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Impact of obesity and Ala16Val MnSOD polymorphism interaction on lipid, inflammatory and oxidative blood biomarkers

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Author(s)

Maria Fernanda Manica-Cattani, Francine Carla Cadoná, Raul de Oliveira, Tális da Silva, Alencar Kolinski Machado, Fernanda Barbisan, Marta Maria Medeiros Frescura Duarte, Ivana Beatrice Manica da Cruz

ABSTRACT

Previous investigations suggest association between obesity and Ala16Val MnSOD gene polymorphism. The V allele produces enzyme which not catalyze the superoxide anion efficiently as occurs with A allele. As obesity is related to development of other metabolic disorders we performed a study that analyzed the effect of interaction between Ala16Val MnSOD polymorphism and obesity on lipid, oxidative and inflammatory biomarkers of adult subjects. The study enrolled 161 volunteers as categorized in six groups with different genotypes: Obeses with different genotypes (AAO, VVO and AVO) and nonobese (AANO, VVNO and AVNO). In general the group AANO presented lower values whereas VVO presented higher values of biomarkers analyzed. These results suggest that oxidative metabolism influenced by genetic status could to minimize or maximize the obesity effects on lipid, oxidative and inflammatory biomarkers that are also implicated in the genesis of important dysfunctions and diseases as atherosclerosis, diabetes 2 and cardiovascular morbidities.

KEYWORDS

Ala16Val MnSOD Polymorphism; Obesity; Oxidative Stress; Inflammation; Oxidized LDL; Anti-Oxidized LDL; Hs-PCR

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