

A study of Antenatal risk factors and fetal outcome in IUGR pregnancies

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Abstract

Introduction: Low birth weight (LBW) (neonate weighing <2500 g) is a multifactorial phenomenon. Many maternal and fetal factors are found significantly to be associated with the low birthweight. **Material and Methods:** It was a retrospective record based study carried out in tertiary care hospitals in Delhi where the authors work between May 2013 and December 2014. The study population consisted of 200 IUGR cases (babies weighing less than 2 kgs). **Results:** In our study, maximum 80 (40%) of the IUGR cases found in primigravidas, and minimum 24 (12%) cases were found in 4th gravida. In our study 82 (41%) of the IUGR cases found in Normotensives, 59 (29.5%) cases were found in mild hypertensives and minimum 18 (09%) cases were found in severe hypertensive mothers. In our study 90 (45%) of the IUGR cases found in pregnant women had normal haemoglobin levels, maximum 56 (28%) cases found in pregnant women had mild anemia and minimum 12 (06%) cases found in pregnant women had severe anemia. **Conclusion:** From the available literature reviewed it was found that the major risk factor for IUGR was lack of knowledge in the mothers regarding prevention of IUGR. Hence there is a need to assess the knowledge of rural primigravidas mothers and conduct a structured teaching programme on prevention of IUGR.

Keywords: Antenatal, IUGR, Low birth weight, Pregnancy, Risk factors

Introduction

Intra uterine growth restriction is a global issue and an important public health problem which is associated with increased neonatal mortality. The birth of an intra uterine growth restricted baby evokes considerable psychological stress in the mothers which is directly related to lack of knowledge in these mothers regarding IUGR [1]. Low birth weight (LBW) (neonate weighing <2500 g) is a multifactorial phenomenon [2]. Many maternal and fetal factors are found significantly to be associated with the low birthweight [3]. World Health Organization definition of low birth weight (LBW) babies i.e. birth weight less than 2500 gm [4]. IUGR is observed in about 23.8% of the newborn and approximately 30 million babies suffer from IUGR every year [5]. Nearly 75% of all affected babies are born in Asia, 20% in Africa and about 5% in Latin America. The prevalence of low birth weight in India was found to be 26% [6]. The proportion of IUGR was found to be 54.2% in India [5]. Major risk factor for IUGR was lack of knowledge in the mothers regarding prevention of IUGR. Hence researcher felt the need to assess the knowledge of rural primigravida mothers and conduct a structured teaching programme on prevention of IUGR.

Material and methods

Study design: Retrospective record based study.

Study period: May 2013 and December 2014.

Study place: The study was carried out in tertiary care hospitals in Delhi.

Study population: The study population consisted of 200 IUGR cases (babies weighing less than 2.5 kgs) from the hospital records.

Procedure: The records of the study group were studied retrospectively and the high risk factors in the antenatal period and the fetal outcome were compared.

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Statistical analysis: The data was entered in the Microsoft office excel 2007 and analyzed using Epi-info software (available free online).

Results

Table No 1: Distribution of IUGR cases according to the maternal age.

| Maternal age in years | No. of IUGR cases | Percentage |
|-----------------------|-------------------|------------|
| ≤20 | 38 | 19 |
| 21- 30 | 100 | 50 |
| 31- 40 | 40 | 20 |
| ≥40 | 22 | 11 |
| Total | 200 | 100 |

In our study 38 (19%) of the IUGR cases found in ≤ 20 year age group, maximum 50 (20%) cases were found in 21- 30 year age group and minimum 22 (11%) cases were found in 21- 30 year age group.

Table No 2: Distribution of IUGR cases according to the parity.

| Parity | No. of IUGR cases | Percentage |
|--------------|-------------------|------------|
| Primi | 80 | 40 |
| G2 | 52 | 26 |
| G3 | 44 | 22 |
| G4 | 24 | 12 |
| Total | 200 | 100 |

In our study, maximum 80 (40%) of the IUGR cases found in primigravidas, and minimum 24 (12%) cases were found in 4th gravida.

Table No 3: Distribution of IUGR cases according to the weight gain during pregnancy.

| Weight gain | No. of IUGR cases | Percentage |
|--------------|-------------------|------------|
| < 4 Kg | 53 | 26.5 |
| >4 Kg | 147 | 73.5 |
| Total | 200 | 100 |

In our study 53 (26.5%) of the IUGR cases were found. Total weight gain during pregnancy is less than 4 Kg and 147(73.5%) cases were found where the total weight gain during pregnancy is more than 4 Kg.

Table No 4: Distribution of IUGR cases according to the pregnancy induced hypertension.

| PIH | No. of IUGR cases | Percentage |
|--------------|-------------------|------------|
| Normotensive | 82 | 41 |
| Mild | 59 | 29.5 |
| Moderate | 41 | 20.5 |
| Severe | 18 | 09 |
| Total | 200 | 100 |

In our study 82 (41%) of the IUGR cases found in Normotensives, 59 (29.5%) cases were found in mild hypertensives and 18 (09%) cases were found in severe hypertensives.

Table No 5: Distribution of IUGR cases according to the anemia.

| Anemia | No. of IUGR Cases | Percentage |
|--------------|-------------------|------------|
| Normal | 90 | 45 |
| Mild | 56 | 28 |
| Moderate | 42 | 21 |
| Severe | 12 | 06 |
| Total | 200 | 100 |

In our study almost 45 % of IUGR babies delivered from mothers with normal haemoglobin.

Discussion

In our study, IUGR was found more commonly in the age group of less than 20 years and least common in the age group of more than 40 years. This observation is comparable with the study conducted by Moore who found IUGR to be more common in less than 20 years age group [7]. In our study, maximum 80 (40%) of the IUGR cases found in primigravidas, and minimum 24 (12%) cases were found in 4th gravida. This finding is in concordance with the findings of Arora et al [8]. In our study, 53 (26.5%) of the IUGR cases found where the total weight gain during pregnancy was less than 4 Kg and 147(73.5%) cases were found where the total weight gain during pregnancy is more than 4 Kg. these results were comparable to the study conducted by Arora et al, [8] who showed that patients with IUGR had less weight gain during pregnancy. Similarly Abrams et al [9] found that underweight women with

poor weight gain during pregnancy have greater risk of delivering infants less than 2500 grams. In our study, the incidence of pregnancy induced hypertension with IUGR was 59%. These findings are comparable to the study conducted by Arora et al [8] who found 24% of patients of IUGR to be associated with PIH, Visser et al [10] found hypertensive disorders were the most common causative factor for IUGR accounting for 59% of the cases, similarly Odegard, [11] found in a study that risk of IUGR was four times higher in infants born after preeclampsia. In our study 90 (45%) of the IUGR cases found in pregnant women had normal haemoglobin levels, maximum 56 (28%) cases found in pregnant women had mild anemia and minimum 12 (06%) cases found pregnant women had severe anemia. Allen [12] showed that anemia was significantly associated with IUGR. The percentage of anemia was 27% in his study.

Conclusion

From the available literature reviewed it was found that the major risk factor for IUGR was lack of knowledge in the mothers regarding prevention of IUGR. Hence there is a need to assess the knowledge of rural primigravidas mothers and conduct a structured teaching programme on prevention of IUGR.

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