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Thyroid function is associated with carotid intima-media thickness in euthyroid subjects.

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Source

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Abstract

To investigate the relationship between thyroid function and carotid intima-media thickness (CIMT) in a relatively large general population with euthyroid status we initially enrolled 1772 Japanese adults (421 men and 1351 women) who participated in a medical screening program for the general population over 40 years old. To evaluate only euthyroid subjects without vascular diseases and/or its major risk factors, 1129 were excluded and 643 participants (175 men and 468 women) were included for further analysis. Simple and multivariate linear regression analyses were performed to evaluate free thyroxine (fT4) and thyroid-stimulating hormone (TSH) levels and other existing parameters, including carotid intima-media thickness. By multivariate linear regression analysis adjusted for age and sex, free thyroxine was significantly correlated with triglycerides (beta=0.07, p=0.015), carotid intima-media thickness (beta=-0.091, p=0.049), and thyroid-stimulating hormone (beta=-0.091, p=0.003). Thyroid-stimulating hormone was significantly correlated with high-density lipoprotein cholesterol (HDL-C) (beta=-0.001, p=0.015), HbA(1c) (beta=0.038, p=0.045), carotid intima-media thickness (beta=0.27, p=0.001), and free thyroxine (beta=-0.15, p=0.003). When adjusted for confounding factors, free thyroxine was significantly correlated only with carotid intima-media thickness (beta=-0.13, p=0.043) and thyroid-stimulating hormone was significantly correlated with HDL-C (beta=-0.001, p<0.001), HbA(1c) (beta=0.04, p=0.021), and carotid intima-media thickness (beta=0.29, p=0.001). We have demonstrated that carotid intima-media thickness is independently associated with thyroid function within the normal reference range, which suggests an increased cardiovascular risk in subjects with low normal thyroid function.

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