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Decreased deceleration capacity of rate and heart rate deceleration runs in patients suffering from type 2 diabetes mellitus with essential hypertension

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This study aims to investigate the changes of deceleration capacity of rate (DC) and heart rate deceleration runs (DRs) in patients suffering from type 2 diabetes mellitus (T2DM) with essential hypertension and to explore the correlation between them and insulin resistance (IR). Fifty cases of T2DM and 95 cases of T2DM with essential hypertension as the experimental group, 50 cases of normal physical examination as a control group were recruited. The related biochemical and metabolic index of 3 group patients were measured; all patients were monitored with 24h Holter. DC, DRs and heart rate variability and other relevant indexes were determined, the index changes of 3 groups were compared. Results showed that (1) T2DM and T2DM + HT group of DC, SDNN, rMSSD, DR₂, DR₄, DR₈ were decreased significantly than that of control group ($P < 0.05$ and 0.001); (2) compared with T2DM group, DC of T2DM + HT group also decreased significantly ($P < 0.05$); (3) in T2DM and T2DM + HT group, DC and DR₂, DR₄, DR₈, SDNN, RMSSD was significantly positive correlation ($P < 0.0001$ respectively), and significantly negative correlated to the FBG, HbA_{1c}, IR (P were 0.0196 , 0.0013 , < 0.0001 respectively); (4) in T2DM and T2DM + HT group, IR and DC, DR₂, DR₄, DR₈, SDNN was significantly negative correlation (P were < 0.0001 , 0.0014 , 0.0019 , 0.0216 , 0.0006 , respectively), was significantly positive correlated with AC, HbA1c (P were 0.0004 and 0.0003 , respectively). In summary, in T2DM with essential hypertension patients, the autonomic function was damaged with IR, the DC and DRs detection can be used to assess cardiac autonomic function.

Biography

Xing De Wang graduated from Shanghai Second Medical University and Post-doctoral studies from Shanghai Jiao Tong University Affiliated Sixth People's Hospital - East Campus. He has published more than 20 papers in reputed journals and his major research interests were the non-invasive diagnosis of heart disease and complications of other diseases, such as COPD and diabetes.

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