

ECG Changes During a Normal Stress Echocardiography Study - Do They Have Any Significance?

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Background: It is uncertain whether patients who have ischemic changes in the electrocardiogram (ECG) but normal wall motion contractility during a stress echocardiography study (SES) have a worse prognosis than those patients in whom both, the ECG and the wall motion contractility are normal during SES. The aim of our study is to compare the cardiac outcome among populations with and without ECG changes during a normal SES.

Methods: Observational study on 3322 patients who underwent a SES. Primary endpoint was a composite of all cause mortality and myocardial infarction (MI). According to SES results, patients were stratified into three groups: normal SES and normal exercise ECG (n=2107), group II: normal SES and abnormal exercise ECG (n=868), group III: abnormal SES (n=347).

Results: Patients in group III were older than patients in group I and II (67±10 years and 57±12 years, respectively) and there was higher prevalence of males and risk factors. Group I and II patients had similar clinical characteristics. The figure depicts the MI free survival among Group III (abnormal SES) compared to group I and II patients (normal SES with or without ECG changes). In multivariate Cox proportional regression analysis with adjustment for baseline demographics and co morbidities, no difference was found in the outcome of group I (reference group) and II patients (hazard ratio 0.18, 95% CI 0.62-2.24. Abnormal SES was a significant parameter that impacted on the survival, increasing the risk for MI and/or death by 2.11 (95% CI 1.16-3.81, p=0.014).

Conclusion: A normal SES has high negative predictive value for MI and/or death, regardless of ECG changes during the test.

