Effects of d-chiro-inositol in lean women with the polycystic ovary syndrome.

Iuorno MJ, Jakubowicz DJ, Baillargeon JP, Dillon P, Gunn RD, Allan G, Nestler JE.

Department of Medicine, Medical College of Virginia, Virginia, Commonwealth University, Richmond, Virginia, USA.

Abstract

OBJECTIVE: To determine whether the administration of D-chiro-inositol, a putative insulin-sensitizing drug, would affect the concentration of circulating insulin, the levels of serum androgens, and the frequency of ovulation in lean women with the polycystic ovary syndrome.

METHODS: In 20 lean women (body mass index, 20.0 to 24.4 kg/m²) who had the polycystic ovary syndrome, treatment was initiated with either 600 mg of D-chiro-inositol or placebo orally once daily for 6 to 8 weeks. We performed oral glucose tolerance tests and measured serum sex steroids before and after therapy. To monitor for ovulation, we determined serum progesterone concentrations weekly.

RESULTS: In the 10 women given D-chiro-inositol, the mean (+/- standard error) area under the plasma insulin curve after oral administration of glucose decreased significantly from 8,343 +/- 1,149 mU/mL per min to 5,335 +/- 1,792 mU/mL per min in comparison with no significant change in the placebo group (P = 0.03 for difference between groups). Concomitantly, the serum free testosterone concentration decreased by 73% from 0.83 +/- 0.11 ng/dL to 0.22 +/- 0.03 ng/dL, a significant change in comparison with essentially no change in the placebo group (P = 0.01). Six of the 10 women (60%) in the D-chiro-inositol group ovulated in comparison with 2 of the 10 women (20%) in the placebo group (P = 0.17). Systolic (P = 0.002) and diastolic (P = 0.001) blood pressures, as well as plasma triglyceride concentrations (P = 0.001), decreased significantly in the D-chiro-inositol group in comparison with the placebo group, in which these variables either increased (blood pressure) or decreased minimally (triglycerides).

CONCLUSION: We conclude that, in lean women with the polycystic ovary syndrome, D-chiro-inositol reduces circulating insulin, decreases serum androgens, and ameliorates some of the metabolic abnormalities (increased blood pressure and hypertriglyceridemia) of syndrome X.

PMID: 15251831 [PubMed - indexed for MEDLINE]