

Correlation between increased serum and tissue L-carnitine levels and improved muscle symptoms in hemodialyzed patients

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Abstract

A group of 14 uremic patients on intermittent hemodialysis was admitted to a cross-over double-blind trial in order to evaluate serum and muscle carnitine levels before and after 60 days of L-carnitine oral (2 g/day) treatment. The morphology of muscle fragments was studied by light and electron microscopy. Symptoms (asthenia, cramps) occurring during hemodialysis were also recorded. After L-carnitine treatment the blood and muscle levels of the metabolite increased simultaneously to reduced asthenia and cramps.

Morphological examination of the muscle of 13 of 14 patients did not reveal any pre- or posttreatment pathological alterations. The presence of nemaline rods was morphologically diagnosed in only one case and was no longer observed at the second biopsy at 2 months of L-carnitine treatment.