

Pregnancy Outcome in Oligohydramnios At Term: A Study of 100 Cases

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Abstract

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

Materials & Methods: A case control study on pregnancy outcome 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: The selected outcomes showed significant variations in both groups. 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 < 5cm detected after 37 completed weeks of gestation is an indicator of poor pregnancy outcome. Determination of AFI can be used as an adjunct to other fetal surveillance methods. Determining of AFI is a valuable screening test for predicting fetal distress in labor requiring caesarean section.

I. Introduction

A fetus is surrounded inside the uterus by amniotic fluid. 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. 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 originally described by Phelan et.al¹. Many studies⁽²⁻⁵⁾ show that oligohydramnios is associated with variety of adverse pregnancy outcomes, such as fetal distress, low birth weight, perinatal morbidity and increased incidence by caesarean section. Some authors have not confirmed the association of adverse perinatal outcome with oligohydramnios. Thus this study is conducted to determine whether an antepartum AFI of 5 cm or less at term as a predictor of poor pregnancy outcome.

II. Materials And Methods

This was a prospective case control study conducted in the Department of obstetrics & gynaecology, Bankumar Sammilani Medical College & Hospital, Bankura, during the period extended from April, 2015 to March 2016. Permission for the study was duly obtained from Ethical committee of BSMCH, Bankura.

This study consists of an analysis of pregnancy outcome in 50 cases with diagnosis of 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 for the study purpose was AFI ≤ 5 cm, 37 completed weeks of gestation, intact membrane, single live intrauterine gestation with cephalic presentation, pregnancy induced hypertension. Following patients were excluded from the study : gestational age less than 37 completed weeks, associated fetal malformation, ruptured membranes, malpresentation, multiple gestation and pregnancy with previous lower segment caesarean section or myomectomy or hysterotomy .

After selection of cases, detailed history & examination were done. All required investigation 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 tracing, 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. The results were statistically analysed using parameters like mean, student deviation and chisquare test.

III. Results

Table- I : 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	18 (36%)	9 (18%)	0.04
Thick Meconium stained liquor	20 (40%)	06 (12%)	0.001
LACS	30 (60%)	10 (20%)	0.0001
APGAR Score <7 – 1 Min	15 (30%)	8 (16%)	0.40
5 Min	08 (16%)	03 (06%)	0.40
Birth Weight < 2.5 kg	31 (62%)	10(20%)	0.008
NICU Admission	20(40%)	5(10%)	0.0006
Neonatal death	0(0%)	0(0%)	

In this present study there was a non-significance difference in maternal age between the two groups. Maximum number of patients in both groups were at gestational age of 38-40 weeks. There was a non-significance difference in parity between the two groups. Table – I shows the outcome parameters in study vs Control group. The occurrence of non-reactive NST was 36% in study group and 18% in control group. This was statistically significant (P Value – 0.04). Thick meconium stained liquor was detected in 40% of cases in study group and 12% of cases in control group which was statistically significant as p-value was 0.001. In our study LSCS was done in 60% cases in study group and 20% cases in control group which was statistically significant (P-value – 0.0001), low 5 min APGAR score (<7) was deducted in 16% of cases in study group and 06% of cases in control group which was statistically not significant (P-value – 0.40). Low birth weight (\leq 2.5) was deducted 62% of cases in study group and 20% of cases in control group which was statistically significant as P-value was 0.008 NICU admission rate was 40% in study group and only 10% in control group and this was statistically significant (P-value – 0.0007). In our present study there was no neonatal death in any group.

IV. Discussion

The purpose of this study was to determine the pregnancy outcome in patients with a singleton pregnancy with more than 37 weeks of gestational age, intact membrane and oligohydramnios and to compare the outcome with a comparable group of patients with normal amniotic fluid volume. Amniotic fluid volume is known to be reduced with advancing gestational age after 40 weeks. Hypertensive disorders which cause chronic placenta insufficiency lead to oligohydramnios. Oligohydramnios was recognised as a sign of potential fetal compromise. It was associated with an increased rate of pregnancy complications and higher incidence of perinatal morbidity & mortality. In our study non-reactive NST was detected in 36% of cases in study group. Non-reactive NST was 69.23%, 41.55% and 52.7% in studies done by Chandra P et.al⁶, Sriya R et.al⁷ & Umber et.al⁸ respectively.

The thick meconium stained liquor was noted in 40% of cases in study group in present study. Thick meconium stained liquor was detected 23.7%, 38.88% and 6% of cases with oligohydramnios in studies conducted by Chandra P et.al⁶, Sriya R⁷ et.al & Umber et.al⁸ respectively. Various studies show different rates of LSCS for fetal distress in pregnant woman with AFI of \leq 5 cm. The LSCS for fetal distress was 76.92%, 51% and 43.5% in studies conducted by Chandra P⁶ et.al, Casey et.al⁹ and Sriya et.al⁷ respectively. It was 60% in our present study. Low APGAR score (<7) in study group was 30% at 1 min and 16% at 5 min, which was comparable with other studies. Low APGAR Score are 1 min was 39% and 38.88% in studies conducted by Guin et.al¹⁰ and Sriya et.al⁷ respectively. Chandra et.al⁶ showed low APGAR score in 5 min 23.07% of cases and this was comparable with our present study. The present study showed that the occurrence of low birth weight (\leq 2.5 kg) was 62% of the cases in study group which was comparable with other studies such as Chandra P et.al⁶ 61.53% and Sriya et.al⁷ 58.38%. In our study 40% of the new born in study group were admitted in NICU for various morbidities. This was comparable with study conducted by Chandra et.al⁶. Their study showed 46.15% of new born in oligohydramnios group were admitted in neonatal intensive care unit (NICU).

In the present study there was no neonatal death among cases and controls & this was probably because of good NICU facilities.

The limitation of study includes the following :

1. The diagnosis of fetal distress was made depending on FHR trainings. However, fetal acidosis was not proved by fetal scalp blood sampling or other methods because of non-availability.
2. The use of backup surveillance methods like scalp blood sampling and acoustic stimulation and amnioinfusion would have altered the outcome.

V. Conclusion

An AFI of <5 cm detected after 37 completed weeks of gestation is an indicator of poor pregnancy outcome. In presence of oligohydramnios, the occurrence of non-reactive NST, thick muconium stained liquor, development of fetal distress, the rate of LSCS, low 5 min APGAR score, low birth weight and perinatal morbidity & mortality are high. Determination of AFI can be used as adjunct to other fetal surveillance methods. Determination of AFI is a valuable screening test for predicting fetal distress in labour requiring caesarean section.

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