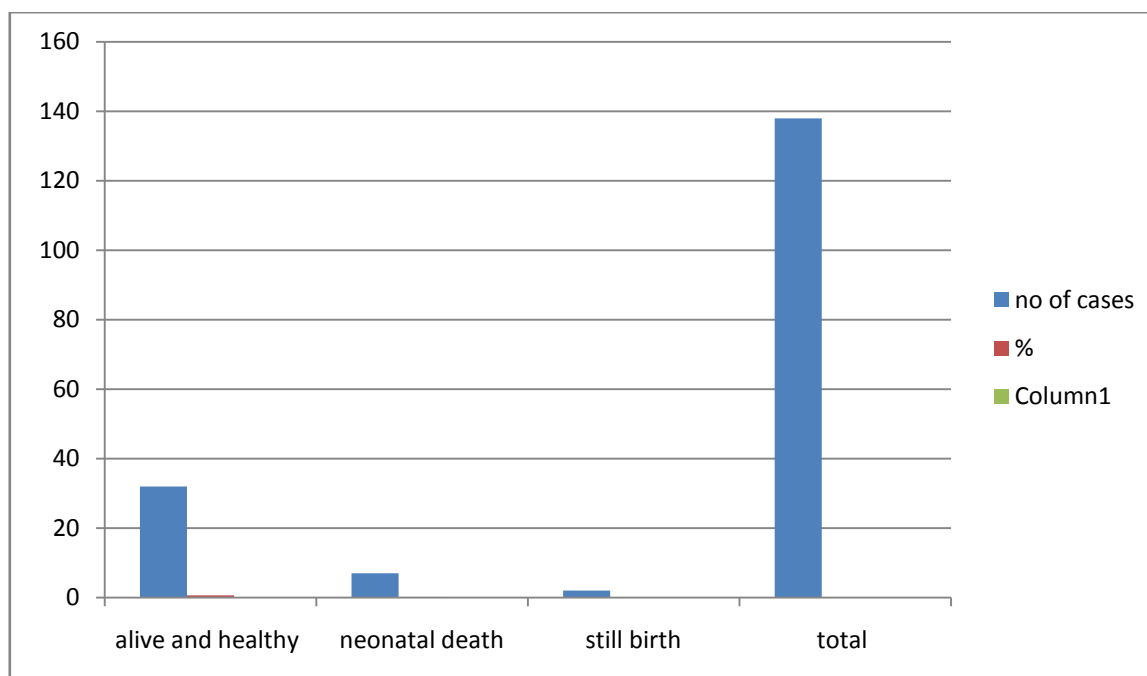


Table 9 Distribution of cases according to perinatal outcome

Perinatal outcome	No of cases	%
Alive and healthy	97	70.28%
NICU admission	32	23.18%
Neonatal death	7	5.07%
Still birth	2	1.44%
Total	138	



IV. Discussion

The present study includes 138 women with oligo hydramnios (AFI<5) above 34 weeks of gestation of obstetrics and gynaecology admitted in antenatal ward or lab or ward in the department of Obstetrics and gynaecology , Siddhartha medical college, Vijayawada from January 2018 to June 2019

The incidence of oligohydramnios is 1-5% of pregnancies at term . in the present study the incidence is 1.2%. In the study by Bansal et al the incidence of oligohydramnios was 3%. Many studies have proven that oligohydramnios is correlated with increased risk of maternal morbidity.,Perinatal morbidity and mortality . estimation of amniotic fluid volume is an integral part of antenatal fetal surveillance.¹ majority of the study group were in age between20-25 years.demographic factors like age , parity , religious and gestational age were comparable in both groups. In present study 88% of cases in study group were booked. While in Mathuriya g et al study 88% in study group were unbooked. The incidence of oligohydramnios was 86% in primigravida in present study.² kaur P et al , found the incidence of oigohydramnios was 60% in primigravida which is comparable to present study.³ Medical disorders like pre eclampsia, hypothyroidism were risk factors to cause oligohydramnios in this study . chronic placental insufficiency is the main underlying mechanism, leading to oligohydramnios . in present study pre eclampsia was seen in 27.53% cases in study group. In Chate P et al study hypertensive disorders in 8 % of oligohydramnios cases only.⁴ induction of lab or was seen 13.8% of women with low AFI in study group . similar to Singhal SR et al study significantly higher induction of labour was seen in low AFI group 72% as compared to control group 12%.⁵ the most common indication for LSCS was foetal distress followed by failed induction and ultrasound Doppler abnormalities in study group. In present study 70.25% undergone LSCS . similar to Mathuriya et al study 65% of the study cases under went LSCS .²

In Ranjita G et al study caesarean section rate was 54% in the oligohydramnios group as compared to control group 26%.⁶ Chaudhary R eta al study reported 51% underwent LSCS in cases , while 22% underwent LSCS in controls .⁷

In present study birth weight <2.5 kgs observed in 41.45% of cases in study group. Bhagat et al in their study found that 56% neonate in low AFI group had birth weight less than 2.5 kgs as compared to 21.7% in control group .⁸ in contrast to present study , Sulthana et al in their study observed that the difference in low birth weight was not significant between the two groups of AFI (p value =0.4).⁹

In Kaur P et al study AFI in study cases as a screening test in predicting foetal distress during labour requiring LSCS , has a sensitivity of 68% , specificity 60% , positive predictive value 48% and negative predictive value 78%.¹⁰

V. Conclusion

Amniotic fluid volume is a predictor to identify pregnancies at risk of poor perinatal outcomes and its decrease is associated with increased risk of perinatal morbidity and mortality . In this study amniotic fluid index < 5 cms was commonly associated with increased caesarean section rates, intrauterine growth restriction , Non reactive NST and abnormal umbilical artery Doppler velocimetry studies . hence , every case of oligohydramnios needs to be evaluated carefully , early detection and initiation of appropriated treatment and treat the cause if possible . proper parental counselling and individualized decision to be taken according to the case regarding timing and mode of delivery , continues intrapartum foetal monitoring and good neonatal care for optimum perinatal outcome.

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