

- relationships and social aspect: social and emotional problems affecting relationships with family and friends. She no longer holds her position as a lawyer either.

Commonly seen amongst drug addicts as their mentality is reshaped towards the one goal of obtaining the drug and no longer actively involved in their families or social circles.

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## ACTIVITY OF NO-SYNTASE AND DAMAGE TO ENDOTHELIUM IN ACUTE EXPERIMENTAL PERITONITIS

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**Актуальность.** An important role in inflammation belongs to the inducible isoform of NO synthase (NOS), the activation of which results in production of significant amounts of nitric monoxide (NO), which can have a non-selective cytotoxic effect on body cells [1]. In its turn, the lack of information about the role of NO in the development of microcirculatory disorders in peritonitis determines the relevance of research in this direction.

**Цель.** Purpose: to study the activity of NO-synthase and severity of an endothelial damage in acute experimental peritonitis.

**Методы исследования.** Rats were divided into 2 equal series, which were injected intraperitoneally: 1st series (control) – 0.9% NaCl, 2nd series (experimental peritonitis, EP) – 15% fecal suspension, 0.6 ml/100 g body weight [2]. The concentration of NO metabolites, nitrite/nitrate ( $\text{NO}_x$ ), was determined in blood plasma and peritoneal fluid by spectrophotometric analysis [3, 4]. The study of damage to the endothelium of blood vessels was carried out by counting the number of circulating endothelial cells (CEC) in hemocytometer. Statistical data processing was performed using the Statistica 10.0 program for Windows (StatSoft Inc., USA) using the nonparametric Kruskal-Wallis test and post hoc comparisons; data are presented: Me (LQ; UQ) – median (lower quartile; upper quartile).

**Результаты и их обсуждение.** The study of NOS activity in rats with acute EP showed a significant increase in the content of  $\text{NO}_x$  in blood plasma and

peritoneal fluid, which may be a consequence of an increase in NO production by the induced NOS isoform under its stimulation with bacterial antigens, pro-inflammatory cytokines and may be a sign of the nitrosyl stress development. In addition, the development of acute EP was characterized by an increase in the quantity of CEC in the blood as an indicator of damage to the endothelium of blood vessels after half a day – up to 10.6 (10; 11.7) /  $\mu\text{l}$ , or 3.4 times ( $p < 0.001$ ), after 1 day – up to 20.6 (19.4; 21.7)/ $\mu\text{l}$ , or 6.6 times ( $p < 0.001$ ), after 3 days – up to 19.7 (19.4; 21.1)/ $\mu\text{l}$ , or by 6.4 times ( $p < 0.001$ ) compared with the value in the control – 3.1 (2.2; 4.2)/ $\mu\text{l}$ . The increase in the number of CEC in the blood of rats with EP can be caused by “bacterial aggression” and formation of reactive nitrogen and oxygen species with damage to the basal membrane of blood vessels and disconnection of endothelial cells from it.

**Выводы.** The obtained data on the study of changes in the body of rats with acute experimental peritonitis indicate damage to the vascular endothelium, which may be as a consequence of microcirculation disorders under significant increase in the activity of the inducible NOS isoform and the production of excess NO concentrations.

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## COMPUTATIONAL METHOD FOR CONSTRUCTING INDIVIDUALLY ACCEPTABLE DIET USING MS EXCEL SOLVER

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**Актуальность.** Human health is largely determined by nutrition. A balanced menu is a very important component of a healthy diet. Quick and correct calculations of an energetically optimal diet that provides the daily nutrient requirements, taking into account the individual characteristics of the body and a particular individual preferences, is a problem of current interest.

**Цель.** Calculate the individual required daily calorie intake, taking into account gender, weight, height, age, and physical activity of a person. Solve the problem of an