RENAL PARAMETERS IN THE THIRD TRIMESTER OF PREGNANCY COMPLICATED BY HYPERTENSION IN THE COURSE OF CHRONIC RENAL DISEASE

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Background: Hypertension is an important independent risk factor of progressive loss of renal function. The aim of the study was to evaluate the influence of hypertension on renal function in pregnancy complicated by 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+/-6.7 years before pregnancy and the mean arterial pressure during the 3rd trimester was 159+/-8.5/97+/-11 mmHg in the study group versus 115+/-6/68+/-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 occurred after renal transplantation. The following biochemical parameters were measured in maternal serum: uric acid, urea, creatinine, Na+, K+, Cl-, protein. Moreover, the degree of proteinuria was compared in both groups.

Results: The increase in serum uric acid (35+/-5.6 vs. 19+/-3.6 micromol/L, P<0.001), urea (7.75+/-3.7 vs. 3.3+/-0.8 mmol/L, P< 0.001) creatinine (138+/-60 vs. 66+/-4.4 micromol/L, P<0.001), K+ (4.71+/-0.3 vs. 4.2+/-0.2 mmol/L, P< 0.04), Na+ (140+/-0.3 vs. 137+/-5.5 mmol/L, P<0.01) and Cl- (108+/-2 vs. 105+/-2 mmol/L, P<0.001) concentration accompanied by the decrease in protein concentration (56+/-8 vs. 65.0+/-5.0 g/L, P<0.001) was observed in pregnancies complicated by hypertension of renal origin compared with healthy controls. 24-hour protein excretion was significantly higher in the study group 1.84+/-0.8 vs. 0.2+/-0.3 g/24 hours, P<0.001).

Conclusion: During pregnancy hypertension that occurred secondary to chronic renal disease may be considered a marker of significant disturbances of renal function. This is reflected by increased concentration of uric acid, urea, creatinine, K+, Na+ and Cl-, hypoproteinemia and proteinuria. Abnormal results of biochemical tests confirm that up to 80% of the renal glomerulae are damaged in studied patients.

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