1. Pancreas. 2010 Jan;39(1):e11-6.

Chronic pancreatitis is associated with hyperhomocysteinemia and derangements in transsulfuration and transmethylation pathways.

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Abstract

OBJECTIVES: Homocysteine has been implicated in vascular dysfunction and thrombosis, as well as inflammatory conditions. This study was aimed to find out whether chronic pancreatitis (CP) is associated with hyperhomocysteinemia and derangements of transmethylation and transsulfuration pathways.

METHODS: We estimated homocysteine and its metabolites in 45 alcoholic CP patients, 45 tropical CP patients, and 48 healthy controls.

RESULTS: Significant increases in plasma total homocysteine and decreases in red blood cell folate, reduced glutathione, plasma methionine, cysteine, and urinary inorganic sulfate/creatinine ratio were observed in both alcoholic and tropical CP patients in comparison with healthy controls. Red blood cell glutathione and plasma cysteine levels were significantly lower in alcoholic than in tropical CP patients. However, plasma vitamin B12 levels were comparable between CP patients and controls. No significant differences in these parameters were observed between diabetic patients and nondiabetic patients. Multivariate regression analysis showed a significant negative correlation between homocysteine and folate ($r = -0.415$, $P = 0.001$) and a positive correlation between glutathione and cysteine levels ($r = 0.37$, $P = 0.003$).

CONCLUSIONS: Chronic pancreatitis is associated with hyperhomocysteinemia and derangements in transmethylation and transsulfuration pathways. Low folate levels observed in these patients seem to have a key role in this derangement.

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