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Fetal Outcome in Oligohydramnios In Rims, Imphal

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Abstract
Background: *The present study is a hospital based case control study among 150 pregnant women with cases being AFI<5cm and control being AFI 5-18cm with period of gestation ≥32 weeks in both the groups. This study was undertaken in the department of Obstetric and Gynaecology, RIMS, Imphal to find out the foetal outcome in oligohydramnios, after approval from the Research Ethics Board, RIMS, Imphal. This study was conducted for a period of 24 months from September 2018 to August 2020. Informed consent was taken from every patient before their participation in the study. Data were collected in a pre designed proforma and analysed for statistical significance.The most common age was in between 21-25years in both the groups. There was not much difference in both the group while comparing with the residential area. Majority of the pregnant women in both the group were from a middle class family and were mostly primigravida in both the group. The mean period of gestation in study group was 37.89 SD±1.134 and in control group was 38.44 SD±1.118.This study revealed that most of women were delivered by Cesarean section in study group as compare to control group. Among the newborns low birth weight in study group was higher than control group. Forty eight had NICU admission in study group and 11 in control group. Neonatal death was observed only in study group.*
Methods*: This is a case control study conducted in the department of obstetrics and gynaecology RIMS Imphal Manipur, during a period of 24 months from september 2018 to august 2020. This study was approved by research ethics board Regional Institute of Medical Sciences.All pregnant women admitted in Department of Obstetrics and Gynaecology RIMS during study period.**CASES**: All pregnant women with Period of Gestation ≥ 32 weeks and Amniotic Fluid Index (AFI)<5 cm taken as cases.**CONTROLS**: All pregnant women with Period of Gestation ≥ 32 weeks and Amniotic Fluid Index (AFI)5-18cm taken as controls. **INCLUSION CRITERIA (common for both cases and controls):** 1)Uncomplicated singleton pregnancy with cephalic presentation. 2)Willing to participate in the study. **EXCLUSION CRITERIA (common for both cases and controls):** 1)Malpresentation and multiple gestations. 2)Hypertensive disorder of pregnancy. 3)Post –term Pregnancy. 4)Gross congenital anomaly. 5)PROM (Pre-mature rupture of membrane). 6)Polyhydramnios.**MATCHING**: Cases and controls were matched according to age, period of gestation, parity. The ratio of cases to controls was taken as 1:1.*
Results: *Most women were from the age group 21-25 years, cases 47 and control 43 with mean age of 24.35 years and SD 3.419 in cases and 24.51 years SD 2.988 in control group.There was not much difference seen in the distribution of pregnant women among the rural and urban area in both cases and control. Majority of pregnant women were literate 92% in cases and 86.7% in control group with there qualification being middle school passed out. Only 8% and 13.3% were illiterate in cases and control group. Almost half of the pregnant women were from middle class 49.3% in cases and 53.4% in control group but only 10.7% and 9.3% were from upper class in cases and control group respectively. Most of the pregnant women in both the group were booked case, with control group 57.30% and study group of 64%. In this study most of the pregnant women were primigravida with cases of 54.7% and control 52%. The mean period of gestation between the groups has shown that in study group was 37.89 weeks SD 1.134 and 38.44 weeks SD 1.118 in control group.Most common cause of oligohydramnios was idiopathic 64.0%.Majority of the cases 68% were admitted for safe delivery and were not in labour and 32% were admitted with spontaneous onset of labour. Among the control group majority were admitted with spontaneous onset of labour 66.7% and 33.3% were not in labour.The onset of labour was mainly by induction 46.7% in study group more than in control group which was 22.6%. Mode of delivery was mostly by cesarean section 69.3% in study group and only 17.3% in control group mainly due to foetal distress 44% and 10.7% respectively. In this study meconium stained liquor was seen 52% in study group and 20% in control group. Birth weight of baby found in this study was that low birth weight ≤2.5 kg was 34 (45.4%) in study group and 9 (12%) in control group.Baby born which required resuscitation were 70.7% and 21.3% in study and control group respectively.Apgar score ≤7 at 1min was 42.6% and 16% and at 5mins was 24% and 8% in study and control group respectively. Most of the baby born by pregnant women in study group 64% were admitted in NICU in compare to the control group which was only 14.7%. Neonatal death in this study was 5.3% in study group and none in control group.*

Conclussion: *This study along with references to other studies shows that women with oligohydramnios (AFI<5cm) were associated with adverse foetal outcome and therefore routine ultrasound for foetal wellbeing during third trimester is a necessity to prevent and detect foetal complications.*

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I. Introduction

Oligohydramnios is defined as an amniotic fluid index (AFI) ≤5cm. AFI value >18 is defined as polyhydramnios.[1] The source of amniotic fluid is maternal plasma, diffusion of extra cellular fluid through fetal skin, fetal urine and fetal lung secretions.[2] The presence of amniotic fluid enables normal development of the fetal respiratory, gastrointestinal, genitourinary and musculo-skeletal system. It enables continued fetal growth in a non-restricted, sterile and thermally controlled environment. The volume of amniotic fluid at each week of gestation is quite variable. The usual amniotic fluid volume increases from 50ml at 12 weeks to 400ml at mid pregnancy and 1000ml at term.[3,4] Amniotic fluid volume increases to about 800-1000ml at 28 weeks, plateaus near term and declines to about 400ml at 42 weeks.[5]The chronically stressed fetus is likely to have low amniotic fluid volume because of the shunting of blood preferentially to the brain, heart and adrenal glands at the expense of other body systems during the period of chronic stress. Decreased renal blood flow leads to decreased urinary output. Because the primary component of amniotic fluid in the third trimester of pregnancy is fetal urine.[6] Incidence of oligohydramnios is reported to be around 1 – 5 % of total pregnancies.[7]The accurate diagnosis of oligohydramnios has become possible by ultrasonographic examination during pregnancy. The findings of oligohydramnios can be associated with congenital fetal abnormalities, premature rupture of membranes, uteroplacental insufficiency, growth retardation, post datism, chronic abruptio placentae. Maternal illness i.e. hypertension, preeclampsia, abnormalities of twinning, history of drug intake etc.[8]The sequel from long standing oligohydramnios includes pulmonary hypoplasia, potter's syndrome, club foot, club hand and dislocation of hip. It is found to be associated with high incidence of maternal and perinatal morbidity and mortality. During labour the predominant mechanical function of amniotic fluid is to provide an aquatic cushion for umbilical cord. Without this cushion, compression of the cord between the fetus and the uterine wall may occur during contractions or fetal movement, this cord compression causes severe FHR decelerations which are associated with low Apgar scores and acidosis at birth, meconium staining, caesarean section and operative vaginal delivery for fetal distress.[8]The present study was carried out to compare the perinatal outcome in women with uncomplicated singleton pregnancies in cephalic presentation with POG≥32 weeks having amniotic fluid index (AFI) ≤ 5 cm to those having normal AFI (5-18 cm), with this in mind this study was conducted to determine the fetal outcome in oligohydramnios in RIMS, Imphal.

II. Materials And Methods

STUDY DESIGNS : Case control study.
STUDY SETTING :Department of obstetrics and Gynaecology Regional Institute of Medical Sciences Imphal, Manipur.
STUDY DURATION: September 2018 to August 2020.
STUDY POPULATION:All pregnant women admitted in Department of Obstetrics and Gynaecology RIMS during study period.
CASES: All pregnant women with Period of Gestation ≥ 32 weeks and Amniotic Fluid Index (AFI)<5 cm taken as cases.
CONTROLS: All pregnant women with Period of Gestation ≥ 32 weeks and Amniotic Fluid Index (AFI)5-18cm taken as controls.
INCLUSION CRITERIA (common for both cases and controls):
1. Uncomplicated singleton pregnancy with cephalic presentation.
2. Willing to participate in the study.

EXCLUSION CRITERIA (common for both cases and controls):
1. Malpresentation and multiple gestations.
2. Hypertensive disorder of pregnancy.
3. Post –term Pregnancy.
4. Gross congenital anomaly.
5. PROM (Pre-mature rupture of membrane)
6. Polyhydramnios.

MATCHING: Cases and controls were matched according to age, period of gestation, parity. The ratio of cases to controls was taken as 1:1.

STUDY VARIABLES:

Independent variables: Age, Socio-economic status, period of gestation, parity, gravida, onset of labour, mode of delivery.

Outcome variables: Birth weight, Apgar Score, admission to Neonatal Intensive Care Unit (NICU), Perinatal Mortality, Meconium aspiration syndrome.

Sample size: Using the formula for difference in proportions taking into account the difference in fetal outcome (Birth weights ≤2.5 kg) between the group (taken from a study conducted by Chate P et al[13])

$$N=\frac{(u+v)^2\{p_1(100-p_1)+p_2(100-p_2)\}}{(p_1-p_2)}$$

Where u = 1.645 for 90% power

v=1.96 for confidence interval

p_1=62% (birth weight ≤2.5kg in the study group)

p_2=28% (birth weight ≤2.5kg in the control group)

$$n=\frac{(1.645+1.96)^2\{62(100-62)+28(100-28)\}}{(62-28)^2}$$

$$n=\frac{(3.6)^2\{62\times38+28\times72\}}{(34)^2}$$

$$n=\frac{12.96\{2356+2016\}}{1156}$$

$$n=\frac{56661.12}{1150}$$

n=49.01

n~50

Therefore 50 participants were taken for each cases and controls. Taking 50% as the non response rate in both the groups, hence the final sample size was 75 participants in each arms.

SAMPLING: Convenience sampling method was done. For cases and controls all patients who fullfil the inclusion and exclusion criteria were included in the study.

STUDY INSTRUMENT: Pre tested, structured proforma were used to collect information about the socio-economic status, age, period of gestation, parity and gravid. Ultrasonography of all pregnant women with period of gestation ≥ 32 weeks were subjected to routine ultrasound examination. Amniotic fluid index was used to identify cases and controls.

Amniotic Fluid Index technique: Patient was place in supine position and a linear, curvilinear or sector transducer was used. Maternal abdomen was divided into four quadrants taking the umbilicus, symphysis pubis and the fundus as the reference point. With ultrasound, the largest vertical pocket in each quadrant was measured. The sum of the four measurements in centimeter was the AFI.[10]

PROCEDURE OF MEASUREMENT:A written informed consent was taken from the subjects who were willing to participate in the study. History was taken for those who were willing to participate in the study after obtaining consent. Ultrasonography was used for diagnosis of oligohydramnios. The membrane status, amount of amniotic fluid, nature of liquor, probable cause of oligohydramnios, onset of labour, mode of delivery, sex, birth weight, Apgar score, need for resuscitation, methods of resuscitation and Neonatal Intensive Care Unit admission was noted at the time of delivery. The mother and baby was observed post delivery till the time of discharged from hospital.

DATA HANDLING AND STATISTICS ANALYSIS: All the data were entered in a Proforma and data analysis was performed using software SPSS version 21 for windows (IBM Corp.1995, 2012). Descriptive statistics like mean, standard deviation and percentage was used. Independent t test was used to see the difference in means and chi square test was used to see the difference in proportions. A p value < 0.05 was considered as statistically significant.

ETHICAL APPROVAL: All the participants were informed about the nature of the study and those who agree to participate were asked to sign the informed consent form. Participants were assured that they could withdraw from the study at any time. The approval of the Research Ethics Board, Regional Institute of Medical Sciences was taken (No.A/206/REB-Comm(SP)/RIMS/2015/490/108/2018). Confidentiality was maintained.

III. Results

This study included 150 pregnant women. Cases (AFI <5cm) 75 pregnant women and control (AFI 5-18cm) 75 pregnant women with period of gestation ≥32 weeks in both cases and control admitted in Department of Obstetrics and Gynaecology, RIMS, Imphal from September 2018 to August 2020.

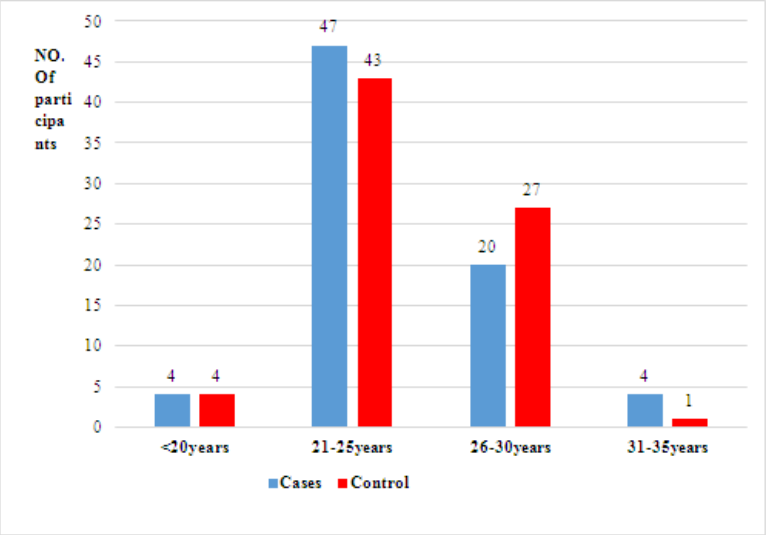

Figure-1: Showing distribution of participants by age (N=75). Figure-1 shows that the majority of the pregnant women were from the age group 21-25 years 47 in cases and 43 in Control.

Table-1: Distribution of cases and control according to age (N=75)

	Mean age	SD (±)	p value
Cases	24.35	3.419	0.761
Control	24.51	2.988	

Table-1 shows the mean age in cases and control group (N=75). The minimum age in both cases and control group was 19 years and maximum age in cases 33years and 34 years in control group.

Table-2: Distribution of cases and control according to Residential area (N=75)

Residential area	Cases n (%)	Control n (%)	p value
Urban	38 (50.7)	39 (52.0)	0.870
Rural	37 (49.3)	36 (48.0)	

Table-2 shows that there almost equal distribution in urban and rural areas in both the cases and control, this finding is insignificant (p =0.870).

Table-3: Distribution of cases and control according to socio-economic status (N=75)

Socio-economic status	Cases n (%)	Control n (%)	p value
Upper class	8 (10.7)	7 (9.3%)	0.881
Middle class	37 (49.3)	40 (53.4)	
Lower class	30 (40.0)	28 (37.3)	

From Table-3 it is seen that majority of the participants are from middle class in both the groups and this finding is insignificant (p=0.881).

Table-4: Distribution of cases and control according to literacy (N=75)

Literacy	Cases n (%)	Control n (%)	p value
No schooling	6 (8.0)	10 (13.3)	0.551
Primary school	10 (13.3)	10 (13.3)	
Middle school	47 (62.7)	49 (65.4)	

High school and above	12 (16.0)	6 (8.0)	

Table-4 shows that around 8% of the cases and 13.3% of control group were illiterate. Most 92% and 86.7% of cases and control group respectively were literate. But those who are having middle school qualification 62.7% in cases and 65.4% in control group were maximum.

Table-5: Distribution of cases and control according to booking status (N=75)

Booking status	Cases n (%)	Control n (%)	p value
Booked	48 (64.0)	43 (57.3)	0.403
Unbooked	27 (36.0)	32 (42.7)	

Table-5: 64.0% of the cases and 57.3% of the control group had completed ante natal check-up in Regional Institute of Medical Sciences Gynaecology OPD. 36.0% and 42.7% among cases and control group respectively were unbooked, mostly came as an emergency referred from the peripheral health centres.

Table-6: Distribution of cases and control according to Gravida (N=75)

Gravida	Cases n(%)	Control n (%)	p value
Primigravida	41 (54.7)	39 (52.0)	0.743
Multipara	34 (45.3)	36 (48.0)	

From the above table-6 there was no difference seen among cases and control group in respect to gravida (p=0.743).

Table-7: Comparison Period of gestation (POG) among cases and control (N=75)

Participants	Mean POG	SD (±)	p value
Cases	37.89	1.134	0.003
Control	38.44	1.118	

Table-7 shows the mean POG in cases and control. Minimum POG in cases was 32 weeks and in control group was 34weeks and the maximun POG was 40 weeks in both cases and control group.

Table-8: Cause of oligohydramnios in cases (N=75)

Causes	Number	Percentage
Idiopathic	48	64.0
IUGR	23	30.7
Utero-placental insufficiency	4	5.3

From table-8: Majority of the causes of oligohydramnios was idiopathic (64%) followed by IUGR (30.7%).

Table-9: Distribution between the present or absent of labour among Participants (Cases and Control) (N=75)

Labour	Cases n (%)	Control n (%)	p value
Present	24 (32.0)	50 (66.7)	0.000
Absent	51 (68.0)	25 (33.3)	

From table-9: Most of the cases 68% were admitted for safe delivery were not in labour and 32% were admitted with spontaneous onset of labour. Among the control group majority were admitted with spontaneous onset of labour 66.7% and 33.3% were not in labour and this finding was found to be significant(p=0.000).

Table-10: Distribution between Mode of onset of labour and Participants (Cases and Control) (N=75)

Onset of labour	Cases n (%)	Control n (%)	p value
Spontaneous	24 (32.0)	50 (66.7)	0.000
Induction	35 (46.7)	17 (22.6)	
Not in labour	16 (21.3)	8 (10.7)	

From table-10: Among the 68% of cases who were not in labour 46.7% were induced and in control group 22.6% out of 33.3% were induced this finding is significant(p=0.000) as majority of the cases were induced into labour as compare to control group.

Table-11: Distribution between Mode of delivery and Participants (Cases and Control) (N=75)

Mode of delivery	Cases n (%)	Control n (%)	p value
Vaginal delivery	23 (30.7)	62 (82.7)	0.000
Cesarean section	52 (69.3)	13 (17.3)	

From table-11: Majority of the cases (69.3%) LSCS was done as compare to control group were only 17.3% CS was done and this finding was signicant (p=0.000).

Table-12: Distribution of indication for Cesarean Section among participants (N=75)

Indication for CS	Cases n (%)	Control n (%)
Fetal distress	33 (44.0)	7 (9.3)
IUGR	16 (21.4)	0 (0.0)
CPD	1 (1.3)	3 (4.0)
Placenta previa	1 (1.3)	1 (1.3)
Post twice CS	1 (1.3)	2 (2.7)
Not needed	23 (30.7)	62 (82.7)

Table-12: Out of total 65 no. of LSCS done in both the groups, 52 pregnant women were in study group and 13 in control group. Among the study group 33 pregnant women and 16 pregnant women LSCS was done with fetal distress and IUGR as the main indication for LSCS respectively. Out of the 13 LSCS in control group 7 pregnant underwent LSCS with fetal distress as the indication, which is less as compare to study group.

Table-13: Association between Colour of liquor and Participants (Cases and Control) (N=75)

Colour of liquor	Cases n (%)	Control n (%)	p value
Clear	36 (48.0)	60 (80.0)	0.000
Thin meconium	21 (28.0)	7 (9.3)	
Thick meconium	18 (24.0)	8 (10.7)	

From table-13 it is seen that 52% of cases were meconium stained were as in control group it is 20% only and this finding was significant (p=0.000).

Table -14:Distribution of Birth weight among Participants (Cases and Control) (N=75)

Birth weight	Participants		p value
	Cases n (%)	Control n (%)	
≤2kg	29 (38.7)	2 (2.7)	0.000
2.1-2.5kg	5 (6.7)	7 (9.3)	
2.6-3kg	34 (45.3)	48 (64.0)	
≥3.1kg	7 (9.3)	18 (24.0)	

From table-14: Majority of the birth weight in both the group was 2.6-3 kg which was 64.0% and 45.3% in control and study group respectively. From the above table-14 it is seen that most of the babies with birth weight ≤2kg were in the study group 38.7% as compare to control group which was 2.7% only and this finding is significant(p=0.000).

Table -15: Distribution of sex of baby among participants (cases and control) (N=75)

Sex of Baby	Participants		p value
	Cases n (%)	Control n (%)	
Male	34 (45.3)	44 (58.7)	0.102

Female	41 (54.7)	31 (41.3)	

Table-15 shows the distribution of sex of baby among participants (cases-Control). There is no significant difference in the sex of baby among cases and control(p=0.102).

Table 16: Association between Need for resuscitation of baby among participants (cases and control) (N=75)

Need for resuscitation	Participants		p value
	Cases n (%)	Control n (%)	0.000
Yes	53 (70.7)	16 (21.3)	
No	22 (29.3)	59 (78.7)	

Table-16 shows the association between Need for resuscitation of baby among participants (cases-Control). More than two third (70.7%) of the baby in cases required resuscitation as compare to control group which was only less than one third (21.3%) which required resuscitation. There is significant difference in the Need for resuscitation among baby born of cases and controls (p=0.000).

Table-17: Distribution of Apgar score 1min among newborns in cases and control (N=75)

Apgar score 1 min	Cases n (%)	Control n (%)	p value
≤7/10	32 (42.6)	12 (16.0)	
>7/10	43 (57.4)	63 (84.0)	0.000

From table-17: Women with oligohydramnios had significantly more babies with Apgar score ≤7/10 at 1 min as compare to babies in control group.

Table-18: Distribution of Apgar score 5mins among newborns in cases and control (N=75)

Apgar score 5 mins	Cases n (%)	Control n (%)	p value
≤7/10	18 (24.0)	6 (8.0)	
>7/10	57 (76.0)	69 (92.0)	0.008

From table-18: There was significant difference in Apgar score ≤7/10 at 5mins in cases which was 24.0% and in control group 8%.

Table-19: Distribution of newborn admitted in NICU in Cases and Control (N-75)

NICU	Participants		p value
	Cases n (%)	Control n (%)	
Yes	48 (64.0)	11 (14.7)	0.000
No	27 (36.0)	64 (85.3)	

From table-19: Most of the newborn in cases (64%) were admitted in NICU as compare to control group which was only (14.7%).

Table-20: Distribution of Neonatal death among Participants (Cases and Control) (N=75)

Neonatal death	Participants		p value
	Cases n (%)	Control n (%)	
Yes	4 (5.3)	0 (0)	0.043
No	71 (94.7)	75 (100)	

From table-20: All neonatal death occured in women with oligohydramnios and there no neonatal death seen in the control group and this finding was found to be significant (p=0.043).

IV. Discussion

This present study is a case control study conducted among 150 pregnant women with 75 pregnant women as cases and 75 pregnant women as control. Cases being Amniotic Fluid Index (AFI) <5cm and control AFI 5-18cm, in pregnant women with period of gestation ≥ 32 weeks. These 150 pregnant women were collected from September 2018 to August 2020.Most women were from the age group 21-25 years, cases 47 and control 43 with mean age of 24.35 years and SD 3.419 in cases and 24.51 years SD 2.988 in control group. This finding is almost similar to the study conducted by Agarwal S et al[15] were the mean age in study group was 23.8 years and 24.7 years in control group. As RIMS being a main tertiary hospital in Manipur majority of the

referred case are from rural areas hence, there was not much difference seen in the distribution of pregnant women among the rural and urban area in both cases and control. Majority of pregnant women were literate 92% in cases and 86.7% in control group with there qualification being middle school passed out. Only 8% and 13.3% were illiterate in cases and control group. Almost half of the pregnant women were from middle class 49.3% in cases and 53.4% in control group but only 10.7% and 9.3% were from upper class in cases and control group respectively, this finding was found to be insignificant (p=0.881). Most of the pregnant women in both the group were booked case, with control group 57.30% and study group of 64% comparable to study done by Rizvi SM et al[7] showing 76% of booked cases.

In this study most of the pregnant women were primigravida with cases of 54.7% and control 52% comparable to study by Ghimire S et al[16] were primigravida was 58% in both the group and to study by Singh A et al[25] in which 61% of oligohydramnios were primigravida. The mean period of gestation between the groups has shown that in study group was 37.89 weeks SD 1.134 and 38.44 weeks SD 1.118 in control group which was more than compare to study by Ghosh R et al[21] which showed that mean period of gestation as 36.9 weeks with SD 2.5.Most common cause of oligohydramnios was idiopathic 64.0% which was similar to the study of Kansal R et al[22] which show idiopathic as the main cause of oligohydramnios in 66%, but was more compared to the study by Jagatia K et al[14] and Ahmar R et al[17] which were 52% and 44.44% respectively.

Majority of the cases 68% were admitted for safe delivery were not in labour and 32% were admitted with spontaneous onset of labour. Among the control group majority were admitted with spontaneous onset of labour 66.7% and 33.3% were not in labour and this finding was found to be significant(p=0.000). The onset of labour was mainly by induction 46.7% in study group more than in control group which was 22.6%. In study carried by Ahmar R et al[17] induction of labour was 42.22% by induction in oligohydramnios and in study conducted by Sudha HC et al[2] induction of labour was 46 % in study group and 24% in control group, which is similar with this study.Mode of delivery was mostly by cesarean section 69.3% in study group and only 17.3% in control group mainly due to foetal distress 44% and 10.7% respectively. A study by Das S et al[9] showed that 60% cesarean section was done in study group and 20% in control group and study done by Biradar KD et al[10] showed that 62% Cesarean section was done in oligohydramnios and main indication for Cesarean section was foetal distress 42%, which is similarly seen in this study.

In this study meconium stained liquor was seen 52% in study group and 20% in control group which was identical to the study by Sudha HC et al[2] which showed 52% meconium stained liquor in study group and 26% in control group. While a study by Siraj A et al[27] showed meconium stained liquor 54.7% in study group and 3.3% in control group.Birth weight of baby found in this study was that low birth weight ≤2.5 kg was 34 (45.4%) in study group and 9 (12%) in control group while study conducted by Mohammed FZS et al[26] and Kumud M et al[24] showed that low birth weight ≤2.5kg was 62% and 64% in study group and in control group was 24% and 28% respectively, which was more in comparison to this study. Sowmya K et al[12] showed that low birth weight was 48% in study group and 22% in control group which is similar to this study. Sex of the baby was 54.7% female in study group and 58.7% male in control group p value=0.102 which was not significant.Baby born which required resuscitation were 70.7% and 21.3% in study and control group respectively with p value=0.000 which is significant as compare to study by Patel PK et al[18] which showed 45% and 43.44% which required resuscitation in study and control group with p value 0.7994 which was insignificant.

A study conducted by Ashok BA et al[11] it showed that Apgar score ≤7 at 1min was 50% and 24% and at 5mins was 34% and 10% in study and control group respectively, and in this study it was found that Apgar score ≤7 at 1min was 42.6% and 16% and at 5mins was 24% and 8% in study and control group respectively which is comparable to the above study.Most of the baby born by pregnant women in study group 64% were admitted in NICU in compare to the control group which was only 14.7%. This finding is similar to the study conducted by Aishwarya RS et al[19] in which 70% of baby born by pregnant women in study group were admitted and only 34% of baby born of control group were admitted in NICU. Neonatal death in this study was 5.3% in study group and none in control group. Whereas Kahkhaie KR et al[20] reported 5.9% which is similar to this study. Chate P et al[13] and Asnafi N et al[23] reported 2% and 3.7% respectively, which was less in comparison to this study. Chidanandaiah SK et al[28] reported 8% which was higher compare to this study.

V. Conclusion

This case control study among 150 pregnant women with cases being AFI<5cm and control being AFI 5-18cm with period of gestation ≥ 32weeks in both the groups. It was conducted to determine the foetal outcome in oligohydramnios. This study revealed that oligohydramnios was associated with increased rate of Cesarean section 69.3% with main indication being foetal distress (44%). Meconium stained liquor was more in study group (52%) as compare to control group (20%). Newborns with low birth weight was 45.4% in study group as compare to 12% in control group. Apgar score ≤7 at 1min was 42.6% and 16.0% and at 5 mins was 24% and 8% in study and control group respectively. Most of the newborns among the study group required resuscitation

70.7% as compare to control group which was 21.3%, as a result most of the newborns in study group were admitted in NICU 64% in comparison to control group 14.7%. Four neonatal death were observed in study group due to Meconium aspiration syndrome and none was observed among control group. This study along with references to other studies shows that women with oligohydramnios (AFI<5cm) were associated with adverse foetal outcome and therefore routine ultrasound for foetal wellbeing during third trimester is a necessity to prevent and detect foetal complications.

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