

The exercise training restores the heart rate variability in heart failure patients. A systematic review [El entrenamiento físico restaura la variabilidad del ritmo cardiaco en la insuficiencia cardiaca. Revisión sistemática]

Segovia V.

Manterola C.

González M.

Rodríguez-Núñez I.

Cardiovascular diseases are a significant cause of morbidity and mortality in the general population. In this sense, the autonomic imbalance is the cornerstone of the pathophysiology underlying the development of these diseases. The aim of this study was to determine the efficacy of exercise training on heart rate variability (HRV) in adult patients with chronic heart failure. Methodology: A systematic literature review was conducted in electronic databases. The considered studies were randomised clinical trials, quasi-experimental studies with non-randomised control group, quasi-experimental studies with analysis of pre- and post- intervention, and crossover studies with randomly assigned training and non-training periods. The standardised mean differences were calculated between pre- and post-intervention in both the control and experimental group. Results: Within-subject analysis of the control group showed no statistical significance in the standardised mean differences of HRV. In the experimental group, the standardised mean differences were positive for the root mean square of successive difference ($+0.468 \pm 0.215$; $P = .032$), high frequency band (HF) (0.934 ± 0.256 ; $P < .001$) and low frequency band (LF) ($< 0.415 \pm 0.096$; $P = .001$). Moreover, the standardised mean difference was negative for LF/HF ($?0.747 \pm 0.369$, $P = <.044$). On the other hand, only 3 studies entered the comparative metaanalysis. The effect of exercise training was favourable for the experimental group in LF/HF ($?2.21 \pm 95\% \text{ CI: } ?3.83 \text{ to } ?0.60$), HF, and LF. Conclusion: The exercise training was effective in increasing HRV and restoring the autonomic balance in patients with heart failure. © 2017 Instituto Nacional de Cardiología Ignacio Chávez.

Autonomic nervous system

Chile

Exercise

Heart failure

Training

adult

cardiovascular disease

exercise

heart failure

heart rate variability

human

randomized controlled trial (topic)

Review

systematic review

convalescence

heart failure

heart rate

kinesiotherapy

pathophysiology

Exercise Therapy

Heart Failure

Heart Rate

Humans

Recovery of Function