

Relationship between (Na + K)-ATPase activity, lipid peroxidation and fatty acid profile in erythrocytes of hypertensive and normotensive subjects

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Oxidative stress may play a role in the pathogenic mechanism of essential hypertension. Lipid peroxidation can alter the cellular structure of membrane-bound enzymes by changing the membrane phospholipids fatty acids composition. We investigated the relationship between (Na + K)-ATPase activity, lipid peroxidation, and erythrocyte fatty acid composition in essential hypertension. The study included 40 essential hypertensive and 49 healthy normotensive men (ages 35-60 years). Exclusion criteria were obesity, dyslipidemia, diabetes mellitus, smoking, and any current medication. Patients underwent 24-h ambulatory blood pressure monitoring and blood sampling. Lipid peroxidation was measured in the plasma and erythrocytes as 8-isoprostane or malondialdehyde (MDA), respectively. Antioxidant capacity was measured as ferric reducing ability of plasma (FRAP) in the plasma and as reduced/oxidized glutathione (GSH/GSSG ratio) in erythrocytes. (Na + K)-ATPase activity and fatty acids were determin