ABSTRACT

Receptor for advanced glycation end products (RAGE), its soluble form (sRAGE) and glyoxalase 1 (GLO 1) are important part of pathogenesis of many chronic diseases.

The aim of this thesis was to elucidate role of sRAGE, four chosen *RAGE* polymorphisms and one *GLO 1* polymorphism in physiologic pregnancy and in pregnancy with complications.

Serum sRAGE levels were determined in healthy pregnant women (N=120) and in pregnancies complicated with threatening preterm labor (N=99), preeclampsia (N=35), intrauterine growth restriction (IUGR) (N=22) and intrahepatic cholestasis of pregnancy (ICP) (N=14). Four *RAGE* polymorphisms (*RAGE* -429T/C, -374A/T, *RAGE* Gly82Ser (557G/A), *RAGE* 2184A/G) and one *glyoxalase 1* polymorphism *GLO 1* Glu111Ala (419A/C) were studied in the same population of healthy pregnant women and women with pathological pregnancy.

Serum sRAGE levels are low in comparison to non-pregnant controls, but they vary during the physiologic pregnancy. Serum sRAGE levels are low in the 1st trimester, increased in the 2nd trimester and again decreased in the 3rd trimester. Women with premature labor have significantly decreased serum sRAGE levels in comparison to women with threatening premature labor and in comparison to healthy pregnant women. sRAGE correlates negatively with leukocyte count in preterm labor. Patients with preeclampsia have significantly increased serum sRAGE levels compare to healthy pregnant controls. sRAGE correlates positively with proteinuria, with serum uric acid and creatinine level. Serum sRAGE levels are not affected in patients with IUGR or ICP. sRAGE correlates positively with serum uric acid and creatinine level in patients with IUGR. sRAGE correlates negatively with serum alanine amino transferase (ALT) level in patients with ICP. There are no differences in genotype or allelic frequencies of studied RAGE and glyoxalase 1 polymorphisms among studied groups.

These results partly elucidate pathogenesis of pathological pregnancies. It might help to uncover high risk patients and provide them early adequate prenatal care. Further studies with larger studied group (especially patients with preeclampsia, IUGR, ICP) are still needed to confirm results.

Key words: receptor for advanced glycation end products, RAGE, soluble receptor for advanced glycation end products, sRAGE, glyoxalase 1, preterm labor, preeclampsia, intrauterine growth restriction, intrahepatic cholestasis of pregnancy