



Research Article

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PREGNANCY OUTCOME AFTER DIAGNOSIS OF OLIGOHYDRAMNIOS AT TERM

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ABSTRACT

Oligohydramnios is characterized as amniotic liquid file of less or equivalent to five centimeters. Amniotic liquid is measured utilizing amniotic liquid file. Different reviews indicated expanded confirmation of antagonistic perinatal result like fetal pain, meconium recolored alcohol, low amniotic liquid file, low birth weight, neonatal bleakness and mortality. This review is attempted to know the unfriendly perinatal result in pregnant ladies with oligohydramnios and to assess the estimation of AFI in foreseeing the consequent fetal misery and caesarian conveyance. This is a review comprise of investigation of pregnancy result in 25 cases with conclusion of Oligohydramnios by electro sound following 37 finished weeks of incubation contrasted and 25 controls with no oligohydramnios and coordinated for different factors like Age, gestational age, and any pregnancy confusions. Different result results were recorded and arranged. There is expanded confirmation of work acceptance in ladies with AFI <5 cm than ladies with AFI >5cm. There is expanded event of low birth weight in ladies with Oligohydramnios.

Keywords: Oligohydramnios, amniotic fluid index, low amniotic fluid index, low birth weight.

INTRODUCTION

Amniotic liquid is the defensive fluid contained by the amniotic sac of pregnant ladies amniotic liquid is created from the maternal plasma, and goes through the fetal films by osmotic and hydrostatic strengths when fetal kidneys start to capacity is about week 10, fetal pee additionally contribute the liquid. The volume of amniotic liquid increments with the development of fetes from 10 to twentieth week it increments from the 25ml to 400ml roughly. In the tenth week breathing and gulping of fetal marginally diminish the measure of liquid yet neither pee nor gulping contributes essentially to liquid amount changes, until 25th week. The relationship amongst liquid and fetal development stops, it achieves level of 800ml by the 28th week gestational age. The direction of amniotic liquid volume stays in totally caught on. The motivation behind bringing ladies with oligohydramnios at term pregnancies are because the etiology, administration and result is diverse in late onset oligohydramnios to early onset oligohydramnios. Energy about significance of amniotic liquid volume as pointer of fetal status and oligohydramnios as a marker of incessant fetal hypoxia is a moderately late improvement. Amniotic liquid list of ≤ 5 cm characterizes oligohydramnios as, initially portrayed by Phelan *et al*. Many reviews demonstrate that oligohydramnios relates to assortment of unpropitious pregnancy, for example, fetal misery, low birth weight, perinatal grimness, perinatal ethical quality and expanded frequency of cesarean area.

Amniotic fluid production and consumption

Amniotic liquid volume whenever is the harmony amongst creation and utilization. Different pathways are included with it and their relative significance changes as the pregnancy progresses. The amniotic sac creates from a space framed in the primitive amnion neighboring embryonic plate around 12 days' post preparation. At first, the real wellspring of amniotic liquid is

maternal blood inside the uterine divider from which the water and electrolytes are transported into amniotic sac, which is called "transmembranous pathway". The utilization is like maternal plasma and furthermore incorporates discharge from amnion. Later in the primary trimester and early second trimester, smooth motion happens between the amniotic liquid and fetal blood across the fetal of placenta and other surface like umbilical string and fetal skin. Fetal skin is penetrable to water and a few solutes until keratinization happen at around 24 weeks of development. This pathway is called intra membranous pathway. In the later 50% of pregnancy the two-essential wellspring of amniotic liquid are fetal pee and lung fluid with little commitment from fetal or-nasal holes. Essential course of evacuation are fetal gulping and retention into the fetal blood through the fetal wellspring of placenta. Fetal pee creation is the significant wellspring of amniotic liquid particularly in the later of pregnancy.

Fetal Kidney starts to work at 10-20 weeks. Human reviews utilizing serial ultrasound estimation of fetal bladder measurement have indicated day by day pee creation to be 30% of body weight. Different reviews have evaluated that pee stream rate to be 2.2 ml/h at 22 weeks to 27 ml/h at 40 weeks a plausible reduction to 24 ml/h at 42 weeks. Van otterlo *et al*, watched hourly fetal pee stream rate (HFUFR) of 3.3 ml/h at 24 weeks to 24.4ml/h at 40 weeks took after by slight decrease.¹ In 1989 Ron Rabinwitz, *et al*, utilizing ongoing ultrasound measured bladder volume at each 2-5-minute interim and computed HFUFR as 5 ml/h at 20 weeks to 51 ml/h at 40 weeks which was twofold contrasted with past reviews and demonstrated regular bladder purging. The dissimilarity was because, the estimation interim was 15-20 min in past studies.²

The second imperative wellspring of amniotic liquid emission is lung fluids. Throughout the years, it was suspected that lungs retain as opposed to emit amniotic liquid. The perception that tracheal ligation prompts to net over distension of lungs in every

mammalian species has prompts to continuous acknowledgment of liquid discharge shape lungs. In human hatchlings, lung fluid commitment to amniotic liquid is less critical because almost no amniotic liquid is available within the sight of rental organizations.

Consumption

Fetal gulping is the most vital method for amniotic liquid utilization. It has been perceived in view of the nearness of epidermal flotsam and jetsam incorporating lanugo hair in meconium.

Abramovich measured close term fetal gulping rate 68 ml/kg/day by infusing intramniotic colloidal gold.³ More present reviews with ultrasound have affirmed that human baby bites, swallows' and even spews amid intrauterine life.

The other potential pathway for amniotic liquid utilization is transmembranous and intermembranous pathway. Particularly the intramembranous pathway assumes a vital part.

At long last, hormones assume a part in amniotic liquid direction. For instance, intra amniotic infusion of prolactin has been demonstrated decrease amniotic liquid volume by half. A synchronous decline in maternal hematocrit demonstrate that prolactin invigorates the vehicle of water from fetal to material compartment. Cortisol and DHA additionally impact for all time of amnion. Goodlin *et al* have demonstrated that, there is solid amendment between maternal plasma volume an amniotic liquid volume i.e. a lifted maternal plasma volume relates to polyhydramnios and abatement plasma volume with oligohydramnios.⁴

Functions of Amniotic Fluid

Amniotic fluid provides several benefits to the fetus. It cushions the fetus and acts as shock absorber against trauma, has antibacterial properties to lessen infection and function as a reservoir to provide short term source of water and nutrients. Further, it provides the medium in which fetus can move freely allowing growth, development and maturity of musculoskeletal, respiratory and gastrointestinal system.

Amniotic Fluid Volume

There is a large variation of the fluid within the same subject as it is a dynamic reservoir. It increases rapidly in the first half of pregnancy with close correlation with fetal weight reaching a mean of 60 ml at the end of first trimester 100-500 ml by 16 week, 700 ml by 32 week. Then it increases slowly to maximum volume of 800 to 1000 ml at 37 weeks, thereafter declines gradually to 700-800 ml at 40 weeks. After 40 weeks, amniotic fluid decrease at a rate of 8% per week and average only 400-450 ml at the end of 42 weeks. It reduces further to a mean of 250 ml and 160 ml at 43 and 44 weeks respectively.⁵

Oligohydramnios

An amniotic fluid volume more than the two-standard deviation below the mean for specific gestational age or volume reduced below the 5th percentile for gestational age would define oligohydramnios. Based on this definition volume less than 300 at term would constitute oligohydramnios. In some instance the amniotic fluid may be reduced to only few ml or viscid fluid. The like hood AFI ≤ 5 cm is 2.4% and in pregnancies more than 40 weeks the incidence may be more than 12% as the amniotic fluid volume decline progressively after 41 weeks of gestation.

Fetal Malfunctions

Fetal abnormalities particularly involving the urinary tract are an important cause of early onset oligohydramnios. The incidence of structural abnormalities and aneuploidy ranges between 7-37%.

Various fetal abnormalities are:

Genitourinary - Bilateral renal agenesis, renal dysplasia, infantile polycystic kidneys, urethral obstruction, bladder exstrophy, meckel gurber syndrome, ureteropelvic junction obstruction, pune belly syndrome, posterior urethral valve.

Central Nervous System – meningocele, encephalocele, microcephaly, chromosomal tripoidy, trisomy 18, turner's syndrome. Twin Reversal Arterial perfusion and twin transfusion syndrome. Colocal agenesis, cystic hygroma, diaphragmatic hernia, Hypothyroidism.

Amniotic syndrome

Skeletal- Syrenomelia, sacral agenesis, facial clefting, absent radius

VACTERL – Vertebral, anal, cardiac, tracheoesophageal, renal and limb abnormalities.

Leaking fluid following amniocentesis or chronic villous sampling: Continued leaking fluid affects less than 1% undergoing aminocentesis or CVS. In almost these patients, leaking stop and fluid returns to normal following a period of bed rest.

Drugs

Prostaglandin synthetase inhibitors like indomethacin have been shown to reduce human fetal and neonatal urinary output. Primary fetal effects of indomethacin are losing of ducts arterisus and oligohydramnios. They have been used in treatment of preterm labour and symptomatic polyhydramnios. Angiotensinogen converting enzyme inhibitors if used in pregnancy can causes oligohydramnios.

Uteroplacental Insufficiency

Uteroplacental insufficiency is one of the important cause of oligohydramnios in the third trimester and is less common in early onset oligohydramnios. It leads to fetal growth restriction. This is often associated maternal disorders like hypertension, chronic renal disease, autoimmune diseases like antiphospholipid antibody syndrome. In FGR due to uteroplacental insufficiency, typically fetal abdominal circumference is below 5th percentile for gestational age. The abdominal circumference lags behind the head circumference. There is elevated HC/AC ratio. Increase resistance in uterine and umbilical circulation in Doppler studies will help to associate the diagnosis of oligohydramnios to uteroplacental insufficiency.

Post term Pregnancy

Amniotic fluid volume decreases after 40th week and more rapidly after 42nd week at a rate of 33%. The decrease in the amniotic fluid volume may be because of failing placental function and / or decreased fetal urine production.

In presence of oligohydramnios, the combination of wave forms may be of help in diagnosis.⁶

- High resistance uteroplacental wave and absent end diastolic frequencies in umbilical artery waveforms: placental insufficiency
- High resistance uteroplacental wave forms and normal umbilical artery wave forms: placental insufficiency.

- Low resistance uteroplacental wave form and absent end diastolic frequencies in umbilical artery waveforms; primary fetal cause.
- Low resistance uteroplacental wave form and normal umbilical wave forms: most likely rupture of fetal membranes.

Effect of Oligohydramnios

Reduction in amniotic fluid early in the gestational age can interfere with fetal development leading to structural malfunctions. These include cranial, facial and skeletal deformities and pulmonary hypoplasia. Deformities associated with oligohydramnios include dolicocephaly, Potter's facies, arthrogryposis, talipes equino varus, pulmonary hypoplasia. Late onset oligohydramnios has been associated with high risk of poor perinatal outcome. There is increased incident of meconium stained liquor, abnormal HFR tracing, low Apgar score, low birth weight, admission to NICU, birth asphyxia and cesarean section for fetal distress. However there are few contradictory reports also. Most of the problems occur during intrapartum period and hence careful intrapartum fetal; monitoring is necessary.

MANAGEMENT

Early onset oligohydramnios

Earlier the onset and longer the duration of oligohydramnios. Worse the prognosis. The prognosis remains poor in second trimester oligohydramnios complicating pregnancy irrespective of the cause. This is partly because of lethal abnormalities. Even in absence of such abnormalities, the fetus often to reach a viable age. Those who are born alive may associated pulmonary hypoplasia.

The trans abdominal amnioinfusion in patient with severe oligohydramnios helps in making certain diagnosis and better prediction of fetal outcome. However, role of repeated therapeutic amnioinfusion in early onset oligohydramnios to improve perinatal outcome is less clear and require further study.

Late onset oligohydramnios

Late onset oligohydramnios, in the absence of PROM is usually due to poor uteroplacental perfusion and is usually associated with FGR. For cases with diagnosed oligohydramnios hospitalization and close monitoring and intense antepartum assessment with regular NST, BPP and Doppler velocimetry is required.

Oligohydramnios may develop in normal grown post term fetus which may be an indication of failing placental function. The perinatal morbidity in post term pregnancy in presence of oligohydramnios. Even in the absence of abnormalities in other fetal surveillance tests, oligohydramnios is an indication for delivery in post term pregnancies.

For milder case, without any other evidence of fetal compromise, conservative management can be continued till term. However, after 34 weeks, if severe oligohydramnios is present, even if other parameters of BPP are delivery should be considered.

Role of intrapartum amnioinfusion

Oligohydramnios and consequent cord compression in labour may be associated with intrapartum complication like deceleration of HFR, fetal hypoxia and distress requiring cesarean section.

Recent studies have suggested that intrapartum saline fusion reduces the risk of intrapartum fetal distress. Amnioinfusion restores the cushioning effect and relieves umbilical cord compression. There is also evidence that amnioinfusion improve the perinatal outcome in presence of thick meconium stained liquor, amnioinfusion may dilute the meconium and reduce the risk of meconium aspiration.

Nageotte and coworkers (1991) found that prophylactic amnioinfusion resulted in significantly decreases frequently and severity of variable deceleration in labor, however there was no improvement in the cesarean of condition of term infant.⁷

Sponge and associate (1994) concluded that prophylactic amnioinfusion did dilute the meconium but did not improve the perinatal outcome.⁸

Role of maternal hydration

Recent studies in women suggest that maternal hydration by improving maternal fluid volume or decreasing maternal osmolate may be effective in improving AFV. Oral maternal hydration with 2 liters of water was associated with an increase in AFI in women with decreased AFI. Whether this is safe effective way to treat oligohydramnios awaits further studies.

NST- Non-Stress Test

NST is the most widely used primary method for assessment of fetal wellbeing and has also been incorporated into the BPP scoring system. It describes the FHR acceleration in response to fetal movements, as a sign health based on the hypothesis that heart rate of the fetus who is non-acidotic will temporarily accelerate in response to fetal movements.

Deceleration during NST

ACOG has concluded that variable deceleration during NST (if non-repetitive and brief is not a sign of fetal compromise. In contrast, repetitive variable deceleration has been associated with increased risk of cesarean delivery for fetal distress and the risk is even if associated with AFI \leq 5 cm. apart from non-reactive pattern, repetitive variable decelerations, baseline oscillation of less than 5 bpm late deceleration with spontaneous uterine contraction are also consistently associated with evidence of uteroplacental pathology.

The CST –Contraction Test

In the method stress is applied by eliciting uterine contraction which causes intermittent interruption of blood supply and uteroplacental insufficiency by producing late deceleration and variable decelerations in presence of oligohydramnios. Contraction are elicited either by oxytocin infusion (oxytocin challenge test) or by Nipple stimulation.

Visual Acoustic Stimulation Test (VAST)

Visual acoustic stimulation test was developed by Dr. Damania from Bombay. It utilizes ultra sound to evaluate the fetal respond to acoustic stimulation. A mix of acute and chronic markers of uteroplacental insufficiency is assessed.

Doppler velocimetry

Umbilical artery velocimetry is most commonly used. A S/D ratio more than 95th percentile for gestational age, absent reversed end diastolic flow signifies increased impedance and is associated with fetal growth restriction. Absent or reversed end diastolic flow and umbilical venous pulsation have a grave prognosis for

fetus, as reported by Zelob and Colleagues (1996) the PNM rate for reversed and diastolic flow is 33 % and for absent diastolic flow is 10 %.⁹

MATERIALS AND METHODS

This review comprises of an investigation of pregnancy result in 25 cases with analysis of oligohydramnios by ultrasound following 37 finished weeks of incubation contrasted and 25 controls with no oligohydramnios and coordinated for different factors like age, equality, gestational age and any pregnancy intricacy. The review and the control gathering were the ladies conceded in Little Flower Hospital and Research Center, Angamaly, Ernakulam District. It is a forthcoming review done over a time of one year just those ladies who recollected their date of east menstrual period were taken for the review. Their gestational age computed by clinical examination and ultra sound. For every one of the ladies, ultrasound examination was done and amniotic liquid file was figured by four quadrants amniotic liquid volume estimation strategy. For every one of the ladies pattern examination like Hb%, blood gathering and Rh pee examination were finished. NST was accomplished for all patients.

For all the chose cases, intensive history was taken and finish examination was finished. Clinical confirmation of oligohydramnios was searched for. The past obstetric records and ultrasound reports were explored. Just those ladies who recollected their date of last menstrual period effectively with past consistent cycles and the gestational age figured by clinical examination and ultrasound were comparing were taken for study. Thus, just the great dates and phenomenal dates ladies with thirty-seven finished weeks of incubation were considered. For every one of the ladies, ultrasound examination was done and amniotic liquid record was figured by four quadrants amniotic liquid volume estimation procedure.

For all ladies standard examinations like Hb%, blood gathering and Rh writing, pee examination were finished. NST was accomplished for all and BPP for couple of patients. Oligohydramnios is characterized as amniotic liquid record < 5 cm. The amniotic liquid volume is viewed as typical if amniotic liquid file is between 5.1 a 20 cm. Those with burst films and different difficulties like various pregnancy, malpresentation which could adjust the outcomes were barred from the review. For every case a control was brought with comparable gravidity, equality, gestational age and any pregnancy intricacy like preeclampsia yet the amniotic liquid list of more than 5 cm and under 20 cm.

The Inclusion Criteria: Thirty-seven completed weeks of gestation. Amniotic fluid index of < 5 cm, Intact membranes, Singleton pregnancy with cephalic presentation.

The Exclusion Criteria: Gestational age less than 37 completed weeks, Associated fetal malformations, Ruptured membranes, Malpresentation and multiple gestation.

The pregnancies with fetal malformations were also excluded from the study except for the deformities that can be caused by oligohydramnios like CTEV. The cases in which amnioinfusion was done were also excluded from the study to avoid confounding outcome.

The management protocol was similar in both study group and control group. Those women who had high risk factors like preeclampsia, post term pregnancy and non-reactive NST, were induced using dinoprostone gel (PGE2) or oxytocin. Women with

no other risk factors were allowed for spontaneous onset of labour and daily NST and weekly BPP was done. All of them were monitored by continuous electronic fetal monitoring in labour. The nature of amniotic fluid noted at artificial rupture of membrane which was done in all women and was classified as clear, thin meconium stained liquor and thick meconium stained liquor. Those who developed significant variable decelerations and repetitive late decelerations or other ominous FHR pattern with or without meconium stained liquor which persisted in spite of corrective measures like change in maternal position, hydration, O2 inhalation and stopping oxytocin were delivered by LSCS or forceps delivery. All new born were attended by neonatologists and endotracheal intubation was done in presence of thick meconium stained amniotic fluid.

Various outcome measures recorded were, induced Vs spontaneous labor, gestational age at delivery, nature of amniotic fluid, FHR tracings, mode of delivery, indication for cesarean section or instrumental delivery Apgar score at one minute and five minutes, birth weight, admission to neonatal ward, perinatal morbidity and perinatal mortality.

Ethical Consideration: The study was approved by institutional ethical committee (LFMRC-1/2012).

Data analysis

The results were recorded and tabulated. The results were statistically analysed using parameters like mean, standard deviation and chi square test. In addition, epidemiological parameters like sensitivity, specificity, positive predictive value, negative predictive value were used.

RESULTS

This study is performed in 25 pregnant women with amniotic fluid index of <5 cm and has completed 37 weeks of gestation and is compared with 50 pregnant women with amniotic fluid index between 5 cm and 20 cm. These groups were similar about antepartum variables i.e., maternal age gravidity, parity, gestational age and antenatal complications.

Table 1: Age Distribution

Age (Years)	Study Group	Control Group
18-20	7	7
21-25	12	14
26-30	6	4
Total	25	25

The mean age for study group was 23.4 years and that of control group was 22.72 years. There was no difference in the mean age between two groups statistically.

Table 2: Distribution of gestational Age

Gestational Age (weeks)	Study Group	Control Group
37	3	3
38	3	3
39	5	5
40	5	6
41	6	4
42	3	4
Total	25	25

The mean gestational age was 39.68 weeks for study group and 38.6 weeks for control group which was similar.

Table 3: Antenatal Complications

	Number of Cases	Percentage
Mild preeclampsia	6	24
Severe preeclampsia	3	12
Post term pregnancy	3	12
Abruptio placentae	1	4
Post term pregnancy with Preeclampsia	1	4

The occurrence of preeclampsia and post term pregnancies were similar in control group also. Thus 46% of control group was belonging to high risk category.

Table 4: Distribution of Amniotic Fluid Index (AFI)-Study Group

AFI in cm	Number	Percentage
2-3	9	36
3.1-4	6	24
4.1-5	10	40
Total	25	100

Table 5: Distribution of Amniotic Fluid Index (AFI) – Control Group

AFI in cm	Number	Percentage
5 to 8	10	40
8.1 - 11	6	24
11.1 - 14	7	28
14.1 - 17	2	8
Total	25	100

The amniotic fluid index was measured by four quadrants amniotic fluid volume assessment technique. The mean AFI for study group was 3.6 cm and for control group was 9.12 cm. The outcome parameters analyzed include non-stress test, fetal heart rate decelerations on CTG, nature of amniotic fluid, induction rate, mode of delivery, occurrence of LSCS and instrumental delivery for fetal distress, Apgar score at 1 minute and 5 minutes, birth weight, admission to neonatal ward and perinatal mortality.

Table 6: Non-Stress Test Pattern

NST	Study Group		Control Group	
	No	Percentage	No	Percentage
Reactive	15	60	20	80
Non-Reactive	10	40	5	20
Total	25	100	25	10

The non-stress test was non-reactive in 10 (40%) women with AFI < 5 cm compared to only 5 (20%) in control group. There was significant difference between two groups in occurrence of non-reactive and reactive NST pattern. (P<0.05).

Table 7: Occurrence of Variable Decelerations and Late Decelerations

FHR Pattern	Study Group		Control Group	
	No	Percentage	No	Percentage
Variable Decelerations	3	12%	5	20%
Late Decelerations	13	52%	7	28%
Total Decelerations	16	64%	12	48%

Most common FHR abnormality included variable decelerations which was considered significant if it was below 70 bpm persisting for > 60 sec. The significant variable decelerations (< 70 bpm for > 60 sec) was noted in 3 women (12%) and repetitive late deceleration in 13 (52%) of women of study group. In the control group 5 women developed variable decelerations and 7

women had late deceleration. However, these ominous FHR were seen in those women of control group who had an AFI in the lower range. There was no significant difference in two groups in occurrence of FHR decelerations statistically (P=0.66).

Table 8: Nature of Amniotic Fluid

Liquor	Study Group		Control Group	
	No	Percentage	No	Percentage
Clear	10	40%	19	76%
Thin Meconium	3	12%	2	8%
Thick Meconium	12	48%	4	16%
Total	25	100%	25	100%

P < 0.001 X2 = 14.04

The amniotic fluid was thick meconium stained in 12 (48%) and thin meconium stained in 3 (12%) women in study group. In control group, only 4 (16%) women had thick meconium stained amniotic fluid and 2 (8%) had thin meconium stained amniotic fluid. The difference in occurrence of meconium stained amniotic fluid between two groups was statistically significant.

Table 9: Induced Vs Spontaneous labor

Labor	Study Group		Control Group	
	No	Percentage	No	Percentage
Induced	14	56%	6	24%
Spontaneous	11	44%	19	76%
Total	25	100%	25	100%

The labor was induced in 14 (56%) women with AFI < 5 cm and 6 (24%) women with AFI>5 cm. The decision for induction or allowing for spontaneous labor was made depending upon AFI, gestational age, presence of complications like preeclampsia, post term pregnancy, non-reactive NST, and favorability of cervix. The difference between two groups in this category was statistically significant (P < 0.002).

Table 10: Mode of Delivery

Mode of Delivery	Study Group		Control Group	
	No	Percentage	No	Percentage
Normal Vaginal Delivery	10	40	18	72
LSCS	12	48	6	24
Forceps delivery	3	12	1	4
Total	25	100	25	100

Table 11: Interventions for Fetal Distress

Intervention	Study Group		Control Group	
	No	Percentage	No	Percentage
LSCS	11	44	4	16
Instrumental Delivery	2	8	1	4
Total Intervention	12	48	5	20

$\chi^2 = 0.03P=0.98$ (NS)

Cesarean section was done in 12 women and forceps delivery in 3 women. A total of 12 women (48%) developed fetal distress in study group. 11 (44%) of them were delivered by cesarean section and 2 (8%) of them by forceps delivery. The difference was statistically non-significant (P=0.98). In our study cases went for L.S.C.S. due to fetal distress 44%, in control group LSCS is 18% due to fetal distress. This study shows that oligohydranmios (< 5 cm) cases are going for LSCS quite high.

Table 12: LSCS for Fetal Distress

Groups	LSCS	Vaginal Delivery
AFI<5	11 (a)	15 (b)
AFI>5	5 (c)	20 (d)

The determination of AFI < 5 cm as a screening test in predicting fetal distress during labor requiring LSCS, has a sensitivity of 68.75%, specificity of 58%, positive predictive value of 44% and negative predictive value of 80%.

Sensitivity= $a*100 / (a + c) = 11*100 / (11+5) = 68.75\%$

Specificity= $d*100 / (b + d) = 20*100 / (15+20) = 58\%$

Positive Predictive Value= $a*100 / (a + b) = 11*100 / (11+15) = 44\%$

Negative Predictive Value= $d*100 / (c + d) = 20*100 / (5+20) = 80\%$

A better sensitivity and negative value makes it a good screening test.

Table 13: LSCS for Fetal Distress in Non-Reactive NST

Groups	Non-Reactive NST	LSCS for Fetal Distress	Percentage
Study Group	10	5	50
Control Group	5	2	40

The occurrence of cesarean section rate was high in oligohydramnios group when associated with non-reactive NST (50%). Even when the NST was reactive in oligohydramnios 40% had LSCS.

Table 14: LSCS for Fetal Distress in Reactive NST

Groups	Reactive NST	LSCS for Fetal Distress	Percentage
Study Group	15	7	46.67
Control Group	20	4	20.00

Table 15: Birth weights

Weight in Kgs	Study Group		Control Group	
	No	Percentage	No	Percentage
1.5 – 2	3	12	0	0
2.1 – 2.5	13	52	7	28
2.6 – 3	5	20	12	48
3.1 – 3.5	3	12	6	24
> 3.5	1	4	0	0

The non-reactive non-stress test rates are high in women with AFI < 5 cm. The rate of non-reactive NST is 38% in present study and is comparable to that in similar study.

The FHR decelerations, during intrapartum period suggestive of fetal distress are common in pregnant women with AFI < 5 cm. Most common are variable decelerations due to cord compression. The ominous FHR pattern noted in 40% in present study is comparable to 48% and 36.11% in studies by Casey *et al.* and Sriya R. *et al.* respectively.

The occurrence of meconium stained amniotic fluid is high in women with AFI < 5 cm. The thick meconium stained liquor was noted in 48% in study group in present study which is like other studies. These are not consistent with study by Baron *et al* 1995 and this could be due to less number of women who had crossed 40 weeks.

The efficacy of oligohydramnios (AFI < 5 cm) in predicting fetal distress and requirement of LSCS had a sensitivity of 71% and negative predictive value of 82.0%. But the specificity and positive predictive value were poor. So, this can be considered as a screening test for occurrence of fetal distress in intrapartum period requiring cesarean delivery.

The rate of LSCS was more in those with oligohydramnios and non-reactive NST (52.6%). In control group women with non-reactive NST had 40% cesarean rate and with reactive NST had only 12.5% of cesarean rates.

The mean 1 min and 5 min Apgar score was 6.9 and 8.02 in study group and 7.8 and 9.2 in control group respectively. The 5 min Apgar score < 7 is seen in 16% of oligohydramnios gathering and are equivalent with different reviews.

The mean birth weight is less in oligohydramnios assemble. The high rate of low birth weight might be a result of ceaseless placental inadequacy bringing about fetal development limitation.

CONCLUSION

An amniotic liquid record of ≤ 5 cm distinguished following 37 finished weeks of incubation pointer of poor perinatal salary. Assurance of AFI is a profitable screening test for anticipating fetal trouble in labor requiring caesarian area.

In nearness of oligohydramnios, the event of non-responsive NST, unusual FHR tracings amid work, thick meconium recolored, alcohol, advancement of fetal pain, the rate of LSCS, low 5 minute Apgar score, low birth weight and perinatal mortality are high. (In our review the rate of LSCS, low 5 min Apgar score and perinatal mortality number is high yet factually the distinction in study and control gatherings are non-significant.) Determination of AFI can be utilized as an assistant to other fetal observation techniques. It recognizes those babies at danger of poor perinatal result. Assurance of AFI is a profitable screening test for foreseeing fetal pain in labor requiring cesarean segment. It has an affectability of 71% and negative prescient estimation of 82% specificity of 58% and positive prescient esteem of 43%.

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