Diagnostic Value Of QTc Dispersion And QT Dispersion Ratio Changes In Treadmill Training Test For Detecting Coronary Lesion In Stable Angina Pectoris Patients

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Introduction: Treadmill exercise test remains an important method and often used in the initial evaluation of patients with chest pain and can be a filter for more expensive invasive diagnostic. Increased QT dispersion (QTD) occurs because of the heterogeneity of ventricular repolarization because transient ischaemia during a treadmill stress test can be a marker of coronary artery disease (CAD) and can improve the accuracy of exercise tests to diagnose CAD, but this parameter is still controversial.

Methods: This is an analytic observational approach with a cross sectional study. Data was taken retrospectively at the Heart Centre Installation at RSUP Dr. M. Djamil Padang, from March to April 2019, stable angina pectoris patient with a positive treadmill stress test who underwent coronary angiography as the subject. Bivariate analysis was performed on changes in QTcD (ΔQTcD) and QTdR (ΔQTdR) variables on the significance of coronary lesions by the Chi-square method, after which a diagnostic test was based on receiver operating curve (ROC) analysis.

Result: There were 113 subjects and found that older age, male and smoking were more common in groups with significant coronary lesions. Cut off point for ΔQTcD is ≥13 ms with a sensitivity of 96.7% and specificity 98.0% and AUC 97.8%, while ΔQTdR ≥5.5% with sensitivity 95.1% and specificity 96.2% and AUC 96.6% are related to significance of coronary lesion. Obtained subjects with significant lesions generally had a value of ΔQTcD ≥ 13 ms (p <0.001) and ΔQTdR ≥ 5.5% (p <0.001).

Conclusion: The use of QTD parameters as ECG variables, which are easily obtained in evaluating stress tests, can improve the diagnostic accuracy of exercise tests. In addition, evaluation of QTD variables can provide information about the incidence of CAD.