

## Associations between vitamin D status and atherosclerosis among Inuit in Greenland

**Background and aims:** Low levels of vitamin D are suspected to be a risk factor for cardiovascular disease and atherosclerosis. The aim of this study was to assess the prevalence of subclinical atherosclerosis among Inuit in Greenland, and to evaluate the association with vitamin D status. We hypothesized that low vitamin D status could be associated with higher carotid intima-media thickness (IMT) as a marker of atherosclerosis.

**Methods:** 756 adults from the Inuit Health in Transition (IHIT) study carried out in Greenland in the period 2005–2010 were included. A blood sample donated in 1987 was available for a sub-sample of 102 individuals. Serum 25(OH)D3 from the IHIT study and the 1987 survey was used as a measure of vitamin D status. IMT measurements were conducted by ultrasound scanning. The prevalence of atherosclerosis was estimated, and the association between serum 25(OH)D3 and IMT measurements was examined by linear regression.

**Results:** The overall prevalence of subclinical atherosclerosis was 20.1% (n = 152). The linear regression analyses indicated a weak positive association between serum 25(OH)D3 level and IMT measurements from the IHIT study, though not statistically significant after adjustment for potential confounders ( $\beta = 0.35\%$  per 10 nmol/L 25(OH)D3,  $p = 0.06$ ). Linear regression analyses of the association between serum 25(OH)D3 level in the 1987 survey and IMT measurements also indicated a positive, though not statistically significant, association after adjustment ( $\beta = 0.07\%$  per 10 nmol/L 25(OH)D3,  $p = 0.86$ ).

**Conclusions:** Our findings did not support the hypothesis of an association between low vitamin D levels and risk of atherosclerosis.

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