

POLTAVA STATE MEDICAL UNIVERSITY

NITROGEN OXIDE METABOLISM IN THE LIVER UNDER CONDITIONS SYSTEMIC INFLAMMATORY RESPONSE SYNDROME

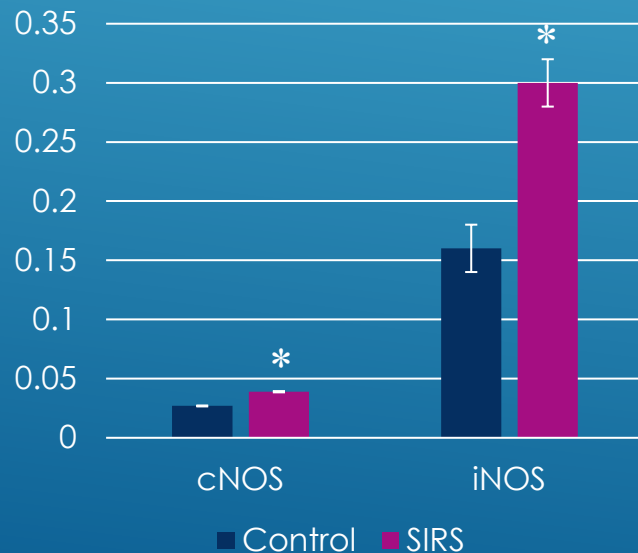
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Most “diseases of civilization”, in particular, the metabolic syndrome, which grows rapidly in the population and causes serious complications, have a hepatic component, in the pathogenesis of which a significant role is played by oxidative-nitrosative stress.

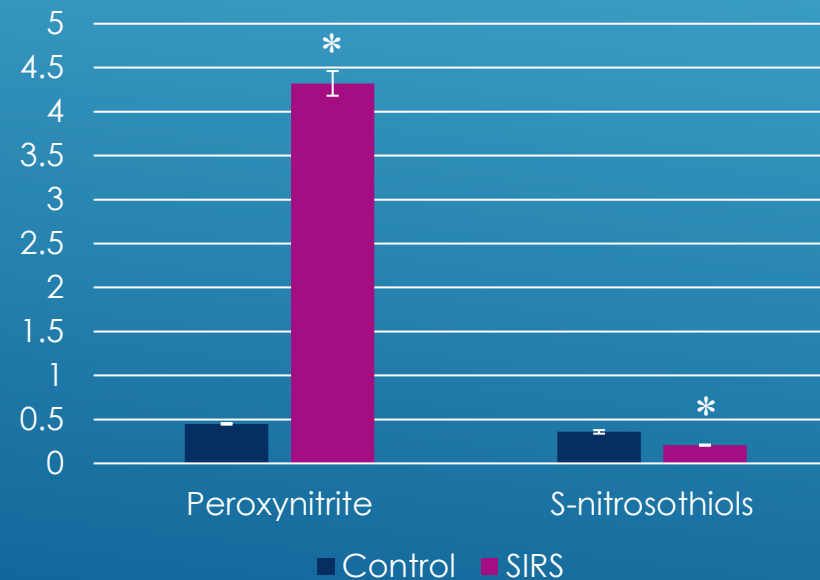
Objective: to study the activity of inducible (iNOS) and constitutive (cNOS) isoforms of NO synthases, the concentration of nitrosothiols, peroxynitrite and nitrites in the liver of rats on day 63 of systemic inflammatory response syndrome (SIRS) modeling.

Materials and methods: Experimental studies were performed on 12 male Wistar rats weighing 180-220 g. Animals were divided into two groups: 1 - control and 2 - experimental group, which simulated SIRS by intraperitoneal administration of 0.4 µg/kg of *S. Typhi* bacterial lipopolysaccharide. The activity of iNOS and cNOS, the concentration of nitrosothiols and peroxynitrite were studied in the rat liver homogenate. The obtained results were subjected to statistical processing using the Mann-Whitney test.

Activity of NO-synthases in rat liver during SIRS modeling, µmol/min per g of protein



Concentration of S-nitrosothiols and peroxynitrite in rat liver during SIRS modeling, µmol/g of tissue



*- p<0.05 compared to control

Conclusions. Modeling of SIRS by intraperitoneal administration of bacterial lipopolysaccharide on day 63 of the experiment leads to increased production of nitric oxide from NO synthases with its predominant conversion into the oxidant peroxynitrite, which causes the development of oxidative-nitrosative stress.