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**PHYSIOLOGICAL RESPONSES TO CARDIOPULMONARY EXERCISE TEST IN PATIENTS WITH PARKINSON'S DISEASE**

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**Objective:**

Parkinson's disease (PD) is a neurological disease characterized by motor disturbances. It has been demonstrated that patients with PD also present cardiovascular and autonomic impairments. Maximal cardiopulmonary exercise test is used to investigate cardiovascular alterations in different populations, and heart rate during recovery (HRR) is an important index of autonomic balance. Thus, this study compared physiological responses during and after a maximal cardiopulmonary exercise test in patients with PD and healthy controls (CO).

**Methods:**

29 patients with PD (65±2 ys, 119±2/78±1 mmHg, 25.9±0.6 kg/m<sup>2</sup>, Hoen & Yarh stages II and III, "on" state) and 17 healthy CO (64±2 ys, 117±3/78±2 mmHg 25.0±0.8 kg/m<sup>2</sup>) underwent a maximal cardiopulmonary exercise test on a cycle ergometer (ramp protocol). Heart rate (HR) and oxygen uptake (VO<sub>2</sub>) were assessed at rest, anaerobic threshold (AT), respiratory compensation point (RCP) and peak exercise. HR decay at 1 min of recovery (ΔHRR1) was also assessed. Data was compared between groups by an unpaired t-test (p ≤ 0.05).

**Results:**

	PD	CO
HR (bpm)		
Rest	75 ± 2	75 ± 3
AT	104 ± 3	111 ± 3
RCP	122 ± 3*	141 ± 3
Peak	135 ± 4*	158 ± 4
ΔHRR1	12 ± 2*	22 ± 2
VO <sub>2</sub> (ml. kg <sup>-1</sup> .min <sup>-1</sup> )		
AT	9.9 ± 0.5	11.3 ± 0.8
RCP	14.5 ± 0.8*	17.2 ± 1.2
Peak	17.3 ± 0.9*	21.2 ± 1.6

Mean ± SE; \* p ≤ 0.05

**Conclusion:**

Patients with PD present blunted cardiorespiratory responses at exercise above the AT and exhibit slower HRR. These results suggest cardiorespiratory impairment, autonomic imbalance and a poor cardiovascular prognosis in PD patients.