

Materials and methods. In order to achieve the proposed goal, the publications from the specialized journals of the PubMed, Medline and Hinari electronic libraries have been used, based on a series of observational studies, system reviews and experiments on diet. The aim of majority of observational studies was the coronary heart disease often in the form of myocardial infarction or fatal or non-fatal stroke.

Results. Following the summary of the studies we have concluded: the consumption of industrial trans fatty acids can reduce high density lipoprotein (HDL) concentrations, while increasing at the same time low density lipoprotein (LDL) and very low density lipoprotein (VLDL) concentrations. As a result, increased cholesterol / HDL ratio, which is able to raise lipoprotein concentrations (a), a risk factor for cardiovascular disease, has been detected. Increased inflammation markers, including TNF-alpha, C-reactive protein and interleukin-6, associated with endothelial dysfunction markers that contribute to atherosclerosis and hypertension, have been reported.

Conclusions. Epidemiological studies and meta-analyzes of the latest clinical studies have shown that trans fatty acids from industrial sources are responsible for the damage caused in particular by the lipid profile, whereas the trans fatty acids from natural sources have a reduced effect on the lipid profile and other risk factors cardiovascular. However, the mechanisms, the origin of these variations according to isomers is not yet well known and need further studies.

Key words: fatty, acids, cardiovascular, VLDL

263. LIPID PEROXIDATION IN EXPERIMENTAL OVARIAN TORSION

Author: **Cornelia Lazăr**

Scientific adviser: Tagadiuc Olga, MD, PhD, Professor, Department of Biochemistry and Clinical Biochemistry

Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova

Introduction. Ovarian torsion is a disease where ischemia/reperfusion injuries have a significant role. The detorsion is required to preserve the affected ovary. As it is known, if one organ is exposed to ischemia, the reperfusion may increase cells lesions due to the enhance of oxidative stress. One marker of lipids exposure to reactive oxygen species is malondialdehyde (MDA).

Aim of the study. To determine the changes in MDA levels in ovarian homogenates of female rats that underwent various ovarian torsion/detorsion models and to appreciate the effects of simple and controlled detorsion (reperfusion) on the MDA levels. The experimental protocol was authorized by The Ethics Committee of the "Nicolae Testemitanu" State University of Medicine and Pharmacy.

Materials and methods. The subjects of our research were 70 females rats (*Rattus albicans*). The animals were divided into seven groups (n=10): Group 1: no intervention; Group 2: the rats experienced laparotomy only; Group 3: the animals underwent ovarian torsion (ischemia) for 3 hours; Group 4: the rats have borne ovarian torsion for 3 hours succeeded by simple reperfusion for 1 hour; Group 5: the rats underwent 3 hours ovarian torsion and 1 hour controlled detorsion (assured by opening and closing the clips on the ovarian annexes in 10 seconds intervals for 120 seconds, succeeded by 1 hour of simple reperfusion); Group 6: the rats experienced 3 hours ovarian ischemia and 24 hours simple reperfusion; Group 7: the rats were exposed to 3 hours ovarian torsion and 24 hours controlled reperfusion. MDA levels were determined by Галактионова Л. П., et al. method (1998), modified by Gudumac V., et al. (2012). The results were analyzed using ANOVA.

Results. The obtained MDA levels were statistically significant high in ischemia group, compared to those rats that underwent only laparotomy. The simple reperfusion groups had a statistically significant high levels of MDA compared to 24 hours controlled reperfusion group.

Conclusions. Ovarian torsion and its detorsion involve reactive oxygen species production, that determines lipid peroxidation. Controlled detorsion can diminish this process and decrease the level of MDA that is produced.

Key words: ovarian, torsion, malondialdehyde

264. EXPERIMENTAL MYOCARDIAL INFARCTION AND INTERLEUKINE-6 MODIFICATIONS

Author: **Tatiana Timercan**

Scientific adviser: Lisii Leonid MD, PhD, Professor, Department of Biochemistry and Clinical Biochemistry

Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova

Introduction. The inflammatory response, manifested as acute necrosis, is induced by ischemia in infarcted myocardium. Myocardial remodelling is one of the complications, which leads to arrhythmias and heart failure. Interleukine-6 (IL-6) is a cytokine involved in tissue remodelling, as well as in the pro- and anti-inflammatory response pathways. Post infarct it promotes myocyte hypertrophy and myocardial dysfunction. In addition, IL-6 inhibits cardiomyocyte apoptosis.

Aim of the study. To evaluate serum and homogenate IL-6 level in isoproterenol-induced acute myocardial infarction.

Materials and methods. Forty adult male rats (*Rattus albicans*) were divided into five groups: L1 – intact (n=11); L2 – control animals which were administered NaCl 0.9% (n=11); L3 (n=6), L4 (n=6) and L5 (n=6) included the animals with experimental myocardial infarction, reproduced by injecting subcutaneously isoproterenol hydrochloride 100 mg/kg (one dose). Rats were anesthetized, and sacrificed at 6h, 24h and 7 days respectively. For IL-6 assessment, we use standard Rat IL-6 ELISA kit (Beijing 4A Biotech Co. Ltd). The results were analyzed by Kruskal-Wallis nonparametric test using SPSS version 23. Discussion

Results. The investigated groups have not presented any statistically significant difference neither in homogenate IL-6 content ($p = 0.098$), nor in serum IL-6 level ($p = 0,322$). At the same time, higher amounts of both homogenate and serum IL-6 were registered in experimental groups compared to intact and control groups.

Conclusions. Inflammation plays a significant role in the pathogenesis of myocardial ischemic injury. Infarcted myocardium increases the production of IL-6. Increased IL-6 levels for a prolonged time can indicate associated inflammation and elevated risk of second myocardial infarction. Serum IL-6 level following AMI can be used for the inflammatory process monitoring. In order to prove it the research should be enlarged, and statistical correlations will be performed.

Key words: myocardial injury, cytokine, IL-6

LABORATORY OF TISSUE ENGINEERING AND CELL CULTURES

265. THE ETHIOLOGY OF THE AVASCULAR NECROSIS OF THE FEMORAL HEAD

Authors: **Ignatov Olga, Jian Mariana, Cobzac Vitalie**

Scientific adviser: Nacu Viorel, MD, PhD, Professor, Laboratory of Tissue Engineering and Cells Culture

Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova

Introduction. Avascular necrosis (AVN) is the disease characterized by a vascular insult to the blood supply of the femoral head, which can lead to necrosis of the spongiform bone followed by