

## **L-Carnitine vs Extracorporeal Elimination for Acute Valproic Acid Intoxication: A Systemic Review**

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**Abstract :** The purpose of this study is to review the evidence comparing the efficacy and safety between L-carnitine and extracorporeal elimination therapy in the management of acute valproic acid L-carnitine vs Extracorporeal Elimination for Acute Valproic acid Intoxication. PubMed, Embase, Cochrane library, Web of Science, KoreaMed, KMBase, and KISS were searched, using the terms carnitine and valproic acid. All studies, regardless of design, reporting efficacy or safety endpoints were included. Reference citations from identified publications were reviewed. Both English and Korean languages were included. Two authors extracted primary data elements including poisoning severity, presenting features, clinical management, and outcomes. Thirty two articles including 33 cases were identified. Poisoning severity was classified as 3 mild, 11 moderate, and 19 severe cases. Nine cases were treated with L-carnitine while 24 cases received extracorporeal therapy without L-carnitine. All patients except one expired patient treated with hemodialysis recovered clinically and no adverse effects were noted. A case report comparing two patients who ingested the same amount of valproic acid showed increased ICU stay (3 vs. 11 days) in case of delayed extracorporeal therapy. Published evidence comparing L-carnitine with extracorporeal therapy is limited. Based on the available evidence, it is reasonable to consider L-carnitine for patients with acute valproic acid overdose. In case of severe poisoning, extracorporeal therapy would also be considered in the early phase of treatment.

**Keywords :** carnitine, overdose, poisoning, renal dialysis, valproic acid

**Conference Title :** ICT 2016 : International Conference on Toxicology

**Conference Location :** London, United Kingdom

**Conference Dates :** February 25-26, 2016