

## **The Role of Hyperlipidemia on Nerve Conduction**

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**Background:** Previous reports suggested a relationship between hyperlipidemia and neuropathy as a cause of focal neuropathy or generalized poly-neuropathy. Only few cases were reported and they are often involved individuals with other illnesses which cause neuropathy, such as diabetes mellitus, hypertension, hyperuricemia and fatty liver.

**Objective:** To study the association of peripheral neuropathy with hyperlipidemia and to detect the type of peripheral neuropathy and its distribution.

**Design:** Prospective study.

**Setting:** Neurophysiology unit in Basra teaching hospital and the department of physiological chemistry, College of Medicine, University of Baghdad.

**Method:** Sixty-eight patients (38 males and 30 females) aged 25-77 years with a mean age of (48.9±13.5) years. Forty-two healthy subjects (24 males and 18 females) of matching age were enrolled as control. Biochemical investigations included lipid profile, post prandial blood glucose, blood urea, serum creatinin and uric acid.

**Electrophysiological investigations included:**

1. Sensory nerve conduction study: measurement of sensory latency, amplitude and conduction velocity of median, ulnar, common peroneal and posterior tibial nerves bilaterally.
2. Motor nerve conduction study: measurement of latency amplitude and conduction velocity of the CMAP of median, ulnar, common peroneal and posterior tibial bilaterally.
3. F-wave conduction study: measurement of minimal f-wave latency and conduction velocity of median and common peroneal nerves bilaterally.

**Result:** The result of the sensory nerve conduction study revealed variable levels of significance between measured parameters of the same nerve and between different nerves. As for the motor nerve conduction study and f-wave conduction study, they were all normal and with no abnormality that could be elicited.

**Conclusion:** Hyperlipidemia could be associated with subclinical peripheral neuropathy which may occur more frequently in patients with very high levels of TG, TC and LDL. The type of peripheral neuropathy that occurs is mainly a sensory type, although motor neuropathy cannot be excluded.

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