

Integrative metabolic support has an impact on the cardiac function and quality of life

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Introduction: The aim of the study was to assess the impact of the integrative metabolic support (IMS) on the cardiac function and quality of life (QoL). We accepted the concept that O₂ consumption and ATP regeneration are two processes mutually dependant and inseparable and that the flux through energy-providing pathways determines the functional state of the tissue.^{1,2}

Patients and Methods: IMS, i.e. supplemental support cardiac therapy (SSCT) consists of a 15-day session and includes the use of coenzymes/substrates, O₂, antioxidants, a low-frequency pulsed magnetic field and exercise training (ET). SSCT was applied in 106 sessions – 30 sessions in patients with preserved ejection fraction (EF) and 76 sessions in patients with reduced EF. M-mode, 2D echocardiography and vascular ultrasound were performed in all patients. Cardiopulmonary echocardiographic test with was performed at the start and the end of 30 sessions and EF and left ventricular volumes were determined using 4D biplane volume measurement. Patients with reduced EF were asked to evaluate the QoL the Minnesota Living with Heart Failure Questionnaire. In addition to optimal medical therapy patients received Mg, niacin, Q-10, thiamine diphosphate, riboflavin, pantothenic acid, pyridoxal, biotin, glutathione and vit. E. After ET the patients inhaled 95% O₂, 4 l/min through O₂ concentrator with ionisation while lying in a low frequency pulsed magnetic field (up to 30 microT). After the inhalation of O₂, the patients received carnitine, arginine, NADH, lipoic acid, selenium, and vitamin C. For patients with reduced EF, the SSCT did not include ET. Statistical analyses were performed using SPSS Statistics version 17.0 and version 25.

Results: The values before SSCT compared to values after SSCT are in strong correlation with the VAS, NYHA and LVIDd indicators and in a very strong correlation with physical dimensions, emotional dimensions and EF indicator. Arithmetic means of most Ergospiro echocardiographic parameters are lower before and higher after SSCT. 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 SSCT range from 0.568 to 0.952. P-values are less than 0.05 for all 20 pairs of cardiopulmonary echocardiographic variables.

Conclusion: SSCT, supporting normal mechanisms for energy production, supports the cardiac function and QoL.

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LITERATURE

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