

# The Efficacy of Ultrasound in Determining the Gestational Age in the First Trimester and Decreasing the Rate of Post-Term Pregnancy -A Reveiw

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## Abstract:

**Introduction:** Based on the international and standard definitions confirmed by WHO and FIGO, post-term pregnancy s applied to cases in which gestational age extends for 42 weeks (294 days) and more.

### Methods:

In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify the efficacy of Ultrasound in determining the gestational age in the first trimester and decreasing the rate of post-term pregnancy

In this review, the papers published until early January 2017 that were conducted to study the efficacy of Ultrasound in determining the gestational age in the first trimester and decreasing the rate of post-term pregnancy were selected.

**Findings:** Exact and precise determination of gestational age is a very important factor in maintaining the health of the pregnant mother and the new born. Knowledge of the gestational age has a significant effect on genetic studies and the sampling, chorionic pelvic and amniocentesis, biochemical screening tests, the method of delivery and fetal development.

**Discussion and conclusion:** With the advancement of technology, determining the most clinically appropriate and cost-effective method for estimating the gestational age has become more and more important. Nowadays, despite added care costs, ultrasound is preferred to other available and inexpensive methods, such as measuring the height of the uterus, to estimate the gestational age.

**Key words:** Ultrasound , gestational , first trimester , post-term pregnancy

## INTRODUCTION:

Based on the international and standard definitions confirmed by WHO and FIGO, post-term pregnancy s applied to cases in which gestational age extends for 42 weeks (294 days) and more (1). This definition, which covers approximately 10% of pregnancies, is not actually post-term; the use of ultrasound decreases the rate of post-term regency from 10 to 3%. The American College of Obstetricians and Gynecologists consider postpartum pregnancy as a high-risk condition during which prenatal care should be performed twice a week (2). The effect of using ultrasound is significant on the midwifery career and no case of risk to the fetus has been reported in the last 30 years. The measurement of primary embryo CRL is one of the most accurate ultrasound measurements for estimating the age of the fetus, which is usually used for a period of 5-12 weeks; the error rate is 3 days (3). These factors are of paramount importance in ultrasound: the normal variance of each biologic parameter increases with the advancement of gestational age; The CRL is the most accurate method for assessing the gestational age in the first three months; and, the mean age calculated through BPD, HC, and FL cover one week of SD for 16 to 26 weeks and 2-3 weeks of SD for 26<sup>th</sup> week up to labor (4).

## METHODS:

In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly

searched to identify the efficacy of Ultrasound in determining the gestational age in the first trimester and decreasing the rate of post-term pregnancy. In this review, the papers published until early January 2017 that were conducted to study the efficacy of Ultrasound in determining the gestational age in the first trimester and decreasing the rate of post-term pregnancy were selected.

## FINDINGS:

Exact and precise determination of gestational age is a very important factor in maintaining the health of the pregnant mother and the new born (5). Knowledge of the gestational age has a significant effect on genetic studies and the sampling, chorionic pelvic and amniocentesis, biochemical screening tests, the method of delivery and fetal development (6). Several methods, such as using the first day of the last regular menstruation, physical examination, and ultrasound, are used to determine gestational age (7). Nowadays, ultrasound is used routinely to determine the gestational age; it measures different criteria, such as the gum diameters, the length of the embryo, the maximum cross-sectional length of the fetus, the length of the thigh bones, the abdomen, the length of the long bones such as the arm, the measurement of the lateral diameters of the cerebellum and the length of the fetal foot (8). The precise gestational age depends on the correct measurement of the above diameters. Also, the differentiation of each measurement of the fetus increases with the advancement

in the gestational age in different individuals; the earlier the measurements are done, the more accurate the gestational will be estimated (9). The accuracy of measuring the gestational age with the cross-sectional diameters of the fetus and the length of the thigh bones decreases in the third trimester of pregnancy; the process of estimating gestational age is complicated due to certain conditions of the fetus, such as inappropriate positions and possible abnormalities (10).

#### DISCUSSION AND CONCLUSION

Considering the crucial role of gestational age in creating the possibility of treating midwifery and medical risk factors, such as pregnancy-related hypertension, preterm or younger than the gestational age infant, and post-term infant, precise and exact estimation of gestational age is one of the important components of prenatal care (11). Through measuring the height of the uterus, LMP time, and the height of the uterus, it is possible to determine gestational age with high accuracy and precision (12). However, if the age of the uterus is not clearly determined by measuring the height of the uterus, and when LMP is unclear and cycles are irregular, Ultrasonography examinations indicate the exact gestational age in the 14th to 20th week of pregnancy. the accuracy of ultrasound decreased with the advancement in gestational age (13). With the advancement of technology, determining the most clinically appropriate and cost-effective method for estimating the gestational age has become more and more important. Nowadays, despite added care costs, ultrasound is preferred to other available and inexpensive methods, such as measuring the height of the uterus, to estimate the gestational age (14).

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