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Effect Of Physical Exercise Training In Patients With Chagas Heart Disease: A Randomized Clinical Trial – Peach Study

Autor(es): Fernanda de Souza Nogueira Sardinha Mendes¹, Mauro Felipe Felix Mediano¹, Fernando Cesar de Castro e Souza², Paula Simplicio da Silva², Fernanda Martins Carneiro², Marcelo Teixeira de Holanda², Roberto Magalhães Saraiva², Sergio Salles Xavier², Pedro Emmanuel Alvarenga Americano do Brasil², Henrique Horta Veloso², Alejandro Marcel Hasslocher-Moreno², Gilberto Marcelo Sperandio da Silva², Luiz Henrique C. Sangenis², Andréa Rodrigues da Costa², Flavia Mazzoli da Rocha², Erica Rodrigues Maciel², Andréa Silvestre de Sousa²

Instituição(es): ¹Fiocruz - Fundação Oswaldo Cruz, ²Instituto Nacional de Cardiologia

Aims: Chagas heart disease (CHD) is a chronic fibrosing myocarditis with high mortality. The PEACH study aimed to evaluate if exercise training can improve the functional capacity of CHD patients with severe left ventricular dysfunction and/or heart failure. **Methods:** The PEACH study was a single centre, parallel-group, controlled trial that randomised thirty clinical stable CHD patients with left ventricular ejection fraction <45% or heart failure symptoms to either supervised exercise training 3 times a week for 6 months or a control group without formal exercise prescription. Both groups had the same monthly pharmaceutical and nutritional counselling as well as usual care. Primary endpoint was functional capacity assessed by peak exercise oxygen consumption (peak VO₂) obtained by cardiopulmonary exercise test (CPET). Secondary endpoints included other CPET variables, cardiac function by echocardiography, body composition, muscle respiratory strength and metabolic biomarkers. The outcomes were expressed as differences between groups of the final and initial biomarker difference. **Results:** Peak VO₂ increased among patients in exercise group from 17.60 mlO₂.kg⁻¹.min⁻¹ (SD: 4.65) to 19.40 mlO₂.kg⁻¹.min⁻¹ (SD:5.51) while decreasing in controls from 15.40 mlO₂.kg⁻¹.min⁻¹ (6.30) to 12.96 mlO₂.kg⁻¹.min⁻¹ (SD: 4.50), resulting in significant difference in change in peak VO₂ between groups after 6 months (beta=+4.6, p=0.004). There were significant differences between groups in changes in anaerobic threshold (beta=+3.7, p=0.05), peak oxygen pulse (beta=+2.7, p=0.032) and maximum minute ventilation (beta=+13.9, p<0.0001) after 6 months of intervention. **Conclusion:** Exercise training improved functional capacity among chronic CHD patients with left ventricular dysfunction and/or heart failure.