ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 6 | June - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

FETOMATERNAL OUTCOME IN IUGR PREGNANCIES: A PROSPECTIVE OBSERVATIONAL STUDY

Gynecology

Dr. Monika Bhaskar K Postgraduate, Department of Obstetrics and Gynaecology, Adichunchangiri Institute Of Medical Sciences.

Prof. Dr. Mahendra. G* Professor, Department of Obstetrics and Gynaecology, Adichunchangiri Institute Of Medical Sciences. *Corresponding Author

Prof. Dr. Ravindra. S. Pukale Professor and Head of The Department of Obstetrics and Gynaecology, Adichunchangiri Institute Of Medical Sciences.

ABSTRACT

BACKGROUND: Intrauterine growth restriction (IUGR) is an important and common cause of perinatal morbidity and mortality.
AIM: The main objective of this study was to find out the frequency of IUGR, to identify the maternal & placental risk factors associated with IUGR and perinatal outcome.
METHODS: A prospective study was conducted for 1 year at a tertiary care hospital, AIMS, B .G. Nagara.
RESULTS: The incidence of IUGR in our study is 2.5 %. Hypertensive disorders of pregnancy followed by oligohydramnios were most commonly associated with IUGR. Mean growth lag was >4weeks clinically , 34% had abnormal Doppler findings on admission, mean gestational age at delivery was 37weeks,mean birth weight of the babies was 2.01kg. Cesarean delivery accounted to74%.70% of IUGR neonates required admission to NICU.
CONCLUSION: Identification of risk factors and management of the same antenatally is an important issue to prevent adverse perinatal outcomes associated with IUGR.

KEYWORDS

Intrauterine growth restriction, maternal & placental factors, perinatal outcomes.

INTRODUCTION:

Intrauterine growth restriction (IUGR) is an important and common cause of perinatal morbidity and mortality. [1]The IUGR fetuses are at a greater risk of developing perinatal and neonatal complications[2] Henceforth, an early detection, choosing the optimal time, mode of delivery and intervention when required could minimize the risk significantly.

OBJECTIVE:

The main objective of this study was to identify the maternal & placental risk factors associated with IUGR and its perinatal outcome.

MATERIALS AND METHODS:

It was a Prospective Observational Study .It was conducted from October 2018 to October 2019 at a tertiary care hospital, Adichunchangiri Institute of Medical Sciences, B .G. Nagara, Karnataka. Included 50 singleton pregnancies above 28weeks of gestation with clinical diagnosis of IUGR and confirmed by ultrasonography.

RESULTS:

The incidence of IUGR is 2.5%

Table 1: Maternal Factors:

SL. NO	MATERNAL FACTORS	NO	%
1.	PARITY		
	PRIMI	35	70%
	MULTI	15	30%
2.	BMI		
	<18.5	6	12%
	18.6-24.9	36	72%
	>25	8	16%
3.	BOOKED CASES WITH FOLLOW UP	25	50%
	UNBOOKED CASES	21	42%
	REFERRED CASES	4	8%
4.	GESTATIONAL AGE		
	<34 WEEKS	3	6%
	34-37 WEEKS	9	18%
	>37 WEEKS	38	76%

Many of them were primi (70%) and belonged to normal BMI range(72%) and 50% were booked cases with regular follow up.

Table 2: Distribution Of Iugr According To Maternal Risk:

SL. NO	MATERNAL RISK FACTORS	NO	PERCENTAGE
1.	HYPERTENSIVE DISORDERS IN PREGNANCY • Gestational hypertension • Mild Pre-Eclampsia • Severe Pre-Eclampsia	 5 5 7	34%
2.	OLIGOHYDRAMNIOS	13	26%
3.	Impaired GTT on MNT Gestational Diabetes Mellitus Overt DM	2 1 1	8%
4.	ANAEMIA	3	6%
5.	HYPOTHYROIDISM	4	8%
6.	OTHERS	5	10%
7.	NONE	8	16%

Hypertensive disorders(34%) followed by Oligohydramnios(26%) were most common antenatal risk factors. Others include Rh negative status, bronchial asthma, ovarian cyst, retro-positive status.

Table 3: Growth Lag By Clinical Assessment By Per Abdomen Examination

SL. NO	GROWTH LAG	NO	PERCENTAGE
1.	<4 WEEKS	11	22%
2.	4-6 WEEKS	39	78%

78% had growth lag of 4-6 weeks when assessed clinically

Table 4: Distribution Of Iugr Cases Based On Fetal Biometry (obstetric Sonography) Descriptive Statistics:

Sl. No	Particulars	NO	MIN	MAX	MEAN	SD
1.	BPD	50	6.48	8.30	7.39	0.91
2.	AC	50	20.57	34.20	29.25	3.06
3.	FL	50	4.56	7.61	6.63	0.64
4.	FL/AC	50	18.80	31.13	22.57	1.97
5.	HC/AC	50	0.94	1.15	1.05	0.05

Table 5: Distribution Of Iugr Cases Based On FL/AC & HC/AC Ratio:

SL. NO	RATIOS	NO	PERCENTAGE
1.	FL/AC ratio >23.5(IUGR) <23.5	 10 50	 20% 80%

2.	HC/AC ratio >34 weeks >1(IUGR) <1	 45 2	 95.7% 4.25%

34 weeks , HC/AC ratio is < 1

If more than 1 , suggestive of IUGR. 95.7% cases had HC/AC ratio > 1

Table 6: Distribution Of IUGR Cases Based On Fetal Doppler

SL. NO	FETAL DOPPLER	NO	PERCENTAGE
1.	NORMAL	29	58%
2.	ABNORMAL	21	42%

42% of IUGR cases had abnormal doppler findings.

Table 7: Distribution Of IUGR Cases According To Maternal Outcome:

SL NO	MODE OF DELIVERY	NO	PERCENTAGE
1.	VAGINAL	13	26%
2.	CESAREAN	37	74%

74 % underwent cesarean delivery

Table 8: Indication For Cesarean Delivery:

SL. NO	INDICATIONS	NO	PERCENTAGE
1.	FETAL DISTRESS	17	34%
2.	PREVIOUS LSCS IN LABOUR	6	12%
3.	SEVERE PE	5	10%
4.	REVERSAL OF CPR RATIO	4	8%
5.	PRIMI WITH BREECH	2	4%
6.	FAILURE TO PROGRESS	2	4%
7.	ABRUPTION	1	2%

Fetal distress accounted to 34% and was accounted to be the most common indication for cesarean delivery .

Table 9: Significant Intra-operative And Post-operative Findings Cesarean Delivery:

SL NO	INTRA-OP AND POST-OP FINDINGS	NO	PERCENTAGE
1.	Meconium Stained Amniotic Fluid	15	30%
2.	SCANTY LIQUOR	10	20%
4.	BLOOD STAINED LIQUOR	1	2%
5.	APGAR : AT 1 MIN < 5 AT 5 MIN <7	 10 5	 20% 10%
6.	NICU ADMISSION	35	70%

30 % of cases had meconium stained amniotic fluid .20% of babies had APGAR at birth <5 and at 5 min <7 was 10% (APGAR improved after Bag and Mask ventilation.)

Table 10: Distribution According Birth Weight:

SL. NO	BIRTH WEIGHT	NO	PERCENTAGE
1.	<1500 GRAMS	10	20%
2.	1500-2499 GRAMS	34	68%
3.	>2500 GRAMS	6	12%

68% belonged to LOW BIRTH WEIGHT group and 20% belonged to EXTREMELY LBW group.

Table 11: Fetal Outcome:

SL. NO	OUTCOME	NO	%
1.	Normal without any immediate morbidity	15	30%
2.	NICU Admission	30	60%
3.	NICU admission + ventilator	4	8%
4.	Intrauterine fetal death	0	0
5.	Perinatal mortality	1	2%

70% of babies were admitted to NICU , out of which 8%(n=4) required ventilator. 2% (n=1) expired after 6 days of birth.

Table 12: Perinatal Outcome:

SL. NO	OUTCOME	NO	%
1.	HYPERBILIRUBINAEMIA	30	60%
2.	PERINATAL ASPHYXIA	8	16%
3.	HYPOGLYCEMIA	7	14%
4.	POLYCYTHEMIA	3	6%
5.	FEED INTOLERANCE	10	20%
6.	NECROTIZING ENTEROCOLITIS	1	2%
7.	SEPSIS	3	6%

60% (n=30)of babies had Hyperbilirubinaemia and required phototherapy (Max TB : 18mg/dl). 16%(n=8) had perinatal asphyxia.

Table 13 : Distribution According To Hospital Stay

SL. NO	DAYS OF HOSPITAL STAY	NO	%
1.	<5	3	6%
2.	5-10	30	60%
3.	>10	17	34%

Mean hospital stay of all patients was around 10 days , 60% patients stayed in hospital stay for 5-10 days .Maximum no of days at hospital was 34 days.

DISCUSSION:

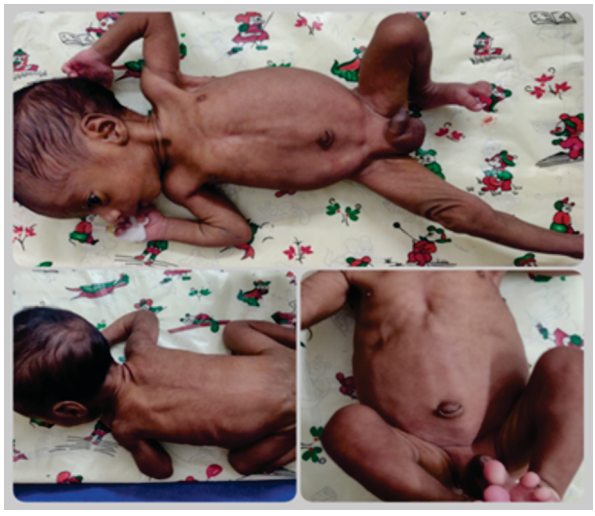
IUGR is an important cause of perinatal mortality and morbidity in developing countries. In our study, the Incidence of pregnancy induced hypertension (mild, moderate, severe) with IUGR was 34%(17/50) which is comparable to a study conducted by Muniyar N et al[1] who found 33.66% patients with IUGR. Similar percentage and number that is 13/50 cases (26%) was shared by oligo-hydraminos as an antenatal risk factor for IUGR.

Color Doppler was done for all patients and was normal in 58% (29/50) with 42% (21/50) patient having it abnormal which is comparable with study conducted by Gaikwad PR et al.[2]

Out of all mothers affected by IUGR 70% (35/50) were primigravida while 30% (15/50) were multigravida which is in line with findings of Arora et al. [6]Good fetal surveillance in antenatal period by fetal movement count, non-stress test, biophysical profile allow most cases of IUGR to do well.

Mode of delivery, observed in our study was, that the majority of patients i.e. 74% (37/50) required caesarean section while only 26% (13/50) delivered by vaginal route, this finding is consistent with other observational studies like Arora et al [6]and Muniyar Net al .[1]The planned preterm deliveries in IUGR pregnancies are conducted to avoid intra-uterine fetal demise in cases of fetoplacental insufficiency.

Analysis of fetal outcome in our study showed that 70% (35/60) of neonates required NICU admission while 8% (4/60) of it required ventilatory assistance. This is comparable with study conducted by Shrestha A.



This was a 37 week neonate born to a mother with severe PE with birth weight 1.5 kg.

Asymmetrical IUGR:

- Large head compared to rest of the body
- Visible rib cage

- Excessive skin folds
- Loss of body fat

SUMMARY:

The incidence of IUGR in our study is 2.5 %.

Hypertensive disorders of pregnancy followed by Oligohydramnios were most commonly associated with IUGR. Mean growth lag was >4weeks clinically .42% had abnormal Doppler findings .Mean gestational age at delivery was 37weeks.Cesarean delivery accounted to74%.Mean birth weight of the babies was 2.01kg. 70% of IUGR neonates required admission to NICU. Mean hospital stay was around 10 days.

CONCLUSION:

- Most of the consequences of IUGR are preventable.
- Awareness amongst pregnant women about antenatal checkups (SERIAL GROWTH MONITORING) is upmost importance.
- Identification of risk factors and ANTENATAL management of the same is an important issue to prevent adverse perinatal outcomes associated with IUGR.

REFERENCES:

1. Muniyar N, Kamble V, Kumar S. IUGR Pregnancies-Feto-Maternal Outcome. Gynecol Obstet (Sunnyvale). 2017;7(6):1-3.
2. Seyam YS, Al Mahmeid MS, Al Tamimi HK. Umbilical artery Doppler flow velocimetry in intrauterine growth restriction and its relation to perinatal outcome. International Journal of Gynecology & Obstetrics. 2002 May;77(2):131-7.
3. Shrestha A, Kayastha B. Analysis of Frequency and Risk Factors for Intrauterine Growth Restriction. Kathmandu Univ Med J. 2018;63(3):240-3.
4. Bahado-Singh RO, Kovanci E, Jeffres A, Oz U, Deren O, Copel J, Mari G. The Doppler cerebroplacental ratio and perinatal outcome in intrauterine growth restriction. American journal of obstetrics and gynecology. 1999 Mar 1;180(3):750-6.
5. Sharma D, Shastri S, Sharma P. Intrauterine growth restriction: antenatal and postnatal aspects. Clinical Medicine Insights: Pediatrics. 2016 Jan;10:CMPed-S40070.
6. Arora NK, Paul VK, Singh M 2002) Meharban- neonatal section. Journal of Paediatrics 4: 25.