

Effect of maternal serum triglycerides and high density lipoprotein ratio on fetal macrosomia in non-diabetic patients

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Background: Maternal lipids have a crucial role in fetal growth and development. An abnormal lipid profile is found throughout gestation. This abnormal elevation of maternal plasma lipids has been linked with various adverse outcomes during pregnancy including: fetal macrosomia, gestational hypertension and preterm birth. Fetal macrosomia is a major public health problem worldwide. Although there is a clear correlation between fetal macrosomia and maternal diabetes mellitus, most of macrosomic infants are born to women without diabetes. The ratio of TGs/HDL is a commonly used marker for lipid disturbance.

Objectives: To study the effect of maternal serum triglycerides and serum high density lipoprotein ratio on fetal macrosomia in non-diabetic patients at El-Shatby Maternity University Hospital.

Subjects and methods: A case control study was performed from December 2021 to May 2022 on 160 pregnant women at EL-Shatby Maternity University Hospital who were admitted for delivery. Patients were divided into two groups, Group (A): 80 cases with macrosomic fetus, Group (B): 80 cases with average sized fetus. The two groups were matched according to age, obstetric history and mode of delivery. Maternal pre-pregnancy BMI, weight at delivery, maternal serum TG/HDL ratio, estimated fetal weight and neonatal birth weight were assessed.

Results: A strongly positive correlation was found between neonatal birth weight and TG/HDL ratio in women with macrosomic infants where ($R=0.725$) and there was moderate correlation in the group of women with normal birth weight infants where correlation coefficient was ($R=0.395$). Also, there was a significant higher triglyceride concentration in women with macrosomic infants than the group of women with normal birth weight infants ($P=0.04$).

Conclusion: High serum TG concentrations and serum TG\HDL ratio at late gestation were associated with an increased risk of fetal macrosomia in non-diabetic women.