

Abstract

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Lower plasma Coenzyme Q10 in depression: a marker for treatment resistance and chronic fatigue in depression and a risk factor to cardiovascular disorder in that illness.

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BACKGROUND: There is now evidence that major depression is accompanied by an induction of inflammatory and oxidative and nitrosative stress (IO&NS) pathways and by a lowered antioxidant status. Coenzyme Q10 (CoQ10) is a strong antioxidant that has anti-inflammatory effects.

METHODS: This paper examines the plasma concentrations of CoQ10 in 35 depressed patients and 22 normal volunteers and the relationships between plasma CoQ10 and treatment resistant depression (TRD), the severity of illness as measured by means of the Hamilton Depression Rating Scale (HDRS) and the presence of chronic fatigue.

RESULTS: We found that plasma CoQ10 was significantly ($p=0.0002$) lower in depressed patients than in normal controls. 51.4% of the depressed patients had plasma CoQ10 values that were lower than the lowest plasma CoQ10 value detected in the controls. Plasma CoQ10 was significantly lower in patients with TRD and with chronic fatigue than in the other depressed patients. There were no significant correlations between plasma CoQ10 and the HDRS.

CONCLUSIONS: The results show that lower CoQ10 plays a role in the pathophysiology of depression and in particular in TRD and chronic fatigue in depression. It is suggested that depressed patients may benefit from CoQ10 supplementation. The findings that lower CoQ10 is a risk factor to coronary artery disease and chronic heart failure (CHF) and mortality due to CHF suggest that low CoQ10 is another factor explaining the risk to cardiovascular disorder in depression. Since statins significantly lower plasma CoQ10, depressed patients and in particular those with TRD and chronic fatigue represent populations at risk to statin treatment.

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