DISORDERS OF MINERAL METABOLISM AND INFLAMMATION, BUT NOT HYPERHOMOCYSTEINEMIA, AREA RELATED TO CAROTID INTIMA-MEDIA (CIMT) THICKNESS IN HEMODIALYSIS (HD) PATIENTS

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Traditional risk factors for cardiovascular disease (CVD) can not explain the excess mortality and morbility in HD patients (pts). This amplification in CVD risk in uremic pts has been attributed to several emerging risk factors, such as oxidant stress, hyperhomocysteinemia, hyperphosphatemia, chronic low-grade inflammation, and arteriosclerosis vessel stiffening. The aim of our study was to evaluate if there was an association between the extent of the CIMT and some of the main emerging risk factors for atherosclerosis in HD pts. 127 pts underwent bilateral B-mode ultrasonography of the carotid artery for the evaluation of CIMT (mm) and biochemical analysis of sCa, SPO_4 albumin, cholesterol, HDL, LDL, triglycerides, homocystein (Hcy), C-reactive protein (CRP), fibrinogen, PTA, folic acid, and vitamin B_{12}. Mean intake of calcium salts and vitamin were recorded in all pts. The CIMT was correlated with age, sPO_4, Ca x PO_4 product, HDL, CRP, and diastolic blood pressure (r=.514, P<.000; r=.233, P<.01; r=.264, P<.01; r=–.253, P<.01; r=.311, P<.001; r=–.197, P<.05; respectively). Patients with age > 60 years showed CIMT values higher than pts with age < 60 years (1.13±58 vs 1.00±09 mm, P<.001). Patients with sPO_4 > 5.5 mg/dl, Ca x PO_4 > 55 mg^2/dl^2, PTH > 200 pg/ml, and CPR > normal values compared with pts who showed these parameters within normal range have CIMT values significantly higher (1.68±71 vs 1.28±.67 mm, P<.001; 1.48±.71 vs 1.31±67 mm, P>.01; 1.58±79 vs 1.27±45, P<.01; 1.91±.82 vs 1.34±.62, P<.001; respectively). Homocystein levels did not show any correlation with CIMT, and when pts were subdivided into normal or high Hcy values or stratified for different Hcy levels there were no differences in CIMT values between groups, nevertheless pts with higher Hcy levels showed lower folic acid values. We did not find any relationship between amount of calcium salts and vitamin D intake and the extent of CIMT. Taken together, our results suggest than among the main emerging risk factors for CVD calcium-phosphorus derangement and inflammation are associated with a greater atherosclerotic damage, as indicated by the extent of CIMT, while hyperhomocysteinemia does not seem to be related to this event. Nevertheless, because most of our pts have hyperhomocystinemia we can rule out a role of hyperhomocysteinemia in the atherosclerotic process, so that needs further investigations.

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