



CARDIOVASCULAR AUTONOMIC NEUROPATHY AND PERIPHERAL NEUROPATHY AMONG TYPE 2 DIABETIC POPULATION IN COLOMBO DISTRICT, SRI LANKA: A PRELIMINARY STUDY

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Abstract

Cardiovascular autonomic neuropathy (CAN) and peripheral neuropathy (PN) are common complications of diabetes mellitus. The objectives of this preliminary study were to determine the frequency of CAN and PN among a periurban type 2 diabetic (T2DM) population and to determine the glycemic control. A descriptive cross-sectional study was conducted using systematic random sampling for 228 T2DM patients attending selected community clinics in Colombo District. Baseline data were obtained by a questionnaire. PN was assessed by the Michigan Neuropathy Screening Instrument (MNSI) and monofilament test. Monofilament test was done with 10g Semmes Weinstein monofilament, and vibration perception threshold (VPT) was determined using 126 Hz tuning fork. Glycemic control was determined by the HbA1c. Handgrip test was performed on all subjects to determine CAN. Among the participants 156 (68%) were female. MNSI examination was abnormal in 130 (60.7%) of T2DM patients while 120 (52.6%) had poor scores for MNSI questionnaire. Abnormal monofilament test results were found among 50 (22%) of T2DM patients. However, PN was diagnosed in 107 (47%) of the T2DM patients according to the diagnostic criteria. Poor glycemic control was detected in 178 (78.3%) T2DM patients. Mean HbA1c of the neuropathy and non-neuropathy groups were 8.25 ± 2.08 SD and 8.36 ± 6.33 SD, respectively. Duration of diabetes was significantly different between neuropathy and non-neuropathy groups ($p < 0.05$). Among the participants, 129 (56.5%) had abnormal decrease in diastolic blood pressure to sustained handgrip indicating CAN. Presence of one abnormal cardiovascular test result identifies the condition of possible or early CAN. Hence, these preliminary results indicate a high frequency of early or possible CAN amongst T2DM patients in this population. MNSI questionnaire and MNSI examination are useful tests to screen T2DM patients for peripheral neuropathy and can be used to diagnose neuropathy early, in busy clinics. The glycemic control of T2DM patients attending these clinics needs to be urgently addressed.

Keywords: T2DM, peripheral neuropathy, cardiovascular autonomic neuropathy