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TITLE

INTRAUTERINE PROGRAMMING OF ENDOTHELIAL DYSFUNCTION IN THE GENESIS OF ANOMALOUS UTERINE BLEEDING IN ADOLESCENT GIRLS BORN WITH LOW BIRTH WEIGHT

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ABSTRACT

Aim. Evaluate the association of polymorphisms NOS3 and ESR1 with the functional state of the endothelial system, angiogenesis regulation and sex steroid reception in girls born with low birth weight (LBW) and suffered by anomalous uterine bleeding (AUB).

Material and methods. A total 96 adolescent girls were studied including 32 born with LBW and AUB; 37 girls with normal birth weight and AUB; 27 healthy girls. Single allele gene polymorphism NOS3 786T>C, 894G>T and ESR1 351A>G and 397T>C was studied by PCR real time method. Indicators of the endothelial function and angiogenesis regulation were assessed by enzyme immunoassay in accordance with the recommendations of the kits manufacturers. The level of sex steroids receptors in the vaginal mucosa was investigated by immunocytochemistry. Results: Girls with uterine bleeding, born with IUGR, more determined carrier polymorphic allele C NOS3 gene 786 T>C (for homozygotes OR = 2,03; CI 95% 1.12-3.68; p = 0.04; for heterozygotes OR = 1.68; 95% CI 1.09-2.60; p = 0.046) and genotype Pvull ESR1 (OR = 4,58; 95% CI; 0.97-21.68; p = 0. 04). They showed a reduction in the level of endogenous nitric oxide (10.71 (6.89-17.29) umol / ml in the control group - 18.39 (14.58-23.62) umol / ml, p = 0.003), endothelin-1 (0.57 (0.42-4.80) fmol / ml vs. 1.34 (0.45-4.74) fmol / ml in the control group; p = 0.015) and a three-fold increase in the level of angiogenesis activator - vascular endothelial growth factor (371.75 (219.9-565.7) ng / ml, the control 195.05 (78.21-301. 85) ng / ml, p = 0.0017). These girls defined high local level of ER? receptors expression in vaginal mucosa (24.52 ± 4.86 points against 1.06 ± 0.28 points in the control, p <0.0001).

Conclusion. Intrauterine programming of endothelial dysfunction syndrome could play a significant role in the development of AUB in adolescent girls born with LBW.

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