THE CORRELATION BETWEEN LIPID AND HORMONE CONCENTRATIONS IN THE THIRD TRIMESTER OF PREGNANCY COMPLICATED BY HYPERTENSION IN THE COURSE OF CHRONIC RENAL DISEASE

Czajkowski K, Sienko J, Wojcicka J, Smolarczyk R, Kostro I, Grymowicz M, Bros M, Milewczyk P, Romejko E, Malinowska-Polubiec A.

2nd Department of Obstetrics and Gynecology, Medical University of Warsaw, Poland

Background: Chronic renal disease and hypertension influence hormone and lipid metabolism in the course of pregnancy. The aim of the study was to investigate possible correlations between lipid and hormone concentrations in the third trimester of pregnancy complicated by hypertension in the course of chronic renal disease.

Methods: The study covered 15 hypertensive pregnancies with chronic renal disease. The mean maternal age was 29.1+/-2.4 years and the mean gestational age was 33+/-2.5 weeks. Hypertension was diagnosed 7.8+/-6.7 years before pregnancy and the mean arterial pressure during the 3rd trimester was 159+/-8.5/97+/-11 mmHg. Hypertension complicated the following underlying kidney disorders: chronic glomerulonephritis (8 patients), chronic pyelonephritis (2), nephrolithiasis (1), hydronephrosis (1), and renal hypoplasia (1). In 2 patients hypertension followed renal transplantation. The study group manifested proteinuria of 1.84+/-0.8 g/24 hours. The prepregnancy body mass index (BMI) was 21.6+/-1.6 and the predelivery BMI was26.1+/-2.4. The BMI increase during pregnancy was in 19.3+/-2.4%. The r-Pearson’s correlation coefficient between hormone (progesterone, cortisol, free triiodothyronine (FT3), free thyroxine (FT4) and thyroid stimulating hormone (TSH)) and lipid concentrations (total cholesterol, HDL-cholesterol, LDL-cholesterol and triglycerides) was evaluated.

Results: There was a positive correlation between FT3 and progesterone concentration(r=0.9, P<0.001) and FT3 and cortisol concentration(r=0.789, P<0.001). Cortisol but not progesterone concentration correlated positively with FT4 concentration (r=0.67, P<0.03) Progesterone level correlated negatively with TSH (r=-0.66, P<0.04) and cortisol concentrations(r=-0.64, P<0.05). None of the studied hormone concentration correlated with any lipid parameter.

Conclusion: Progesterone and cortisol concentrations are associated with some of the thyroid hormone concentrations in pregnancy complicated by hypertension and chronic renal disease. This finding suggest that incorrect thyroid gland functioning may be related to impaired intrauterine well-being of the fetus. Lipid disturbances observed in this disorder seem to be independent of accompanied hormonal changes.

email: jaceks@szpitalkarowa.pl