

Abstract

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Effects of Testosterone on Antioxidant Systems in Male Secondary Hypogonadism.

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BACKGROUND: Oxidative stress is involved both in metabolic syndrome and male infertility. Hypogonadism is also associated with increased risk for cardiovascular disease.

OBJECTIVE: To investigate the role of gonadal steroids in systemic antioxidants regulation, we determined plasma CoenzymeQ10 (CoQ10) and Total Antioxidant Capacity (TAC) in post-surgical hypopituitary patients.

METHODS: Twenty-six patients, aged 28-55 ys, were studied 6-12 months after operation. CoQ10 levels were measured by HPLC; TAC by spectroscopy using the system mioglobin-H₂O₂, which, interacting with the chromogen 2,2(l)-azinobis-(3-ethylbenzothiazoline-6-sulphonate), generates a radical after a latency time (LAG) that is proportional to antioxidant content.

RESULTS: Sixteen patients presented low testosterone values; in 10 patients hypogonadism was isolated, while in 6 patients also hypothyroidism was present. CoQ10 levels were significantly lower in isolated hypogonadism than in normogonadism. Testosterone treatment, performed in those patients with isolated hypogonadism, induced a significant enhancement both in CoQ10 level and LAG. CoQ10 and LAG values significantly correlated, suggesting an inter-relationship between different antioxidants.

CONCLUSION: Our data suggest that hypogonadism could represent a condition of oxidative stress, in turn related with augmented cardiovascular risk.

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