

## THE EFFECT OF VITAMIN D SUPPLEMENTATION ON NERVE CONDUCTION STUDIES IN TYPE 2 DIABETES MELLITUS INDONESIAN PATIENTS

*Aida Fitri<sup>1</sup>, Hasan Sjahrir<sup>1</sup>, Adang Bachtiar<sup>2</sup>, M. Ichwan<sup>3</sup>*

<sup>1</sup>Department of Neurology Faculty of Medicine Universitas Sumatera Utara, Indonesia

<sup>2</sup>Faculty of Public Health Universitas Indonesia

<sup>3</sup>Department of Pharmacology and Therapeutic Faculty of Medicine Universitas Sumatera Utara, Indonesia

**Address for Correspondence:** [serviceheb@gmail.com](mailto:serviceheb@gmail.com)

**Background:** Diabetic neuropathy (DN) is one of the most common complication in patients with type 2 diabetes mellitus (T2DM). Diabetic neuropathy is the most common form of neuropathy in developed countries. Low levels of circulating vitamin D may contribute to large fiber neuropathy in diabetic patients. In some literatures, there are conflicting reports on the effect of vitamin D on nerve conduction studies (NCSs).


**Objective:** To investigate the effect of vitamin D supplementation on NCSs in T2DM Indonesian patients.

**Methods:** Fifty subjects with T2DM in Haji Adam Malik General Hospital Medan, were randomly divided into 2 groups. The groups were treated for 10 weeks either with placebo or vitamin D (D<sub>3</sub>) supplementation of 50.000 IU/week, double-blind trial. They were evaluated by routine NCSs in upper and lower limbs, before and 10 weeks after placebo or vitamin D supplementation. The effect of vitamin D supplementation on NCSs was analyzed using linear regression.

**Results:** Vitamin D supplementation had significant decrease in distal latencies (DLs) of motor median, peroneal, and tibial nerve, motor and sensory ulnar nerve ( $p < 0.001$ ), increase in amplitudes (As) of motor and sensory median and ulnar nerve, motor peroneal and tibial nerve, and sensory sural nerve ( $p < 0.001$ ), and increase in nerve conduction velocities (NCVs) of motor median and peroneal nerve, motor and sensory ulnar nerve ( $p < 0.001$ ). There were neither significant effect of vitamin D supplementation in DL and NCVs of sensory median and sural nerve, nor NCVs of motor tibial nerve.

**Conclusion:** Vitamin D supplementation for 10 weeks had effect on NCSs in T2DM Indonesian patients.

**Keywords:** diabetic neuropathy, nerve conduction studies, vitamin D

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### References

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