Value of QT dispersion in prediction of myocardial ischemia and its severity detected by stress imaging

Ahmed Sanad

Military Medical Academy

BACKGROUND:

Early detection of ischemic heart diseases and prediction of their degree of myocardial involvement and MACEs is a universal target. QT dispersion (QTd) is related to regional variations in myocardial repolarization.

AIM:

Our study aims to assess the value of QTd in prediction of myocardial ischemia and its severity during stress imaging.

METHODS AND RESULTS:

We enrolled one hundred patients having chronic coronary syndrome (CCS) and fulfilling the "Appropriateness criteria for cardiac radionuclide imaging" (MPI). Patients were referred to our center (Heart Specialized Hospital of Kobri El-Kobba Military Complex).They were divided into Group I including patients with MPI-detected ischemia (patients) and Group II including patients with normal perfusion scan (50 patients). We excluded unstable CAD and all other causes affecting QTd. During isotope scan, ECGs were taken and QTd was calculated at rest and at maximum heart rate. All scans were performed using SPECT (Gamma camera Siemens Symbia-E series).

QTd was significantly higher in ischemic group both at rest and exercise (P = 0.000). QTd difference, the difference between QTd at rest and stress, was calculated. QTd difference was significantly lower in normal than in ischemic group (P = 0.003). There was a significant positive correlation between QTd difference and defect size (P = 0.04).

CONCLUSION:

QTd increases in ischemia and the QTd difference (between rest and stress) correlates positively with severity of ischemia.

Patients who had negative stress ECG test for exercise induced myocardial ischemia with QTd-difference value more than (9 ms) most probably having abnormal perfusion scan results.

QTd and QTd difference could be used to improve the accuracy of stress imaging test.