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EFFECTS OF D-CHIRO-INOSITOL IN LEAN WOMEN WITH THE POLYCYSTIC OVARY SYNDROME

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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/m^2) who had the polycystic ovary syndrome, treatment was initiated with either 600 mg of D-chiroinositol 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.