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Acta Medica Iranica
2009;47(4) : 52-59

Study of Methionine, Vitamin B12, and Folic Acid Status in Coronary Atherosclerotic Male Patients

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Abstract:

Background: Increased level of serum homocysteine is one of the risk factor of atherosclerosis. Its production related in some sulfur amino acids such as methionine. Some important cofactors that are involved in metabolic pathways of this amino acid are folate and vitamin B12. We have assessed the status of methionine, folic acid, and vitamin B12 in some coronary atherosclerotic male patients.

Methods: In this case-control study, 46 cases of coronary atherosclerosis were selected from male patients aged 37 to 66 years undergoing coronary angiography. Of these, 21 had history of acute myocardial infarction (MI) in previous 3 to 36 months and 25 had angina pectoris. The controls were selected from male healthy volunteers. Inclusion criteria for all study participants required that they had no history of diabetes, hypertension, renal, hepatic, or gastrointestinal disease, endocrinal disorders, or psychiatric illness. Nutritional status was assessed using biochemistry methods and estimation of nutrient intake. Serum methionine was determined by HPLC methods.

Results: Mean serum levels of vitamin B12, and folate, also erythrocyte folate concentration are significantly lower in these patients than in control subjects, but not for methionine. The ratios of serum methionine to vitamin B12 and folate were higher in patients than controls. Vitamin B12 and folate deficiencies, both, were higher in patients than controls.

Conclusion: In summary, it is concluded that, despite normal level of serum methionine, coenzymes deficiencies may be one of the factors accounting for atherosclerosis.

TUMS ID: 3816

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