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To Assess the AFV for the Respective G.A and Assign as Normal/ Oligohydramnios

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Original Research Article

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Abstract: Oligohydramnios is strongly associated with being small for gestational age and mortality, and polyhydramnios with birth weight more than (>) 90th centile. In this study we had assess the AFV for respective G.A. & Assign as Normal/Oligohydramnios. The present study entitled "To Assess the AFV for the respective G.A and Assign as Normal/ Oligohydramnios" was conducted in the Department of Obstetrics and Gynaecology, Amaltas Institute of Medical Sciences, Dewas (M.P) during the period of January 2016 to June 2017. This was a Prospective Observational study. The patients selected from the antenatal outpatient department and those in early labour were entered in this study. Study was done according to the regulations of the Institutional Ethics Committee MSL was a good indicator of fetal distress in 22/36 cases which alerts the observer for intensive monitoring and if possible more electronic monitoring. There was statistically significant association between Correlation of AFI with Mode of Delivery in IUGR Pregnancy, ($P < 0.05$). Oligohydramnios with intact membranes, especially when severe and in the absence of anomalies is usually managed by delivery; however, further research is indicated to delineate management guidelines. Amniotic fluid volume remains an important component of any obstetric ultrasonographic examination. Gestational age dependent Standardized criteria are necessary for the interpreting sonographic assessments of amniotic fluid volume.
Keywords: AFV, G.A., Oligohydramnios, Delivery, MAS & NICU.

INTRODUCTION

Oligohydramnios can be found in an otherwise uncomplicated pregnancy or as further finding in a complicated pregnancy (hypertensive disorders, decreased fetal movement). Many studies have found that oligohydramnios in the setting of a complex pregnancy is related with an increased risk of adverse result, as well as admission to the neonatal intensive care unit (NICU), meconium staining of amniotic fluid, meconium aspiration syndrome (MAS), Cesarean delivery, 5-min Apgar score < 7, umbilical cord blood pH < 7.10, low birth weight (small-for-gestational age) & respiratory distress syndrome [1, 2]. However, there are conflicting data on the significance of isolated oligohydramnios [3].

The diagnosis of oligohydramnios alters pregnancy management and may be an sign for delivery. Depending on the gestational age, induction may raise the hazard of Cesarean delivery and the risks linked with late preterm/early term deliveries. Thus, it is important to delineate the risks of oligohydramnios and the benefits of prompt delivery [4].

MATERIALS & METHODS

The present study entitled "To Assess the AFV for the respective G.A and Assign as Normal/ Oligohydramnios" was conducted in the Department of Obstetrics and Gynaecology, Amaltas Institute of Medical Sciences, Dewas (M.P) during the period of January 2016 to June 2017. This was a Prospective Observational study. The patients selected from the antenatal outpatient department and those in early labour were entered in this study. Study was done according to the regulations of the Institutional Ethics Committee.

Sample Size

GP-1All patients with suspected IUGR with clinically as well as sonographicallyproven Oligohydramnios were taken as study group of 50 cases.

GP-2 and those patients with clinically and sonographically proven IUGR with normal liquor volume were taken as control group 50 cases.

Inclusion Criteria

- All patients with IUGR or suspected IUGR with vertex presentation showing unsatisfactory weight gain, relatively less weekly increment in symphysio-fundal height and abdominal girth.
- All womenwith 7 months pregnancy or 30 weeks pregnancy dates confirmed by USG report showing AFI ≤ 5cm and suspected possibility of IUGR.

Exclusion Criteria

- Woman with bleeding PV in third trimester.
- Guardiannot ready to give informed consent.
- Polyhydramnious
- Mistaken dates
- Constitutional small babies
- Postdated pregnancy
- Abnormal presentation
- CPD
- Multiple Gestation

Procedure Planned

- Clinical assessment included bimanual palpation, Symphysio-fundal height measurement and abdominal girth measurement but those are unreliable.
- The estimation of Amniotic fluid index (AFI) was done by B-mode real time ultrasonography by 4 quadrent technique.

Classification of Amniotic fluid Index (AFI)

- Normal- AFI = 5.1 – 25 cm.
- Oligohydramnios- AFI =<5 cm.
- Polyhydramnios-AFI =>25 cm.

Biometric assessment of fetus and gestational age

- Biparietal Diameter (BPD)
- Femur Length (FL)
- Abdominal Circumference (AC)
- Head Circumference (HC)
- Estimated fetal weight
- Placental location, maturity and aging of placenta

In my study all 100 cases are IUGR [<2.5 kg]. Fortnightly later weekly near term amniotic fluid volume was estimated by AFI, till the termination of pregnancy and latest reading were taken into account. Cephalopelvic disproportion and pelvic assessment were recorded. The clinicians were not blinded to the result of the AFI estimation.

Either the cases were left for spontaneous onset of labour or labour was induced for non-reassuring fetal heart testing at Bishop score of 6 or greater, menstrual age of 294 days or more or low amniotic fluid volume. Caesarean section was conducted as per the indications. Forceps deliveries were performed for fetal distress or prolonged second stage or for maternal indications like heart diseases etc. Baby was attended by paediatrician at delivery.

Indications for NICU admission include Apgar score <7, meconium aspiration syndrome (MAS), neonatal depression, cyanosis, transient tachyponea of new born and jaundice.

Intrapartum FHI (Fetal heart irregularities), fetal blood pH, Thick meconium stained liquor were excluded from perinatal morbidity as there is individual variation in detection of Fetal heart irregularities in the institute. Facilities to detect scalp blood pH is not available here and the presence of only the meconium stained liquor does not always cause morbidity like MAS (meconium aspiration syndrome) etc. Rather reassessment with CTG (Non assuring FHR).

Obstetrical management and its effect on the maternal health were observed.

Investigation Details

- CBC
- Blood sugar Random
- Blood grouping and Rh. Typing
- HbsAg
- HIV Elisa
- Urine routine
- VDRL
- Blood urea
- Tests for fetal wellbeing- NST, CTG,
- USG
- Fetal biometry
- Placental grade and localisation
- Gestational age
- Amniotic fluid – Amniotic fluid index
- Estimated fetal weight

Doppler flow velocimetry for deterioration in fetal wellbeing Umbilical artery flow, uterine artery flow, MCA

Data Collection and Methods

Fifty patients with clinically as well as sonographically proven intrauterine growth restriction with oligohydramnios were selected in one group. In control group, 50 patients with clinically and sonographically proven intrauterine growth restriction with normal liquor volume were taken. The following observations were made:

- Age Distribution in all women
- Parity distribution in IUGR
- Patient Booked /Unbooked
- AFI fortnightly/ weekly
- Mode of termination of IUGR Pregnancy in relation to AFI
- Correlation of AFI with intrapartum fetal distress

- Correlation of AFI with mode of delivery
- Correlation of AFI with mode of assisted delivery
- Correlation of Apgar score to AFI
- Correlation of AFI with perinatal outcome
- Correlation of AFI with perinatal morbidity, motility and ICU admission.

DISCUSSION

Petrozella *et al*. [5] and Gumus *et al*. [6] observed that significant increase in incidence of IUGR, MSL, and intrapartum foetal distress with borderline and reduced AFI Correlation of Apgar score with AFI & Correlation of AFI with perinatal outcome.

In present study, 62% of neonates born from oligohydramnios group had 1 minute Apgar score < 7 as compared to 40% of neonates born from normal A.F.I. group. Similarly 14 % of neonates born from oligohydramnios group had5 minutes Apgar score < 7 as compared to 4% of neonatesfrom normal AFI Group.

Manning *et al*. [7] in their study found 96.3% of neonates born from normal A. F. I. group and 76.4% of neonates born from oligohydramnios group had Apgar score of > 7 at 5 minutes. Similarly type of observation was reported by Chauhan & Washburne [8].

Dizon *et al.* [9] found that foetus with reactive NST and decreasing AFI was directly correlated with risk of 5 min Apgar score> 7 and directly foetal distress Hsich TT& Hung [10], observed higher percentage of low Apgar score in the neonates born from oligohydramnios group.

RESULTS

MSL was a good indicator of fetal distress in 22/36 cases which alerts the observer for intensive monitoring and if possible more electronic monitoring.

Table-1: Correlation of Oligohydramnios with FHR and MSL

	AFI < 5			
	With FHI		Without FHI	
	NO.	%	NO.	%
With MSL	22	44%	1	2%
Without MSL	28	56%	13	26%
TOTAL	50	100%	14	28%

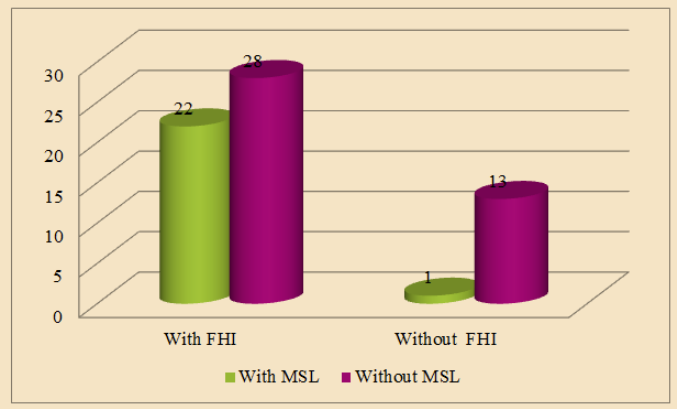

Fig-1: Correlation of Oligohydramnios with FHR and MSL

Table-2: Correlation of AFI with Mode of Delivery in IUGR Pregnancy

Mode of Delivery	AFI in cm			
	Control gr.		Study gr.	
	(> 5-25 cm)	%	(≤5 cm)	%
Normal Delivery	27	54%	5	10%
LSCS	19	38%	34	68%
Assisted Delivery	4	8%	11	22%
Total	50	100%	50	100%

chi-square = 22.6 degrees of freedom = 2 probability = 0.000

Above table shows that majority of cases 27(54%) in normal AFI group had normal delivery as compared to 10% in oligohydramnios group.

Maximum patients (90%) landed up in LSCS (Elective + Emergency) / instrumental delivery with AFI ≤ 5 cm, in comparison to AFI > 5 cm (46 %).

There was statistically significant association between Correlation of AFI with Mode of Delivery in IUGR Pregnancy, ($P < 0.05$).

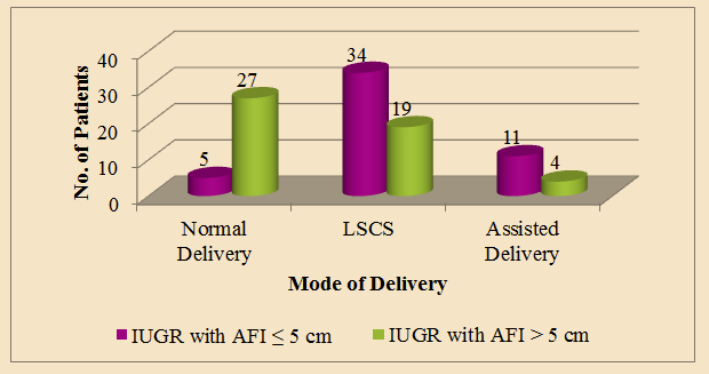

Fig-2: Correlation of AFI with Mode of Delivery in IUGR Pregnancy

CONCLUSION

Oligohydramnios with intact membranes, especially when severe and in the absence of anomalies is usually managed by delivery; however, further research is indicated to delineate management guidelines.

Amniotic fluid volume remains an important component of any obstetric ultrasonographic examination. Gestational age dependent Standardized criteria are necessary for the interpreting sonographic assessments of amniotic fluid volume.

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