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The desire of every woman contemplating motherhood is that her pregnancy culminate in a healthy offspring who will achieve the highest possible physical and mental potential. Towards achieving this goal it remains the obstetrician’s responsibility to reduce the well recognized implication and consequences of intrauterine growth retardation by early diagnosis and management.

The growth retarded fetus represents a failure to achieve recognized normal growth parameters.

It has been estimated that approximately 20% of all fetal deaths can be attributed to complication related to IUGR. This is further reflected in the recognition that from 30 to 40 per cent of all low birth weight infants (i.e. less than 2500 gm.) are growth retarded rather than just premature. The impact of this problem is reflected in the marked increase in perinatal mortality and morbidity seen in the growth retarded fetus.

Follow up studies have established that by the age of six years there is on an average a diminished intelligence quotient and smaller stature among children born with IUGR. Significantly higher number of children with speech defects, CNS abnormalities and poor school performance even with an IQ of over 100 were found with a history of IUGR.
There is a deceptive simplicity about the diagnosis of fetal growth retardation and there is no reliable definition of IUGR available before birth admittedly it can only be made in retrospect, when in utero becomes ex utero, and you can weigh the baby. The most commonly accepted definition being babies weighing less than the 10th percentile for their gestational age at birth.

Antenatal diagnosis of a growth retarded fetus is difficult and when misdiagnosed, can lead to inappropriate medical intervention. For this reason obstetricians are preoccupied with finding methods that will facilitate early and reliable diagnosis of the growth retarded fetus.

Direct fetal visualization in utero by ultrasonics was introduced by Donald and Brown in 1960. Since than the use of ultrasound to approximate the gestation age of the fetus and assess its well being in utero has become wide spread. Fetal biparietal diameter was the first parameter to be measured for this diagnosis and is probably still the one most commonly used.

Although measurement of biparietal diameter before the III trimester enable an accurate assessment of foetal maturity. It is not reliable for detecting fetal growth retardation especially the late flattening type.

Subsequently, continuous attempts were made to discover a more accurate parameter and various ultrasound measured indices were used
either singly or in formulations. These included abdominal circumference, head circumference, thoracic circumference crown rump length and femur length, cross-sectional areas of head and abdomen, quantitative assessment of liquor and total intrauterine volume and echogenicity of placental tissue.

The abdominal girth has been shown to be affected early in the IUGR process. The rationale for measurement of fetal abdominal circumference/diameter transactional area in the prediction of IUGR is based on the observation of gruenwenaly that mass and fetal intra abdominal organs principally the liver are severely affected in IUGR, this was thought to be due to depletion of glycogen in the liver. Keeping this in mind we have tried in the present study to evaluate whether estimation of Biparietal diameter, fetal femur length and abdominal circumference, FL/AL, FC/AC, would assist in the early diagnosis of IUGR.