Selenium supplementation does not decrease thyroid peroxidase antibody concentration in children and adolescents with autoimmune thyroiditis.

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Abstract

In adults, selenium supplementation decreases thyroid peroxidase antibody (TPO Ab) concentrations in patients with autoimmune thyroiditis (AIT). Our aim in this study was to investigate if selenium supplementation decreased TPO Ab and thyroglobulin antibody (Tg Ab) concentrations in children with AIT. Forty-nine patients (33 females) with newly diagnosed AIT and hypothyroidism were randomized to daily oral therapy with levothyroxine alone (group A, n=18), levothyroxine plus 100 microg sodium-selenite (group B, n=13), or levothyroxine plus 200 microg sodium-selenite (group C, n=18). Mean age at diagnosis was 12.2±2.2 years. All 49 patients needed a mean levothyroxine dose of 1.6±0.5 microg/kg body weight to lower TSH to the treatment goal of 1-2 microU/ml, with no significant difference between groups. At study entry and after 12 months, TPO Ab concentrations were comparable in all three groups. Tg Ab concentrations decreased significantly after 12 months in group A and group C (p=0.03 and p=0.01), but not in group B (p=0.06). It is our conclusion that selenium supplementation with sodium-selenite does not decrease TPO Ab concentrations in children and adolescents, neither given in the reduced dose of 100 microg daily nor given in the "adult" supplementation dose of 200 microg daily.