INFLUENCE OF N-ACETYLCYSTEINE ON BIOACTIVATION OF NITROGLYCERIN TO NITRIC OXIDE AND S-NITROSO ThiOLS IN THE LIVER AND BRAIN OF MICE

Maria Sokołowska, Lidia Włodek#

Institute of Medical Biochemistry, Jagiellonian University, Collegium Medicum, Kopernika 7, PL 31-034 Kraków, Poland


Three-day nitroglycerin (NTG) administration at progressively increasing doses caused a drop in the liver S-nitrosothiol (SNT) and malonyldialdehyde (MDA) concentrations below the control levels. It suggests that NTG administered in this way, exhibits antioxidant activity due to releasing the biologically active SNT and nitric oxide (NO). On the other hand, in the brain, NTG did not influence SNT concentrations, but slightly elevated NO formation. N-acetylcysteine (NAC) given jointly with NTG substantially stimulated NTG bioactivation to the biologically active NO and SNT as well in the liver as in the brain. It was accompanied by a rise in non-protein sulfhydryl thiol (NPSH) level and additional suppression of lipid peroxidation in hepatocytes. Therefore, is seems that the combined administration of NTG and thiols or other antioxidants is very much justified not only because of their influence on the vascular endothelial cells but also on such organs as the liver and brain.

Key words: N-acetylcysteine, nitroglycerin, nitric oxide, S-nitrosothiols

# correspondence