

Correlation Study on H-Reflex with Leg Length in Indian Population

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Abstract

This was a co-relational study done to determine the relationship of H-reflex with leg length and limb length in Indian population. Sixty females between 19-25 years of age were included in the study according to the inclusion criteria. H-reflex of all the subjects having leg length between 27 to 49 cm and limb length ranging from 75-99 cm was recorded. Correlation was derived between H-reflex latency and leg length & H-reflex latency and limb length using Karl Pearson formula. A significant correlation was observed between the H-reflex latency and leg length & and limb length.

Keywords: H-Reflex Latency, Leg Length, Limb Length

Introduction

The H-reflex is a monosynaptic reflex elicited by sub maximal stimulation of the tibial nerve and is recorded from the calf muscle. This reflex involves conduction of impulses from the periphery to and from the spinal cord and occurs at latencies that are considerably longer than the latency of direct motor response. This conduction can occur only with central amplification of the motor response due to reflex activation of motor neurons. The arc of the H-reflex includes conduction in large fast conducting Ia fibers.

H-reflex is extensively used both as a research and a clinical tool (*Wang, 2002*). H-reflex is a sensitive test of poly neuropathies and may be abnormal in mild neuropathies. This can be important in the electrodiagnostic evaluation of radiculopathies even when needle EMG is unrevealing (*Buschbacker, 1999*).

Several factors contribute to H-reflex parameters such as age, gender,

body mass index, skin temperature and height (*Buschbacker, 1999; Stetson and Albers, 2002; Scaglioni et al, 2003*). It is found that there is no age influence on H-reflex parameters for subjects in the range of 20 to 40 years of age. Latency of reflex response increases significantly in advanced ages. As far as gender is considered, reflex differences are observed among sexes, due to morphological and functional features, stronger stimulus intensity being necessary for women. Latency for men is longer because men have longer legs (*Peterson, 2005*). The H-reflex latency shows increase with cooling and decreases with warming (*Preston & Shaprio, 1992*). The most important factor affecting H reflex is leg length (*Riccardo et al, 2001*). There is significant correlation found between leg length and H-reflex in normal subjects.

Various studies have been done in this regard, but few studies are done on Indian population. This study will help us to determine the correlation between H