

BOOK OF ABSTRACTS



2ND INTERNATIONAL CONFERENCE FOR YOUNG SCIENTISTS
„BIOMARKERS OF CIVILIZATION DISEASES”

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FOR YOUNG SCIENTISTS
„BIOMARKERS OF CIVILIZATION DISEASES”

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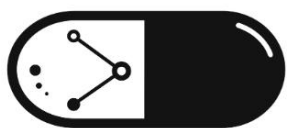
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Determination of markers of liver damage in pregnant rats with a constant dietary intake of nutrient deficient food

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Over the past few years, there has been an increase in the proportion of liver disease among the working-age population in the European region. It is hypothesized that one of the factors leading to their development is the consumption of an unbalanced diet. The aim of the study was to determine the extent of liver damage in pregnant rats fed a nutrient-deficient diet. For the study, 13 pregnant WAG rats were used, 50% of which were the control group. To determine the extent of liver damage, the expression of markers of endothelial nitric oxide synthase (eNOS) and inducible nitric oxide synthase (iNOS) and liver tissue morphometric studies were performed. Immunohistochemical examination of liver tissue demonstrated uneven marker expression. eNOS marked the positively stained endothelium of sinusoids in the periportal regions of the lobules. At the same time, the endothelial cells were located at a considerable distance from each other and were exfoliated and detected in the lumens of veins. iNOS marked endothelial cells not only of sinusoids, but also of central veins and hepatocytes that were in a state of protein dystrophy. In females with nutrient deficiency, the number of binucleated hepatocytes increased by 300% ($p < 0.05$) in the liver. At the same time, there was an increase in the stromal-parenchymal index by 28.2% ($p < 0.01$) due to an increase in the relative volume of the stroma. This indicated a pronounced degree of damage to the endothelium of the organ vessels and the liver itself, which was manifested by an increase in its regenerative activity, as well as activation of proliferative processes, which is probably associated with a deficiency of nutrients and choline in the diet of pregnant rats. In summary, it can be concluded that nutrient deficiency in the diet of pregnant rats has a negative impact on the liver, leading to organ damage and the development of structural changes that may later form the basis of more severe liver pathology.

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