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Introduction. Nitric oxide (NO), the smallest signaling molecule known to be produced by three major isoforms of NO synthase: neuronal (nNOS), endothelial (eNOS) and inducible (iNOS), is receiving nowadays an increased interest considering its role in retinal function and pathology. This review had the intention to summarize some aspects of NO in the retina and suggest new ideas for future research.

Materials and methods. Recent retrospective studies that describe the function and implication of NO in pathogenesis of eye diseases were analyzed.

Results. The nNOS and eNOS are normally expressed and the NO produced in low quantities at the level of the retina is involved in neurotransmission and in the regulation of retinal arteriolar tonicity. iNOS that is found in Muller cells and in RPE it's not normally expressed and NO produced by it in large quantities is considered to generate inflammation of the retina and even retinal degeneration, that explains its implication in pathogenesis of hypertensive and diabetic retinopathy. NO has many physiological roles in the retina, one of it as a messenger of light-dark adaptation. It is also related to excitatory amino acid and free radical neuronal injury that occurs in the retina after ischemia or to the cell death found in such disorders as glaucoma. Recent studies have shown the implication of NO, in the etiology of ischemia and induced damage in the retina that can be a result of many pathologies or systemic diseases as diabetes and hypertension. Still the involvement of NO in the retinal blood flow in response to hypoxia is still controversial. Patients with hypertension, hypercholesterolemia, diabetes etc. showed an inability of the endothelium to generate adequate amounts of bioactive NO and to produce NO-mediated vasodilation.

Conclusions. Many studies performed on NOS in the retina, show us that the roles of different NOS isoforms may be much trickier than previously realized. NO acts as a regulator of different physiological processes. NO appears to have a neurodestructive or a neuroprotective action, or both in pathological conditions such as human neurodegenerative diseases. Future studies on the actions of NO and NOS in the retina will not only give us a better understanding of some processes, but may contribute to the development of pharmacological treatments for various neurodegenerative eye diseases.

Key words: retina, NO, ischemia

262. CORRELATION BETWEEN TRANS FATTY ACIDS AND CARDIOVASCULAR PATHOLOGY

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Introduction. Current studies reveal the harmful effect of trans fatty acids on cardiovascular health. Each additional gram of trans fatty acids increases the risk of myocardial infarction by approximately 5%. trans fatty acids, in principle isomers (18: 1) have two origins: natural trans fatty acids derived from the bio hydrogenation of ruminant unsaturated fatty acids and industrial trans fatty acids derived from the industrial hydrogenation of unsaturated vegetable oils.

Aim of the study. Elucidating the role of trans fatty acids in the mechanisms of production and evolution of cardiovascular diseases by comparing the two origins of trans fatty acids and other types of trans fatty acids.

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

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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.