

L-Carnitine Treatment and Hemoglobin (Hb) and Erythropoietin (EPO) Outcomes in Dialysis Patients.

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Benefits of carnitine therapy in dialysis patients are unclear. We studied whether intravenous (IV) L-carnitine use was associated with improved Hb levels and EPO efficiency in adult, U.S. dialysis patients (N=81,802) prevalent on 1/1/2000, EPO-treated, and with Medicare as a primary payer. The first L-carnitine dose from 1/1/2000 to 7/31/2001 defined the start of a 6-mo. treatment period; for patients without L-carnitine, start of the treatment period was randomly assigned. We characterized patients in a 6-mo. entry period before the treatment period. Using a propensity score approach to reduce confounding, patients were grouped by quintiles of scores, estimated from a logistic regression model. Consistently dosed patients had L-carnitine in 5 or 6 treatment period mos., with at least 10 g per mo.; otherwise, inconsistently dosed. Among L-carnitine groups, we compared mean treatment-period Hb, weekly EPO, and change in Hb and weekly EPO (treatment minus entry-period value). Multiple linear regression models adjusted for propensity scores quintiles, demographics, dialysis duration, comorbidities, and entry period Hb (or weekly EPO), infectious and non-infectious hospital days, vascular access procedures, blood transfusions, urea reduction ratio, and IV iron.

	No L-carnitine (N=77,440)	Consistent L-carnitine (N=2,726)			Inconsistent L-carnitine (N=1,636)		
	^a mean	^a mean	^b difference	P	^a mean	^b difference	P
Hb	11.58 g/dL	11.66 g/dL	0.09 g/dL	<0.0001	11.52 g/dL	-0.03 g/dL	0.08
Hb change	0.00 g/dL	0.11 g/dL	0.09 g/dL	<0.0001	0.06 g/dL	-0.01 g/dL	0.47
weekly EPO	14,794 U	16,612 U	0.9%	0.38	16,917 U	4.2%	0.001
weekly EPO change	450 U	734 U	76 U	0.56	1,012 U	428 U	0.010

^aunadjusted; ^badjusted difference from no L-carnitine group

After adjustment, compared to patients without L-carnitine, those consistently treated achieved higher mean Hb and higher increase in mean Hb with similar mean weekly EPO dose. Results suggest consistent L-carnitine use is associated with increased Hb levels and improved EPO efficiency.