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Oligohydramnios and its perinatal outcome in a tertiary hospital

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Abstract

Background: The importance of amniotic fluid volume as an indicator of fetal status is being appreciated relatively recently. Around 3% to 8% of pregnant women are presenting with low amniotic fluid at any point of pregnancy. The present study was undertaken to study the outcome of pregnancies with Oligohydramnios at or beyond 34 weeks.

Methods: This study consists of 50 cases of antenatal patients with oligohydramnios at or beyond 34 weeks of gestation compared with age and gestation matched 50 normal liquor. The outcome measures recorded were labor, gestational age at delivery, amniotic fluid index (AFI), mode of delivery, indication for cesarean section or instrumental delivery, APGAR score and birth weight.

Results: Variable deceleration was noted in 13 (26%) and late deceleration in 4 (8%) cases. In control group, 2 (4%) had late deceleration. In cases induced labor is in 15 (30%), spontaneous labor 35 (70%). In cases, term normal vaginal delivery was in 14 (28%), PVD in 5 (10%), LSCS in 30 (3%) and instrumental vaginal delivery in 1 (2%). In controls, full term normal vaginal delivery was in 42 (84%), PVD in 5 (10%), LSCS in 3 (6%). APGAR score <7 at 1 minute was in 19 (38%) and at 5 minutes was in 5 (10%) in cases. Birth weight is reduced in cases. IUGR was reported in 9 (18%) in cases.

Conclusions: Pregnancies with Oligohydramnios (AFI ≤ 5) is associated with increased rate of non-reactive NST. Routine induction of labor for Oligohydramnios is not recommended. It is preferable to allow patients to go into spontaneous labor with continuous FHR monitoring. Antepartum diagnosis of Oligohydramnios warrants close fetal surveillance.

Keywords: Amniotic fluid index, APGAR score, Fetal heart rate, Intra uterine growth restriction

Introduction

Oligohydramnios refers to reduced amniotic fluid expected for that gestational age. Ultrasound examination is diagnostic and may be described qualitatively (eg; normal or reduced) or quantitatively (eg; amniotic fluid index AFI < 5cm). For normal fetal movements and growth and to cushion the fetus and umbilical cord, adequate volume of amniotic fluid is critical.

Oligohydramnios may inhibit these processes and can lead to fetal deformation, umbilical cord compression, and death. Oligohydramnios sequence, or Potters syndrome, is a chain of events that results in severe abnormalities of the fetus. Not all fetuses develop abnormalities due to low levels of amniotic fluid. The occurrence of oligohydramnios sequence depends on few factors, the stage of pregnancy and the level of amniotic fluid. The later stages of pregnancy appear to be troublesome. If oligohydramnios sequence occurs at that time, a more serious condition can occur.

The importance of amniotic fluid volume as an indicator of fetal status is appreciated all along [1]. Normally during third trimester, around 3% to 8% of pregnant women are with low amniotic fluid at any point of pregnancy. It is normally anticipated as a sign of placental insufficiency [2], Amniotic fluid has a number of important roles in embryo/fetal development. It cushions that fetus against trauma, has antibacterial property and promotes growth and development of gastrointestinal and musculoskeletal system [2]. It helps to maintain the fetal body temperature and plays a part in homeostasis of fluid, and permits fetal movements [4, 5]. Amniotic fluid volume maintains amniotic fluid pressure thereby reducing the loss of lung fluid- an essential component to pulmonary development. It prevents compression of the umbilical cord [6]. Decreased amniotic fluid volume is frequently one of the first clues to an underlying fetal abnormality or maternal disease state. A significant reduction in the amniotic fluid correlates with an increased rate of both perinatal morbidity and mortality [7].

Methods

This prospective study was done at Department of Obstetrics and Gynecology, Tagore Medical College, Chennai. This study consists of 50 cases of antenatal patients with the ultrasound diagnosis of oligohydramnios (AFI \leq 5) at or beyond 34 weeks of gestation compared with 50 normal liquor (AFI \geq 5 and \leq 25) and matched for age, parity and gestational age. The subjects with congenital anomaly, ruptured membranes,

Results

Table 1: Demographic representation of the subjects.

	Study group (nS=50) Mean \pm SD	Control
Age	22.8 \pm 3.02	22.6 \pm 3.9
Gestational age	37.9 \pm 2.3	37.3 \pm 1.9
AFI	3.74 \pm 1.2	12.54 \pm 2.5*

* Significant ($p < 0.05$).

Table 2: Occurrence of variable and late deceleration, labor, mode of delivery between cases and controls.

FHR pattern	Cases	Controls	P value
	Number (%)	Number (%)	
Variable deceleration	13 (26%)	0	$P < 0.05$
Late deceleration	4 (8%)	2 (4%)	
Induced labour	15 (30%)	2 (4%)	$P < 0.05$
Spontaneous labour	35 (70%)	48 (96%)	
Full term normal vaginal delivery	14 (28%)	42 (82%)	
PVD (Planned Vaginal Delivery)	5 (10%)	5 (10%)	
LSCS	30 (60%)	3 (6%)	
Instrumental vaginal delivery	1 (2%)	0	

Table 3: APGAR score, birth weight and IUGR.

APGAR score	Cases	Controls
	Number (%)	Number (%)
1 Minute (< 7)	19 (38%)	13 (26%) $P < 0.05$
5 Minute (< 7)	5 (10%)	2 (4%)
Weight (kg)		
< 2.5	31 (62%)	12 (24%) $P < 0.05$
> 2.6	19 (38%)	38 (76%)
IUGR	9 (18%)	1 (2%) $P < 0.05$
NST Non- reactive	22(44%)	2(4%) $P < 0.05$

Summary

The present study included 100 pregnant women. Among them 50 were cases of oligohydramnios (AFI \leq 5) at or beyond 34 weeks of gestation and 50 were 50 normal liquor (AFI \geq 5 and \leq 25) and matched for age, parity and gestational age. Age and gestational ages were not significant between cases and controls. Amniotic fluid index (AFI) was significantly decreased in cases (3.74 \pm 1.2) compared (12.54 \pm 2.5) with controls as illustrated in Table 1.

As shown in Table 2, variable deceleration was noted in 13 (26%) and late deceleration in 4 (8%) cases. In control group no women developed variable deceleration and 2 (4%) had late deceleration. In cases induced labor is in 15 (30%) and spontaneous labor is in 35 (70%). In cases, full term normal vaginal delivery was in 14 (28%), PVD in 5 (10%), LSCS in 30 (60%) and instrumental vaginal delivery in 1 (2%). In controls, full term normal vaginal delivery was in 42 (84%), PVD in 5 (10%), LSCS in 3 (6%) and instrumental vaginal delivery nil.

Conclusion

Pregnancies with Oligohydramnios (AFI \leq 5) at or beyond 34 weeks is associated with increased rate of non reactive NST. FHR deceleration during labor, development of fetal distress, rate of caesarean delivery and low birth weight. Rate of caesarean for fetal distress is increased because of increased rate of induction of labor in the women with Oligohydramnios. Routine induction of labor for Oligohydramnios is not recommended. Termination of pregnancy with Oligohydramnios by caesarean delivery or instrumental vaginal delivery to be done at the onset of fetal distress. Antepartum diagnosis of Oligohydramnios warrants close fetal surveillance. The study recommends that AFI surveillance needs to be an integral part of any antenatal foetal surveillance and decision making process while planning appropriate obstetric management. We conclude that every case of oligohydramnios needs careful antenatal evaluation, parental counselling, individualized decision regarding timing and mode of delivery. Continuous intrapartum fetal monitoring and good neonatal care are necessary for better perinatal outcome.

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