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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

Evaluation of Fetal Kidney Length in Relation to Femur Length as an Accurate Method of Estimation of Gestational Age in Third Trimester

Thesis

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By

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List of Abbreviations

Abb.	Full term
2DUS	Two-dimensional ultrasound
AC	Abdominal circumference
BPD	Biparietal diameter
CI	Cephalic index
CRL	Crown-rump length
DM	Diabetes Mellitus
EDD	Estimated date of delivery
EFW	Estimated fetal weight
FKL	Fetal Kidney Length
FL	Femur length
GA	Gestational age
GDM	Gestational diabetes mellitus
HC	Head circumference
hCG	Human chorionic gonadotropin
IUGR	Intrauterine growth retardation
IUP	Intrauterine pregnancy
LMP	Last menstrual period
MRI	Magnetic resonance imaging
MSD	Mean sac diameter
OFD	Occipitofrontal diameter
SE	Standard error
TAUS	Transabdominal ultrasound
TVUS	Transvaginal ultrasound

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Introduction

An accurate gestational age (GA) is vital to the diagnosis of fetal growth disorders and the timing of elective delivery, failure of which could either result in iatrogenic prematurity or postmaturity, with their attendant perinatal morbidity and mortality. In developing countries, a significant number of pregnant women tend to seek antenatal care late in pregnancy, a number of who are unable to recall their precise last menstrual period (LMP) ***(Lees et al., 2020).***

Compared with the traditional methods of dating pregnancy using LMP and clinical measurement, ultra-sonographic dating has been recognized as the most parameters used include gestational sac volume, gestational sac diameter, and crown‐rump length (CRL) measurements, which are most commonly used in 1st-trimester pregnancy dating.

By the end of the 1st trimester, measurements of biparietal diameter (BPD) become more accurate than the CRL, which by that time reflects errors associated with fetal flexion and extension. BPD and femur length (FL) are commonly used for 2nd‐trimester pregnancy dating. To a lesser degree, biometric indices such as transcerebellar

diameter, foot length, and clavicular length have also been used. The sonographic parameters used in the 3rd trimester are BPD, FL, abdominal circumference (AC), and head circumference (HC). Between the 12th and 28th weeks of gestation, BPD has been shown to be able to predict GA within 6–11 days, but after 26 weeks, the accuracy of FL measurement progressively decreases, with a standard error (SE) of ±3 weeks near term ***(Edevbie and Akhigbe, 2018).***

This study has been done through measurement of femur length of the selected cases and compare it with the new parameter which is Mean fetal Kidney length to get the most accurate single parameter for estimation of gestational age in third trimester.

Das et al concluded that the most accurate method for evaluation of gestational age was the Fetal Kidney Length (FKL) followed by Abdominal Circumference (AC) and Biparietal Diameter (BPD) ***(Das et al., 2018).*** While **kumar et al** found that the best linear regression model for estimating of gestational age is Femur Length (FL), Fetal Kidney Length (FKL) and Biparietal Diameter (BPD) in that order ***(Kumar et al., 2013).***

Aim of the Work

The aim of the study is to compare the accuracy of fetal kidney length in relation to FL regarding to estimation of gestational age in third trimester.

Research question:

Is the measurement of the fetal kidney length more accurate in prediction of gestational age in third trimester than the measurement of femur length?

Research hypothesis:

Measurement fetal kidney length is more accurate in prediction of gestational age in third trimester than measurement of femur length.