Original Research Article

Perinatal outcome in oligohydramnios diagnosed at term -A prospective study

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Abstract

Introduction: Amniotic fluid acts like a cushion and helps in growth of foetus. Decrease in amniotic fluid level is known as oligohydramnios There exists a correlation between oligohydramnios and adverse perinatal outcome in terms of low apgar score, meconium aspiration syndrome, birth asphyxia, increased rate of caesarean section for foetal distress, etc. It is the most frequent complication of pregnancy. **Objectives**

1. To analyse the incidence of oligohydramnios by using AFI .
2. To assess the maternal and Perinatal morbidity and mortality in women with low AFI.
3. To evaluate the effect of oligohydramnios on APGAR score rate at birth and the rate of NICU admissions.

Methods: Prospective study on perinatal outcome done in Obstetrics and Gynaecology Department of PMCH, Udaipur over a period of 2 years from January 2018 to December 2019. 115 women with oligohydramnios at or after 37 weeks of pregnancy were analysed for perinatal outcome. Detailed history taken and necessary laboratory investigations done. Amniotic fluid index measured by ultrasonography using four quadrant technique as described by Phelan et al. **Results:** Incidence of oligohydramnios was found to be 9.13% in the present study. LSCS was done in 52.17%, low birth weight was seen in 60% IUGR in 26.08% NICU admission in 28.75%. **Conclusion:** Oligohydramnios occurs frequently and needs intensive surveillance and proper antenatal care with strict vigilance during labour. Decision between vaginal delivery and caesarean section should be well balanced.

Keywords: -AFI, LSCS, oligohydramnios, peri-natal outcome.

Introduction

Amniotic fluid is a dynamic and complex aquatic environment that changes in volume as pregnancy advances. Amniotic fluid covers the fetus inside the amniotic sac and it acts like a shock absorber to the fetus and at the same time maintains a hydrated environment for free movement and growth of the fetus during the entire period of pregnancy. Umbilical cord compression during labour is common. with oligohydramnios which increases the risk of caesarean delivery for fetal distress[1]. Amniotic fluid volume changes in three trimesters of pregnancy. Patient is said to have Oligohydramnios when liquor amnii is less than 200 ml at term, because primary component of amniotic fluid in third trimester is fetal urine, oligohydramnios indicates ongoing chronic stress in the fetus[2]. Using ultrasound as confirmatory investigation oligohydramnios is confirmed when AFI is less than 5 cm. Incidence of oligohydramnios is reported to be around 1 to 5 %[3]. of total pregnancies. Oligohydramnios is associated with increased maternal complications, LBW, low APGAR score and perinatal morbidity[3]. Hence early detection and its adequate management not only during antenatal period, but also during lobour may help in reduction of maternal and perinatal morbidity associated with oligohydramnios. Oligohydramnios is associated with high risk of adverse Perinatal outcome[1]. Oligohydramnios is a poor predictor of the adverse outcome[4].

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Aim of the study

1.To determine if oligohydramnios at term can be considered as a predictor of adverse outcome
of pregnancy.

Material and Methods

This is a prospective observational study conducted in the department of obstetrics and gynaecology Pacific medical and hospital, Udaipur over a period of 2 years from Jan 2018 to dec 2019 .115 cases of oligohydramnios (AFI<5 cm) at term were considered for the study.

Inclusion criteria

singleton pregnancy of 37 weeks and above
AFI <5 cm confirmed by USG
Pregnancy with no congenital anomaly in fetus
Patients with intact membranes
patients with multiple pregnancy
Preterm pregnancy

Exclusion criteria

Polyhydramnios
Patients with ruptured membranes
Patients with fetal congenital anomalies.

Variables selected for study to evaluate the results

CTG changes, Mode of delivery, associated maternal factors like pre-eclampsia, hypothyroidism, PIH, postdatism. Fetal factors like apgar score at 1 and 5 minutes, birthweight, NICU admn, presence of meconium-stained liquor. Purpose of the study was explained and verbal consent taken from all women and /or their relatives. For all

the selected patients a detailed history was taken and complete examination with emphasis on clinical evidence of oligohydramnios was looked for. Routine haematological profile and abdominal ultrasound done. Oligohydramnios was confirmed by ultrasound measurement of AFI using Phelan"s four quadrant technique of <5 cm considered as oligohydramnios.

Fetal monitoring was done at the time of admission by CTG in which baseline fetal heart rate, accelerations, decelerations, beat to beat variability noted and CTG findings recorded as reactive or non-reactive. Prolonged bradycardia, late or variable decelerations were taken as indicators of fetal distress which in turn influenced the management of labor Gestational age was noted at the time of delivery. Assessment of volume and colour of liquor done at the time of membrane rupture, both during normal labour and caesarean section. Mode of delivery, neonatal weight and APGAR score were recorded. All relevant information of the study variables were recorded and appropriately analysed.

Results and Discussion

Oligohydramnios was observed in 115 cases, giving a incidence of 9.13% of the total deliveries conducted during 2 years of study. Obstretic risk factors associated with oligohydramnios were post term 6(5.21%),PIH 16(13.91%), Preeclampsia 3(2.60%) PROM 6(5.21%), Hypothyroid 10(8.69%), Rh negative 4(3.47%). Meconium-stained liquor was seen in 35(30.43%)patients in our study which is comparable to study of Jayathi Nath[10]et al (31%).

Increased incidence of caesarean section 60 (52.17%) was noted in our study (table 5) which is comparable to study of Jeyamani B et al[6] (56.5%) but is in contrast to the study of Birador et al[7] (62%) and Chandra et al[8] (76.92%). Fetal distress (30%),non-reactive CTG(25%),and IUGR(18.33%) being the main indication for LSCS in this study table 8,) which is in constrast to the study of Jeyamani B[6] which shows higher rates of LSCS due to feta distress (44.2%) and IUGR (34.6%).

In our study(table-6) non-reactive CTG observed in 25.21% of the cases is in contrast to the study done by Kumar et al[9](40%).

Incidence of low APGAR score (less than 7) was increased both at 1 minute 36(31.30%} and at 5 minutes18(15.65%} in our study which is comparable to the study of Birador et al[7] (26% and 18.2%) respectively, but is in contrast to the study of Golan et al[10] (4.6% at 5 minutes).

Perinatal outcome noted were LBW69 (60%), IUGR30(26.08%), Stillbirth3(3.45%), Apgar<7 at 5 minutes 18(20.70%), NICU admission25(28.75%).(table 9).

LBW(60%) in this study is in contrast to the study of Birador et al[7] 38.6% . 28.75% of neonates required NICU admission in our study is in contrast to the studies done by, Charu Jundial et al (16%) Akhetar et al (10.00%) and Julie M Jhonson et al (20.0%)[11,12,13].

Table 1: Incidence of oligo hydramnios at our center

Total deliveries	Cases of oligo	Percentage
1865	115	9.13%

Table 2: Age distribution

Age group	Number	Percentage
20-25	58	50.44%
26-30	38	33.04%
>30	19	16.52%
Total	115	100%

Table 3: Distribution according to gravida

Type	Number	Percentage
Primi gravida	56	48.69%
Multi gravida	59	51.31%

Table 4: Maternal factors associated with oligo hydramnios

Factor	Number	Percentage
Post term	6	5.21%
PIH	16	13.91%
Pre-eclampsia	3	2.60%
PROM	6	5.21%
Rh negative	4	3.47%
Hypothyroid	10	8.69%

Table 5: Mode of delivery

Type	Number	Percentage
LSCS	60	52.17%
NVD	45	47.83%

Table 6: CTG on Admission

CTG	Number of cases	Percentage
Abnormal	29	25.21%
Normal	86	74.79%

Table 7: Indication of LCS

Indication	Number	Percentage (%)
Total LSCS	60	52.17
Fetal distress	18	30
MSL	10	16.67

Non-reactive CTG	15	25
IUGR	11	18.33
Previous CS	4	6.67
Failed induction	2	3.3

Table 8: Colour of liquor at the time of rupture of membranes

Colour of liquor	Number	Percentage (%)
Clear / normal	75	65.22%
Meconium stained liquor	35	34.78%

Table 9: Perinatal outcome

Factor	Number	Percentage (%)
LBW	69	60
IUGR	30	26.08
SB	3	3.45
Apgar<7at 1 minutes	36	31.30
Apgar<7at 1 minutes	18	20.70
NICU admission	25	28.75

Table 10: Distribution of newborn according to their Gestational Age

Factor	Number	Percentage (%)
AGA	45	39.14
SGA	70	60.86
Total	115	100

Discussion

Oligohydramnios can be isolated or associated with maternal conditions like PIH, premature rupture of membranes, hypothyroid, preeclampsia. Oligohydramnios though associated with adverse perinatal outcome is a poor indicator of same. Thus, assessment of amniotic fluid volume can be a useful tool to determine the cases at risk of adverse perinatal outcome. Antepartum oligohydramnios increases the risk of meconium staining, intrapartum cardiotocographic abnormalities and operative deliveries for fetal distress[19]. Determination of optimal time of delivery is necessary and labour should not be prolonged[18].

In this study oligohydramnios was detected in 9.13% while in the study done by Case BM et al and Raj Sriya et al incidence of oligohydramnios was (2.31%), and (1.51%)[15,16] respectively. Maximum number of patients were in the age group of 20-25 which may be due to the high fertility rate in this age group, mean maternal age in this study was 25.57 years which is comparable to study done by Casey et al[15] and Kaur et al[17] in which it was 23.9 years, and 25.8 years respectively.

Table 4 shows associated maternal conditions with oligohydramnios like PIH (13.91%), Preeclampsia (92.60%), Postdatism (5.21%), hypothyroidism (8.69%). PROM (5.21%). Perinatal outcome in table 9 and 10 shows the incidence of SGA babies (60.86%) to be more than AGA (39.14%) babies which may be due to intrauterine growth retardation in these patients APGAR score of less than 7 at 1 minute (31.30%) in our study is comparable to study of V. Sriya R et al[16] (38.80%). 28.75% of new-born in our study needed admission in NICU as compared to study done by Julie M Johnson et al[13](20%).

Conclusion

From the present study it can be concluded that oligohydramnios (AFI less than 5 cm) is associated with increased maternal and perinatal morbidity in the form of low birth weight, low APGAR score and increased need for NICU admission. Maternal morbidity is increased due to increased need for caesarean section in these patients. AFI measurement should be considered as one of the routine investigations to identify patients at risk of poor perinatal outcome so that a timely and balanced decision can be taken between vaginal delivery and caesarean section to ensure a healthy baby from a healthy mother. It can be concluded that oligohydramnios can be considered a high-risk pregnancy for which proper antenatal and intranatal care is of utmost importance to deliver a healthy baby from a healthy mother.

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