

Abstract

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Association of thyroid dysfunction with vitamin B12, folate and plasma homocysteine levels in the elderly: a population-based study in Sicily.

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BACKGROUND: Association of thyroid dysfunction with plasma homocysteine levels and vitamin B(12) has previously been reported. We evaluated these associations in the elderly in San Teodoro, a mountainous village of Sicily.

METHODS: Subjects (n=279) aged 60-85 years (119 males and 160 females) were examined using self-reported signs, clinical examination and laboratory tests.

RESULTS: Hypothyroidism and/or goiter were two characteristics that were not associated with a significant change in homocysteine when compared with euthyroidism and the absence of goiter. Vitamin B(12) was significantly higher in subjects in the first quartile of the thyroid-stimulating hormone distribution, compared with those in the fourth quartile (371+/-207 vs. 297+/-196 pmol/L, p=0.0121). Homocysteine was significantly higher in the first quartile of the free tri-iodothyronine distribution compared to the third quartile (18.0+/-5.7 vs. 16.0+/-6.2 micromol/L, p=0.0130) and was correlated with log tri-iodothyronine in euthyroid subjects (p=0.0254). In multivariate analysis, homocysteine was associated with vitamin B(12) (p=0.0014), folate (p<0.0001), creatinine (p<0.0001) and age (p<0.0001), but not with either free tri-iodothyronine (p=0.7680), tetra-iodothyronine (p=0.5706) or thyroid-stimulating hormone (p=0.2294).

CONCLUSIONS: Our results suggest that the influence of thyroid hormones on homocysteine is much weaker in elderly subjects than in selected patients with hypothyroidism.

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