International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622

www.gynaecologyjournal.com
2021; 5(6): 224-226
Received: 12-09-2021
Accepted: 13-10-2021

Dr. R Ramya
Final Year Post Graduate, Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College, Annamalai University, Chidambaram, India

Dr. A Malliga
Professor, Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College, Annamalai University, Chidambaram, India

Dr. R Vidhya
Assistant Professor, Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College, Annamalai University, Chidambaram, India

Corresponding Author:
Dr. A Malliga
Professor, Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College, Annamalai University, Chidambaram, India

A Study of Perinatal Outcome in Oligohydramnios in term Pregnancies

Dr. R Ramya, Dr. A Malliga and Dr. R Vidhya

DOI: https://doi.org/10.33545/gynae.2021.v5.i6d.1084

Abstract
Background: The amniotic fluid is the fluid that collects within the amniotic cavity surrounding the embryo. It is an ultrafilrate of maternal plasma. The main source of amniotic fluid is fetal urination. Another important source is fetal lungs which produces fluid that exits respiratory tract and enters amniotic compartment. The volume of amniotic fluid increases rapidly with the growth of products of consumption of about 50 ml at 12 weeks of pregnancy; 400ml at 20 weeks and at 36 weeks it's about 1000 ml. During the last few weeks of pregnancy its volume decrease about 600-800ml. At 43 weeks it is about 100-600 ml. This present study is to assess the amniotic fluid index of <= 5cm in term pregnancies.

Keywords: AFI, Oligohydramnios, Perinatal outcome

Introduction
Amniotic fluid that collects within the amniotic cavity is elaborated by amnion; a two layered embryonus membrane formed by inner ectoderm and outer somatic mesoderm; the two main sources of amniotic fluid are fetal urination (which is about 1-2 litre/day at term) and fetal lungs. Amniotic fluid is removed mainly by fetal swallowing [3].
Amniotic fluid keeps the baby warm and provides lubrication that helps them growing together; also lets the baby move easily; so that the baby can exercise muscles and strengthens bone before baby is born; providing physical movement for fetal movement and necessary for musculoskeletal development; permits fetal swallowing essential for GIT development; helping fetal lung development; guards against umbilical cord compression and protects fetus from diseases.
With AFI<5CM, incidence of oligohydramnios after 34 weeks was 2.3%. Umbilical cord compression during labour is common with oligohydramnios which increases the caesarean delivery for fetal distress and 5 minute APGAR score <7 (Chauhan 2004) [1]; Oligohydramnios is associated with still birth; increased labour induction; meconium aspiration syndrome; non reassuring fetal heart patterns and neonatal death.

Objective: To assess the perinatal outcome in oligohydramnios in term pregnancy with AFI <=5 cm.

Methodology: A prospective study is done on the perinatal outcome in oligohydramnios in term pregnancies with AFI<=5CM and control group amniotic fluid level >5CM was carried at Rajah Muthiah Medical College, Chidambaram.

Sample size: About 150 cases in AFI<=5CM (study group) and 150 cases in control group (AFI>5CM).

Inclusion criteria
1. Singleton pregnancy with gestational age > 37 weeks
2. Pregnancies without anomalies with intact membrane
3. AFI<=5CM

Exclusion criteria
1. Singleton pregnancies with gestational age < 37 weeks.
2. Patient with multiple gestation.

3. Pregnancies with fetus having congenital anomalies like renal agenesis, polycystic kidney disease.
4. Ruptured membranes or draining per vaginum.
5. Polyhydramnios.

Result

Table 1: Age Group

Age Group	Study Group		Control Group	
Age	No	%	No	%
<20 yrs	12	8%	7	47%
20-30 yrs	132	88%	138	92%
>30 yrs	6	4%	5	3.3%
Total	150	100%	150	100%

Table 2: Obstetric Code

Obstetric Code				
Parity	Study Group		Control Group	
	No	%	No	%
Primi	83	55.3%	85	56.7%
Multi	67	44.7%	65	43.3%

Table 3: High Risk

High Risk	Case	Control
Pre eclampsia	26(17.7)	20(13.6)
Postdated	27(18.4)	13(8.8)
Breech	14 (9.5)	3(2.0%)
Uncomplicated	56(38.1)	95(64.6)
Previous LSCS	24(16.3)	19(12.9)

Table 4: NST

NST	Study Group		Control Group	
	No	%	No	%
R	101	67.3%	125	83.3%
NR	47	32.7%	25	16.7%

Table 5: Onset of Labour

Onset of labour	Study		Control	
	No	%	No	%
I	54	36.0%	45	30.0%
S	96	64.0%	105	70.0%

Table 6: Obstetric Code

Onset of liquor	Study		Control	
	No	%	No	%
Clear	81	54.0%	110	73.3%
Thick	39	26.0%	11	7.3%
Thin	30	20.0%	29	19.3%

Table 7: Mode of Delivery

Mode of delivery	Study		Control	
	No	%	No	%
LN	57	38.0%	93	62.3%
LSCS	69	46.0%	35	23.3%
RPT	24	16.0%	22	14.7%

Table 8: Indication for LSCS

Indication for LSCS	Study		Control	
	No	%	No	%
Breech	9	6.0%	3	2.0%
CPD	10	6.7%	19	12.7%
FD	50	33.3%	17	11.3%
FI	13	8.7%	11	7.3%
IUGR	10	6.7%	5	3.3%
Others	2	1.3%	2	1.3%

Table 9: Baby weight

Baby weight	Study		Control	
	No	%	No	%
Below 2kg	38	25.3%	12	8.0%
2 to 2.5kg	24	16.0%	27	18.7%
2.5 to 3kg	75	50.0%	83	55.3%
3kg & above	13	8.7%	28	18.7%

Table 10: Apgar

Apgar	Study		Control	
	No	%	No	%
Below 4	6	4.0%	0	.0%
4 to 7	20	13.3%	3	2.0%
7 & above	124	82.7%	147	98.0%

Table 11: NICU admission

NICU admission	Study		Control	
	No	%	No	%
Yes	78	52.0%	27	18.0%
No	72	48.0%	123	82.0%

Discussion

Oligohydramnios with AFI<=5CM may lead to perinatal mortality and morbidity where there is increased complications like fetal distress, low Apgar score, meconium liquor [5]. In comparative to control group, fetal acidosis increases twice (Moore, *et al.*). There is an increase in fetal distress in caesarean section when compared to control. Here in. this. Study, we had 150 cases with AFI<=5CM in study group and with AFI>5 CM. 26 patients had pre eclampsia, 27 patients had postdated pregnancy, 24 cases had previous LSCS and. 14 were with breech presentation in the study group, while 20 cases had pre-eclampsia, 13 patients had postdated pregnancy, 19 cases had previous LSCS and 3 were with breech presentation in the control group.

In a study by Casey & Coworkers (2001) on pregnancy outcome after diagnosis of oligohydramnios it is found that there were increase in induction of labour (42% over 18%), no reassuring fetal heart rate patterns (48% vs 39%), MSAF (1% over 0.1%) NICU admission (7% over 2%), neonatal death rate (5% over 0.3%) associated with oligohydramnios.

Chamberlain & coworkers (1993) in their study found that that there was a significance between incidence of congenital anomaly, IUGR related to amniotic fluid level.

Golan & coworkers (1994) in their study of 145 babies with oligohydramnios and found increased incidence of fetal distress, IUGR (24.5%), MASF (29%), birth asphyxia (11.5%), breech (17%). Youseef, *et al.* 1993 found that AFI more than 5cm had better fetal outcome.

In a study by Chauhan S P & coworkers (1999) found more

frequency of caesarean delivery with antepartum and intrapartum AFI <5cm due to low APGAR score at 5mins and due to fetal distress.

Baron and coworkers (2000) in a study comparing patients with AFI <5cm with normal AFI patients found that oligohydramnios resulting in caesarean section due to fetal distress have sensitivity of 78%, specificity of 74%, positive predictive value of 33%, negative predictive value of 95%.

Locatelli A (2004) found that oligohydramnios was associated with high risk of low birth weight in post dated pregnancies

Present study

In this study outcome of 150 patients with AFI<=5cm was compared with 150 patients with AFI>5cms. 57patiens had normal vaginal delivery and 93 patients underwent LSCS (69 primary LSCS and 24 repeat LSCS) in study group. 93 patients had normal vaginal delivery and 57 patients underwent caesarean section (35 primary LSCS and 22 repeat LSCS).

45 cases in control group and 54 cases in study group were delivered by inducing labour. Oligohydramnios as a predictor for caesarean section due to fetal distress has a sensitivity of 74.6% comparable with other studies. Sensitivity of meconium stained liquor is 63.8% when comparable to various studies [2]. Predicting APGAR value <7 at 5mins with oligohydramnios in this study has sensitivity of 90% comparable to other studies. Sensitivity of 75% in IUGR babies with oligohydramnios is found in this study when comparable with earlier studies. 6% of neonatal death is found in this study group when comparable to other studies. There were 9 neonatal deaths out of which 8 were due to complications of IUGR was found in the study group and one neonatal death in control group [6].

Summary

In this study perinatal outcome with AFI<=5cm is compared with control group. About 150 cases were studied in each group. 88% of study group and 92.6% of control group belong to 20-30 years of age. 38% had vaginal delivery and 46 % had LSCS with 16% having repeat LSCS in study group. 62% had vaginal delivery, 23.3% had LSCS delivery with 14.7% having repeat LSCS in control group.The rate of caesarean section for fetal distress was higher in study group (33.3%) compared to control group (11.3%). The difference was found to be significant. (p<0.05) APGAR score <7 at 5mins was 17.3% in study group as against 2% in control group. The difference was found to be significant. Babies weighing less than 2 kg were 25.3% in study group and 8% in control group. This difference was found to be significant. (p-<0.05). In study group, 67.3% had reactive NST and 32.7% had non-reactive NST. In control group, 83.3% had reactive NST and 16.7% had non-reactive NST (p-<0.05).

In study group:

Risk of having APGAR score <7 at 5mins was 32.7% nonreactive NST as compared to 9.9% in reactive NST. Risk of NICU admission was high in nonreactive NST (83.7%) as compared to reactive NST (36.6%). Neonatal death rate was 16.3% in nonreactive NST and 1% in reactive NST. The difference was found to be significant. (p-<0.05).

In control group

Risk of having APGAR score <7 at 5mins, was 8% in nonreactive NST as compared to 0.8% in reactive NST. Risk of NICU admission was high in nonreactive NST (44%) as compared to reactive NST (12.8%). Neonatal death rate was 4% in nonreactive NST [8].

Conclusion

Oligohydramnios is detected most often in routinely performed obstetric USG [7], and it is one of the indicator of poor perinatal outcome. It is associated with fetal heart rate abnormalities, meconium staining of amniotic fluid, umbilical cord compression, poor tolerance of labour, low APGAR score of fetal acidosis. In third trimester of pregnancy induced hypertension, post dated pregnancies are the commonest causes. Oligohydramnios with reactive NST is associated with good prognosis. Oligohydramnios with nonreactive NST needs careful monitoring and results in early delivery, increased incidence of caesarean delivery for fetal distress, NICU admission, low APGAR score at 5mins, and neonatal death. Mode of delivery depends on severity of oligohydramnios and status of fetal wellbeing. Caesarean section is mostly required for cases with anhydramnios with intrapartum fetal heart abnormalities. Babies are relatively more prone for certain complications like intrapartum fetal distress, MAS, and birth asphyxia. Oligohydramnios associated with IUGR carries a poor perinatal outcome (increased neonatal death, NICU admission, increased rate of caesarean section for fetal distress, very low birth weight). Hence they need good neonatal care. From this study, we conclude that oligohydramnios is a high risk pregnancy and proper antepartum care, intensive fetal surveillance and intrapartum care are required in patients with oligohydramnios. Every case of oligohydramnios needs careful antenatal evaluation, parental counselling, individualization, decisions regarding time and mode of delivery. Continuous intrapartum fetal monitoring and good neonatal care are necessary for better perinatal outcome.

References

1. Chauhan SP, Sanderson M, Hendrix NW, MAgann EF. Perinatal outcome and amniotic fluid index in the antepartum and intrapartum period. A meta-analysis Arch gynecology Obstetrics. 2007 Jul;276(1):17-9.
2. Casey BM, Leveno KJ. Pregnancy outcomes after antepartum diagnosis of oligohydramnios at or beyond 34 weeks gestation. American Journal of obstetrics and gynaecology, 2000;182:9009.
3. Brace RA, Wlodek ME, Cock ML, *et al*. Swallowing of lung liquid and amniotic fluid by the fetus under normoxic and hypoxic conditions. American Journal of Obstetrics and Gynecology. 1994;17:1764-1770.
4. Brace RA. Progress toward understanding the regulation of amniotic fluid volume, water and solute fluxes in and through the fetal membranes and placenta, 1995;16:1-18.
5. Baron C, Morgan MA, Garite TJ. The impact of amniotic fluid volume assessed intrapartum on perinatal outcome. American Journal of obstetrics and gynecology. 1995;173:167,
6. Deutinger J, Bartl W, Pfersmann C, *et al*. Fetal kidney volume and urine production in cases of fetal growth retardation. Journal of perinatal medicine. 1987;15:307-315.
7. Nabhan AF, Abdelmoula YA. Amniotic fluid index versus single deepest vertical pocket as a screening test for preventing adverse pregnancy outcome. Cochrane Database of Systemic Reviews, 2008, 3.
8. McCurdy CM, Seeds JW. Oligohydramnios: problems and treatment. Semin perinatology. 1993;17:183.