

Sonographic Estimation of Fetal and Actual Birth Weight in Pakistani Nation

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ABSTRACT

Objectives: The objective of this study was to compare estimated fetal weight with actual birth weight in Pakistani population.

Study Design: A retrospective cohort study of 400 pregnancies with detailed fetal measurements at 29-34 weeks' gestation.

Settings: This study was conducted in Radiology Department of Shalamar Hospital in collaboration with Jinnah hospital, Lahore which is a tertiary care hospital.

Duration of Study: It was completed in two months from 2ⁿ June to 2nd August 2008.

Subjects and Methods: First 200 consecutive patients in each hospital at 29-34 weeks gestation were ultrasonographically evaluated for estimated fetal weight and retrospectively compared with actual neonatal birth weight, excluding maternal history of diabetes.

Results: In most of our patient with estimated fetal weight below 3000 grams if we add 250 grams and for more than 3000grams if we add 500 grams then it gives actual birth weight with \pm of 100-150 grams only.

Conclusion: we can make very easy formula to measure actual neonatal birth weight in Pakistani population.

Keywords: ultrasonography, estimated fetal weight, Neonate actual birth weight , diabetes

INTRODUCTION

Ultrasonography has been known for quite some time to be a useful tool for the detection of congenital abnormalities, fetal weight ,expected date of delivery ,in the diagnosis of multiple pregnancies, in locating the placenta, evaluating fetal growth, and in identifying pregnant women at risk of postmaturity or intrauterine growth restriction. More recently, morphology of the umbilical cord, including its diameter and the amount of Wharton's jelly, have been associated with adverse perinatal events, such as preeclampsia, gestational diabetes mellitus , intrauterine growth restriction , small-for-gestational-age fetuses , fetal distress during labor and indication for Cesarean delivery . Using an ultrasound scanner with high image resolution we can easily estimate approximate fetal weight.Sonographic measurement of the diameter of the umbilical cord and its vessels is yet to become routine practice in obstetrics . Although there is no clear explanation for this, some of the difficulties that are presumed to be the principal determining factors in the technique not having yet been incorporated into routine healthcare during pregnancy include the absence of a universally accepted reference curve for these measurements, the lack of effective validation of these

measurements in different populations, and possible technical difficulties in performing the measurements. The fetal part measurements including fetal weight which are feed in ultrasound machines are a little different in our population.The fetal weight measurement study is part of a larger study designed to construct a reference value. The objective of this study was to evaluate difference in fetal weight measurements in foreign and Pakistani population.

OBJECTIVE

The objective of this study was to compare estimated fetal weight on ultrasound examination at 29 to 34 weeks with actual birth weight in Pakistani nation.

MATERIAL AND METHODS

First 200 consecutive patients in each hospital at 29-34 weeks gestation were ultrasonographically evaluated on TOSHIBA just vision 200 and Capasee machines for estimated fetal weight and retrospectively compared with actual neonatal birth weight, excluding maternal history of diabetes and patients dietary habits.Patient data was noted in between 29 to 34 weeks of gestation regardless her number of visit and follow up done in labour room at both hospitals and neonatal birth weight noted.

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RESULTS

The result were that in 90% of our patient with estimated fetal weight below 3000 grams when added 250 grams and for more than 3000grams if we add 500 grams then it gave actual birth weight. The remaining 10% of the patient were having variation in weight about ± 100 grams.

DISCUSSION

Birth weight is the principal variable affecting fetal and neonatal morbidity, especially in the preterm and small for-dates fetus. It is also of value in the management of breech presentations, diabetes, trial of labor, macrosomic fetuses, and twins. Clinical estimation of fetal weight using abdominal palpation has been shown to be within 500 g in 85% of cases, with more accuracy in the average, term fetus than in the preterm and macrosomic fetus. The introduction of real-time ultrasound has enabled the clinician to and accurately measure fetal structures. There are a number of formulas used to calculate fetal weight. However only few of them are widely distributed in clinical practice over the different centers. We have used the mostly used formulas to compare their accuracy on large study population in Pakistan. The actual fetal weight is unknown at examination, and

there is need to use a formula, which gives similar results in all fetal weight groups.

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