

Fetomaternal Outcome in Induction of Labor in Third Trimester Oligohydroamnios Pregnancies.

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Abstract

Introduction: Amniotic fluid is a clean and slightly yellowish liquid surrounding the fetus in the uterus. Oligohydroamnios is defined as when Amniotic Fluid Index - AFI is less than 5th percentile or cumulative 4 quadrant AFI <5cm or maximum vertical pocket <2cm. Too little amniotic fluid can cause an early indication of problem for the mother and the baby. It is associated with meconium staining of liquor, fetal heart conduction abnormalities, umbilical cord compression, poor tolerance of labor, low APGAR score and fetal acidosis. It is one of the major cause of ANC surveillance and induction of labor.

Objective: To study fetomaternal outcome in induction of labor in term pregnancies with oligohydroamnios.

Materials And Methods: This was a hospital based study on 100 antenatal patients, who underwent ultrasound examination and doppler examination to confirm oligohydroamnios. Various outcome measures were recorded and analysed after induction of labor in the third trimester.

Results: Out of 100 cases which are taken 40 patients (40%) had AFI <5cm while the rest 60% had AFI between 5-7cm. PGE₂(prostaglandin E₂) was preferred mode for induction in 65% of women. Augmentation was required in 37% of cases out of which 10 patients had caesarean section. Mode of delivery was vaginal delivery in 60% of patients (60/100) out of which 23 patients had AFI <5cm and 37 patients had AFI between 5-7cm, while others 40 (40%) of women had caesarean section. Total 7% babies had NICU admission with single IUD (intrauterine death)(1%) and 1% still birth.

Conclusion: Oligohydroamnios is proxy for chronic hypoxia and utero-placental insufficiency and demands delivery. Decision regarding time and mode of delivery should be taken with optimal fetal and maternal monitoring.

Keywords: Caesarean section, induction of labor, intrauterine death, oligohydroamnios.

Introduction

Just as our ancestors crawled out of ocean to life on land. Similarly we float in amniotic fluid until born. Amniotic fluid is a clean and slightly yellowish liquid surrounding

the fetus in the uterus. It protects the developing baby by cushioning against blow of the mother's abdomen, allowing easier fetal movement promoting muscular and skeletal development. It is Inhaled and exhaled by the fetus which is essential for the lung maturity of the fetus. It contributes to the formation of meconium on swallowing. Oligohydroamnios is defined as when Amniotic Fluid Index - AFI is less than 5th percentile or cumulative 4 quadrant AFI <5cm or maximum vertical pocket <2cm. Too little amniotic fluid can cause an early indication of problem for the mother and the baby. Majority of the pregnancy proceeds normally and baby is born healthy. Babies with too little amniotic fluid develop contractures, disability of hands and feet and hypoplastic lungs which can be potentially fatal. Decreased volume of amniotic fluid poses a challenge in obstetric management, particularly at term. lack of amniotic fluid allow compression of fetal abdomen which reduces the movement of the diaphragm and lack of flowing in and out of fetal lungs leading to pulmonary hypoplasia. Oligohydroamnios is associated with meconium staining of liquor, fetal heart conduction abnormalities, umbilical cord compression, poor tolerance of labor, low APGAR score and fetal acidosis. In case of IUGR degree of oligohydroamnios is proportional to growth restriction and reflects the internal placental dysfunction and is associated with increase in perinatal mortality rate. It is one of the major cause of ANC surveillance and induction of labor.

Material & Method

This was a hospital based study carried out in a duration of 1 year. In total 100 antenatal patients were included in this study after applying the inclusion and exclusion criteria, who underwent ultrasound examination and doppler examination to confirm oligohydroamnios.

Inclusion criteria

- singleton pregnancies with gestational age >28 week
- cephalic presentation
- AFI <5cm or between 5-7cm
- Intact membranes

Exclusion criteria

- singleton pregnancies with gestational age <28 week
- malpresentation
- fetus with congenital anomalies
- multiple pregnancies

After selection of cases, detailed history (including obstetric history, menstrual history, past history, family and personal history, drug history) was taken. Complete examination in the form of general, systemic, per abdomen and pelvic examination was done.

Clinical evidence of Oligohydroamnios was confirmed by ultrasound and Doppler examination. Various outcome measures were recorded (color of amniotic fluid, mode of deliver, indication for C-section, APGAR score at 1 and 5 min, admission to Neonatal Intensive Care Unit NICU, perinatal morbidity and mortality).

Results

Out of 100 cases which are taken 40 patients (40%) had AFI <5cm while the rest 60% had AFI between 5-7cm.(Table no.1). Maximum patients (70%) had no complains while 16% of the mothers had abdominal pain followed by loss or decrease fetal movement in 8% and 5% mothers respectively. Bleeding PV was complained by 11% of the mothers. (Table no.2). PGE2(prostaglandin E2) was preferred mode for induction in 65% of women with 3% women were induced with double gel. one patient was induced with gel followed by two doses of misoprost. Another patient was induced by sweeping and stretching of membranes; thereby afterwards one gel was instilled too. Augmentation was required in 37% of cases

out of which 10 patients had caesarean section. (Table no.3). Mode of delivery was vaginal delivery in 60% of patients (60/100) out of which 23 patients had AFI <5cm and 37 patients had AFI between 5-7cm, while others 40 (40%) of women had caesarean section. These 40 patients were distributed as 17 patients with AFI <5 cm and 23 patients with AFI 5-7cm. Maximum number of C-section 60% were due to failed induction. Rest indications were fetal distress 20% > failed progression 15% > cephalo pelvic disproportion(CPD) > deep transverse arrest (DTA). (Table no.4 & 5). Course of babies were complicated by IUGR (intrauterine growth restriction) and MSL (meconium stained liquor) in 26%. Total 7% babies had NICU admission with single IUD (intrauterine death)(1%) and 1% still birth. (Table no.6 & 7)

Discussion

Several studies have demonstrated an association between oligohydroamnios and greater rate of adverse fetal and neonatal outcome. 40% of subjects had AFI <5cm and 60% had AFI 5-7cm. Rossi et al(2013)[1] also observed AFI <5cm as cut off for oligohydroamnios. Among the patients, 16% complained of abdominal pain on admission. Decrement or loss of fetal movement in 13% patients lead to seek care. Rest 70% had no complains. Complain of decreased or loss of fetal movement were due to utero-placental insufficiency, hypoxia changes and less spacious environment around the fetus associated with oligohydroamnios. Regarding mode of induction in subjects, Alcehlabi et al(2006)[2] identically studied like us in inducing all the patients and recording their perinatal outcome. Operative delivery was mode of delivery in 40% patients, out of which 17% had AFI<5cm. Main reason for C-section was failed induction 60%, followed by fetal distress 20%. Our study was close to Casey B et al (2000) [3] who reported 32 % cases being delivered by C-section. But indication for section due to fetal distress was

seen only in 5%. Dissimilar results were obtained by Lacatelli et al (2004)[4], in which only 15% had C-section, out of which 8.2% had fetal distress. IUGR and MSL has complicated the course for 26% babies. MSL was seen in 7%, out of which 1 baby succumbed to IUD. So in our study if induction is done in case of idiopathic oligohydroamnios at term, perinatal morbidity is comparable to general population with no appreciable increase due to oligohydroamnios. Dipty Shrestha (2009)[5] studied fetal outcome in oligohydroamnios. Majority of the cases were primipara. 50.9% had AFI<5 cm and 40.1% had AFI 5-8cm. In the group with AFI <5cm , 21.81% had vaginal delivery and 78.18% underwent c-section. While 73.33% had vaginal delivery and 26.67% had caesarean section in AFI 5-8cm group. There were total 28 admission in NICU, 20 babies belonged to AFI<5 cm group and 8 to AFI 5-8cm. Preshit Chate et al (2013) [6]analysed pregnancy outcome in 50 cases with diagnosis of oligohydroamnios (AFI<5 cm) after 37 weeks and compared with 50 normal pregnancies. Due to oligohydroamnios there were increased chances of FHR decelerations,non reactive NST, thick meconium, low Apgar score at 5 min. ,birth weight <2.5 kg, admission to NICU, congenital anomalies & neonatal mortality.

Tables

Table No. 1: Distribution of Cases According to Amniotic Fluid Index

AFI	NUMBER	PERCENTAGE
<5cm	40	40%
5-7 cm	60	60%
TOTAL	100	100%

Table No. 2 : Distribution of Cases According to Chief Complains on Admission

COMPLAINS	NUMBER	PERCENTAGE
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Bleeding per vaginum	1	1%
Decreased fetal movement	5	5%
Loss of fetal movement	8	8%
Abdominal pain	16	16%
No complains	70	70%
TOTAL	100	100%

Table No. 3 : Distribution of Cases According to Mode of Induction

METHOD	NUMBER	PERCENTAGE
Oxytocin	1	1%
Double mode of induction	2	2%
Misoprost	3	3%
Sweeping & stretching of membrane	29	29%
PGE2	65	65%
TOTAL	100	100%

Table No. 4 : Distribution of Cases According to Correlation between Amniotic Fluid Index and Mode Of Delivery

MODE OF DELIVERY	AFI <5cm	AFI 5-7cm	TOTAL
Vaginal Delivery	23	37	60
C - section	17	23	40
TOTAL	40	60	100/100

Table No. 5 : Distribution of Cases According to Indication of Caesarean Section (C - section)

INDICATION	NUMBER	PERCENTAGE
Failed Induction	24	60%

Fetal Distress	8	20%
Failed Progression	6	15%
Cephalo pelvic disproportion(CPD)	1	2.5%
Deep transverse arrest (DTA)	1	2.5%
TOTAL	40	100%

Table No. 6 : Distribution of Cases According to Correlation between Amniotic Fluid Index and Fetal Complications

COMPLICATION	AFI <5cm	AFI 5-7 cm
IUGR	5%	14%
MSL	2%	5%

Table No. 7 : Distribution of Cases According to Correlation between Amniotic Fluid Index and Fetal Outcome

OUTCOME	AFI <5cm	AFI 5-7cm
NICU Admission	5%	2%
IUD	1%	-
Still birth	1%	-

Conclusion

Oligohydroamnios is proxy for chronic hypoxia and utero-placental insufficiency and demands delivery. Severe oligohydroamniotic women, who visits for ANC (antenatal) check-up should be carefully evaluated, counselled and individualised. Decision regarding time and mode of delivery should be taken with optimal and meticulous antepartum, peripartum and postpartum fetal and maternal monitoring.

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