

Abstract

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Coenzyme Q10 evaluation in pituitary-adrenal axis disease: preliminary data.

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BACKGROUND: In previous works we have demonstrated plasma CoQ10 alterations in pituitary diseases, such as acromegaly or secondary hypothyroidism. However, pituitary lesions can induce complex clinical pictures due to alterations of different endocrine axes controlled by pituitary itself.

OBJECTIVE: A further rationale for studying CoQ10 in pituitary-adrenal diseases is related to the common biosynthetic pathway of cholesterol and ubiquinone.

METHODS: We have therefore assayed plasma CoQ10 levels in different conditions with increased or defective activity of pituitary-adrenal axis (3 subjects with ACTH-dependent adrenal hyperplasia, 2 cases of Cushing's disease and 1 case of 17-alpha-hydroxylase deficiency; 10 subjects with secondary hypoadrenalism, including three subjects with also secondary hypothyroidism).

RESULTS: CoQ10 levels were significantly lower in isolated hypoadrenalism than in patients with adrenal hyperplasia and multiple pituitary deficiencies (mean +/- SEM: 0.57 +/- 0.04 vs 1.08 +/- 0.08 and 1.10 +/- 0.11 microg/ml, respectively); when corrected for cholesterol levels, the same trend was observed, but did not reach statistical significance.

CONCLUSION: These preliminary data indicate that secretion of adrenal hormones is in some way related to CoQ10 levels, both in augmented and reduced conditions. However, since thyroid hormones have an important role in modulating CoQ10 levels and metabolism, when coexistent, thyroid deficiency seems to play a prevalent role in comparison with adrenal deficiency.

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