

Coenzyme Q10 and niacin mitigate streptozotocin-induced diabetic encephalopathy in a rat model.

Heba Darwish, Tarek K. Motawi, Manal A. Hamed, Nagy S. El-Rigal, Asmaa F. Aboul Naser

Abstract

Diabetic encephalopathy is an important complication of diabetes characterized by cognitive impairment, neurochemical and structural abnormalities. This study aimed to investigate the effect of coenzyme Q10 (CoQ10) and niacin as well as their combination in the treatment of encephalopathy associated with streptozotocin (STZ)- induced diabetes in rats. Glibenclamide (reference diabetic drug) and donepezil hydrochloride (acetylcholinesterase inhibitor) were also evaluated. Diabetes was induced by a single intraperitoneal injection of STZ (60 mg/kg). One month after STZ injection, diabetic rats were treated with the aforementioned drugs for two weeks. The evaluation was done through measuring glucose level, total antioxidant capacity (TAC), interleukin 6 (IL6), DNA degradation as well as serotonin and noradrenaline as neurotransmitters. The present data illustrated that combining CoQ10 and niacin exhibiting the most potent effect in improving the measured parameters and ameliorating some of diabetes complications.

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