

## Autonomic nervous system in individuals with cerebral palsy: a controlled study.

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### Abstract

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**Background:** Disturbances in homeostatic functions have been observed in individuals with cerebral palsy (CP), possibly resulting from autonomic dysfunction. Salivary flow rate and saliva composition are controlled by the autonomic nervous system, and CP individuals exhibit alterations in salivary parameters that suggest autonomic impairment. This study aimed to investigate cardiac parameters as indicative of autonomic disturbances, possibly associated with salivary changes observed in CP individuals. **Methods:** Ninety individuals with CP were compared with 35 sibling volunteers with no neurological damage (CG). Twenty-four-hour ECG/Holter monitoring (SEER® Light; GE Medical Systems, Milwaukee, WI, USA) and 12-lead electrocardiographic recordings were performed on the CP and control groups. Total saliva was collected, and the salivary flow rate and total protein concentration were determined. **Results:** Cerebral palsy (CP) individuals presented a significant reduction in salivary flow rate ( $P < 0.01$ ) and increased protein concentrations ( $P < 0.01$ ) compared to CG. Twenty-four-hour Holter ECG analysis showed differences for high frequency (HF), low frequency (LF) and LF/HF ratio between the groups, with the CP group presenting higher HF and LF values and lower LF/HF. Electrocardiographic parameters showed a statistically significant difference for heart rate, and its correlates, and mean corrected QT interval between the groups studied ( $P < 0.05$ ). Snoring was frequent among CP patients. ECG and autonomic changes were independently associated with CP. Individuals with cerebral palsy present cardiovascular changes **Conclusion:** principally manifested as disturbed sympathovagal balance. These autonomic dysfunctions could contribute to the salivary changes observed.

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