

Research Article

**Measurement of Fetus Age by Fetal Biometry (Biparietal Method)
and It's Reliability**

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ABSTRACT

Objective:To determine the relationship between bi-parietaldiameter and gestational age and LMP (last menstrual period) and the ultra-sonographic criteria to determine DBP measurement (bi-parietal diameter) at different gestational ages of single normal gestation.

Study Design:The study of the research is descriptive.

PLACE AND DURATION: The data was collected and study performed at Department of Radiology Nishter Hospital, Multan from January 2014 to January 2015.

METHODOLOGY: Gestational age (n = 100) with single fetus, different gravida and gestational ages were examined with transabdominal exploration with 3.5 M standard curved probes. Biparietal diameters were recorded at different gestational ages and the accuracy was evaluated.

RESULTS:Of the 100 women, 76% corresponded to PML and gestational age, while BPD measurements in the second trimester were compared with the third trimester, only 62%.

CONCLUSION:Ultrasound and gestational age and BPD measurement are a good correlation before work. It is a reliable tool for assessing gestational age, especially when the GML is unknown or suspicious, especially in the second and third trimester of pregnancy in the second trimester of pregnancy.

KEYWORDS:Biparietal diameter, fetal biometry, gestational age, pregnant women, trimester.

INTRODUCTION

The measurement of various parts of fetal body is known as fetal biometry. Accurate determination of gestational age is critical for gestational age (EG) knowingly obstetric care and, for that, we can provide optimal prenatal care. There are several ways to evaluate the age of the pregnancy as PML, but it is less reliable because it is affected by the subjectivity. Fetal biparietal diameter (BPD) and head circumference (HC) measurements have become established methods to assess fetal size and gestational age. The diameter of the head of the DBP fetus is clearly visible on the outer circumference of the bark and can be visualized in the transaxial plane of the fetal head of the parietal, temporal bone, and

usually the septal equatorial midway thalamus before the capillary pellucidum is tested. The most widely accepted method is the measurement from the leading edge to the leading edge (external to the inside) performed by the ultrasound. Trans-abdominal ultrasonography is performed in all prenatal cases for the measurement of various fetal parts. To calculate the age of the pregnancy in women and to evaluate the fetus, ultrasonication and pregnancy follow-up are routinely performed. A single parameter is not enough to give a precise fetal age at the ultrasound. Initial assessment of gestational age can be done as early as the first trimester. After 26 weeks, the sensitivity of the measurement

gradually decreases and if DBP is about ± 3 weeks term.⁷ between 12 and 26 weeks, DBP needs 10 to 11 days \pm . BPD and femur length correlate well with gestational age. However, the main advantage of measuring DBP TLP is that it is twice as sensitive to femur length as fetal.⁸ growth variation is more affected by factors such as mother and baby parity, and fetal sex, nutritional deficiency or placental insufficiency. Pakistan is a low-income country and very few studies have been conducted on BPD and gestational age. This study aims to determine the relationship between biparietal diameter and gestational age and to determine the sonographic criteria for measurement of DBP, normal pregnancy only at different gestational ages.

METHODOLOGY:

This randomized descriptive study was conducted from January 2014 to January 2015 at the MultanNishter Hospital Radiodiagnosis and Imaging Division. The study populations consisted of 100 pregnant women carrying a single fetus with different fetuses and gestational ages. At the second and third trimester, routine obstetric examinations were randomly selected. After receiving the informed consent, a form was filled in for each study participant and a full history (including PML) was obtained to find the regularity of the menstrual cycle and the medical problem during pregnancy, which could affect BPD, such as diabetes, hypertension. IUGR, intrauterine fetal death, multiple pregnancies and fetal congenital malformations were excluded. Women who were intestinally addicted and who were exposed to active and passive smoking were also excluded.

All these pregnant women were examined using a 3.5 MHz Tran abdominal probe per consultant. DBP measurements were taken to assess gestational age and were checked by another elderly person to exclude the bias in the study. All the findings are filled in forms and fed to the computer. Correlations of BPD and LMP measurements according to gestational age were recorded. Variables were analyzed with the SPSS

16 version and presented as mean DBP values for each week of pregnancy, frequency, and percentile.

RESULTS:

In this study, the average age of 100 pregnant women is 20 years and their ages range from 18 to 47 years. Seventy percent of the patients ($n = 74$) were multigravida in 74% ($n = 74$) and 26% ($n = 26$) of 100 women who were studied at different gestational ages in the second and third trimester ($n = 26$). 31) 20-26. In the weeks, 27-33. During pregnancy weeks 29% ($n = 29$), 34-40. 21% ($n = 21$) in the gestational weeks, 19% in 19) were gestations of 13-19 weeks as shown in Table-I.

Characteristics	n=100	Percentage %
Age (Years)		
18 - 23 Years	19	19%
24 - 29 Years	33	33%
30 - 35 Years	29	29%
36 - 41 Years	19	19%
Gravidity		
Primidravida	26	26%
Multigravida	74	74 %
Different Gestational age at the time of presentation		
13 - 19 Weeks	19	19%
20 - 26 Weeks	31	31%
27 - 33 Weeks	29	29%
34 - 40 Weeks	21	21%

Table II shows the relationship between LMP and BPD. In 100 of the cases, BPD measurement did not fit into the gestational week of 76 (76%) and 24 (24%) of the gestational age-related correspondence between LMP and BPD. In the second quarter of the LMP, only a compliance of 62% was observed in the third quarter.

Correspondence during Second trimester (14-26 weeks)		
Correspondence	No. of Patients	Percentage %
Present	76	76
Absent	24	24
Total	100	100
Correspondence during Third trimester (27-39+ weeks)		
Correspondence	No. of Patients	Percentage %
Present	62	62
Absent	38	38
Total	100	100

DISCUSSION:

A child is a precious gift from heaven, and the best way to bless it is to have a safe and healthy

birth. In this sense, accurate information about gestational age is of great importance. Very few studies have been reported on this issue in Pakistan and standard graphics and reference values are in use. A study in Nigeria reported only fetal DBP results without a definite relationship between gestational age and biparietal diameter. This study was designed to generate BPD reference intervals, especially for the commonly used fetal parameters, local populations, gestational age, and LMP has been found to be more reliable, a matter of this issue and memory dependence. Ultrasonic technology has shown that the biparietal diameter is a useful tool for determining fetal gestational age, especially in the second quarter. there have been a few researches, 12 but a population of Willocks and colleagues reported fetal cephalometry in 1964, since many of these studies were carried out in Western countries and fetal anthropometric characteristics were considered to vary according to ethnic, social and nutritional sources. In 2000, non-Indians such as Lim and his colleagues showed an important difference when compared to Indians (Malay and China). Similarly, when compared to the western population in this study, BPD and Centil were found high in the area. This study created reference tables and tables for gestational age using BPD.

These tables are very similar to the other charts for the mixed population of Caucasus and Europe and they found the most satisfactory means for gestational age. There was no effect on maternal age, fetal sex, and maternal weight in BPD. Fetal presentation, parity and low gestational age were recorded.

CONCLUSION:

It is possible that ultrasound and gestational age have a good correlation with BPD measurement before work.

Especially in the second and third trimesters of pregnancy, the age of the pregnancy in the second trimester is a reliable tool especially for patients with unknown or suspicious LMP.

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