Abstract

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Dietary zinc intake is inversely related to subclinical atherosclerosis measured by carotid intima-media thickness.

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BACKGROUND: The relationship between dietary Zn intake and the risk of atherosclerosis remains unclear, and no epidemiological studies have been reported on the effects of dietary Zn intake on morphological changes in the vascular wall.

OBJECTIVE: We examined the relationship between dietary Zn intake and common carotid intima-media thickness (IMT) as a marker of subclinical atherosclerosis among the middle-aged and elderly populations.

METHODS: A cross-sectional analysis of a prospective cohort baseline study was performed with 4564 adults aged 40-89 years and free of clinical CVD. Dietary data were collected by trained interviewers using an FFQ. Common carotid IMT was measured using a B-mode ultrasound imaging technique. Subclinical atherosclerosis was determined using carotid IMT, and defined as >80th percentile of carotid IMT or >/= 1 mm of carotid IMT.

RESULTS: After adjustment for potential confounders, the mean carotid IMT in the low Zn intake group was higher than that in the high Zn intake group. When subclinical atherosclerosis was defined as >80th percentile value of IMT or >/= 1 mm of carotid IMT, after adjustment for potential confounders, Zn intake was inversely related to subclinical atherosclerosis (5th v. 1st quintile, OR 0.64, 95 % CI 0.45, 0.90, P for trend = 0.069; 5th v. 1st quintile, OR 0.34, 95 % CI 0.16, 0.70, P for trend = 0.005, respectively). In persons free of clinical CVD, dietary Zn intake was inversely correlated with subclinical atherosclerosis.

CONCLUSIONS: The present findings suggest a putative protective role of dietary Zn intake against the development of atherosclerosis.

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