

STUDY OF ROUTE OF DELIVERY AND PERINATAL OUTCOME IN OLIGOHYDRAMNIOS

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Received : 05/09/2023
Received in revised form : 25/10/2023
Accepted : 09/11/2023

Keywords:
Oligohydramnios, FGR, NST, Fetal distress, Labor induction, Caesarean delivery.

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DOI: 10.47009/jamp.2023.5.6.285

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2023; 5 (6); 1385-1387



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Abstract

Background: To study neonatal outcome and appropriate route of delivery in oligohydramnios of AFI < 5 cm in women at or beyond 34 weeks gestation. **Methods:** In this prospective case control study of 50 women (study group) with oligohydramnios of AFI < 5 cm at or beyond 34 weeks of gestation was compared with 50 women (control group) with normal AFI > 5 cm and less than 25 at or beyond 34 weeks matched for age, parity, gestational age. Women with PROM, gestational age < 34 weeks and greater than 40 weeks, congenital anomaly, PIH, multiple gestations were excluded from this study. This study was done in antenatal and intrapartum period for neonatal outcome and appropriate route of delivery. **Results:** In our study we found that oligohydramnios was associated with increased rate of non-reassuring fetal heart rate (25% Vs 6%), cesarean delivery (50% Vs 10%), low birth weight (60% Vs 25%), FGR (17% Vs 5%) and admission to NICU (15% Vs 5%). There was no neonatal death in the study. **Conclusion:** Pregnancies with isolated oligohydramnios (AFI < 5 cm) at or beyond 34 weeks are associated with increased incidence of fetal distress (non-reassuring fetal heart rate), caesarean delivery, and low birth weight. Induction of labor was associated with increased rate of caesarean section due to fetal distress. No appropriate route of delivery can be recommended for isolated oligohydramnios.

INTRODUCTION

Amniotic fluid has a number of important roles in embryonal fetal development. It cushions the fetus against trauma, acts as shock absorber has antibacterial property and is important for growth and development of fetus. It helps to maintain the fetal temperature body and maintains the homeostasis of fluid, helps in fetal movements. Amniotic fluid volume maintains. It is calculated by dividing the uterus externally into 4 quadrants to measure vertical diameter of the largest pocket in each quadrant in millimeter, which is then summed to calculate AFI. AFI < 5 cm is diagnosed as oligohydramnios. Ante partum diagnosis of oligohydramnios by means of AFI accounted for 2.3% of pregnancies undergoing sonography after 34 weeks. Oligohydramnios can be an idiopathic finding in women who have low risk pregnancies and no medical or fetal complication.

It both prevents compression of the umbilical cord. A significant reduction in the amount of amniotic fluid co-relates with an increased rate of perinatal mortality. Morbidity and perinatal Hence it is an

important factor for a good perinatal outcome. The progressive improvements in ultrasonographic imaging have taken the technology of fetal and amniotic fluid assessment from the stage of subjective impression to present state in which relatively better judgment of fetal condition can be made based on reproducible measurements. In present practice, amniotic fluid assessment in antenatal period has become very important. Study the outcome of pregnancies with AFI ≤ 5 cm at or beyond 34 weeks.

MATERIALS AND METHODS

This is a prospective case control study done in the department of Obstetrics and Gynecology of Deccan college of medical sciences. The Study consists of analysis of pregnancy outcome in 50 cases of antenatal patients with the ultrasound diagnosis of oligohydramnios (AFI ≤ 5) at or beyond 34 weeks of gestation compared with 50 controls with normal AFI and matched for other variables like age, parity and gestational age. The study and control group

consist of pregnant woman at or >34 wks admitted in antenatal ward upto delivery.

RESULTS

The mean age in study was 22.6 years. Most of them were primigravida's and the mean gravidity was 1.68 in the study. The amniotic fluid index was measured by four quadrant semi quantitative technique by ultrasonography. The mean AFI in the study was 3.80cm. The occurrence of non-reactive NST was more common in the study group compared to control group (22% Vs 6%). The deceleration in CTG were recorded more often in oligohydramnios group and variable deceleration were the common type (38% Vs 6%). The incidence of induction of labor was more in the study group, compared to control group (28% Vs 2%). There was an increase in incidence of cesarean delivery (58%) in women with oligohydramnios due to fetal distress in induced women. There was no difference in the occurrence of Apgar score less than 7 at 1 min and 5 min both in term and preterm babies with oligohydramnios. Incidence of FGR in the study was 17%. The mean birth weight was 2.4kg in the present study. The birth weight \leq 2.5kg was seen in 64% of women in the study. The incidence of low birth weight was high even in women with term gestation. 15% of babies born in study group were admitted in NICU for various neonatal complications like meconium aspiration, fetal distress, low birth weight, preterm birth, FGR and birth asphyxia. There were no early neonatal deaths in the present study. No appropriate route of delivery for isolated oligohydramnios can be recommended by our study.

DISCUSSION

Importance of amniotic fluid volume as an indicator of fetal status was appreciated relatively recently.

The various outcome measures recorded were, induced Vs spontaneous labor, gestational age at delivery, nature of amniotic fluid, FHR tracing, mode of delivery, indication for caesarean section or instrumental delivery, Apgar score at one minute and five minute, birth weight, admission to NICU, perinatal morbidity and mortality. The mean age for the study group in the present study was 22.6 years which is comparable with Elizabeth G. Voxman,^[16] and Brian M. Casey et al,^[7] 27.3 yrs and 23.9 yrs respectively.

The mean parity is 0.68 comparable with that of mean parity of 0.6 in the study by Magann et al,^[12] and mean parity of 1 in a study by Collen B et al.^[9] The mean gestational age in the present study was 38.1 weeks comparable with 37.5 weeks in a study by Brian. M Casey et al.^[7] The mean AFI in the present study was 3.8cm comparable with a study by Elizabeth G Voxmann,^[16] of 3.2cm. The rate of non-

reactive NST in present study is 22% vs 40% in Kumar P et al,^[23] and 5.9% in Elizabeth G. Voxman.(16) FHR deceleration pattern was noted in 38% of women in present study which is comparable to 36.11% and 48% in studies by Sriya R et al,^[24] and Casey et al,^[7] respectively. Meconium stained liquor was noted 22% in present study compared with 16% in Kreiser D et al,^[14] and 6% in Casey et al.^[7] In the present study 14 women (28%) In study group were induced. Compared to Casey et al,^[7] the rate of induction was 42%, Rainford et al,^[15] it was as high as 98%, and Kreiser et al(14) 7%. In the present study 36% of women underwent LSCS for fetal distress compared with Rainford et al,^[15] which is 21%.

Apgar score < 7 at 5 minutes was 10% in the study group. Casey et al,^[7] found no difference in incidence of low Apgar scores at 5 min (<7). The rates of low Apgar score were similar between the pregnancies in study and control group. Our study results were consistent with the inference by various author like Rainford et al,^[15] Kreiser D et al,^[14] Locatelli a et al,^[17] and Elizabeth G. Voxman et al.^[16] The occurrence of low birth weight babies less than 2.5kg was 64% which is comparable with other studies like Chandra P et al,^[23] (61.53%) and Sriya R et al,^[24] (58.38%). The occurrence of low birth weight babies were significantly high even in women with term gestation. In present study the rate of occurrence of FGR was 17%. Compare to Corosu R et al,^[13] 39.59% and 24.5% in Golan A et al,^[8] 15% of newborn were admitted to the NICU for various morbidities like meconium aspiration, birth asphyxia, FGR, low birth weight preterm care. This is not consistent with studies by Magann et al,^[12] – 7.6%, Casey et al,^[7] – 7%, and Sriya R et al(24) – 88.88%. There were no cases of neonatal death in our study. No neonatal mortality was seen in a study by Garmel et al,^[10] and Casey et al.^[7]

CONCLUSION

Pregnancies with isolated 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, increased rate of caesarean delivery and low birth weight. Rate of cesarean for fetal distress is increased because of increased rate of induction of labor in the women with oligohydramnios. Routine induction of labor for isolated oligohydramnios is not recommended. No appropriate route of delivery can be recommended by this study. It is preferable to allow patients to go into spontaneous labor with continuous fetal heart rate monitoring. Termination of pregnancy with oligohydramnios by caesarean delivery or instrumental vaginal delivery to be done at the onset of fetal distress. Antepartum diagnosis oligohydramnios warrants close fetal surveillance.

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