An analytical Study of Age in Normal and Intrauterine Growth Retardation (IUGR) for pregnant women

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ABSTRACT

Introduction: Intrauterine growth retardation (IUGR), a common complication of pregnancy, has been linked to the later development of diseases in adulthood. Aim of the study: The aim of this survey was to compare the age in normal and IUGR pregnancies. Material and Methods: Research study, Anatomy Department, R.N.T. Medical College, Udaipur. 100 control and 100 IUGR Pregnancies. Results: In the normal pregnancies maximum 38 females were of more than 30 years old but in IUGR cases 34 females were between 21 to 25 years age and 34 female were more than 30 years old. Conclusion: In our survey age is not statistically essential feature causing IUGR

Keyword: Pregnancy, IUGR, World Health Organization (WHO), low birth weight (LBW), People’s Republic of China (PRC), “Insulin-like growth factor binding protein (IGFBP)”, vasoactive intestinal polypeptide (VIP), birth weight (BW), fetal etiologies (FEs), maternal etiologies (MEs)

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INTRODUCTION

The normal fetal development is significant factor of healthy pregnancy and affects the offspring long-term health. Nevertheless, defining abnormal and normal fetal development is long-standing task in clinical survey and practice [1].

In developed countries, the overall incidence of intrauterine growth restriction is about 2 – 8%. The incidence in developing countries is still higher [2]. Five percent of the term and 15% of post term babies are IUGR. There are 2 kinds of IUGR: asymmetrical (80%) and symmetrical (20%) [3]. The main significant reason of neonatal loss is LBW (Low Body Weight). The LBW baby is described by ninth revision of International Classification of Diseases of WHO (1977) [4] as one whose birth weight is 2500 g or less, irrespective of gestational age. After correlating both gestational age and birth weight they are classified into two groups: pre-term and IUGR or small-
There are various reasons for IUGR are not caused fundamentally by placental deficiency, yet indirectly lead to it [6]. The reasons for IUGR might be partitioned into MEs and FEIs. The FEIs comprise of congenital malformations, placental/cord abnormalities, genetic diseases, infections, and multiple gestations [7]. The MEs are ordered as follows: (1) diminished uteroplacental blood stream, (2) diminished blood volume, (3) nutrition status, (4) diminished oxygen conveying ability, (5) teratogens, and (6) different causes like short pregnancy intervals, maternal age, and low financial status [8-10].

Ilker Gunyeli et al (2011) indicated that association among morphological variations in IUGR placentas and intrauterine fetal deaths. The perception of placental insufficiency seems to provide plausible description for foetal emergency conditions [11],[12].

The articulations permit and incite further considerations and studies on real reasons for constant or intense inadequate gracefully of foetus, the newborn and nascent baby, and how to evade these causes. The IUGR, regularly connected with practical placental deficiency, outcomes expanded morbidity and perinatal mortality [13-15].

IUGR EPIDEMIOLOGY

The rate of IUGR is multiple times greater in immature/creating nations whereas contrasted with that in created nations, and this frequency might be bigger in lower-and center pay nations, the same number of babies are conceived in home without birth records. The rate of IUGR varies between nations, populaces, and increments with diminishing gestational age [16]. An enormous number of IUGR babies have been found in Asian mainland that represents roughly 75% of every influenced newborn child. This is followed by Latin American and African continents. In Asian mainland nations, the most elevated rates for IUGR–LBW and LBW have been observed in diminishing request in accompanying nations: India, Bangladesh, Sri Lanka, Pakistan [17], Vietnam, Cambodia, Philippines, Thailand, Malaysia, Indonesia and PRC [18-20].

IUGR ENDOCRINE BASIS

The fetal development relies upon different hormones, in particular, thyroid, insulin, adrenal, and pituitary hormones. These hormones advance the development and improvement of baby and any interruption in these hormonal levels prompts IUGR [21].

The insulin maintains cell number since it has direct mitogenic impacts on cell improvement. It prompts glucose take-up and utilization by body tissues and diminishes protein breakdown. The fetal insulin goes about as sign of supplement accessibility for development and insulin inadequacy will prompt IUGR. In insulin inadequacy, IUGR outcomes due to diminished take-up and usage of supplements. In preclinical preliminaries, it is demonstrated that pancreatic agenesis of embryo prompts fetal hyperglycemia and these outcomes in optional abatement in maternal–fetal glucose focus inclination; hence, there is a diminishing in glucose transport to baby, prompting IUGR [22].

The IGF-I is emphatically directed by glucose supply in baby. It has mitogenic assets inducing substantial cell development, multiplication, and impacts glucose transport and amino acids over placenta. In preclinical test, it is demonstrated that a diminished articulation of IGF-I outcomes in especially decreased paces of fetal development [23].
The part of IGF-II, IGFBP-2, IGFBP-3, and VIP in IUGR has been demonstrated. In different preclinical preliminaries, change in IGF-II transformation has appeared to reason of decrease in size of fetal, despite the fact that the impact of IGF-II transformation on human fetal development actually should be resolved decisively. The cell development is subject to the harmony among IGF molecule and binding protein itself. The IGFBP-3 is decreased in rope blood of newborn children with IUGR. The VIP is development factor in embryo influences neuronal and entire body development [24].

The glucocorticoid hormone doesn't have any important consequences for the fetal development yet has a significant function in the turn of events and development of fetal organs. These impacts incorporate glycogen statement, gluconeogenesis, unsaturated fat oxidation, enlistment of surfactant creation and delivery, auxiliary development of alveoli, basic development of the gastrointestinal parcel, expanded articulation of stomach related compounds, expanded adrenal capacity, change from fetal to grown-up hemoglobin union, and development of liver, thymus, and kidney [25].

The “Pregnancy-associated plasma protein -A (PAPP-An)” is discharged by deciduas into maternal dissemination. The capacity of PAPP-A is to separate IGFBP-4, a powerful inhibitor of IGF activity, in this manner expanding the movement of neighborhood IGFs. The low circling degrees of PAPP-An in primary pregnancy is related with an expanded danger for IUGR.

Development hormone that will be main hormonal controller of postnatal development has no certifiable impact on fetal development [26].

IUGR PREVENTION
The high occurrence of IUGR in emerging nations is generally due to social reasons, like sexual orientation segregation and doesn't seem to lessen with intercessions that are focused toward pregnant ladies. The pre-pregnancy andadolescent sustenance, pre-pregnancy loads, destitution are significant factors of fetal development in lowand middle income nations. The social mediation estimates, like dealing with female nourishment improvement, deferring old enough from the outset pregnancy, forestalling female sex savagery, and treating persistent sickness and pregnancy-instigated issues will help positively affect decreasing the frequency of IUGR in creating nations. Notwithstanding, some proof based intercessions have appeared to decrease the rate of IUGR. The proof based demonstrated intercessions incorporate adjusted “energy protein supplementation”, discontinuous preventive treatment of intestinal sickness in pregnancy, bug insecticide treated nets (ITN), various micronutrient supplementations, enemies of platelets for toxemia, and smoking end [27].

MATERIAL AND METHOD
The survey of Age in normal and IUGR cases was at RNT Medical College, Udaipur, two hundred women admitted and delivered in Mahila Chikitsalaya attached to RNT Medical College. The cases are selectively considered from 1-7-13 to 1-4-14. All cases are in 18-40 years age group, of normal weight andheight includes both multigravida andprimigravida. All cases are free from any systemic disease [28].

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OBSERVATION

NORMAL PREGNANCIES:

AGE
Total number of normal cases studied 100. Age Distribution: Patients of different age groups ranging from minimum of 18 years to a maximum of 40 years were included in the normal group. Maximum number of patients was above the age of 30 years.

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<tr>
<th>AGE GROUP</th>
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<tr>
<td>Less than 21 years</td>
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<td>21-25 years</td>
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IUGR PREGNANCIES -
Total number of cases studied was 100.

AGE

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DISCUSSION
Intrauterine growth restriction (IUGR) is a principal cause of fetal and neonatal morbidity and mortality. It is defined as a rate of fetal growth that is less than normal in light of the growth potential of that specific infant. IUGR infants may have many acute neonatal conditions including perinatal asphyxia, hypoglycemia, hypothermia, and polycythemia. The long-term complications of these infants include growth retardation, neurological disorders, and developmental diseases. IUGR can be the result of maternal, fetal or placental disorders. Maternal causes include hypertension (especially preeclampsia or eclampsia), diabetes mellitus, cardiopulmonary disease, anemia, malnutrition, connective tissue disorders, smoking and drug abuse. Fetal causes comprise of chromosomal abnormalities, ventral wall defect, or genitourinary defects. Placental causes are placental insufficiency, placental infarction and placental mosaicism. Recent literature suggests that placental causes of IUGR are more common than the maternal and fetal causes.

Jaya DS et al reported that LBW prevalence is high (22.0%) in mothers aged among 15 and 19 years. There is a main variance ($p < 0.001$) in mean BW of term female and male babies; however, there is no important variance in their cord length. The mean placental weight of preterm babies and LBW term is lower than corresponding normal weight babies [29].

Hendrix N 5 said that causes of IUGR might be divided into ME and FEs. The MEs are categorized as maternal age, and “low socioeconomic status”. The etiologies information of fetal development constraint is important, so that future care might be targeted at prevention. There are many “primary and secondary prevention” methods might be adopted. In our study maximum 38 females were of more than 30 years old in normal Pregnancies but in IUGR cases 34 females were between 21 to 25 years age and 34 more than 30 years old [30].

CONCLUSION

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In the normal pregnancies maximum 38 females were of more than 30 years old but in IUGR cases 34 females were between 21 to 25 years age and 34 female were more than 30 years old. In our survey, age is not statistically important feature causing IUGR

REFERENCES


