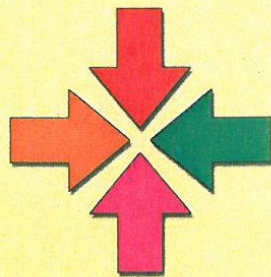


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"Suspect Immune clue until proven otherwise"

AUTOIMMUNITY

Antiphospholipid Antibodies in Cases of Sudden Cardiac Death

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SUMMARY: Fifteen sudden death male victims (average age 43.93 ± 7.81) years and twenty clinically healthy subjects were investigated for antiphospholipid antibodies (aPLs) - anticardiolipin antibodies (aCL), class IgG and IgM; anti- β 2-glycoprotein I antibodies (anti- β 2-GPI) - class IgG and IgM; total cholesterol and triglycerides. In nine of the death cases, macroscopic methods helped to identify myocardial infarction as the cause. Histological investigation of the myocardium was carried out in five of the cases. In the five of the victims with proved myocardial infarction with positive levels of aPLs, three were positive for aCL-IgG, and two of these three were positive for anti- β 2-GPI-IgM. Other two were found with increased values of aCL-IgM antibodies, and total cholesterol levels were increased in only one of the five patients. Using the non-parametric methods for comparing of qualitative changes (Pearson χ^2), we found a statistically reliable difference with the controls regarding aCL ($\chi^2=19.00$, $p=0.0002$). The histological investigation of the myocardium of the five victims positive for aPLs showed data for coronary atherosclerotic changes only in the one with increased total cholesterol level. The results obtained lead to an assumption that aPLs play a role in the pathogenesis of acute coronary incident, provoking a sudden cardiac death in young subjects without atherosclerotic vascular changes.

Key words: antiphospholipid antibodies (aPLs), anticardiolipin antibodies (aCL), anti- β 2-glycoprotein I antibodies, (anti- β 2-GPI), acute myocardial infarction (AMI), sudden cardiac death (SCD)

Introduction

Sudden cardiac death is an unexpected natural death due to cardiac causes occurring over a short time, mostly one hour after the onset of symptoms, without any preceding conditions that may seem fatal [1, 2]. The disease is more common in USA and other developed countries, and is responsible for 50% of mortality in cardio-vascular diseases [3].

In one study, in which the lethal outcome occurred within 2 hours after the onset of the symptoms, 12% of cases of natural death were classified as sudden

death, and 88% were attributed to cardiac disease [1]. About 33% of patients with myocardial infarction (MI) died suddenly within one year after the incident. It was found that 80% of patients with sudden death had coronary cardiac disease.

The incidence of SCD increases with age, and 75% of the cases occur in males. The annual frequency in males is 3 to 4 times higher than in females. The peak of SCD in adults is seen in the range 45-75 years, and it is associated with coronary cardiac diseases. The fact that 30% of these cases affect young people is disturbing [4]. SCD is diagnosed in 19% of cases of ventricular tachycardia [5]. The investigation of Maastricht has shown that 67% of the deaths occurred in people physically inactive at the time of the incident.

Changes in the morphology of the coronary plate into a thrombus, destruction of the plate or/and both, rank first among the causes of death (50%).

Another aspect of the problem are sudden rhythm

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