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| **Abstract:** |  |
| Cardiovascular autonomic neuropathy (CAN) has been frequently postulated to increase susceptibility to ventricular arrhythmias and sudden cardiac death in diabetic patients. The relation between the progression of CAN in diabetes and ventricular repolarization remains to be fully described. Therefore, this study examined QT interval variability and heart rate interbeat variability to identify any alterations of cardiac repolarization in diabetic patients in relation to severity of CAN. Seventy control participants without (CAN-) and 74 patients with CAN (CAN+) were enrolled in this study. Among 74 CAN+ patients, 62 are early CAN+ (eCAN+) , and 12 are definite CAN+ (dCAN+) according to autonomic nervous system function tests as described by Ewing. The results showed that the QT variability index (QTVI) was significantly (p <; 0.05) higher and positive in the dCAN+ (0.51 ±1.32) group than in the eCAN+ (-0.39 ±0.91) and CAN - (-0.54 ±0.72) groups. The QT variability to heart-rate variability ratio provides a measure of the balance between QT and heart interbeat variability. QTVI was more sensitive in identifying disease progression at all stages. Our study supports the hypothesis that QTVI could be used as a clinical test to identify early CAN and as a marker of CAN progression in diabetic patients and may help physicians in determining the best therapeutic strategy for these patients. | |