

Abstract

Endocr J. 2007 Jun;54(3):471-6.

Homocysteine, folate and cobalamin levels in hypothyroid women before and after treatment.

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BACKGROUND: Hypothyroidism may result in accelerated atherosclerosis. Hyperhomocysteinaemia is an independent risk factor for premature atherosclerotic vascular disease.

OBJECTIVE: The aim of the present study was to assess plasma total homocysteine (tHcy), folate and cobalamin concentrations in hypothyroid patients before and after treatment.

METHODS: Thirty-one hypothyroid and thirty health young women were studied. The hypothyroid patients were investigated in the untreated state and again after restoration of euthyroidism. The levels of homocysteine, folate, cobalamin and thyroid stimulating hormone (TSH), free thyroxine (fT(4)), free triiodothyronine (fT(3)) and renal function were measured before and after treatment.

RESULTS: In hypothyroidism tHcy was higher but not statistically significant than in control group. Serum level of folate was higher and serum cobalamin was lower in the hypothyroid state. Following L-thyroxine therapy tHcy significantly decreased as well as the concentration of cobalamin. Level of folate remained unchanged. Univariate analysis in hypothyroid group indicated that tHcy negative correlated with creatinine clearance, fT(3), fT(4), cobalamin and positive with TSH. In multivariate analysis tHcy correlated with creatinine clearance, cobalamin and fT(4).

CONCLUSION: Thyroid status influences the plasma tHcy. Free triiodothyronine and next free thyroxine have the greatest negative influence. This would account for hyperhomocysteinemia in the hypothyroid state and premature atherogenesis.

PMID: 17464093