



THE IMPORTANCE OF OXIDATIVE STRESS BIOMARKERS AND THE NEED OF ANTIOXIDANT THERAPY IN THE CONTROL OF CARDIAC ARRHYTHMIAS

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Antioxidants, drugs or food, have an important role in combating the effects of oxidative stress, which is involved pathophysiologically in oxidation processes, triggering various pathologies, including cardiovascular ones.

Objectives: Assessment of oxidative stress level, due to decrease of specific antioxidant biomarkers - superoxide dismutase-SOD and glutathione peroxidase-GPx in nonstructural supraventricular cardiac arrhythmias. Their quantification allowed the evaluation of the therapeutic need for antioxidants.

Materials and Methods: The study was conducted on 80 subjects, 18-49 years old, with supraventricular cardiac arrhythmias (ECG), without other structural causes and a control group: 40 healthy subjects. Antioxidant enzymes-biomarkers of oxidative stress: SOD and GPx were determined in hemolyzed-serum and compared (by groups and arrhythmia types).

Results: SOD and GPx mean values were decreased in all patients with cardiac arrhythmias: to 62% for SOD and to 68% for GPx, statistically significant compared to controls.

Demonstration of the presence of oxidative stress involved in cardiac arrhythmogenic electrophysiopathological phenomena is important. Antioxidant treatment may be useful in antiarrhythmic control, in order to correct the deficiency and maintain a normal level of the antioxidant enzymes SOD and GPx.

Conclusions:

1. The decreased level of SOD and GPx in supraventricular arrhythmias motivates the association of antioxidant treatment, with favorable effects in antiarrhythmic control.
2. The recorded enzyme deficiency was 38% for SOD and 32% for GPx in non-lesional supraventricular arrhythmias, arguing the antioxidant therapeutic indication.
3. Quantitative enzymatic determination of oxidative stress allows the assessment of antioxidant medication and the monitoring of efficacy (biochemical and electrical).