

P19 MODIFICATION OF PARAOXONASE AND PLATELET-ACTIVATING FACTOR ACETYLHYDROLASE ACTIVITIES IN HEMIN-INDUCED LIPOPROTEIN OXIDATION

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Paraoxonase (PON) and platelet-activating factor acetylhydrolase (PAF-AH) are antioxidant enzymes associated with the HDL particle. Their functions are known to protect lipoproteins from oxidative modification. PON activity has been showed to be modified in oxidized HDL and in oxidative related diseases such as atherosclerosis. Although PAF-AH activity has been also reported to be modified in several diseases, there was no evidence related to the oxidative stress conditions. Hemin, a degradative product of hemoglobin, has been reported as a potent oxidative inducer of lipoproteins in vitro. It has become a prime suspect to be responsible for lipoprotein oxidation in thalassemic patients because of its high concentration in the serum of patients. This study was, therefore, aimed to study kinetic of hemin induced oxidation of lipoproteins on the modification of PON (in HDL) and PAF-AH (in LDL and HDL) activities. The results clearly demonstrated that PON was more susceptible to hemin-induced oxidative stress than PAF-AH. In HDL, PON activity was rapidly decreased within 1 hr after incubation with hemin. The activity of PON was continuously decreased. Its activity was remained only 30 % after 10 hr of the incubation. On the other hand, PAF-AH activity was unchanged in HDL but only slightly reduced in LDL, about 20% after 10 hr of the incubation. Our results suggested that the loss of PON activity in hemin induced HDL oxidation may be relevant in vivo and could have an impact in thalassemia.