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Accepted for printing on 20 Sept 2018

DOI: 10.29256/v.02.02.2018.escbm25

MEMBRANE-BOUNDING HEMOGLOBIN IN ERYTHROCYTES OF PREGNANT WOMEN WITH PREECLAMPSIA AND PREECLAMPSIA WITH HYPERTENSION

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The metabolic status of erythrocytes in women with preeclampsia has not been studied. Changes in the metabolism of red cells leads not only to a decrease in their basic function, but also to a violation of the physical and chemical properties of the membranes, which affects the charge of erythrocytes, the permeability of their

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membranes, the imbalance of ions and the release of hemoglobin into the blood plasma. The appearance of free hemoglobin in the blood plasma leads to the formation of reactive oxygen species and has a toxic effect on the cells of the renal tubules. Another consequence is the instability of the cell membrane, the reduction of surface area and changes in cell shape.

**Materials and Methods.** Four groups of pregnant women were identified: the first group included 11 pregnant women with preeclampsia developed on the background of hypertension, the second group included 23 pregnant women with severe hypertension, the third group included 25 pregnant women with severe preeclampsia, the fourth group – a control group consisting of healthy non-pregnant women. In red blood cells the concentration of MSG was determined according to Toktamysova Z. S. (1990). The results were processed using the Kruskal-Wallis criterion.

**Results.** There was a significant change in the concentration of membrane-binding hemoglobin relative to the control (p <0.05) in the erythrocytes of group 1 and 2 women, but the concentration of membrane-binding hemoglobin in the first and second groups did not have significant differences between them (p <0.05). While the concentration of membrane-binding hemoglobin in the third group has no significant differences relative to the control, but significantly (25% p < 0.05) lower than in the first and second groups.

**Conclusion.** Our data showed that pregnant women with preeclampsia developed against the background of hypertension, pregnant women with severe chronic hypertension develop intracellular oxidative stress, which has an unconditional effect on the metabolic processes and functions of red blood cells and it is likely to affect the stability of the cytoskeleton of red blood cells. “Damaged” red blood cells are less resistant to stress shift, easily enough destroyed in the bloodstream, are a marker of oxidative stress. The decrease in the concentration of membrane-binding hemoglobin in the third group relative to the first and second groups is probably due to protective mechanisms to increase the affinity of hemoglobin to oxygen.

Thus, the data obtained by us show the important role of studying membrane-binding hemoglobin as one of the first markers of erythrocyte damage as a result of oxidative stress and requires further investigation.

Prospects for further: prognostic markers of preeclampsia development in pregnant women with physiological pregnancy and other somatic pathology will be studied.

**References:**

**Keywords:** studying membrane-binding hemoglobin, preeclampsia, oxidative stress.

Accepted for printing on 25 Aug 2018

DOI: 10.29256/v.02.02.2018.escbm26

**POSSIBLE FACTORS AND INTENSITY OF SOMATIZATION SYMPTOMS AS A RESPONSE TO STRESS IN THE STUDENT POPULATION**

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Stress in a medical context is a factor of physical, mental and emotional nature that stimulates the body to a physiological response. Due to the long duration of stress, somatization disorders are symptoms that manifest themselves through pain, neurological problems, gastrointestinal complaints and sexual symptoms. Members of student population are exposed to stress every day, with short periods of breaks. A typical manifestation of stress in the student population during the exam – period is through circadian rhythm disorders, mostly as a consequence of sleep deprivation. In addition, hormones of stress also arise as a result of the desire for success and fear of failure. Due to inability to quantify the source and intensity of stress as well as individual predisposition to the stress effect, this environmental factor of human health and wellbeing is often underestimated. In this we would like to emphasize

**References:**


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Accepted for printing on 25 Aug 2018

DOI: 10.29256/v.02.02.2018.escbm26