

## **P68. Modulatory effects of alpha-lipoic acid (ALA) administration on insulin sensitivity in obese PCOS patients**

*G Despini (IT) [1], K Shefer (IT) [2], D Della Casa (IT) [3], A Prati (IT) [4], A Napolitano (IT) [5], A Manzo (IT) [6], A Genazzani (IT) [7]*

**Context:** PCOS is a quite common disease that affects up to 15%-20% of women during fertile life. Recently it has been extensively demonstrated the relevance of the dismetabolic aspect and the importance and risks of having a familiar diabetes that highly predisposes to hyperinsulinemia.

**Objective & Methods:** We aimed to evaluate the efficacy of alpha-lipoic acid (ALA) administration on hormonal and metabolic parameters of a group (n=32) of obese PCOS patients with and without familiar diabetes. PCOS patients were selected after informed consent among those attending the outpatients Clinic of the Gynecological Endocrinology Centre at the University of Modena and Reggio Emilia, Italy. 20 patients referred to have first grade relatives with diabetes type I or II. Hormonal and metabolic parameters as well as OGTT were evaluated before and after 12 weeks of ALA integrative administration (400 mg per os every day).

**Results:** ALA administration significantly decreased insulin, glucose, BMI and HOMA index. Hyperinsulinemia and insulin response to OGTT decreased both as maximal response (?max) and as AUC. PCOS with diabetes relatives showed the decrease also of triglyceride and GOT. Interestingly in all PCOS no changes occurred on all hormonal parameters involved in reproduction such as LH, FSH, and androstenedione.

**Conclusions:** ALA integrative administration at a low dosage as 400 mg daily improved the metabolic impairment of all PCOS patients especially in those PCOS with familiar diabetes who have a higher grade of risk of NAFLD and predisposition to diabetes. In addition our data sustain the hypothesis that while ALA improves only insulin resistance, inositols, as second messengers, modulates both cellular responses to insulin and gonadotropins.

[1] Gynecological Endocrinology Centre, Departement of Obstetrics and Gynecology, University of Modena and Reggio Emilia, Italy, [2]

Gynecological Endocrinology Centre, Departement of Obstetrics and Gynecology, University of Modena and Reggio Emilia, Italy, [3]

Gynecological Endocrinology Centre, Departement of Obstetrics and Gynecology, University of Modena and Reggio Emilia, Italy, [4]

Gynecological Endocrinology Centre, Departement of Obstetrics and Gynecology, University of Modena and Reggio Emilia, Italy, [5]

Gynecological Endocrinology Centre, Departement of Obstetrics and Gynecology, University of Modena and Reggio Emilia, Italy, [6]

Gynecological Endocrinology Centre, Departement of Obstetrics and Gynecology, University of Modena and Reggio Emilia, Italy, [7]

Gynecological Endocrinology Centre, Departement of Obstetrics and Gynecology, University of Modena and Reggio Emilia, Italy

