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Original Research Article

A clinical study of mode of delivery and perinatal outcome in oligohydramnios

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ABSTRACT

Background: To evaluate intrapartum sequale of sonographically diagnosed Oligohydrominos such as rate of caesarean section, fetal distress and condition of the new born.

Methods: This Prospective observational study was conducted in the department of obstetrics and Gynecology, Navodaya Medical College Hospital and Research Centre between June 2015 to December 2016. The antenatal women with gestational age more than 34 weeks and above, attending our OPD or labor room were included in this study.

Results: A total of 140 cases of Oligohydromnias were selected for present study and outcome were assessed. The mean maternal age is 24.42 years. 32.14% cases have delivered vaginally, 67.82% patients went for caesarean sections, 10.7% of babies needed NICU care and 1 was still birth. No adverse maternal complications were observed during the study.

Conclusions: Oligohydromnia is one of the frequent complications during labor. The risk of muconium staining of liquor, intrapartum fetal distress, operative delivery and NICU admissions are more in Oligohydromnia cases.

Keywords: APGAR, Caesarean section, Fetal distress, IUGR, Muconium stained liquor, NST, Oligohydrominos

INTRODUCTION

Oligohydrominos is defined when the maximum vertical pocket of liquor is less than 2 cm or amniotic fluid index (AFI) is less than 5 cm. Amniotic fluid plays a major role in the development of fetus. It allows proper growth and development of long bones musculoskeletal system; has a bacteriostatic and anti-inflammatory properties. Decrease in amniotic fluid volume or Oligohydrominos has been well correlated with increased risk of IUGR, meconium aspiration syndrome, severe birth asphyxia, low apgar score, and congenital abnormalities of the fetus.¹

Early detection of Oligohydrominos and its management may help in the reduction of maternal, fetal morbidity and

mortality. Oligohydrominos increases maternal morbidity by increasing the rate of induction of labor and operative interference.

METHODS

The present study was conducted at Navodaya Medical College Hospital and Research Centre Raichur, between June 2015 to December 2016. Total no of 140 cases are selected for study, which includes both booked and unbooked cases. The study consists of Oligohydrominos with gestational age more than 34 weeks of pregnancies. Antenatal women with gestational age more than 34 weeks and above, attending our OPD or labor room were included in the study.

Inclusion criteria

- Pregnancy with >34 weeks
- Patients sure of their last menstrual period
- Singleton pregnancy with cephalic presentation
- Patients with AFI < 5 cm.

Exclusion criteria

- Pregnancy with gestational age < 34 weeks
- Multiple pregnancy
- Patients complaining of PROM
- Complications of pregnancy DM/Eclampsia
- Abnormal presentation
- Pregnant women having isolated Oligohydrominos on clinical examinations are subjected to ultrasound examination to confirm Oligohydrominos by phelan et al method²

Other important examinations like color Doppler, NST and CTG.

The data were collected for social environmental, medical surgical h/o of drug taking at first trimester, obst and menstrual history collected. Systemic examination was done for all patients; details of delivery and neonatal condition of babies were recorded. Cases were followed till they were discharged from the hospital.

RESULTS

Majority of study group belongs to the age group of 21 to 30 years (76.4%). The mean age is 24.42 years.

Table 1: Age wise distribution of cases.

Age-group in years p	Frequency	Percent
<20	26	18.6
21 to 30	107	76.4
>30	7	5
Total	140	100

In present study rate of Oligohydromnias was more in primigravidas i.e 52% and grand multies were 7.9%. The gestational age selected for our study was above 34 weeks of pregnancy 51% of patients belongs to 37 to 39 weeks of pregnancy. Out of 140 cases, 49 cases (35%) had a N.S.T. non- reactive and 91 cases (65%) had N.S.T. reactive.

Table 7: Association between LSCS and gestational age.

Emergency/Elective	Gestational age			Total	Chi sq	P	Inference
	34-36	37-39	>40				
Elective	2	20	15	37	6.9649	0.031<0.05	Significant
Emergency	8	40	10	58			
Total	10	60	25	95			

Table 2: Distribution according to the parity.

Obstetric score	Frequency	Percent
Primi	74	52.9
Multi	55	39.3
Grand multi	11	7.9
Total	140	100

Table 3: Distribution according to gestational age.

NST	Frequency	Percent
Non-reactive	49	35
Reactive	91	65
Total	140	100

Table 4: Distribution of cases according to result of NST.

NST	Frequency	Percent
Non-reactive	49	35
Reactive	91	65
Total	140	100

Out of 140 cases induction of labor was done for 46 cases, 7 delivered spontaneous vaginal delivery and 39 cases went for caesarean section.

Out of 140 cases 95 cases underwent emergency/ elective cesarean section (67.8) and 45 cases went for vaginal delivery as per Table 6. The colour of muconium was clear in 127 cases (90.7%), in 13 cases (9.3%) muconium stained. The NICU support was given to 15 babies (10.7%). The mean birth weight was 2654.86 gms and minimum-maximum variables was 1500 to 3750 gms.

Table 5: Result of induction of labor for non-reactive NST.

Type of labour	Frequency	Percent
LSCS emergency	39	84.8
Spontaneous	7	15.2
Total	46	100

Table 6: Result of mode of delivery.

Vaginal/ LSCS	Frequency	Percent
LSCS	95	67.86
Vaginal	45	32.14
Total	140	100

Table 8: Association between NICU admission and gestational age.

NICU admission	Gestational age			Total	Chi sq	P	Inference
	34-36	37-39	>40				
No	11	69	45	125	23.1312	0.000<0.05	Highly significant
Yes	8	3	4	15			
Total	19	72	49	140			

Table 9: The indication for caesarean sections.

Indication	No. of cases	Percent
Failed induction	13	13.68
Fetal distress	26	27.36
IUGR	2	2.1
Precious pregnancy	10	10.52
Severe oligohydromnias	44	46.31
Total	95	100

Table 10: Colour of the meconium.

Color of liquor	Frequency	Percent
Clear	127	90.7
MSL	13	9.3
Total	140	100

Table 11: Mode of vaginal deliveries.

Vaginal delivery	No. of cases	Percent
Spontaneous	30	66.6
Forceps	5	11
Ventos	10	22
Total	45	100

Table 12: Neonatal mortality.

Neonatal mortality	Frequency	Percent
Live	139	99.3
IUD	0	0
Still birth	1	0.7
Total	140	100

DISCUSSION

This prospective observational study was conducted in the department of Obstetrics and Gynecology, Navodaya

Medical College Hospital and Research Centre between June 2015 to December 2016. The amniotic fluid volume serves as an indicator for fetal well-being. Decrease in the volume of amniotic fluid reflex that fetus is in stress.

Shunting of blood to the brain and decrease in the renal perfusion and in turn there will be a decrease in urinary output and oligohydromnias.³

The assessment of amniotic fluid volume has become an integral part of fetal wellbeing assessment. In our present study mean maternal age was 24.42 yrs and similar studies were done by Chauhan et al and Everett et al, who found the similar findings in their study.^{4,5}

In our series 52.9% cases were primi gravidas. The AFI among studied cases varies from 1-5cms. 49 cases (35%) had a non-reactive NST and 91 cases (65%) had reactive reassurance NST. The induction of labor was done for 46 cases of non-reactive NST, out of 46 cases 7 cases (15.2%) delivered vaginally and remaining 39 cases (84.8%) of induction taken for emergency LSCS on various indications in Table 9. In remaining cases of 94 in which NST was reactive; 56 cases went for LSCS and 38 cases had normal deliveries.

Over all out of 140 cases selected for study 95 cases (67.86%) underwent caesarean section and 45 cases (32.14%) had spontaneous/ instrumental delivery. The caesarean section rate is 67.86% in our study.

One of the reason is non-reassurance NST develop ped complication during induction. Caesarean section rate is less in other studies by Cassy et al 51% and Sriya R et al 43.05%.^{6,7} but Zhang et al found no difference in overall rate of caesarean section between women with Oligohydromnias and control group 24% vs 19%.⁸

Table 13: Descriptive statistics of the variables.

	N	Mean	Std. Deviation	Std. error	Range	Minimum	Maximum
Age	140	24.42	3.54	0.30	17	18	35
Birth weight	140	2654.86	470.15	39.74	2250	1500	3750
APGAR at 1 min	139	6.52	0.85	0.07	6	2	8
APGAR at 5 min	139	8.45	0.66	0.06	3	6	9
No. of days NICU admission	15	1.53	1.65	0.11	6	1	7

Chauhan SP et al found an increased risk of caesarean delivery for fetal distress among Oligohydromnias cases which was comparable to our study. Compression of cord due to Oligohydromnias may be the cause for fetal distress. The incidence of low birth weight was not high in isolated Oligohydromnias. However, some studies do suggest that isolated Oligohydromnias is associated with low birth weight i.e, Sowmya K et al.⁹ Sharma M et al concluded rate of caesarean section in their series of Oligohydrominos was 44%.¹⁰

In present study mean birth weight was 2654.86gms Casey et al found 35% low birth weight and Chandra et al 61.53% and Sriya R et al 58.38%.¹¹ The high incidence of low birth weight may be because of chronic placental insufficiency causing fetal growth restriction in their study.

The mean APGAR score at 1 minute was 6.52 and minimum-maximum variation was 2 to 8 and after 5 minutes mean was 8.45 and minimum-maximum variation was 6 to 9. Out of 139 babies 10.7% were admitted to NICU for maximum 7 days for various causes.

CONCLUSION

Oligohydromnia is one of the frequent complications during labor. The risk of muconium staining of liquor, intrapartum fetal distress, operative delivery and NICU admissions are more in Oligohydromnias cases. Early intervention in the form of induction of labor close intrapartum monitoring, artificial rupture of membrane in active phase of labor and early decision for mode of delivery, proper resuscitation by paediatrician is mandatory to bring down the perinatal mortality and morbidity.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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