Role of right-sided chest leads in the detection of multivessel coronary artery disease in patients with extended Q-wave anterior myocardial infarction

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Abstract

Objective: To evaluate the improvement of diagnostic ability of exercise testing to detect multivessel coronary artery disease in patients with extended Q-wave anterior myocardial infarction, using additional right-sided chest leads.

Methods: Fifty-two consecutive patients with Q-wave anterior myocardial infarction underwent exercise testing, using the standard 12 and the additional right-sided (V3R, V4R, V5R) chest leads, thallium-201 scintigraphy and coronary arteriography.

Results: Twenty-one (40%) patients had one-vessel disease, 18 (35%) had two-vessel disease and 13 (25%) had three-vessel disease. The sensitivities of the standard 12-lead exercise testing and its combination with the additional right-sided chest leads were 24% (5/21) versus 28% (6/21) for the detection of one-vessel disease (P: NS), 33% (6/18) versus 83% (15/18) for the detection of two-vessel disease (P<0.05) and 38% (5/13) versus 92% (12/13) for the detection of three-vessel disease (P<0.05), respectively. In thallium-201 scintigraphy, 29 of the 31 (94%) patients with multivessel coronary artery disease demonstrated reversible ischemia. The usual 12-lead exercise testing could detect ischemia in 11 (35%) of these 31 patients, while the addition of the right-sided chest leads could detect ischemia in 27 (87%) of them (P<0.05).

Conclusions: The additional right-sided chest leads significantly improve the low sensitivity of the usual exercise testing to detect multivessel coronary artery disease in patients with previous extended Q-wave anterior myocardial infarction.