Evaluation of fetal weight with respect to placental thickness and fetal doppler indices for detection of fetal growth curve

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Abstract

Introduction: Normal development of the placenta throughout pregnancy is critical for supporting a healthy fetus. Contrarily, any impairment in its development may have a profound impact on fetal development and pregnancy outcomes.

Aim of the study: The purpose of the study was to evaluate the correlation between Evaluation of Fetal Weight (EFW) and both placental thickness and fetal doppler indices in healthy pregnant ladies. It might be used as a tool for fetal weight estimation and fetal growth curve detection.

Subjects and Methods: This study was conducted in the obstetrics and gynecology department outpatient clinic at Fayoum University Hospital and involved 50 pregnant women from January 2020 to July 2021. Using an ultrasound device, the gestational age (GA) of the fetus and fetal weight were estimated. Doppler indices were estimated for the uterine and umbilical arteries, and the thickness of the placenta was measured.

Results: The mean value of placental thickness was 38.5 (17.4–68.8) mm, and the mean EFW was 1992.2 (83–3797) g. EFW and placental thickness showed a statistically significant positive connection (*P = 0.001*). The mean value of pulsatility index (PI) was 0.92 (0.42–1.76), and there was no significant correlation between EFW and uterine artery PI (*P = 0.95*). The mean value of PI was 0.95 (0.33–1.66), and there was a statistically significant weak negative correlation between PI and the umbilical artery.

Conclusions: From the results, we found that there was a significant correlation between EFW and placental thickness. But there was no significant correlation between EFW and uterine artery PI. A weak negative correlation was found between EFW and umbilical artery PI.

Keywords: Estimated Fetal Weight; Placental Thickness; Fetal Doppler Indices.