EFFECTS OF CONTROLLED EXERCISE REHABILITATION ON QRS/T ANGLE IN CAD PATIENTS WITH AND WITHOUT DIABETES

Poster Contributions
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Background: This study employed spatial QRS/T angle (QRSTA), an index of sudden cardiac death risk, to assess effects of controlled exercise program in coronary artery disease (CAD) patients with and without type-2 diabetes (T2D).

Methods: Diabetic (n=20) and non-diabetic patients (n=22) with angiographically proven CAD were selected from ARTEMIS exercise study, a two-year randomized and controlled exercise trial. Patients were matched on age, sex, prior myocardial infarction and revascularization. Holter recordings (24h) were performed before and after 12-month training. Linear regression was used to calculate a predicted QRSTA at 60bpm.

Results: Predicted QRSTA at 60bpm decreased in the non-T2D group after the training period, whereas in the T2D group no change in the values was observed (Figure). The change in the QRSTA was significant between the groups (non-T2D: 21.4±34.5° vs. T2D: 3.2±25.9°, P=0.048). The differential pattern was evident also for minimum and maximum QRSTA and QRSTA across heart rate ranges. Gain in exercise capacity did not differ between the groups (P=0.135).

Conclusions: Exercise rehabilitation reduces QRSTA abnormalities in CAD patients without T2D. However, in patients with diabetes, no cardioprotective effect was observed despite equal gain in exercise capacity. It remains to be determined whether or not this difference in response to exercise training is due to diabetes-related autonomic neuropathy, which could impair the efficacy of cardiac rehabilitation.