

ISEI Abstract – *Clinical prescriptions for exercise in athletes – what are the key messages for prevention of illness and adequate recovery for athletic populations? - 7*

Auto anti oxLDL, IgM and IgG: comparison between sedentary and athletes

SANTOS J M B¹, BACHI A L L², RIOS F J O, CAPEL T L¹, VAISBERG P H C¹, AMIRATO G R¹, VAISBERG M¹

¹Department of Otorrinolaringology and Head and Neck Surgery; Federal University of São Paulo; São Paulo, Brazil.

²Microbiology, Immunology, and Parasitology Department, Federal University of São Paulo; São Paulo, Brazil.

ABSTRACT

Introduction: The practice of regular physical activity contributes to reduce the prevalence of coronary hearth disease (CHD) and aerobic exercises are associated with beneficial changes in the profile of circulating lipids and lipoproteins. However in the past years the oxidative hypothesis assumed great importance in the pathogenesis of CHD. During exhaustive exercises there is a greater possibility of oxidation of LDL, forming oxidized LDL (oxLDL) that has a key role in atherogenesis. However the incidence of coronary events in athletes is lower than in sedentary persons. It is described in the literature that we can find in serum auto autoantibodies anti-oxLDL, of the isotypes IgG and IgM. The former involved with atherogenesis and the latter with an atheroprotective function. The aim of this study was to verify if there are differences in the prevalence of the different autoantibodies between athletes and sedentary persons. **Methods:** Twenty male recreational runners and twenty male sedentary individuals living in the city of São Paulo were recruited for the study. Both the study protocol and consent form had been approved by the UNIFESP-EPM Ethics Committee. None of the participants were using lipid-lowering medications, no smokers, addicted to alcohol consumption, obese or had systemic arterial hypertension, neither liver, renal, metabolic, inflammatory or neoplastic diseases. Blood sample were collected at rest. Blood draws for all the individuals were performed after 12 hours of fasting. IgM and IgG anti ox LDL specific reactivity in serum, were measured by ELISA using previously stored serum. Student's t-test was used to analyze differences in age and body mass index (BMI). The Mann-Whitney test was used to determine if the differences between the results for sedentary individuals and those for runners at rest were significant. **Results:** We found that at rest the group of athletes studied showed a statistically higher concentration of IgM autoantibodies against ox-LDL than controls (figure 1 a). At the same time, IgG autoantibodies anti ox-LDL presented the same concentration in controls and athletes (Figure 1 b). **Conclusion:** This finding is of extreme importance when we consider the prevalence of CHD in those different populations and the opposite actions of these two isotypes of antibodies.

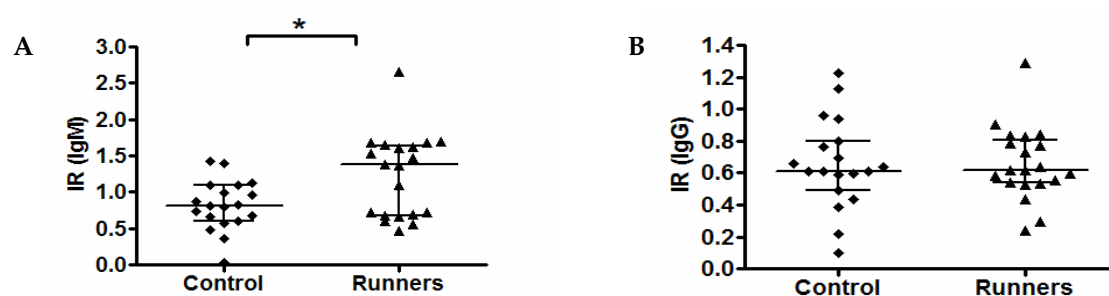


Figure 1: Autoantibodies (IgM-A and IgG-B) specific to oxLDL in control and runners. The Index of Reactivity (IR) of each sample was calculated as followed: (Sample OD – Blank OD)/(Control IgG or IgM OD – Blank OD).