Carnitine Levels and Hypertriglyceridemia in Undialyzed Patients

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Dear Sir,

Carnitine is an essential cofactor for the transport of long-chain fatty acids from the cytosol into the mitochondria [1]. Carnitine deficiency has been suggested to be a factor in the hypertriglyceridemia of the patients on he-modialysis, and the results of its administration on the triglyceride levels are controversial [2–5].

Hypertriglyceridemia is also present in about 70% of patients with end-stage renal disease [6].

We have measured [7, 8] the serum levels of total carnitine (TC), free carnitine (FC), acyl-carnitine (AC), cholesterol (Ch) and triglycerides (TG) in 34 (23 men and 11 women) undialyzed patients (creatinine $884 \pm 513 \mu\text{mol/l}$). 49 (30 men and 19 women) healthy subjects were used as the control group.

The results (table I) show that undialyzed patients have significantly ($p < 0.001$) higher serum levels of TC, FC, AC, and TG than the control group. 18 undialyzed patients (53.1%) had above-normal TG levels, and in this group the levels of TC ($97.1 \pm 39.4 \mu\text{mol/l}$) and FC ($70.1 \pm 24.8 \mu\text{mol/l}$) were slightly higher than the remainder. The TC levels and the level of FC were both significantly correlated with both urea and uric acid levels, but no form of carnitine was significantly correlated with creatinine, Ch or TG levels.

Table I. Serum levels of TC, FC, AC, Ch and Tg in undialyzed patients and control group (mean $\pm$ SEM)

Although we have not measured the muscular levels of carnitine, the hypertriglyceridemia in patients with chronic renal insufficiency might not be produced by carnitine deficiency.

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