PLASMATIC AND INTRACELLULAR Markers of OXIDATIVE STRESS IN NORMAL WEIGHT AND OBESE PATIENTS WITH POLYCYSTIC OVARY SYNDROME

AUTHOR/S.
Di Segni Chantal (IT) [1], Fuoco Valentina (IT) [2], Leo Francesco (IT) [3], Raimondo Sebastiano (IT) [4], Guidi Francesco (IT) [5], Bergamini Christian (IT) [6], Volta Francesco (IT) [7], Fato Romana (IT) [8], Romualdi Daniela (IT) [9], Apa Rosanna (IT) [10], Lanzone Antonio (IT) [11], Mancini Antonio (IT) [12]

ABSTRACT.
Context:Insulin resistance (IR) is associated with polycystic ovary syndrome (PCOS). Oxidative stress (OS) is, in turn, related to IR. Studies in PCOS have remarked abnormal level of OS markers, mainly in obese patients. Objective:To investigate parameters of OS in PCOS and relationship with hormonal and metabolic picture. Methods:Malondialdehyde (MDA) was assayed in blood plasma and in peripheral mononuclear cells obtained by density-gradient centrifugation. MDA levels were determined spectrophotometrically at 535nm by TBARS assay. Basal hormone evaluation and oral glucose tolerance test were also performed. Testosterone (T) and Insulin were assayed using Chemiluminescent Microparticle ImmunoAssay. Patients:2 groups of PCOS (normal weight, n=21, age 18-25ys, mean BMI±ES 21.6±0.2 kg/m²) and obese (n=13, 18-25ys, BMI 32.8±1.1) were compared with two control groups matched for BMI (normal women, n=10, 19-23 ys, BMI 20.7±0.9) and women with metabolic syndrome (MS) (n=28, 20-30ys, BMI 36.8±1.0). Intervention:Case-control study. Results:PCO patients of both groups exhibited higher T levels than controls, but obese patients had a higher HOMA index. Despite plasma MDA levels were not significantly different (normal weight PO 3380±346,9 vs normal women 10514±3982,6; obese PO 5517,5±672,4 vs MS 3939,6±311,2 pmol/ml), intracellular MDA levels were significantly higher in normal weight PCOS than controls (mean 3259±821 vs 458±43 pmol/106) and higher than obese PCOS, although not significantly (1363±412 pmol/106). Patients with MS had the higher intracellular MDA levels (9077 ±4408 pmol/106). Conclusions:These data show that OS could be present in tissue even if not revealed in plasma and this is important for normal weight PCOS The relationship with metabolic status remains to be established but it could be a physiopathological basis for antioxidant treatment in such patients.

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