Abstract

BACKGROUND: Functional electrical stimulation (FES) is a rehabilitation method that can revert alterations provoked by aging, such as reductions in functional capacity and modifications on blood pressure variability (BPV). OBJECTIVES: To evaluate the training effects of FES on functional capacity and BPV in a centenarian woman. METHODS: A 101-year-old woman without previous disease underwent FES training for 12 weeks, with three 40 min sessions/week. FES was applied at a frequency of 20 Hz with a 0.5 ms pulse, 5 s contraction time, 10 s relaxation time, the maximum tolerable intensity and with progressive overload. Functional capacity was assessed with a six-minute walk test (6MWT) and proximal lower limb strength was assessed with a sit-and-stand test (STST). BPV was measured by continuous recording of pulse pressure and calculated by spectral analysis. All variables were measured before and after FES training. RESULTS: After training there was a 70% increase in distance walked in the 6MWT, a 300% increase in the number of STST repetitions, an 8 mmHg reduction in systolic blood pressure (SBP) and a 4 mmHg reduction in diastolic blood pressure (DBP) and mean blood pressure (MBP). Reductions in SBP (11.8 mmHg²), DBP (2.3 mmHg²) and MBP (6.0 mmHg²) variability were also observed. CONCLUSIONS: Three months of FES training improved functional capacity and BPV in a centenarian woman.

Keywords

Electric stimulation, aged, autonomic nervous system.