

TO COMPARE THE INCIDENCE OF FETAL GROWTH RESTRICTION OR IUGR IN CASES OF LOW AFI AND NORMAL AFI

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Abstract

Background & Method: The present study was conducted in the Department of Obstetrics and Gynaecology, Amaltas Institute of Medical Sciences, Dewas (M.P). Each patient was told about her inclusion and participation in this study and her informed consent was taken. This is a case control prospective comparative study performed on 200 randomly selected low risk pregnant patients at term (37-40 weeks of gestation) admitted.

Result: The live babies with congenital anomalies were admitted to NICU. Unpaired t-test is applied. The P value is 0.109 (insignificant). The mean value of weight of baby born to case group is 2.449 ± 0.4190 . The mean value of weight of baby born to control group is 2.554 ± 0.5036 . Study almost double the no. of babies in cases where IUGR or FGR. Though, statistically it came out to be insignificant.

Conclusion: Increased rates of LSCS and congenital anomalies in babies, in rest all parameters no significant statistical difference found in cases and control groups. It is not that IUGR is necessarily associated with low AFI and normal AFI ensures normal birth weight. Among cases only 12% were booked and 88% were unbooked. In control 32% were booked and 68% were unbooked.

Keywords: Fetal, IUGR, AFI

Study Designed: Case Control Prospective Comparative Study.

Introduction

In 1987 a semi quantitative sonographic assessment of AFV was developed known as AFI^[1]. This involves the summing of maximum vertical pockets in each of the four quadrants of the uterus. The original study conducted on 197 patients from 12 to 42 week's period of gestation indicated that the mean amniotic fluid index increased from 7cm to 20cm until 20 weeks, and then plateau at approximately 16 cm for the remainder of the gestation.

Although derived from a high risk population, the amniotic fluid index cut offs provided a useful working definition of "normal" (AFI = 8.1-20cm) amniotic fluid volume. Patients with amniotic fluid index values less than 5cm had significantly higher risk of fetal heart rate abnormalities, meconium staining and cesarean delivery^[2].

The investigators recommended that labour induction be considered in patients with oligohydramnios to reduce the increased risk of fetal morbidity and mortality^[3]. The mechanism of amniotic fluid production, consumption, composition and volume depends on the gestational age. Amniotic fluid volume at any time is a balance between production and consumption.

During the first trimester the major source of amniotic fluid is from the maternal blood within the uterine wall and

secretion from amnion. There is active transport of electrolytes and other solutes through the amnion and passive diffusion of water following osmotic pressure changes^[4].

Material & Method

The present study was conducted in the Department of Obstetrics and Gynaecology, Amaltas Institute of Medical Sciences, Dewas (M.P) during the period from September 2019 to August 2020. Each patient was told about her inclusion and participation in this study and her informed consent was taken. This is a case control prospective comparative study performed on 200 randomly selected low risk pregnant patients at term (37-40 weeks of gestation) admitted in Obstetrics and Gynaecology Department. 100 patients with AFI < 5 cm (cases) and 100 patients with AFI 8-20 cm (control) were taken for study after satisfying inclusion and exclusion criteria.

Inclusion criteria:

- All singleton pregnancies
- Cephalic presentation
- At term 37-40 weeks (gestational age will be calculated by LMP or by first trimester USG)
- Intact membranes.

Exclusion criteria:

- Gestational Age <37 Weeks and >40 weeks
- PROM.
- Uterine Anomaly
- Malpresentation
- Multiple gestation
- High Risk pregnancy
 - Hypertensive disorders of pregnancy
 - Diabetes
 - Chronic Renal Disease / Cardiac Disease and other medical ailment
 - Connective Tissue disorder
 - Vaginal Bleeding (Abruption)
- BOH
- Previous lower segment cesarean section/myomectomy/hysterotomy.

Statistical analysis has been carried out in the present study. Results on continuous measurements are presented on Mean ± SD and results on categorical measurements are presented in Number (%).

Results

Table 1: Incidence of booked and emergency cases

Booking status	Cases		Controls	
	No. of patients	%	No. of patients	%
Booked	12	12	32	32
Unbooked	88	88	68	68
/Emergency				
Total	100	100%	100	100%

Pearson Chi-square value is 11.655. The P value is 0.001 (significant). There is marked increase in unbooked caes in low AFI that is 88 and 68 in normal AFI.

Table 2: Distribution of fetal congenital anomalies and perinatal outcome in control

Name of Congenital Anomaly	No. of Cases	%	Perinatal Outcome
Hydrocephalous	1	1	NICU

The live babies with congenital anomalies were admitted to NICU.

Table 3: Relationship of AFI to IUGR

AFI	No.	IUGR No. of Cases			%age
		Alive	IUD	Total	
<5 cm	100	17	1	18	18
8-20 cm	100	9	0	9	9

Unpaired t-test is applied. The P value is 0.109 (insignificant).

The mean value of weight of baby born to case group is 2.449±0.4190. The mean value of weight of baby born to control group is 2.554±0.5036.

Study almost double the no. of babies in cases where IUGR or FGR. Though, statistically it came out to be insignificant.

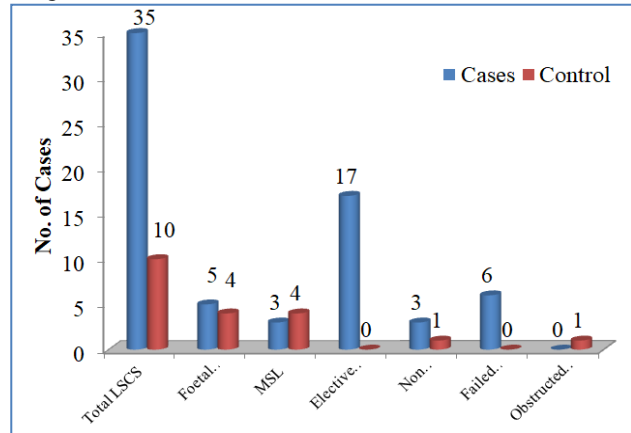


Figure 1: Indication for LSCS

Discussion

In our study it was observed that in cases only 12% were booked and 88% were unbooked. In control 32% were booked and 68% were unbooked. Pearson Chi-square test was applied and P value came out to be 0.001 and is statistically significant. Unbooked cases were significantly associated with low AFI^[5].

Most common indication for LSCS in our study was Elective section (48.5%) mostly for Uteroplacental Insufficiency contributing to 20 % of cases, Absent Diastolic Flow 11.4%, Reversed Diastolic Flow 14.2% in colour Doppler studies (done when indicated) and Loop of cord around neck being 2.8%. Other indications include Fetal distress 14.2%, MSL 8.5 %, Non-progressive labour 8.5% and Failed induction 17%. However for controls, 40 % of controls have undergone LSCS for Fetal distress, 40% for MSL, 10% for Non progressive labour and 10 % for obstructed labour^[6]. So in our study number of MSL and FD is found almost equal in both the groups. In the similar studies (Hindumathi M et al^[7]; Casey et al^[8]; Umber et al^[9] 2009;) Most common indication for LSCS was Fetal Distress (17%), Fetal Distress (48%), Thick MSL (6%), respectively.

In our study about 18 % of the babies were found to be IUGR with AFI ≤5 cm and 9% of the babies were found to be IUGR with AFI 8-20 cm. Unpaired t-test is applied. The P value is 0.109. The mean value of weight of baby born to case group is 2.449±0.4190. The mean value of weight of baby born to control group is 2.554±0.5036.

Conclusion

Increased rates of LSCS and congenital anomalies in babies, in rest all parameters no significant statistical difference found in cases and control groups. It is not that IUGR is necessarily associated with low AFI and normal AFI ensures normal birth weight. Among cases only 12%

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