

EFFECTS OF EXERCISE TRAINING ON THE DOUBLE PRODUCT AND QT DISPERSION IN PATIENTS AFTER MYOCARDIAL INFARCTION: WHETHER THE LEFT VENTRICULAR EJECTION FRACTION HAS AN EFFECT ON THE BENEFIT

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The aim of this study was to examine the effect of exercise training on the double product (DP) and QT dispersion in patients after myocardial infarction and to determine whether the left ventricular ejection fraction (LVEF) had an effect on the benefit.

A total of 375 patients with previous MI were included in the study. Patients were randomly divided into a group that was included in the exercise training program (TG: 329 patients) and a group that did not train (NTG: 46 patients). All patients underwent an echocardiographic examination, standard ECG, corrected QT dispersion (QTdc) and exercise test, after which the training group was included in the exercise training program lasting 21 days.

Reduced left ventricular ejection fraction (RLVEF), less than 40%, was registered in 104 (31.6%) patients in TG, while in NTG it was registered in 16 (34.8%). At the beginning of the follow-up period, in TG, there was no significant difference in DP values, between patients with and without RLVEF (p-NS), while QTdc values were significantly higher in those with RLVEF ($p < 0.001$). After 21 days in TG, a significant decrease in DP (12.3 ± 1.8 vs. 11.7 ± 1.3 beat/min x mm Hg x 10^3 ; $p < 0.01$) and QTdc (103.6 ± 28.3 vs. 96.1 ± 25.8 ms; $p < 0.05$) was registered in patients with RLVEF and a significant decrease in DP (11.9 ± 2.2 vs. 10.8 ± 1.6 beat/min x mmHg x 10^3 ; $p < 0.001$) and QTdc (65.7 ± 25.4 vs. 58.6 ± 22.8 ms; $p < 0.005$) in those without RLVEF. In NTG patients, after a follow-up period of 21 days, no significant changes in DP and QTdc parameters were registered.

The results show that exercise training has a beneficial effect on DP and QT dispersion in patients with previous MI. LVEF has a significant influence on the benefit of exercise training, patients without RLVEF have a better benefit.

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