

Research Paper (1)

Carnitine deficiency in epileptic children treated with a diversity of anti-epileptic regimens

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Abstract

Background: Carnitine deficiency is relatively common in epileptic patients. The risk factors reported include the combination of valproic acid with other antiepileptic drugs (AEDs), young age, multiple neurologic disabilities, non-ambulatory status, and being underweight.

Objectives: To study the level of carnitine deficiency and its associated risk factors among a group of children with idiopathic epilepsy treated with different AEDs. **Patients and methods:** Fifty children with idiopathic epilepsy and 40 age-matched controls were enrolled. For all, serum carnitine level was measured by enzyme-linked immune sorbent assay (ELISA).

Results: The mean carnitine level was lower in cases compared to controls ($p = 0.04$). Patients receiving monotherapy treatment had a high percentage of carnitine deficiency compared to controls ($p = 0.04$). Patients receiving valproate with other AEDs had a lower level of carnitine compared to controls ($p = 0.03$). The age of the patients, the duration of treatment, and the doses of different AEDs were not risk factors for carnitine deficiency.

Conclusions: Carnitine deficiency is common in our population, and the use of valproate with other AEDs is considered the most important risk factor for it in epileptic children.

Keywords: Carnitine, Epilepsy, AEDs