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Enhanced Susceptibility to in Vitro Oxidation of Apolipoprotein B-Containing Lipoproteins and Antioxidant Status in Patients with Coronary Artery Disease

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**Abstract:** Lipoprotein oxidation may play a pivotal role in the pathogenesis of atherosclerosis, and vitamin E and b-carotene have been proposed to prevent the development and progression of atherosclerosis. The aim of this study was to investigate the oxidative susceptibility of apolipoprotein B (apo B)-containing lipoproteins and their relation with vitamin E and total carotene levels. The susceptibility of apo B-containing lipoproteins to oxidation, plasma malondialdehyde (MDA), serum vitamin E, total carotene, lipid and lipoprotein levels were studied in 177 patients with coronary artery disease (CAD) and 75 non-CAD subjects. All subjects (n = 252) had undergone coronary catheterization. Student's unpaired t-test, chi-square test and Pearson's correlation test were used for the statistical analyses. CAD patients demonstrated significant decreases in serum vitamin E and total carotene levels and significant increases in low density lipoprotein-cholesterol (LDL-C) and MDA levels. D MDA (oxidizability of apo B-containing lipoproteins) was negatively correlated with vitamin E and inversely correlated with LDL-C, apo B and MDA levels in CAD patients. In conclusion, oxidized forms of apo B-containing lipoproteins may play an important role in the pathogenesis of atherosclerosis, and antioxidant vitamin supplementation may be useful in CAD by improving the oxidative balance.

**Key Words:** Lipoprotein oxidation, Vitamin E, Total carotene, Coronary artery disease

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