Detection of Multivessel Disease Post Myocardial Infarction Using an Exercise-Induced QRS Score

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DOI: 10.1111/j.1542-474X.2004.93551.x

Abstract

Objective: The aim of this study was to investigate the ability of Athens QRS score values to detect stenoses in other coronary arteries than the obstructed ones (which caused the myocardial infarction [MI]) in patients with a history of MI.

Methods: We studied 125 patients (93 males and 32 females, mean age 54 ± 7 years [range 45–68 years]) with a history of MI (46 patients with anterior MI, 54 patients with inferior MI, 25 patients with lateral MI). All patients underwent treadmill exercise testing and coronary arteriography.

Results: Athens QRS score values were inversely related to the extent of CAD: −0.5 ± 0.3 mm for patients with 1-VD (obstructed vessel), −3.4 ± 2.2 mm for patients with 2-VD (obstructed vessel and stenosis in another vessel), and −5 ± 1.8 mm for patients with 3-VD (obstructed vessel and stenoses in two more vessels). The ROC curves for the detection of multivessel disease showed that the area under the curve for QRS score values < −3 mm is significantly higher than the curve for ST-segment depression ≥1 mm (0.948 vs 0.792, P < 0.001).

Conclusions: Values of the Athens QRS score less than −3 may distinguish single-from multivessel coronary artery disease in patients with a history of MI.