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P196. Association of pathological tyrosine isoforms with parameters of hematopoiesis in hyperfiltrating physiological pregnant women

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Association of pathological tyrosine isoforms with parameters of hematopoiesis in hyperfiltrating physiological pregnant women

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Objective: Hyperfiltration and lowering of hemoglobin level are documented changes in physiological pregnancy. Serum level of erythropoietin (EPO) increases in pregnancy and EPO-resistance develops. Elevation of the concentration of hydroxil radical¬–derived, pathological products of phenylalanine (Phe) as meta- and ortho-tyrosine (m-Tyr, o-Tyr) in contrast to physiological p-Tyr could have a role in the development of EPO-resistance. Serum level of p-Tyr may decrease in hyperfiltration.

Methods and participants: Twenty-three physiological pregnant women and 26 healthy, non-pregnant women were enrolled. We determined the concentrations of Phe and the three Tyr isoforms. The time kinetics of these and their association with hematopoiesis were studied.

Results: At the beginning of the pregnancy hyperfiltration and decreased serum level of p-Tyr were developed ($p<0.05$). Afterwards, in progression of the pregnancy, both p-, m-, o-Tyr and Phe levels showed an increasing tendency ($p<0.05$). Serum levels of m- and o-Tyr and their ratios with Phe and p-Tyr correlated inversely with hemoglobin level ($p<0.05$). In linear regression analyses, these amino acid parameters were independent predictors of hemoglobin level ($p<0.05$). Urinary excretion of p-Tyr showed an increasing tendency ($p<0.05$). Urinary levels of o-Tyr and its ratios with Phe and p-Tyr correlated with red cell distribution width and were predictors of it ($p<0.05$).

Conclusions: Elevated levels of pathological Tyr isoforms and decreased concentration of p-Tyr are associated with hematopoiesis in physiological pregnancy. Lowered level of p-Tyr can be the result of increased excretion or elevated consumption. We propose that pathological tyrosines may lead to disturbed erythropoiesis.

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