A PROSPECTIVE, RANDOMIZED, OPEN LABEL, COMPARATIVE STUDY OF D-CHIROINOSITOL WITH METFORMIN IN PATIENTS WITH POLYCYSTIC OVARY SYNDROME

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ABSTRACT

BACKGROUND:

Polycystic ovary syndrome is the most common cause of infertility due to menstrual dysfunction. In 50-70% cases, it is associated with insulin resistance and hyperandrogenism. D-chiro inositol (DCI) acts as a second messenger in insulin signal transduction, thus helps to improve insulin sensitivity. Only limited studies are available regarding the efficacy of D-chiro inositol in PCOS. So, this study is carried out to study the efficacy and tolerability of DCI in patients with polycystic ovary syndrome.

OBJECTIVES:

To assess reduction in LH level, blood glucose, serum insulin levels, weight reduction and menstrual cycle regularization.

METHODS:

It was done as Prospective, Randomized, open label and comparative study in obese PCOS women with menstrual irregularity and hyperandrogenism. The patients attending Gynaecology OPD at Institute of Obstetrics and Gynaecology, Chennai were randomized to 3 groups. Group A received metformin 500mg TDS, group B received D-chiroinositol 600mg BD and group C received both for 3 months duration.

RESULTS:

The results were analyzed statistically using Paired t-test and ANOVA. The mean LH levels reduced from 14.79 mIU/ml to 14.47 mIU/ml in group A (p=0.02),
15.60 mIU/ml to 13.82 mIU/ml in group B (p=0.001) and 16.26 mIU/ml to 11.88 mIU/ml in group C (p<0.001). At the end of 12 weeks, 40% of patients in group A, 55% of patients in group B and 75% of patients in group C resumed regular menstrual cycles. There was a statistically significant reduction in body mass index, fasting blood glucose and serum insulin levels at the end of 12 weeks in all three groups but more significant in group C receiving metformin with DCI. No serious adverse effects were noted.

**CONCLUSION:**

In patients with polycystic ovary syndrome with obesity and insulin resistance, D-chiro inositol as add on therapy to metformin is effective in reducing LH levels, blood glucose and insulin levels. It aids in weight reduction, regularization of menstrual cycles and increases chances of pregnancy and DCI is well tolerated.

**KEY WORDS:** Polycystic ovary syndrome, Insulin resistance, Anovulation, Hyperandrogenism, D-chiro inositol.