

Original Research Article
**TO ASSESS ULTRASONOGRAPHY IN
SCREENING HIGH RISK MOTHERS FOR
EARLY DETECTION OF IUGR.**

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Abstract

Background & Methods: The aim of the study is to assess ultrasonography in screening high risk mothers for early detection of IUGR. These comprised some cases of pregnancy associated with maternal disorders thereby comprising the obstetric high risk group.

Results: Majority of high risk cases were of PIH which constitutes 34% of total cases this was followed by 18% cases with previous history of having given birth to growth retarded babies. In 10% of cases no risk factor was found.

Conclusion: USG is an important tool in the hands of sonologist for fetal growth monitoring. It is the necessity for obstetric management as an early and accurate diagnosis of fetal growth retardation will help to bring down the perinatal mortality and morbidity, which is our basic aim while providing good maternal and child health services. Detection of IUGR babies and their management will lower the incidence of low birth weight babies, thereby reducing the burden of neonatologist and hospitals with their economic consequences.

Keywords: ultrasonography, risk, mother & IUGR.

Study Design: Observational Study.

1. Introduction

To reduce perinatal mortality and morbidity has been the main aim of radiologist and obstetrics for a few decades[1]. These were managed by clinical assessment, pathological investigations and intrapartum labour monitoring till the advent of USG, since the introduction of sonography in early 1960s. it has become a major tool for monitoring fetal growth from its detection as a fetal pole in the gestational sac up to its delivery in the intrapartum period[2].

Ultrasound waves are mechanical pressure waves, similar to audible sound waves, but with much higher frequency ultrasound waves are transmitted through the body, producing echoes at interfaces of different acoustic impedance. The returning echoes are received modified displayed and recorded. Ultrasonic examination consisted of measurements of BPD, AC, HC, FL, placental grading, amniotic fluid volume and fetal weight[3].

The ultrasound examination was carried out from 22 weeks onwards, preferably those patients who had reported early in the second trimester with any of the known risk factors were taken in early and followed up in later months of pregnancy[4].

The major contributions in designing of equipment and some of the diagnostic potentials discovered that, unidimensional "A" scan could be used in the measurement of

fetal biparietal diameter. This discovered led to the first paper by Donald and his colleagues correlating fetal head size with duration of pregnancy[5]. The development of compound sector scanning added great importance to the investigation of early pregnancy. Donald demonstrated that full bladder pushes the uterus slightly out of the pelvis, providing an excellent medium for transmission of ultrasonic waves. He also demonstrated the presence of early pregnancy exemplified by a gestational sac[6].

2. Material and Methods

This study was carried out in the Dept. of Radio diagnosis at Apollo Spectra Hospital, Gwalior, M.P. for 01 Year. The patients were selected from the antenatal clinics as well as maternity wards and ultrasound O.P.D. A total of 100 cases were included in the study.

USG and Doppler studies was performed by using a convex array 0.57 m.m. R, 2-5.5 MHz multifrequency Doppler probe of Colour Doppler ultrasound unit.

Inclusion Criteria:

These comprised some cases of pregnancy associated with maternal disorders thereby comprising the obstetric high risk group. These were selected from the antenatal clinics as well as the maternity wards. The selection of these was based on the following criteria:

1. The ability of the patient to come for a follow up at regular intervals.
2. The pregnancy was single.
3. The patient would preferably deliver in the same Hospital.
4. Known case of preeclampsia.

3. Result

TABLE NO. 1: Age wise distribution of previous IUGR cases

S. No.	AGE GROUP IN YEARS	NO. OF CASES	PERCENTAGE
1.	16-20	00	00%
2.	21-25	10	55.6%
3.	26-30	06	33.3%
4.	31-35	02	11.1%
5.	36-40	00	00%
	Total	18	100%

Maximum no. cases with previous history of IUGR cases were found in the age group of 21-25 years (55.6%).

TABLE NO. 2: Distribution according to parity

S. No.	PARITY	NO. OF CASES	PERCENTAGE
1.	Primipara	42	42%
2.	Para 1	40	40%
3.	Para 2	14	14%
4.	Para 3	04	04%
	TOTAL	100	100%

The maximum no. of cases was those of primipara i.e. 42 comprising 42% of the total.

TABLE NO. 3: Duration of gestation in weeks at the first USG examination

S. No.	WEEKS OF PREGNANCY	NO. OF CASES	PERCENTAGE
1.	20-21 weeks	06	6%
2.	22-23 weeks	12	12%
3.	24-25 weeks	30	30%
4.	26-27 weeks	18	18%
5.	28-29 weeks	14	14%
6.	30-31 weeks	08	8%
7.	32 weeks on wards	12	12%
	Total	100	100%

The maximum no. of cases underwent first Sonography at 24-25 weeks of pregnancy which constitutes 30% of total cases.

TABLE NO. 4: Distribution of cases according to risk factors

S. NO	RISK FACTORS	NO. OF CASES	PERCENTAGE
1.	Pregnancy induced hypertension (PIH)	34	34%
2.	Essential hypertension	04	04%
3.	Previous IUGR	18	18%
4.	Previous still birth	04	4%
5.	Recurrent abortion	12	12%
6.	Antepartum haemorrhage	04	4%
7.	Diabetes	04	4%
8.	Anemia	10	10%
9.	No risk factors	10	10%
	Total	100	100%

Majority of high risk cases were of PIH which constitutes 34% of total cases this was followed by 18% cases with previous history of having given birth to growth retarded babies. In 10% of cases no risk factor was found.

4. Discussion

Young mothers in the age group of 21-25 years comprised of largest number of total i.e. 44%. Only cases (14%) belong to the age of over 30 years. This observation leads us to believe that most of the high risk mothers were in the active reproductive age group[7].

This is in correlation with the study who suggested that IUGR is seen in early child bearing young mothers. Primipara who constitute 42% of cases were most significantly associated with IUGR. This was followed closely by mothers who were para I constituting 40% of total cases. Age wise distribution of parity shows that primipara and para I in the age group of 21-25 years at maximum risk for IUGR[8].

Hence, the age and parity distribution in our study showed a definitive preponderance of primipara in the age group of 21-25 years at increased risk for IUGR[9]. This group should be considered for screening especially by USG if any possibility for high risk is observed by clinical history. Study found that highest incidence of IUGR occurred in primiparous women ie.52.5%

This distribution of cases is comparable to the study which stated that PIH contributes as one of the highest numbers of at “risk mothers”. Mothers with previous IUGR babies comprised 18% cases of our study and were predominantly found in the age group of 21-25 years. Mothers who had a first baby small for gestational age has a three times higher risk of IUGR in IInd pregnancy[10]. This would indicate that the number of factors which retards fetal growth have a high recurrence rate, a fact readily accepted by most clinicians. Keeping these in mind we were cautious with the patients who gave a history of having previous IUGR babies, still births or multiple mid trimester abortions in our study.

5. Conclusion

USG is an important tool in the hands of sonologist for fetal growth monitoring. It is the necessity for obstetric management as an early and accurate diagnosis of fetal growth retardation will help to bring down the perinatal mortality and morbidity, which is our basic aim while providing good maternal and child health services. Detection of IUGR babies and their management will lower the incidence of low birth weight babies, thereby reducing the burden of neonatologist and hospitals with their economic consequences.

6. References

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