

Reduced Risk of Metabolic Disease with Myoinositol and D-Chiro Inositol Combined Therapy in PCOS Overweight Patients

Introduction

Insulin resistance and compensatory hyperinsulinemia affect a significant proportion of women with polycystic ovarian syndrome (PCOS), with most women being obese. Although overweight women with PCOS respond well to the treatment of insulin-sensitizing drugs, their use has been limited due to certain drawbacks. Myoinositol (MI) and D-chiro inositol (DCI) have been associated with reduction in blood glucose levels and improved ovulation in PCOS women. There is paucity of studies that evaluate the effects of combined treatment using both the inositol stereoisomers, although they play a similar role in insulin resistance.

Aim

This study assessed the impact of combined MI and DCI therapy on the risk of metabolic syndrome and improvement of clinical features in PCOS overweight women as compared to MI monotherapy.

Method

Study Design

- Randomized study

Inclusion Criteria

- Women with a confirmed diagnosis of PCOS
- Mean age of 28 years old
- Body mass index (BMI) >27 kg/m²

Exclusion Criteria

- Diabetics
- Smokers
- Alcohol users

Treatment Strategy

- Cohort was randomized into 2 groups
- MI group of 24 women received 2 g of MI in powder form
- MI+DCI group of 26 women received 550 mg MI plus 13.8 mg of DCI (in physiologic ratio of 40:1 ratio) soft gel capsules twice daily
- Treatment was continued for a period of 6 months
- Cohort underwent blood pressure, height and weight measurements and blood tests at baseline,

after 3 months (T1) and at the end of 6 months (T2)

End Points

- Waist-to-hip ratio
- BMI
- Plasma glucose levels
- Insulin resistance (IR) evaluated using homeostasis model assessment (HOMA)
- Serum progesterone levels
- Sex hormone levels

Results

- There were no changes in the waist-to-hip ratio and BMI in both groups at T2
- At T1, plasma glucose and insulin concentrations were significantly reduced in the MI+DCI group
- At T1 and T2, the combined therapy group showed significant reduction in total testosterone and increase in serum sex hormone binding globulin
- Both groups showed striking improvement of ovulation function; all women ovulated after treatment
- The combined supplementation with MI and DCI resulted to be more effective, compared to the MI group, at T1

Conclusion

- A combined therapy of myoinositol (MI) and D-chiro inositol (DCI) in physiological plasma ratio (40:1) might be useful as the first line approach in PCOS overweight patients, who need to control insulin levels and increase ovarian MI content, reducing the risk of developing a metabolic disease.

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