

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

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Background: Chronic renal disease and hypertension are considered important risk factors for poor perinatal outcome. The aim of the study was to assess hormonal changes 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). Progesterone, cortisol, free triiodothyronine (FT3), free thyroxine (FT4) and thyroid stimulating hormone (TSH) concentrations were assessed in the serum.

Results: Pregnancies complicated by hypertension in the course of chronic renal disease were characterized by decreased concentration of progesterone (173.1 $\pm$ 8-28 vs. 211 $\pm$ 99 ng/mL,  $P < 0.001$ ), increased concentration of FT4 (13.7 $\pm$ 1.7 vs. 11.4 $\pm$ 2 pmol/mL,  $P < 0.001$ ) and normal concentrations of cortisol (241 $\pm$ 165 vs. 225.0 $\pm$ 136 ng/mL, NS), FT3 (3.99 $\pm$ 0.57 vs. 3.73 $\pm$ 0.72 pmol/mL, NS) and TSH (1.03 $\pm$ 0.8 vs. 1.37 $\pm$ 0.9 microIU/mL, NS)

Conclusion: Decreased concentration of progesterone in hypertensive pregnancy complicated by chronic renal disease suggests the presence of placental insufficiency in this disorder, whereas increased concentration of FT4 may reflect thyroid gland function disturbance.

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