A STUDY ON NERVE CONDUCTION ABNORMALITIES IN PATIENTS WITH NEWLY DETECED THYROID DYSFUNCTION

ABSTRACT:

BACKGROUND: Thyroid dysfunction is associated with characteristic symptoms, signs and functional alterations in many organs and systems. The prevalence of neuromuscular disorders related to thyroid dysfunction has been reported to be between 20-80%. Upto 40% of patients with hypothyroidism have sensorimotor neuropathy early in the course of illness. There are 2 types of peripheral neuropathy in hypothyroidism patients 1)sensorimotor polyneuropathy due to axonal and myelin changes. It has distoproximal progression affecting lower limbs first followed by upper limbs. 2) mononeuropathy-entrapment syndromes due to mucinous deposits that compress the nerves. In hyperthyroidism, neuropathy is usually an uncommon manifestation. Acute neuropathy associated with paraplegia - basedow's paraplegia and Carpel tunnel syndrome were observed in patients with hyperthyroidism.

AIMS AND OBJECTIVES: To study the nerve conduction abnormalities in patients with newly detected Thyroid dysfunction.

MATERIALS AND METHODS: This is a descriptive study wherein 50 Patients with newly detected thyroid dysfunction, were subjected to an in-person interview by administering a specific questionnaire. Nerve Conduction Study were performed by using the Standard RMS ENMG EP MARK II machine in all these patients. The

Latency, Amplitude, duration, area and velocity of motor and sensory nerves were studied. Three surface disc electrodes, Recording electrode, Reference electrode and Ground electrode were placed after applying jelly to reduce resistance in air between electrode and skin surface. MNCV were evaluated by Belly Tendon montage. SNCV was measured by anti-dromic stimulation.

RESULTS: Out of 50 patients 18 patients had neuropathy. 14 of them were hypothyroid and 4 of them were hyperthyroid. So it is observed that predominantly hypothyroid individuals are predisposed to develop neuropathy. 2 patients had mononeuropathy and 16 of them had polyneuropathy. Entrapment features like carpal tunnel syndrome was present in 2 patients and both these patients were hypothyroid. 1 patient had features of mononeuritis multiplex. 14 patients had predominantly sensory neuropathy and 4 individuals had both sensory and motor polyneuropathy. 13 patients had both upperlimb and lowerlimb involvement. 4 patients had predominantly lower limb involvement and 1 patient had predominantly upper limb involvement. The amplitude of CMAP and SNAP were particularly altered in both group and it was also statistically significant. Thereby it reflects the axonal pattern of sensory loss,which is expceted in thyroid illness. The most common neurological abnormalities deteted were sensory axonal poly neuropathy, mononeuropathy involving the sural nerve, mononeuritis multiplex pattern, entrapment like capal tunnel involving median nerve.

CONCLUSION: Hypothyroid patients are more prone to develop neuropathy predominantly involving the sensory nerves in both lower limbs. Since this neuropathy at early stage is reversible, it can be used to test the prognosis of hypothyroidism and hyperthyroidism on Standard treatment and nerve conduction

studies can be included in the early part of diagnostic work up panel in newly deteted thyroid illness.

KEYWORDS: Hypothyroid, Hyperthyroid, Neuropathy, entrapment

AIMS & OBJECTIVES:

To Study the Nerve Conduction Abnormalities In Patients With Thyroid Dysfunction

PLACE OF STUDY:

Medicine OPD and Endocrinology OPD at Stanley Medical College and Hospital

STUDY POPULATION

50 patients with newly detected thyroid dysfunction including both hypothyroidism and hyperthyroidism.