

Feto-Maternal Outcome In Case of Oligohydramnios at Term

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Conflicts of Interest: Nil

Abstract

Background: To know the pregnancy outcome in term pregnancy with oligohydramnios. (AFI <5)

Materials & Methods: A case control study was conducted in 50 women with the ultrasound diagnosis of oligohydramnios after 37 completed weeks of gestation compared with 50 controls without oligohydramnios matched with age, parity & gestational age.

Results: There were increased chances of non-reactive NST, thick meconium stained liquor, low APGAR Score at 5 min, low birth weight (<2.5 kg) & NICU admission in pregnancies with oligohydramnios at terms.

Conclusion: An AFI of < 5 cm detected after 37 completed weeks of gestation is an indicator of poor pregnancy outcome. Determining of AFI is a important screening test for predicting fetal distress in labor requiring caesarean section.

Introduction

A fetus is surrounded by amniotic fluid inside the uterus. Amniotic fluid plays a major role in the fetal growth & development. It enables continued fetal growth in a non-restricted, sterile and thermally controlled environment. It

promotes fetal lung development and prevents compression of the umbilical cord and thus protects the fetus from vascular and nutritional compromise.

The abnormalities of the amniotic fluid volume can thus interfere directly with the fetal development. Amniotic fluid index (AFI) of ≤ 5 cm defines oligohydramnios as described by Phelan et.al¹. It may be associated with uteroplacental insufficiency, preeclampsia, hypertension, diabetes, cardiac disease, congenital anomalies, fetal growth restriction, fetal hypoxia etc.

Many studies⁽²⁻⁵⁾ show that oligohydramnios is associated with variety of adverse pregnancy outcomes.

Fetal complications include cord compression, fetal distress, fetal pulmonary hypoplasia, fetal growth restriction, low APGAR score, NICU admission, stillbirth and fetal mortality.

Maternal complications include prolonged labour due to inertia, increased incidence of operative intervention due to malpresentations and its associated morbidity and mortality, such as increased incidence by caesarean section.

This study is conducted to determine whether an antepartum AFI of 5 cm or less at term as a predictor of poor pregnancy outcome.

Materials And Methods

This was a prospective case control study conducted in the Department of obstetrics & gynaecology, SBKS Medical College & Hospital, Vadodara during the period extended from Sep 2019 to June 2020. Permission for the study was obtained from Ethical committee of SBKS medical college.

This study consists of an analysis of pregnancy outcome in 50 cases with oligohydramnios (with AFI ≤ 5 cm) by ultrasound after 37 completed weeks of gestation compared with 50 controls without variable like age, parity and gestational age.

Cases were selected according to following inclusion and exclusion criteria.

The inclusion criteria

- AFI ≤ 5cm
- 37 completed weeks of gestation
- Intact membrane
- Single live intrauterine gestation
- Cephalic presentation

The exclusion criteria

- Gestational age less than 37 completed weeks
- Ruptured membranes
- Multiple gestation
- Malpresentation
- Multiple gestation
- Associated fetal malformations
- Pregnancy with previous lower segment caesarean section or myomectomy or hysterotomy

After selection of cases, detailed history, examination and all required investigations were done. Routine management in the form of rest, left lateral position, oral

and intravenous hydration and control of etiological factor was done if present. Fetal surveillance was done by USG, modified Biophysical profile and Doppler.

Various outcome measures recorded were

- Gestational age at delivery
- Colour of amniotic fluid
- FHR
- Mode of delivery(Indication for caesarean section or instrumental delivery)
- APGAR score at one minute and five minutes
- Birth weight
- Admission to neonatal intensive care unit (NICU)
- Perinatal morbidity and mortality

Results

The results were obtained by various statistical methods like chi square test etc.

Table-1: Demographic information of two Study Groups

	Study group N=50 (mean ± SD)	Control group N=50 (mean ± SD)	p-value
Age(year)	28/06 ±75/5	28/41 ± 5/81	0.470
Gestational age(week)	38/17 ± 1/26	38/10 ± 1/26	0.367
Parity	1/40 ± 0/46	1/50 ± 0/42	0.415
Gravidity	1/70 ± 1/10	1/83 ± 1/60	0.184

Table 1: shows non-significance difference in maternal age between the two groups. Most numbers of patients in both groups were at gestational age of 38-40 weeks. Between the two groups, there was a non-significance difference in parity & gravidity.

Table-2: Outcome Parameters in the Study Group Vs Control Group (Relationship between AFI and Pregnancy outcomes)

Outcome parameters	Study group N=50	Control group N=50	p-value
Non-reactive NST	19 (38%)	8 (17%)	0.01
Thick Meconium stained liquor	22 (42%)	7 (11%)	0.002
Indication for caesarean section	32 (61%)	11 (22%)	0.0001
APGAR Score <7 – 1 Min 5 Min	14 (28%) 09 (15%)	7 (18%) 04 (08%)	0.41 0.43
Birth Weight < 2.5 kg	32 (64%)	12 (24%)	0.006
NICU Admission	21 (44%)	4 (8%)	0.0005
Neonatal death	0 (0%)	0 (0%)	

Table 2: shows the outcome parameters in study vs Control group.

- The incidence of non-reactive NST was 38% in study group and 17% in control group. It was statistically significant as P Value was 0.01.
- Thick meconium stained liquor was in 42% of cases in study group and 11% of cases in control group which was statistically significant because p-value was 0.002.
- LSCS was done in 61% cases in study group and 22% cases in control group and was statistically significant. (P-value – 0.0001)
- Low 5 min APGAR score (<7) was deducted in 15% of cases in study group and 08% of cases in control group. It was statistically not significant. (P-value – 0.43)
- Low birth weight (≤ 2.5 kg) was deducted 64% of cases in study group and 24% of cases in control group which was statistically significant (P-value was 0.006).
- NICU admission rate was 44% in study group and only 8% in control group and it was statistically significant (P-value – 0.0005).
- There was no neonatal death in any group.

Discussion
 The purpose of this study was to compare the pregnancy outcome in patients with a singleton pregnancy with more than 37 weeks of gestational age with intact membrane and oligohydramnios and to see the outcome with a control group of patients with normal amniotic fluid volume. With advancing gestational age, Amniotic fluid volume is known to be reduced. (after 40 weeks) Hypertensive disorders causing chronic placental insufficiency lead to oligohydramnios. Oligohydramnios is indicator of potential fetal compromise. It is associated with a higher rate of pregnancy complications and increased incidence of perinatal morbidity & mortality.

In our study non-reactive NST was detected in 38% of cases in study group. Non-reactive NST was 66%, 43% and 53% in studies done by Chandra et.al6, Sriya et.al7 & Umber et.al8 respectively. The thick meconium stained liquor was noted in 42% of cases in study group in our study. Thick MSL was detected 24.7%, 30.88% and 8% of cases with oligohydramnios in studies done by Chandra et.al6, Sriya 7 et.al & Umber et.al8 respectively. The LSCS for fetal distress was 78.92%, 53% and 44.5% in studies which conducted by Chandra 6 et.al , Casey et.al9 and Sriya et.al7 respectively. It was 61% in our present study. Low APGAR score (<7) in study group was 28% at 1 min and 15% at 5 min. Low APGAR Score at 1 min was 40% and 36% in studies conducted by Guin et.al10 and Sriya et.al7 respectively. Chandra et.al6 showed low APGAR score in 5 min 24%. In present study, the occurrence of low birth weight (i.e. ≤ 2.5 kg) was 64% in study group which was comparable with other studies such as Chandra P et.al6 64% and Sriya et.al7 57%. 44% of the new born in our study group were admitted in NICU for various morbidities which was comparable with study conducted by Chandra et.al6 which showed 47% of

new born with oligohydramnios were admitted in NICU. In the present study there was no neonatal mortality among cases and controls & it was probably because of good NICU facilities.

Conclusion

An AFI of <5 cm detected after 37 completed weeks of gestation is an indicator of poor pregnancy outcome. If oligohydramnios is present, the occurrence of non-reactive NST, thick muconium stained liquor, fetal distress, the rate of LSCS, low 5 min APGAR score, low birth weight (LBW) and perinatal morbidity & mortality are high. Determination of AFI is a valuable screening test for predicting fetal distress in labour requiring caesarean section.

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