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Randomized Controlled Trial

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The combined therapy with myo-inositol and D-chiro-inositol reduces the risk of metabolic disease in PCOS overweight patients compared to myo-inositol supplementation alone

M Nordio ¹, E Proietti

Affiliations

Affiliation

- ¹ Department of Medical Physiopathology, Sapienza University of Rome, Rome, Italy.
maurizionordio1@gmail.com

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Abstract

Background: PCOS is the main cause of infertility due to metabolic, hormonal and ovarian dysfunctions. Women affected by PCOS often suffer of insulin resistance and of a compensatory hyperinsulinemia. These conditions put the patients at risk of developing several metabolic disorders. Both myo-inositol (MI) and D-chiro inositol (DCI) glycans administration has been reported to exert beneficial effects at metabolic, hormonal and ovarian level. Beside these common features, MI and DCI are indeed different molecules: they belong to two different signal cascades and regulate different biological processes.

Aim: In this study, we aim to verify whether the two molecules have a synergistic action by acting on their specific cellular pathways. The effectiveness in reducing the risk of metabolic syndrome as well as in enhancing the ovarian functions of a combined therapy with MI and DCI was compared to a mono therapy in a randomized controlled trial.

Methods: Fifty overweight women with PCOS were enrolled and divided in two groups to receive MI and DCL (MI+DCI group) or MI alone (MI group) for a period of six months. Baseline measurements were repeated at three months (T1) and at the end of the treatment (T2).

Results: At the end of the treatment, both MI and MI+DCI groups showed an improvement of the metabolic parameters and no significant differences were found. As expected, the combined supplementation with MI and DCI resulted to be more effective, compared to the MI group, after three months of treatment.

Conclusions: The combined administration of MI and DCI in physiological plasma ratio (40:1) should be considered as the first line approach in PCOS overweight patients, being able to reduce the metabolic and clinical alteration of PCOS and, therefore, reduce the risk of metabolic syndrome.

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