

Polycystic Ovary Syndrome in Adolescence: new therapeutic approach with Inositol and Alpha-Lipoic Acid

Torge N, Iezzi ML, Varriale G, Farello G, Basti C, Zagaroli L, Lasorella S, Verrotti A
Pediatric Unit, San Salvatore Hospital, University of L'Aquila, Italy

Background: Polycystic Ovary Syndrome (PCOS) is characterized by clinical and/or biochemical hyperandrogenism, oligo-anovulation and/or ultrasound finding of polycystic ovaries. Insulin-resistance represents the etiopathogenetic key of PCOS: a deficit of Inositol's tissue availability seems to be responsible for this clinical picture. Hyperglycemia resulting from insulin-resistance, determines a state of chronic inflammation, which increases oxidative stress.

Objective: To evaluate the efficacy of a new therapeutic approach of PCOS, based on Alternative Insulin Sensitizers as Inositol and α -Lipoic Acid (natural antioxidant, which reduces oxidative stress) dose 400 mg + 1000 mg, twice daily, for 6 months of treatment, in a group of PCOS adolescents, followed at the Pediatric Endocrinology and Adolescentology Clinic of L'Aquila.

Method: Our study included 10 female adolescents (14.6 ± 2.8 years). Anthropometric data were assessed both at baseline time (time 0) and after therapeutic intervention (time 1) together with oral glucose tolerance test (OGTT), luteinizing hormone releasing hormone stimulation test (LHRHT) and hormonal profile.

Results: During therapy, weight and BMI underwent a substantial improvement. After 6 months of treatment, significant improvement of Testosterone, Cholesterol and LH serum levels (after LHRHT) were found, as well as glycaemia and insulin sensitivity. We also demonstrated a positive correlation between the decrease of LH levels and the improvement of Testosterone, DHEAS, D4-Androstenedione and Total Cholesterol. Moreover, all teenagers showed various degree of hirsutism and acne reduction, in addition to menstrual cycle regularization.

Conclusion: PCOS treatment based on Alternative Insulin Sensitizers as Inositol and α -Lipoic-Acid represents the most suitable choice for adolescent patients instead of classic insulin sensitizer, such as Metformin, often burdened with numerous side effects.

	TIME 0	TIME 1	p
WEIGHT	64.06 \pm 18	63.7 \pm 16.6	ns
BMI	26.1 \pm 5.5	24.5 \pm 5.8	ns
LH PEACK	53,34 \pm 27,9	23,89 \pm 21,9	0,01
TESTOSTERONE	0,61 \pm 0,3	0,31 \pm 0,2	0,02
CHOLESTEROL TOT.	182,90 \pm 25,4	152,00 \pm 23,4	0,01
GLICEMIC PEACK	133,40 \pm 19,7	112,70 \pm 14,7	0,01
INSULIN PEACK	100,3 \pm 29,1	72,70 \pm 28,0	0,04

