

## **LIPID METABOLISM IN THE THIRD TRIMESTER OF PREGNANCY COMPLICATED BY HYPERTENSION IN THE COURSE OF CHRONIC RENAL DISEASE**

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Background: Kidneys play an important role in systemic metabolism. Chronic renal disease results in a progressive renal dysfunction what in turn affects the balance between various metabolic pathways. Hypertension is an important independent risk factor of the renal function loss. The aim of the study was to evaluate lipid metabolism in pregnancy complicated by hypertension in the course of chronic renal disease.

Methods: The study covered 15 hypertensive pregnancies with chronic renal disease (the study group) and 105 normal pregnancies (the control group) in the third trimester of gestation. Both groups did not differ in terms of maternal and gestational age. Hypertension was diagnosed 7.8 $\pm$ 6.7 years before pregnancy and the mean arterial pressure during the 3rd trimester was 159 $\pm$ 8.5/97 $\pm$ 11 mmHg in the study group versus 115 $\pm$ 6/68 $\pm$ 7 mmHg in the control group ( $P < 0.001$  for both systolic and diastolic pressure). 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 $\pm$ 0.8 g/24 hours). Neither prepregnancy nor predelivery body mass index (BMI) differed in both groups (21.6 $\pm$ 1.6 vs. 22.5 $\pm$ 2.6, NS and 26.1 $\pm$ 2.4 vs. 26.5 $\pm$ 3.4, NS, respectively). The BMI increase during pregnancy was also similar in hypertensive patients and healthy controls (19.3 $\pm$ 2.4 vs. 17.8 $\pm$ 6.3%, NS). Total cholesterol, HDL-cholesterol, LDL-cholesterol and triglyceride concentration was assessed in the serum. Moreover, LDL-cholesterol/HDL-cholesterol and triglyceride/HDL-cholesterol ratios were calculated.

Results: The increase in total cholesterol (9.4 $\pm$ 0.7 vs. 6.9 $\pm$ 1 mmol/L,  $P < 0.001$ ), LDL-cholesterol (5.7 $\pm$ 1 vs. 4.1 $\pm$ 0.9 mmol/L,  $P < 0.001$ ) and triglyceride concentration (4.5 $\pm$ 0.9 vs. 2.4 $\pm$ 0.8 mmol/L,  $P < 0.001$ ) was accompanied by the increase in LDL-cholesterol/HDL-cholesterol (3.2 $\pm$ 1.1 vs. 2.4 $\pm$ 0.5,  $P < 0.02$ ) and triglyceride/HDL-cholesterol (5.6 $\pm$ 1.7 vs. 1.4 $\pm$ 0.2,  $P < 0.001$ ) ratios.

Conclusion: Pregnancy complicated by hypertension in the course of chronic renal disease is accompanied by significant disturbances in lipid metabolism that include increased concentrations of total cholesterol, LDL-cholesterol and triglycerides and increased LDL-cholesterol/HDL-cholesterol and triglyceride/HDL-cholesterol ratios.

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