

Obesity as risk factor for cardiovascular disease

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Obesity is a chronic, multifactorial, and complex disease resulting from a long-term positive energy balance, in which both genetic and environmental factors are involved. A systemic increase in oxidative stress is often observed in obese subjects and is regarded to be directly involved in increasing incidence of obesity - related metabolic complications including cardiovascular diseases. The alteration of lipoprotein levels and compositions are probably related to the greater risk of cardiovascular disease associated with obesity. The present study was designed to assess serum oxLDL levels in a group of patients with obesity and cardiovascular disease (58.3 ± 4.31 years), and a group of healthy patients (55.94 ± 5.67 years). The LDL susceptibility to *in vitro* induced lipid peroxidation was evaluated following its incubation with a prooxidant system. Results obtained showed the susceptibility of LDL to *in vitro* oxidation was increase in obesity group (18.42 %) compared with a healthy group. This study indicates that circulating ox-LDL is associated with obesity. This association may be explained by the occurrence of small dense LDL that is more prone to oxidation. Another possible explanation is that adipose tissue contributes to the oxidation of LDL by increase the production of arachi-donate-5-lipoxygenase which catalyze LDL oxidation. In conclusion, it is now clear that obesity is associated with endothelial cell dysfunction, an association that, at least in part, accounts for the increased risk of developing cardiovascular atherosclerosis.

Biography

Gianina Ioana Constantin has completed Bucharest University – Chemistry section and she is scientific researcher III, principal chemist – medical biochemistry specialization, at National Institute of Gerontology and Geriatrics "Ana Aslan" from 2004. She has published as author/co-author in more than 8 scientific papers, over 63 national and international congresses and co-worker in 4 national research programs and 1 FP7 - Health international program. Research fields: studying cellular and molecular mechanisms in normal and pathologic aging; markers of atherogenesis process - LDL ox, sialic acid, circulating immune complexes; immunoassay methods for determination of tumor markers and hormones by Tosoh AIA 360.

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