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## Meta-analysis of methylcobalamin alone and in combination with lipoic acid in patients with diabetic peripheral neuropathy.

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#### Abstract

**AIMS:** To compare the efficacy and safety of daily lipoic acid (300-600 mg i.v.) plus **methylcobalamin** (500-1000 mg i.v. or im.) (LA-MC) with that of **methylcobalamin** alone (MC) on diabetic peripheral neuropathy (DPN).

**METHODS:** Electronic database were searched for studies published up to November 1, 2012 and study quality was assessed in duplicate. A random or a fixed effect model was used to analyse outcomes which were expressed as risk ratios (RRs) or mean difference (MD). I(2) statistic was used to assess heterogeneity.

**RESULTS:** Seventeen studies were included. Combined data from all studies showed that the LA-MC combination therapy was significantly superior to MC monotherapy (RR=1.47; 95% CI: 1.37-1.58). Superiority of the LA-MC combination was shown in nerve conduction velocity (NCV) with WMDs of 6.89 (95% CI: 4.24-9.73) for median motor nerve conduction velocity (MNCV), 5.24 (4.14-6.34) for median sensory nerve conduction velocity (SNCV), 4.34 (3.03-5.64) for peroneal MNCV, and 4.53 (3.2-5.85) for peroneal SNCV. There were no serious adverse events associated with treatment.

**CONCLUSIONS:** The results of the meta-analysis show that treatment with LA-MC for 2-4 weeks is associated with better outcomes in NCV and neuropathic symptoms relative to MC treatment. However larger well-designed studies are required to confirm this conclusion.

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**KEYWORDS:** Combination therapy; Diabetic peripheral neuropathy; Lipoic acid; Meta-analysis; **Methylcobalamin**

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