

Standardized Nerve Conduction Studies in the Upper Limb of the Healthy Elderly

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Abstract

Nerve conduction studies are increasingly being performed on elderly individuals; however, no standardized data for the elderly population exists to provide an accurate interpretation of electrodiagnostic findings. The purpose of this study was to provide standardized data in the healthy elderly for the nerves of the upper limb that are routinely chosen for study by electromyographers. Nerve conduction studies were performed prospectively in one upper limb of 155 carefully screened healthy elderly individuals between the ages of 60 and 95 years. Upper limb temperature was controlled to limit the influence of temperature on the measured conduction parameters. Standard nerve conduction techniques using constant measured distances were applied to evaluate the median, ulnar and radial nerves. A normative electrodiagnostic database for elderly individuals was established in this study. The mean nerve conduction parameters of this healthy elderly population compared favorably with existing literature values for younger populations. However, age had a statistically significant but low strength effect on all ulnar nerve conduction velocities and distal latencies as well as the distal sensory amplitudes of all three nerves. Gender had a greater effect than age on these parameters as well as on median sensory distal latency. Other median motor and sensory conduction parameters along with radial sensory distal latency were not significantly related to age or gender based on two-way analysis of variance.