

Serum 25-hydroxyvitamin D, calcium and parathyroid hormone levels in Native and European populations in Greenland

Ca homeostasis is important to human health and tightly controlled by powerful hormonal mechanisms that display ethnic variation. Ethnic variations could occur also in Arctic populations where the traditional Inuit diet is low in Ca and sun exposure is limited. We aimed to assess factors important to parathyroid hormone (PTH) and Ca in serum in Arctic populations. We included Inuit and Caucasians aged 50–69 years living in the capital city in West or in rural East Greenland. Lifestyle factors were assessed by questionnaires. The intake of Inuit diet was assessed from a FFQ. 25-Hydroxyvitamin D (25OHD2 and 25OHD3) levels were measured in serum as was albumin, Ca and PTH. The participation rate was 95 %, with 101 Caucasians and 434 Inuit. Median serum 25OHD (99.7 % was 25OHD3) in Caucasians/Inuit was 42/64 nmol/l (25, 75 percentiles 25, 54/51, 81) (P

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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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