Effect of vanadium on insulin sensitivity in patients with impaired glucose tolerance.


Source

Medical Research Unit in Clinical Epidemiology, Medical Unit of High Specialty, West National Medical Center, Mexican Institute of Social Security, Guadalajara, Mexico.

Abstract

BACKGROUND/AIM:

Impaired glucose tolerance (IGT) is considered a risk factor for developing type 2 diabetes mellitus (T2DM) and is associated with insulin resistance. Vanadium seems to block protein tyrosine phosphatase with the consequent increment in insulin sensitivity (INS) in T2DM patients, but this effect has not been studied in IGT patients. The aim of this study was to evaluate the effect of vanadium on INS in IGT patients.

METHODS:

A randomized, double-blind, placebo-controlled clinical trial was carried out in 14 overweight/obese patients with IGT. Intervention consisted of vanadyl sulfate (VS, 50 mg p.o. twice daily) or placebo for 4 weeks. Before and after the intervention, a metabolic profile was performed and INS was assessed using the euglycemic-hyperinsulinemic clamp technique. Mann-Whitney U and Wilcoxon rank tests were used for statistical analyses.

RESULTS:

There were no significant differences in basal characteristics between groups. VS did not affect INS [2.7+/-.8 vs. 2.9+/-.9 mg/(kg/min), p=0.735] but increased triglyceride levels (1.35+/-.61 vs. 1.70+/-.46 mmol/l, p=0.018).

CONCLUSIONS:

VS administration in IGT patients increased triglyceride concentrations without changes in INS.