

## NEUROLOGY AND NEUROSCIENCE

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**Exploring agreement between ultrasound and nerve conduction studies for screening axonal degeneration associated in carpal tunnel syndrome****Xue Deng**

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**Aim:** To explore the agreement between ultrasound and Nerve Conduction Studies (NCS) for screening Carpal Tunnel Syndrome (CTS) associated with axonal degeneration.

**Method:** Seventy-eight (78) subjects (13 men, 65 women, mean age  $61.02 \pm 9.0$  years), with 87 CTS hands enrolled and assigned into Group-1 (Demyelinated CTS,  $n_1=46$ ) and Group-2 (CTS associated with axonal degeneration,  $n_2=41$ ) based on the NCS performance. Previous identified cut-off values of ultrasound parameters were respectively used for group classification. Correlation and agreement between ultrasound and NCS measurements were examined. Cohen's kappa, concordance, sensitivity and specificity were tested.

**Results:** Pearson's r test revealed mild to moderate correlation ( $r=-0.242-0.338$ ) while Spearman's rho test indicated mild to moderate agreement between NCS and each ultrasound parameter ( $r=0.213-0.408$ ) for screening axonal degeneration associated in CTS, with overall satisfactory Cohen's Kappa (0.182-0.396), concordance (56.82%-76.25%), sensitivity (78.9%-86.8%) and specificity (46%-79.5%) among ultrasound parameters.

**Conclusion:** There is acceptable agreement between ultrasound and NCS for screening axonal degeneration associated in CTS. A combinative use of ultrasound and NCS has the potential to reflect the pathological stage in CTS. It can be a promising assessment protocol to provide complementary diagnostic information for better treatment regime planning.

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