

EVALUATION OF HORMONAL PATTERN AND INDEX OF OXIDATIVE STRESS IN NORMAL WEIGHT WOMEN WITH POLYCYSTIC OVARY SYNDROME.



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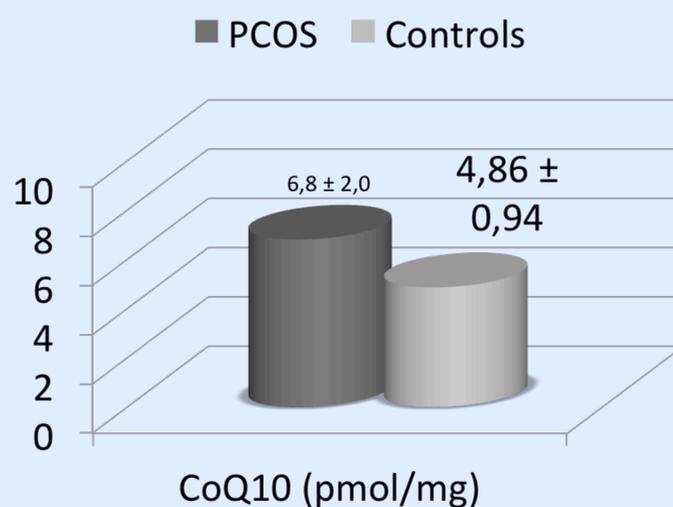
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Objective

It is well known that **insulin resistance (IR) is associated with polycystic ovary syndrome (PCOS)**. Oxidative stress (OS) is, in turn, related to IR, with a vicious cycle. PCOS patients presented higher circulating concentrations of oxidative stress products such as homocysteine, malondialdehyde, an increase of superoxide dismutase and reduction of antioxidants such as glutathione and paraoxonase-1 activity. Most studies however concerned obese PCOS subjects. In order to investigate parameters of OS in normal weight PCOS and the relationships with hormonal and metabolic parameters, **we have evaluated the concentrations of Coenzyme Q₁₀ (CoQ₁₀)**, a component of mitochondrial respiratory chain, also endowed with antioxidant properties, in plasma of **PCOS and normal menstruating women. Also malondialdehyde (MDA)**, a product of lipid peroxidation, was evaluated.

Methods

We have evaluated
 •n=7 **PCOS patients**, age 20-25 ys, mean BMI 24.8±2.6 and
 •N=7 **normal menstruating women**, age 20-25 ys, mean BMI 22.0±2.5).
 CoQ₁₀ levels were determined by HPLC according to Takada et al. and MDA levels were determined spectrophotometrically at 535 nm by TBARS assay.
 Hormonal studies included evaluation of: TSH, fT3, fT4, IGF-1, Testosterone, DHEAS, Androstenedione (by CLIA method) and HOMA index. (Table1)



Results

We did not find a significant difference in MDA (in PCOS patients mean±ES: 7020±2474 pmol/ml vs 12380±2198.9 in controls) and CoQ₁₀ (577.2±41.6 pmol/ml vs 495.6±38.8). (Fig.1a-b)

PCOS patients showed a trend toward a lower fT3 levels (2.8±0.07 vs 3.3±0.12 pg/ml) and higher IGF-1 levels (303±9.3 vs 279.2±46.1 ng/ml).

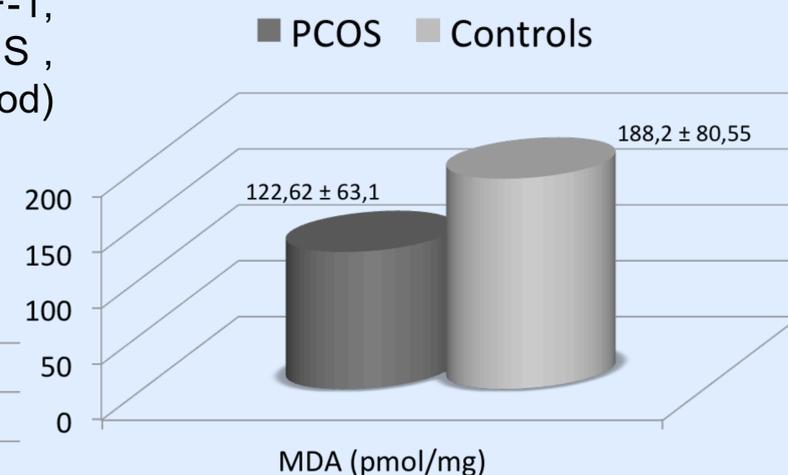


Fig. 1 a-b

Table 1. Mean±ES in PCOS patients and controls

	TSH (μUI/l)	fT3 (pg/ml)	fT4 (pg/ml)	IGF-1 (ng/ml)	T (ng/ml)	DHEAS (ng/ml)	A (ng/ml)
PCOS (n=7)	1.71±0.07	2.8±0.07	9.65±0.20	303±9.68	0.77±0.09	3478±69.91	2.11±0.23
Controls (n=7)	279.25±0.14	3.3±0.13	11.12±0.29	279.25±47.87	0.55±0.03	2742.33±265.75	2.06±0.21

Conclusions

These preliminary data suggest that OS is not simply related to IR in normal weight PCOS but there is a complex interplay between hormones influencing follicular growth. They need to be extended to furnish further insight into the mechanisms of hyperandrogenism in such a condition and to give a rationale for a therapeutic employment of antioxidants in PCOS.