



27 - CORRELATION OF CARDIOAUTONOMIC NEUROPATHY WITH LARGE PERIPHERAL NERVE FUNCTION AS MEASURED BY A PORTABLE POINT-OF-CARE SURAL NERVE CONDUCTION DEVICE IN PATIENTS WITH TYPE 1 DIABETES MELLITUS

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Resumen

Objectives: To analyse the correlation of cardioautonomic dysfunction with a novel portable and automated diagnostic tool of sural nerve conduction (SNC) at the point-of-care [DPN-Check].

Methods: Cross-sectional study in 194 patients with type 1 diabetes mellitus (T1DM) whose sural nerve functions were measured by DPN-Check. Cardioautonomic neuropathy (CAN) were diagnosed by Ewing's cardiovascular reflex tests, low (LFa) and high frequency power (HFa). Multiple regression analyses were conducted addressing the associations of SNC velocity and amplitude with clinical and CAN parameters.

Results: Both SNC velocity and amplitude inversely correlated with age and A_{1c}. SNC velocity inversely correlated with duration of diabetes. Both SNC velocity and amplitude showed a positive correlation with HFa ($r = 0.261$, $p < 0.001$ and $r = 0.183$, $p = 0.013$, respectively), and E/I index ($r = 0.241$, $p = 0.002$ and $r = 0.170$, $p = 0.030$, respectively). SNC velocity correlated with LFa ($r = 0.243$, $p < 0.001$) and VAL index ($r = 0.158$, $p = 0.048$). A multiple regression analysis ($R^2: 0.163$, $p < 0.001$) revealed that age ($\beta: -0.028$ [-0.044 to -0.011]), A_{1c} ($\beta: -0.319$ [-0.532 to -0.106]), and SNC velocity ($\beta: 0.027$ [0.001 to 0.052]), were the main determinants of HFa. Likewise, age ($\beta: -0.015$ [-0.030 to -0.001]) and SNC velocity ($\beta: 0.029$ [0.007 to 0.050]) were the main determinants of LFa ($R^2: 0.083$, $p < 0.001$).

Conclusions: SNC velocity and amplitude measured by a portable and automated point-of-care device correlated with parameters of cardioautonomic dysfunction, easing CAN screening in patients with T1DM.

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