

Complementary supportive cardiac rehabilitation – initial report

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Introduction: Physical training increases cardiac exercise capacity, but generally does not affect cardiac function. Since energy metabolism is closely linked to cardiac function, we assessed the impact of the integrative metabolic approach on the cardiac function during cardiovascular rehabilitation^{1,2}.

Patients and Methods: 3 weeks exercise training was undertaken on an upright bicycle ergometer in 25 complementary supportive cardiac rehabilitation (CSCR) sessions. Before each exercise, the patients received magnesium, niacin, coenzyme Q10, thiamine diphosphate, riboflavin, pantothenic acid, pyridoxal, biotin, glutathione, and vitamin E. Following the exercise, the patients inhaled 95% oxygen 4 L/min provided by oxygen concentrator with ionization lying inside a low frequency pulsed electromagnetic field with intensity of up to 30 microtesla. After oxygen inhalation, the patients received carnitine, arginine, NADH, lipoic acid, selenium, and vitamin C. A cardiopulmonary echocardiography exercise test was performed at the start and the end of the three-week session, and the patients were asked to evaluate the visual analogue scale.

Results: Arithmetic means of most Ergospiro echocardiographic parameters are lower before and higher after rehabilitation. Exceptions are the values VE/VCO₂, VD/VT and E/e', where the ratio of arithmetic means is reversed. The correlation coefficients for all 20 pairs of cardiopulmonary echocardiographic variables before and after rehabilitation range from 0.567 to 0.949. Most of them are closer to the number 1, that is, most of them show a strong positive association. p values are less than 0.05 for all 20 pairs of cardiopulmonary echocardiographic variables.

Conclusion: Supporting normal mechanisms /pathways/ for energy production might be the way of improving cardiac function during CSCR.

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LITERATURE

1. Nystoriak MA, Bhatnagar A. Cardiovascular Effects and Benefits of Exercise. *Front Cardiovasc Med.* 2018 Sep 28;5:135. <https://doi.org/10.3389/fcvm.2018.00135>
2. Taegtmeyer H. Principles of Fuel Metabolism in Heart Muscle. In: *Myocardial Energy Metabolism.* J.W.de Jong, ed. Martinus Nijhoff Publishers, Dordrecht, Boston, Lancaster. 1988;17-34.