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Association between hypomagnesaemia and hyperuricemia accompany more severe forms of atherosclerosis and inflammatory syndrome in patients with cardiovascular disease from Romania

Ioan A Gutiu[1], Anton I Gutiu[2], Flavian S Radulescu[1] and Leon Dumitrescu[3]
[1]Carol Davila University of Medicine and Pharmacy, Romania
[2]Family Office-Ilfov District, Romania
[3]Dental Office, Chiajna, Ilfov District, Romania

Statement of the Problem: In atherosclerosis, hypomagnesaemia (HMg) may increase oxidation of LDL, activation of macrophages and platelets aggregation, freeing of cytokines, etc. Hyperuricemia (HUA) may increase risk of cardiovascular disease by metabolic interventions: could promote oxidative stress, endothelial dysfunction and low level inflammatory syndrome. Effects of association between HUA and HMg on atherosclerosis in cardiovascular disease (CVD) are still unclear now. We hypothesize that association of HMg and HUA may be found in more severe forms of atherosclerosis and may influence and aggravate atherosclerosis consequences (cardiovascular disease-CVD).

Methodology: In a cross sectional study of 405 cardiovascular patients (old myocardial infarction, angina pectoris, stroke), mean age 52.5 years, men 127 (31%), we analyzed presence of main atherosclerosis risk factors (dyslipidemia, arterial hypertension, serum glucose, smoking, obesity, etc.) and some usual markers of inflammation (fibrinogen, CPR, serum leukocytes, dental state: missing tooth and carries as markers of chronic gum inflammation).

Findings: We compared the patients group with HMg (first tertile) and high uric acid level (last tertile) with the rest of patients. Some atherosclerosis risk factors differ significantly in these groups: triglycerides (228.5+/-175.8 versus 144.5+/-108.5 mg%, P<0.001); HDL-cholesterol (45.3+/-12.5 versus 50.3+/-11.8 mg%, P<0.013), serum glucose (128.9+/-52.7 versus 95.7+/-25.7 mg%, P<0.001), systolic arterial pressure: (160.5+/-22.1 versus 152.9+/-26 mmHg, P<0.04); concerning inflammation: fibrinogen (410.8+/-120.8 versus 376.5+/-110.4mg%, P<0.034), missing tooth (18.4+/-8.4 versus 15.6+/-8.4, P<0.034).

Conclusion & Significance: Association of HMg and HUA may delimit a group of CAD patients with more severe atherosclerosis and inflammation. These deleterious effects of association of HMg and HUA imply an early detection and suppose therapeutically consequences.

Biography

Ioan A Gutiu has expertise in the study of atherosclerosis risk factors in cardiovascular disease especially in inflammation contribution, pathogenic interventions of non-traditional risk factors such as dental state, magnesium, uric acid, etc., all with possible therapeutical consequences. All his scientific and medical activities are linked to educational work in “Carol Davila” University of Medicine from Bucuresti –Romania.

ioangutiu@gmail.com

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