

Hyperhomocysteinemia and endothelial function in young subjects: Effects of vitamin supplementation

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Background: The relationship between hyperhomocysteinemia and cardiovascular disease has not been totally elucidated. Hypothesis: The study aimed to verify the association between hyperhomocysteinemia and endothelial dysfunction before and after modification of total homocysteine (tHcy) serum levels with vitamin supplementation in young male subjects devoid of any other cardiovascular risk factor. Methods: Twenty hyperhomocysteinemic (tHcy > 15 μ mol/l) male volunteers (<40 years) and 20 age-matched subjects with normal tHcy levels (tHcy < 13 μ mol/l) were included. Exclusion criteria were smoking, hypertension, diabetes, vitamin ingestion, obesity, hypercholesterolemia, renal failure, and positive antiphospholipid antibodies. Serum tHcy, folate, vitamin B12 levels, activated protein C and S, protein C resistance, fibrinogen, prothrombin, thrombin, antithrombin III, and in vitro oxidation of low-density lipoprotein (LDL) particles were measured. Noninvasive ultrasound measurements of endo