

EVALUATION OF EFFECT OF AMNIOTIC FLUID VOLUME ON PERINATAL OUTCOME IN INTRAUTERINE GROWTH RESTRICTION

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Abstract

Background: Comparison of perinatal outcome of intrauterine growth restriction with oligohydramnios and intrauterine growth restriction having normal liquor volume. **Materials and Methods:** A cross-sectional hospital based study done on a total 80 pregnant women which are divided into two groups. Group A – Constituted 40 patients of IUGR with oligohydramnios (AFI < 5cm), Group B – Constituted 40 patients of IUGR with normal liquor volume (AFI 5 - 25cm). **Result:** Amniotic fluid is a clear, slightly yellowish liquid that surrounds the fetus during pregnancy, contained within amniotic sac and provides supportive environment for the fetus throughout the pregnancy for normal growth and development. Amniotic fluid throughout gestation enables normal development of the fetal respiratory, gastrointestinal and urinary tracts and musculoskeletal system and allows for continued fetal growth in a non-restricted sterile and thermally controlled environment. **Conclusion:** IUGR is an important health problem of developing countries around the world. There are multiple causes for IUGR including maternal, fetal, placental, and genetic factors. Mothers with high risk factors for IUGR fetus should be followed up closely for any complications.

INTRODUCTION

In modern obstetrics, the beneficial outcome of obstetric wellbeing is determined by obtaining a healthy mother and healthy baby.

Recognizing a fetus at risk for death or injury in utero, quantifying the risk, balancing the fetal risk against neonatal complications from immaturity and deciding the time and mode of intervention are the cornerstones of modern perinatal medicine.^[1] Accurate clinical evaluation of amniotic fluid volume (AFV) is essential for prenatal screening, as variations in AFV have been associated to a variety of pregnancy complications. The amniotic fluid around the developing fetus offers protection against physical or biological risk.^[2,3]

The amniotic fluid level drops dramatically after 40 weeks of pregnancy. At term (37 weeks and beyond) average amniotic fluid volume is 750ml approximately.

Oligohydramnios is diagnosed at term when the amniotic fluid index (AFI) is less than 5 centimetres or/and the deepest vertical pocket is less than 2 centimetres, or/and the AFI is less than 200 millilitres. Its incidence is 1-2 percent of all pregnancies.^[1] By protecting the fetus from harmful stimuli, maintaining a consistent temperature, and encouraging healthy cell division, amniotic fluid

(sometimes called liquor amnii) ensures the health and well-being of the developing fetus. Clinical and radiological assessment of amniotic fluid volume as outpatient care is an early step to identifying high-risk pregnancies and fetal health since variations in amniotic fluid volume have been connected to a range of perinatal disorders.^[2]

Amniotic fluid volume is estimated by adding up the amount of fluid that enters and exits the amniotic sac. The most widely used method of determining amniotic fluid volume is ultrasound analysis of the amniotic fluid index (AFI). Ultrasonography is a noninvasive test which can be used for a screening technique. The volume of amniotic fluid present during pregnancy is an important aspect of the biophysical profile, especially in the third trimester.^[4] Phelan et al,^[5] described amniotic fluid evaluation with the amniotic fluid index via transabdominal sonography and four quadrant procedures (AFI).^[5,6] A low amniotic fluid volume (AFV) may indicate underlying placental insufficiency, which has a definite impact on growing fetus.

Phelan et al, Baron et al, and Kwon et al. all defined oligohydramnios as an AFI equal to 5cm or less than that.^[7,8] Oligohydramnios can be caused by a number of different conditions and circumstances which includes: pregnancy induced hypertension

(PIH), birth defects like renal agenesis, premature rupture of membranes (PROM), maternal dehydration (fever, vomiting, diarrhoea), drug induced non-steroidal anti-inflammatory drugs (NSAIDs), post-term pregnancies (>40 weeks), infections, idiopathic isolation, and more.^[9]

AIM

Comparison of perinatal outcome of intrauterine growth restriction (IUGR) with oligohydramnios and intrauterine growth restriction (IUGR) having normal liquor volume.

Primary Objective

Search for the difference in the perinatal outcome in IUGR with oligohydramnios and IUGR with normal liquor volume, if any

Secondary Objectives

1. To compare the risk factors in IUGR with oligohydramnios and IUGR with normal liquor volume.
2. To compare the incidence of spontaneous vaginal delivery in IUGR with oligohydramnios and IUGR with normal liquor volume.

MATERIALS AND METHODS

Type of Study: An Observational analytical study

Study Design: Cross-sectional hospital-based study

Study Population: Mothers with intrauterine growth restriction with oligohydramnios and those with intrauterine growth restriction with normal liquor.

Ethical Requirement: Written informed consent taken for the procedure and Permission from research and ethical committee of institute taken.

Duration of Study: January 2021- June 2022

Timeline of Data: Data Collection: January 2021- December 2021

Data Analysis: January 2021 - March 2022

Data Reporting: April 2022 – June 2022

A sample size was calculated using software n-master on the basis of previously done study.^[1] In that study spontaneous vaginal delivery was 36% in IUGR with oligohydramnios and 72% in IUGR with normal liquor volume. With alpha value was 5%, beta value of 10% and 90% power sample size was calculated to be 38 in each so it included 40 patients in each group.

$$n = \frac{\{Z(1 - \alpha/2) + Z_1 - \beta\}^2 \{p_1(1 - P_1) + P_2(1 - P_2)\}}{(p_1 - p_2)^2}$$

Inclusion Criteria

- Pregnancy with IUGR
- Singleton pregnancy
- Age group at 18 – 35 years

Exclusion Criteria

- Presence of other medical disorder like Diabetes, Hypertension, Rh incompatibility, Renal disease, Heart disease etc.
- Multiple pregnancy.

RESULTS

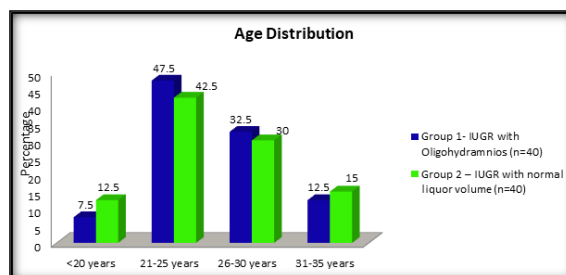


Figure 1: Age Distribution

[Table 1] Majority of the study subjects in both with oligohydramnios and with normal liquor were aged from 21 to 25 years (47.5% vs. 42.5%). The mean age was 25.70 ± 4.02 years and 25.60 ± 4.43 years respectively in IUGR with oligohydramnios and in IUGR with normal liquor with no statistically significant difference (p value = 0.587).

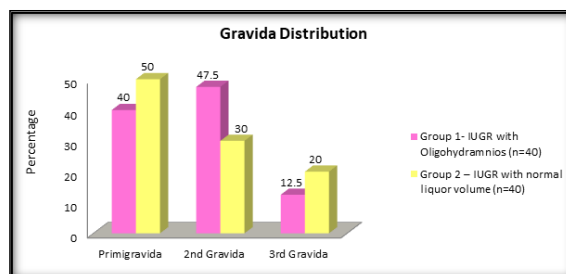


Figure 2: Gravida Distribution

[Table 2] Majority of the study subjects with IUGR with oligohydramnios were 2nd gravida (47.5%) while in IUGR with normal liquor majority of the participants were primigravida (50%), however there was no statistically significant difference regarding gravidity between two groups (p value = 0.257).

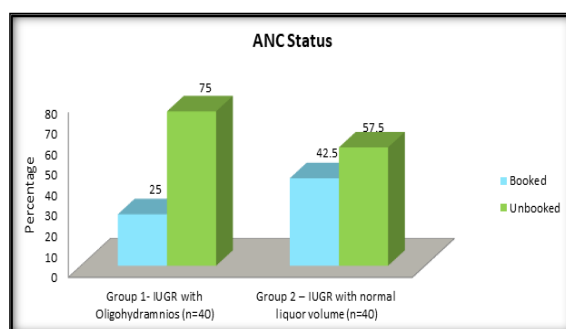


Figure 3: ANC Status

[Table 3] In patients of IUGR with oligohydramnios 10 (25%) were booked i.e. had at least 3 check up in hospital and at least one visit in third trimester of pregnancy and other 30 (75%) were unbooked cases, in IUGR with normal liquor 17 (42.5%) were booked cases while 23 (57.5%) were unbooked cases. there was no statistically significant difference regarding ANC status between two groups (p value = 0.097).

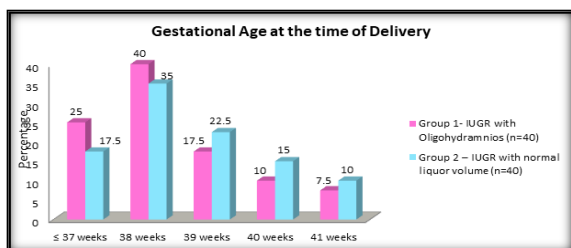


Figure 4: Gestational Age at the time of Delivery

[Table 4] Majority of the study subjects in both the groups delivered at above 37 weeks with no significant difference regarding the period of gestation (p value = 0.834).

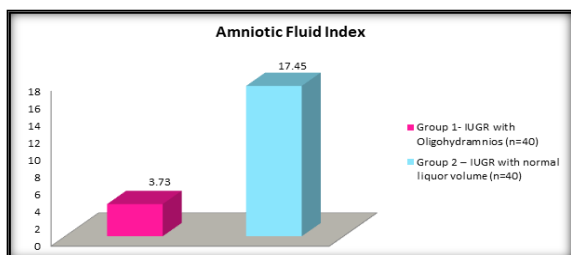


Figure 5: Amniotic Fluid Index

[Table 5] In the present study amniotic fluid index (AFI) was significantly decreased in IUGR with oligohydramnios 3.73 ± 1.07 compared to IUGR with normal liquor 17.45 ± 2.92 (p value = <0.0001) as illustrated in [Table 5].

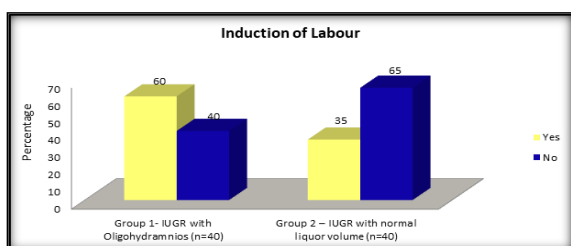


Figure 6: Induction of Labour

[Table 6] Regarding the incidence of induction of labour it was founded that in IUGR with oligohydramnios, induced labour was in 24 (60%) and spontaneous labour is in 16 (40%). While in IUGR with normal liquor, labour was induced in 14 (35%) cases and labour was spontaneous in 26 (65%) cases. Incidence of induction of labour was significantly high in patients with oligohydramnios compared to patients with normal liquor (p value = 0.025).

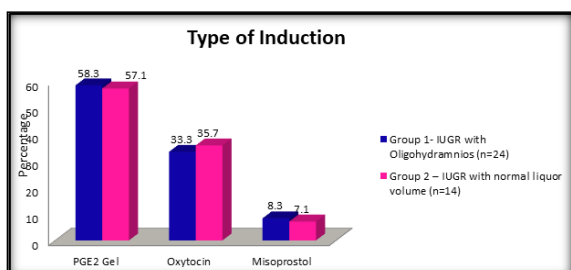


Figure 7: Type of Induction

[Table 7] Out of 24 cases that were given induction in IUGR with oligohydramnios 14 (58.3%) were given PGE2 gel, 8 (33.3%) were given oxytocin and 2 (8.3%) were given Misoprostol. On the other hand in IUGR with normal liquor out of 14 that were given induction 8 (57.1%) were given PGE2 gel, 5 (35.7%) were given oxytocin and 1 (7.1%) was given Misoprostol. Above analysis founded that both groups were comparable in terms of type of induction (p value = 0.984).

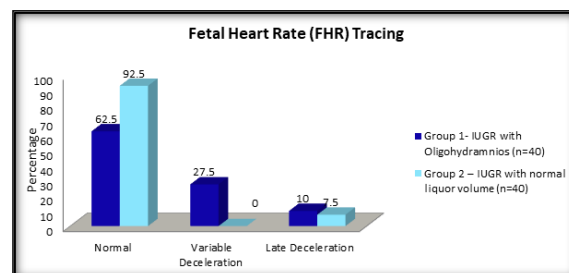


Figure 8: Fetal Heart Rate (FHR) Tracing

[Table 8] The normal range of fetal heart rate is between 110 and 160 beats per minute. It can vary by 5 to 25 beats per minute. In the present study variable deceleration was noted in 11 (27.5%) and late deceleration in 4 (10%) cases in IUGR with oligohydramnios. While in IUGR with normal liquor group no women developed variable deceleration and only 3 (7.5%) had late deceleration. In above analysis founded that normal FHR tracing was significantly high among patients with normal liquor compared to oligohydramnios (p value = 0.001).

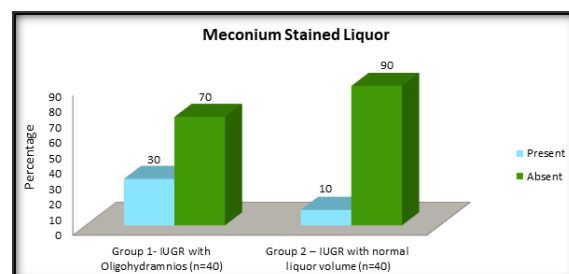


Figure 9: Meconium Stained Liquor

[Table 9] Regarding the incidence of meconium stained liquor it was founded that 12 (30%) women in IUGR with oligohydramnios and 4 (10%) women in IUGR with normal liquor had meconium stained liquor. The difference was statistically significant (p=0.025).

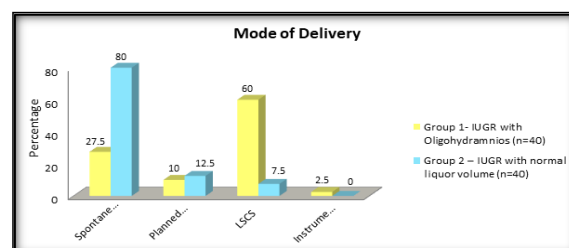


Figure 10: Mode of Delivery

[Table 10] presents the data regarding the mode of delivery among study subjects. In IUGR with oligohydramnios, full term spontaneous vaginal delivery was in 11 (27.5%), planned vaginal delivery (PVD) in 4 (10%), lower segment caesarean section (LSCS) in 24 (60%) and instrumental vaginal delivery in 1 (2.5%). In IUGR with normal liquor, full term spontaneous vaginal delivery was in 32 (80%), planned vaginal delivery (PVD) in 5 (12.5%), LSCS in 3 (7.5%) and instrumental vaginal delivery was nil. Mode of delivery was statistically significant between two groups (p value = <0.0001).

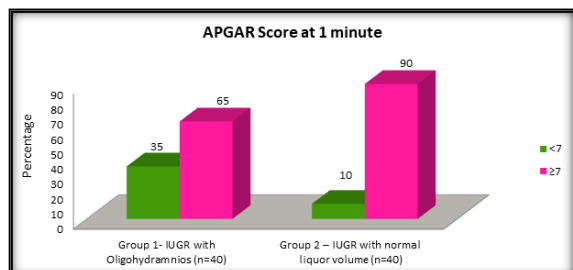


Figure 11: APGAR Score at 1 minute

[Table 11] While analyzing the APGAR score at 1 minute it was founded that in IUGR with oligohydramnios the APGAR score at 1 min was <7 in 14 babies (35%) as compared to 4 (10%) in IUGR with normal liquor (p=0.007).

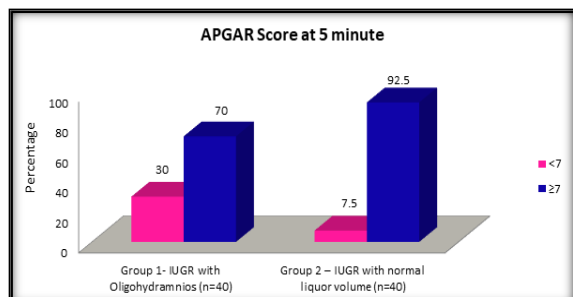


Figure 12: APGAR Score at 5 minute

[Table 12] While analyzing the APGAR score at 5 minute it was founded that in IUGR with

oligohydramnios the APGAR score at 5 min was <7 in 12 babies (30%) as compared to 3 (7.5%) in IUGR with normal liquor (p=0.009).

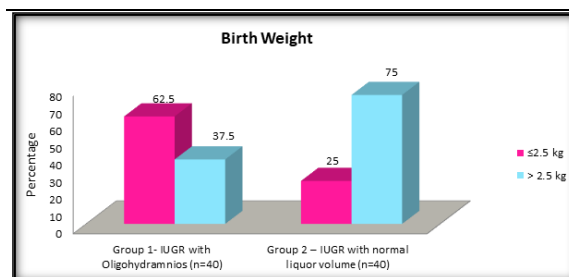


Figure 13: Birth Weight

[Table 13] presents the data regarding the birth weight of the neonates. Birth weight ≤2.5 kg was found in 25 (62.5%) patients in IUGR with oligohydramnios compared to 10 (25%) in IUGR with normal liquor. The mean birth weight in oligohydramnios group was 2.55 ±0.39 which is significantly lower than the mean weight of 2.93 ±0.33 kg in normal liquor group.

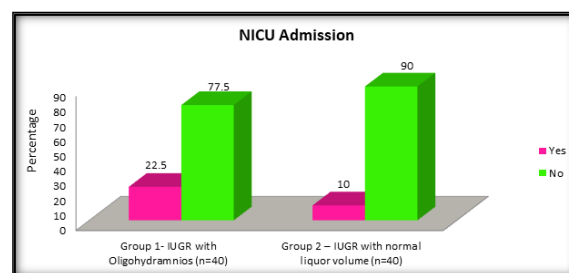


Figure 14: NICU Admission

[Table 14] presents the data regarding the NICU admission. In IUGR with oligohydramnios 9 (22.5%) babies were admitted in NICU while in IUGR with normal liquor only 4 (10%) babies were admitted and it was founded that the difference was statistically significant (p value = 0.033).

Table 1: Age Distribution

Age Group	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
<20 years	3	7.5	5	12.5
21-25 years	19	47.5	17	42.5
26-30 years	13	32.5	12	30.0
31-35 years	5	12.5	6	15.0
Total	40	100.0	40	100.0
Mean Age	25.70 ±4.02		25.60 ±4.43	
Statistical Inference	p value: 0.587			

Table 2:Gravida Distribution

Gravida	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
Primigravida	16	40.0	20	50.0
2nd Gravida	19	47.5	12	30.0
3rd Gravida	5	12.5	8	20.0
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 2.717, p value: 0.257			

Table 3: ANC Status

ANC Status	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
Booked	10	25.0	17	42.5
Unbooked	30	75.0	23	57.5
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 2.739, p value: 0.097			

Table 4: Gestational Age at the time of Delivery

Gestational Age	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
≤ 37 weeks	10	25.0	7	17.5
38 weeks	16	40.0	14	35.0
39 weeks	7	17.5	9	22.5
40 weeks	4	10.0	6	15.0
41 weeks	3	7.5	4	10.0
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 1.456, p value: 0.834			

Table 5: Amniotic Fluid Index

Groups	Mean	±SD
Group 1- IUGR with Oligohydramnios(n=40)	3.73	±1.07
Group 2 – IUGR with normal liquor volume (n=40)	17.45	±2.92
Statistical Inference	p value: <0.0001	

Table 6: Induction of Labour

Induction of Labour	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
Yes	24	60.0	14	35.0
No	16	40.0	26	65.0
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 5.013, p value: 0.025			

Table 7: Type of Induction

Type of Induction	Group 1- IUGR with Oligohydramnios (n=24)		Group 2 – IUGR with normal liquor volume (n=14)	
	Frequency	Percentage	Frequency	Percentage
PGE2 Gel	14	58.3	8	57.1
Oxytocin	8	33.3	5	35.7
Misoprostol	2	8.3	1	7.1
Total	24	100.0	14	100.0
Statistical Inference	Chi square: 0.033, p value: 0.984			

Table 8: Fetal Heart Rate (FHR) Tracing

Fetal Heart Rate	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
Normal	25	62.5	37	92.5
Variable Deceleration	11	27.5	0	0.0
Late Deceleration	4	10.0	3	7.5
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 13.465, p value: 0.001			

Table 9: Meconium-Stained Liquor

Meconium-Stained Liquor	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
Present	12	30.0	4	10.0
Absent	28	70.0	36	90.0
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 5.00, p value: 0.025			

Table 10: Mode of Delivery

Mode of Delivery	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
Spontaneous vaginal Delivery	11	27.5	32	80.0
Planned Vaginal Delivery	4	10.0	5	12.5
LSCS	24	60.0	3	7.5
Instrumental Vaginal Delivery	1	2.5	0	0.0
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 27.70, p value: <0.0001			

Table 11: APGAR Score at 1 minute

APGAR Score at 1 minute	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
<7	14	35.0	4	10.0
≥7	26	65.0	36	90.0
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 7.168, p value: 0.007			

Table 12: APGAR Score at 5 minutes

APGAR Score at 5 minutes	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
<7	12	30.0	3	7.5
≥7	28	70.0	37	92.5
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 6.646, p value: 0.009			

Table 13: Birth Weight

Birth Weight	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
≤2.5 kg	25	62.5	10	25.0
> 2.5 kg	15	37.5	30	75.0
Total	40	100.0	40	100.0
Mean ±SD	2.55 ±0.39		2.93 ±0.33	
Statistical Inference	p value: 0.045			

Table 14: NICU Admission

NICU Admission	Group 1- IUGR with Oligohydramnios (n=40)		Group 2 – IUGR with normal liquor volume (n=40)	
	Frequency	Percentage	Frequency	Percentage
Yes	9	22.5	4	10.0
No	31	77.5	36	90.0
Total	40	100.0	40	100.0
Statistical Inference	Chi square: 4.501, p value: 0.033			

DISCUSSION

Amniotic fluid is a clear, slightly yellowish liquid that surrounds the fetus during pregnancy, contained within amniotic sac and provides supportive environment for the fetus throughout the pregnancy for normal growth and development. Amniotic fluid throughout gestation enables normal development of the fetal respiratory, gastrointestinal and urinary tracts and musculoskeletal system and allows for continued foetal growth in a non-restricted sterile and thermally controlled environment. It protects the foetus from trauma and infection through its dampening and bacteriostatic properties. It prevents compression of the umbilical cord and placenta and protects the fetus from vascular and nutritional compromise.^[10]

Amniotic fluid is in the amniotic sac of human gravid female which surrounds the baby like a shock absorber or a like a cushion. It also allows fetal breathing and movements. The circulation of it is by production of urine and swallowing by the fetus. The amniotic fluid volume changes with the gestational age; it is 200 ml at 16 weeks, 1000 ml at 28 weeks, 900 ml at 36 weeks and 800 ml at 40 weeks of gestation.^[11]

The amniotic fluid volume has made its assessment an important part of antenatal fetal surveillance. Abnormal amniotic fluid volume may be the only or earliest sonographic sign of an obstetric problem.^[12] This study suggests that there is a higher incidence of induction of labour in patients with IUGR

(intrauterine growth restriction) and oligohydramnios compared to those with normal liquor. This finding is based on a comparison of two groups of patients: one with IUGR with oligohydramnios, and the other with IUGR and normal liquor.

In the present study the mean age was 25.70 ±4.02 years and 25.60 ±4.43 years respectively in IUGR with oligohydromnios and in IUGR with normal liquor with no statistically significant difference (p value = 0.587).

In the present study, majority of the study subjects with IUGR with oligohydromnios were 2nd gravida (47.5%) while in IUGR with normal liquor majority of the participants were primigravida (50%), however there was no statistically significant difference regarding gravidity between two groups (p value=0.257)

In patients of IUGR with oligohydromnios 10 (25%) were booked i.e. had at least 3 check up in hospital and at least one visit in third trimester of pregnancy and other 30 (75%) were un-booked cases, in IUGR with normal liquor 17 (42.5%) were booked cases while 23 (57.5%) were un-booked cases. there was no statistically significant difference regarding ANC status between two groups (p value = 0.097).

In the present study, the majority of the study subjects in both the groups delivered at above 37 weeks with no significant difference regarding the period of gestation (p value = 0.834).

In the present study amniotic fluid index (AFI) was significantly decreased in IUGR with

oligohydramnios 3.73 ± 1.07 compared to IUGR with normal liquor 17.45 ± 2.92 (p value = < 0.0001).

Regarding the incidence of induction of labour in the present study founded that in IUGR with oligohydramnios induced labour was in 24 (60%) and spontaneous labour is in 16 (40%). While in IUGR with normal liquor labour was induced in 14 (35%) cases and labour was spontaneous in 26 (65%) cases. Incidence of induction of labour was significantly high in patients with oligohydramnios compared to patients with normal liquor (p value = 0.025).

Where, out of 24 cases that were given induction in IUGR with oligohydramnios 14 (58.3%) were given PGE2 gel, 8 (33.3%) were given oxytocin and 2 (8.3%) were given Misoprostol. On the other hand in IUGR with normal liquor out of 14 that were given induction 8 (57.1%) were given PGE2 gel, 5 (35.7%) were given oxytocin and 1 (7.1%) was given Misoprostol. Above analysis founded that both groups were comparable in terms of type of induction (p value = 0.984).

In the present study variable deceleration was noted in 11 (27.5%) and late deceleration in 4 (10%) cases in IUGR with oligohydramnios. While in IUGR with normal liquor group no women developed variable deceleration and only 3 (7.5%) had late deceleration. In this analysis it was founded that normal FHR tracing was significantly high among patients with normal liquor compared to oligohydramnios (p value = 0.001).

Regarding the incidence of meconium stained liquor it was founded that 12 (30%) women in IUGR with oligohydramnios and 4 (10%) women in IUGR with normal liquor had meconium-stained liquor. The difference was statistically significant ($p=0.025$).

In the present study, in IUGR with oligohydramnios, the full term spontaneous vaginal delivery was in 11 (27.5%), planned vaginal delivery (PVD) in 4 (10%), LSCS in 24 (60%) and instrumental vaginal delivery in 1 (2.5%). In IUGR with normal liquor, full term spontaneous vaginal delivery was in 32 (80%), planned vaginal delivery (PVD) in 5 (12.5%), LSCS in 3 (7.5%) and instrumental vaginal delivery was nil. Mode of delivery was statistically significant between two groups (p value = < 0.0001). While analyzing the APGAR score at 1 minute in present study founded that in IUGR with oligohydramnios the APGAR score at 1 min was < 7 in 14 babies (35%) as compared to 4 (10%) in IUGR with normal liquor ($p=0.007$). Regarding the APGAR score at 5 minute we found in IUGR with oligohydramnios the APGAR score at 5 min was < 7 in 12 babies (30%) as compared to 3 (7.5%) in IUGR with normal liquor ($p=0.009$).

In the present study, birth weight ≤ 2.5 kg was found in 25 (62.5%) patients in IUGR with oligohydramnios compared to 10 (25%) in IUGR with normal liquor. The mean birth weight in oligohydramnios group was 2.55 ± 0.39 which is significantly lower than the mean weight of 2.93 ± 0.33 kg in normal liquor group.

In the present study, IUGR with oligohydramnios 9 (22.5%) babies were admitted in NICU while in IUGR with normal liquor only 4 (10%) babies were admitted and the difference was founded statistically significant (p value = 0.033).

Summary

- The present study was conducted to compare the perinatal outcome of IUGR with oligohydramnios and IUGR having normal liquor volume.
- It was also assessed to search for the difference in perinatal outcome, compare the risk factors and also to compare the incidence of spontaneous vaginal delivery in IUGR with oligohydramnios and IUGR with normal liquor volume. The study was conducted between the two groups.
- Group 1 constituted 40 patients of intrauterine growth restriction with oligohydramnios (AFI < 5 cm) and Group 2 constituted 40 patient of intrauterine growth restriction with normal liquor volume (AFI 5 cm - 25 cm).
- In both the groups majority were aged from 21 to 25 years. 47.5% was in IUGR with oligohydramnios whereas 42.5% in IUGR with normal liquor volume. Here no statistically significant difference was founded.
- Majority of the study subjects with IUGR with oligohydramnios were 2nd gravida (47.5%) while in IUGR with normal liquor volume majority of the participants were primigravida (50%). There was no statistically significant difference founded in gravidity of both the groups.
- In both the groups majority were unbooked. In IUGR with oligohydramnios was 75% whereas in IUGR with normal liquor volume was 57.5%. There was no statistically significant difference regarding ANC status was founded.
- Majority of the study subjects in both the groups delivered at above 37 weeks with no significant difference regarding the period of gestation.
- Amniotic fluid index (AFI) was significantly decreased in IUGR with oligohydramnios 3.73 ± 1.07 compared to IUGR with normal liquor 17.45 ± 2.92 .
- The incidence of induction of labour was significantly higher in patients in IUGR with oligohydramnios (60%) as compared to IUGR with normal liquor volume (35%).
- In both the groups majority cases were induced by PGE2 gel, (58.3%) in IUGR with oligohydramnios while (57.1%) in IUGR with normal liquor volume. And both the groups were comparable in terms of type of induction.

The variable deceleration was noted in 27.5% and late deceleration in 10% in IUGR with oligohydramnios. While in IUGR with normal liquor group had no variable deceleration and only 7.5% had late deceleration. So, FHR tracing was significantly high in patients with normal liquor to oligohydramnios.

The incidence of meconium-stained liquor was 30% in IUGR with oligohydramnios as compared to 10%

in IUGR with normal liquor volume. The difference was statistically significant.

Regarding the mode of delivery, majority of cases (60%) was done by LSCS in IUGR with oligohydramnios whereas in IUGR with normal liquor volume, majority of cases (80%) done by full term spontaneous vaginal delivery. Mode of delivery was statistically significant in both the groups.

While analyzing the APGAR score at 1 minute, it was founded that in IUGR with oligohydramnios the APGAR score at 1 min was <7 in(35%) babies as compared(10%) in IUGR with normal liquor volume.

While analyzing the APGAR score at 5 minute, it was founded that IUGR with oligohydramnios the APGAR score at 5 min was <7in (30%) babies as compared to (7.5%) in IUGR with normal liquor volume.

Birth weight ≤ 2.5 kg was found 62.5% in IUGR with oligohydramnios as compared to 25% in IUGR with normal liquor volume. The mean birth weight in oligohydramnios group was 2.55 ± 0.39 which was significantly lower than the mean weight of 2.93 ± 0.33 kg in normal liquor volume group.

In IUGR with oligohydramnios, (22.5%) babies were admitted in NICU as compared to IUGR with normal liquor volume (10%) babies were admitted and it was founded that the difference was statistically significant.

CONCLUSION

Based on the observation of the present study it was concluded that amniotic fluid index is a helpful tool in determining high risk patients during labour and AFI ≤ 5 cm is one of the indicators of comparatively poor perinatal outcome.

Compared to pregnancies with IUGR with normal liquor volume, and patients with IUGR with Oligohydramnios have a higher risk of adverse perinatal outcomes. In the present study it was found a significant difference regarding occurrence of non-reassuring FHR, LSCS, incidence of thick

meconium-stained liquor. Hence, AFI can be used a helpful tool to identify patients who needs intensive monitoring during labour and may land up in emergency caesarean section.

In conclusion 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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