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ASSESSMENT OF KNOWLEDGE OF PHARMACOVIGILANCE AMONG MEDICAL UNDERGRADUATES BY ALLOTING THEM ADR REPORTING ACTIVITY & BY QUESTIONNAIRE METHOD

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ABSTRACT

Introduction: Intra uterine growth retardation refers to poor growth of a fetus while in mother's womb during pregnancy. Intrauterine growth restriction can result in a baby being small for gestational age which is more commonly defined as weight below the 10th percentile for gestational age. **Objectives**: To assess risk factors for development of IUGR, the mode of delivery and indications for caesarian delivery and the fetal outcome in pregnant women with IUGR. **Material and methods** –An observational retrospective study on pregnant women with IUGR was done in a tertiary care hospital of Govt. Doon Medical College, Uttrakhand .The fetal outcome was studied in the gestation period till term and the risk factors associated with IUGR were also analysed. **Results**: Total 50 pregnant women with IUGR of 18-45 years of age were enrolled in our study. The risk factors assessed were hypertensive gravida with superimposed preeclampsia, elderly primigravida, preeclampsia, low lying placenta and diabetes mellitus. The mode of delivery in 80% of cases required operative intervention. The reasons for were pregnancy complications like decreased fetal movements, fetal distress, bleeding P/V, leaking P/V and previous history of Cesarian and oligohydramnios. All the babies born were LBW babies, rest outcome were preterm babies, neonatal asphyxia, hypoglycemia and intrauterine death. **Conclusion:** The causes of IUGR and subsequent fetal morbidity and mortality are preventable by correct management guidelines.

KEYWORDS: Intrauterine growth retardation, risk factors, low birth weight.

INTRODUCTION

Intrauterine growth restriction (IUGR) is a cardinal factor associated with significant neonatal morbidity and mortality. IUGR is a term used for fetuses with birth weight less than 10th percentile of those born at the same gestational age or two standard deviations below the population mean are considered as growth restricted.[1] Low birth weight (LBW) is another term used to define growth restricted babies but it includes preterm babies as well. The World Health Organization (WHO) definition of LBW babies is the babies weighing less than 2500 gm at birth.[2] The Prenatal diagnosis of IUGR is based on clinical and ultrasonographic (USG) examination. USG is considered more accurate with less intra-observer variations. Sonographically fetus with estimated weight <10th percentile for gestational age is considered growth restricted.[3]

Fetal weight is predetermined by genetic factor, health of fetus & placental perfusion. Placenta is the life line of the fetus and when challenged, it has a remarkable ability to adapt.[4] To diagnose intrauterine growth restriction, it is essential to estimate gestational age accurately. Although it is calculated from last menstrual period when known with certainty, reliability of this estimate is low as timing of ovulation is variable. First trimester ultrasonogram can date pregnancy more reliably. The diagnosis of IUGR is made by physically assessing fundal height, assessing the overall bulk of the uterus and increase in weight of the mother. More precisely it is assessed by ultrasound study by measuring the amount of amniotic fluid (AFL), fetal dimensions (abdominal circumference is very important parameter), abnormal umbilical blood flow, abnormal uterine blood flow and seeing placental calcification. Decreased cerebral blood flow is an indication for urgent caesarian section.

Serial fundal height measurement is a simple technique for assessing fetal growth. Ultrasonogram measurements of biparietal diameter, head circumference, abdominal circumference & fetal length of less than 10th percentile are highly suspicious and measurements below 3rd percentile are an unequivocal evidence of fetal growth restriction. Growth of abdominal circumference of less than 1cm over 14 days is also indicative of intrauterine growth restriction. Doppler assessment of uterine, umbilical, middle cerebral vessel is used to identify placental insufficiency and fetal wellbeing.[5,6] Grade III placenta before 36 wks is corroborative evidence of intrauterine growth restriction. Adverse long term

neurological sequelae in fetuses subjected to hypoxia for even short duration have been noted.[7] The incidence of IUGR varies between 4-7% in developed countries and up to 30% in poor resource settings.[4] Various maternal factors like vascular insufficiency, poor maternal nutrition, poor maternal weight gain during pregnancy are considered to be risk factors for IUGR. The growth restricted fetuses are at increased risk for respiratory distress, low Apgar score, necrotizing entero-colitis, hypoxic ischemic encephalopathy and other long term complications. This study was carried out to assess the risk factors for development of IUGR, and fetal outcome in pregnant women with IUGR.

MATERIALS AND METHODS

This was an observational retrospective study carried out on 50 pregnant women with IUGR in Department of Obstetrics and Gynecology, Government Doon Medical College, Dehradun. In this study, 50 pregnant women with IUGR of 18-45 years of age were enrolled with following inclusion and exclusion criteria.

Inclusion criteria

1. Pregnant woman of age group between 18-45 years.
2. Gestation age equal to or after 20 weeks.
3. Diagnosed cases of IUGR.

Exclusion Criteria

1. Pregnant women with gestational age less than 20 weeks.
2. Patients with history of Psychotic disorder, epilepsy and renal disease

The fetal outcome was studied during the gestation period till term. Along with this the risk factors associated with IUGR was analysed and the readings of diagnostic tests were analyzed. The diagnosis of IUGR was made by physically assessing fundal height, overall bulk of the uterus and increase in weight of the mother. More precisely it was assessed by ultrasound study by measuring the amount of amniotic fluid (AFL), fetal dimensions like abdominal circumference, abnormal umbilical blood flow, abnormal uterine blood flow and placental calcification.

RESULTS

The present study was an observational retrospective study conducted on 50 IUGR pregnant women with gestational age more than 20 weeks.

In this study, the pregnant woman with IUGR has the following risk factors like, 10 patients were diagnosed with Elderly Primigravida, 20 patients with hypertensive gravid and superimposed pre-eclampsia, 7 patients with low lying placenta, 5 were diabetic and in rest of the 3 cases the cause was unknown.

Table 1: Risk factors associated with IUGR in the study.

Elderly primigravida	Hypertensive gravida and superimmposed pre-eclampsia	Pre-eclampsia	Low lying placenta	Diabetic	Unknown
1O (20%)	20 (40%)	5(10%)	7(14%)	5 (10%)	3(6%))

Regarding the mode of delivery in patients affected with IUGR, 40 patients were delivered by cesarean section and 10 patients were by vaginal delivery (Table 2)

Table 2: Mode of delivery in the IUGR cases.

Mode of Delivery	Cesarean section	Vaginal delivery
No of Patients	40	10

In this study, the following symptoms occurs as an indicative for cesarean, 15 patients had decreased fetal movements and fetal distress, 10 patients had amniotic fluid leaking, 5 patients had vaginal bleeding and 10 patients had previous history of cesarean section and 5 had oligohydramnios. (Table 3).

Table 3: Indication for Cesarean Section in the present study.

Parameters	No of Patients
Extremely decreased fetal movements	10
Fetal distress in Doppler study	10
Leaking P/V	10
Bleeding p/v	5
Previous history of Cesarean section	10
Oligohydramnios	5

Further, in the present study the following complications were visualized in pregnant women affected with IUGR, 20 patients had delivered preterm babies, 20 patients had delivered babies affected with neonatal asphyxia, 9 pregnant women had babies with hypoglycemia and one baby had intrauterine death.

Table 4: Complications of IUGR in the present study.

preterm delivery	neonatal asphyxia	Hypoglycemia	Intrauterine death
20	20	9	1

DISCUSSION

IUGR is the mainstay in the perinatal morbidity and the mortality worldwide. IUGR can be defined as birth of an infant at weight which is less than its genetic potential. It encompasses a heterogeneous group of conditions which result in failure of fetus to achieve its genetic potential for growth prenatally. This condition includes inadequate placental function and fetal abnormalities. The prevention of low birth weight was public health priority in many developing countries where the condition was largely attributable to IUGR as compared to prematurity.

In our study the following risk factors were observed in our study, like elderly primigravida, hypertensive gravida, Diabetes and low lying placenta. Among all the risk factors, hypertensive gravid with superimposed pre-eclampsia was the risk factor seen in majority of the patients. In a population based study done by Gilbert et al.[8] found that the incidence of chronic hypertension was 0.69% (29,842) with increased neonatal morbidity along with IUGR.

Elderly primigravida was also seen as second important risk factor in most of the patients. A study conducted by Moses and Dalal, showed that IUGR is one the risk in elderly primigravida pregnant women.[9] Gestational diabetes mellitus were significant risk factors for IUGR in this study and it was in conformity with the findings of Tanne and Ornoy.[10,11] Further, low lying placenta was associated as a risk factor in our study which is in line with previous study published by Kalanithi et al.[12] In rest of the other cases of IUGR, the cause can be TORCH test positive mothers.(ie-mothers infected with toxoplasma gondii, rubella virus, cytomegalovirus, herpes simplex virus and chromosomal abnormalities.[13]

Regarding, mode of termination of pregnancy, the majority of patients i.e. 40 out of 50 required caesarean section while only 10 patients were delivered by vaginal route. The finding of our study was in line with other observational studies which showed that detection of growth restriction may be associated with an increased incidence of obstetric interventions.[14]

In this study, a significant proportion of the pregnancies in this study were delivered by cesarean section. This might be due to wide array of reasons like minified fetal movements, amniotic fluid leaking, vaginal bleeding and previous history of cesarean and oligohydramnios. The results were in consistent with the previous report.[15]

In this study, the following fetal outcome was observed like preterm delivery, neonatal asphyxia, hypoglycemia and intrauterine death of the fetus. Our results were in corroboration with the previous clinical studies.[16]

Further, in the study the IUGR pregnant women were advised bed rest to help the baby to grow, Eight hrs of sleep in the night and 1-2 hrs of rest in the afternoon. The mother should be aware of baby's movements and should report to the doctor if they are less or not felt. She should check her medications as a medication taken for another health problem can affect the growing fetus. Healthy food should be eaten. In cases of pre-eclampsia, salt restriction was suggested along with the valium injection.

The hypertensive patients with diastolic BP >100 were managed with the drug labetolol 100 mg twice daily with escalating doses at weekly intervals, reaching a maximum of 1.2 g in 24 hours. During severe hypertension, protein diet restriction was also advised.

The cases of impending eclampsia were given magnesium sulfate regime by intravenous or intramuscular route. The intramuscular regimen was a 4 g intravenous loading dose, immediately followed by 10g IM and then 5 g IM every 4 hrs in alternating buttocks. The intravenous regimen given as 4 g dose, followed by a maintenance infusion of 1-2 g/hr by controlled infusion pump. An aminodrip was also suggested for nutrition. The vasodilators like isoxsuprine was used to increase the blood flow in the maternal vessels supplying the placental bed.[17]

CONCLUSION

It is concluded that IUGR is an important cause of perinatal morbidity and mortality. The commonest maternal cause for IUGR in our study was hypertensive gravida with superimposed pre-eclampsia. Further, most of patients were delivered by caesarean section. The most common fetal complication observed in this study was preterm babies. Thus, causes of IUGR and subsequent fetal morbidity and mortality are preventable by correct management guidelines. Awareness among pregnant patients about nutrition, antenatal checkups are of upmost importance. The hospital also need to be equipped with facilities for antepartum fetal surveillance, facilities of operative delivery, availability of NICU and ventilatory support for the fetal complications, in case required.

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