

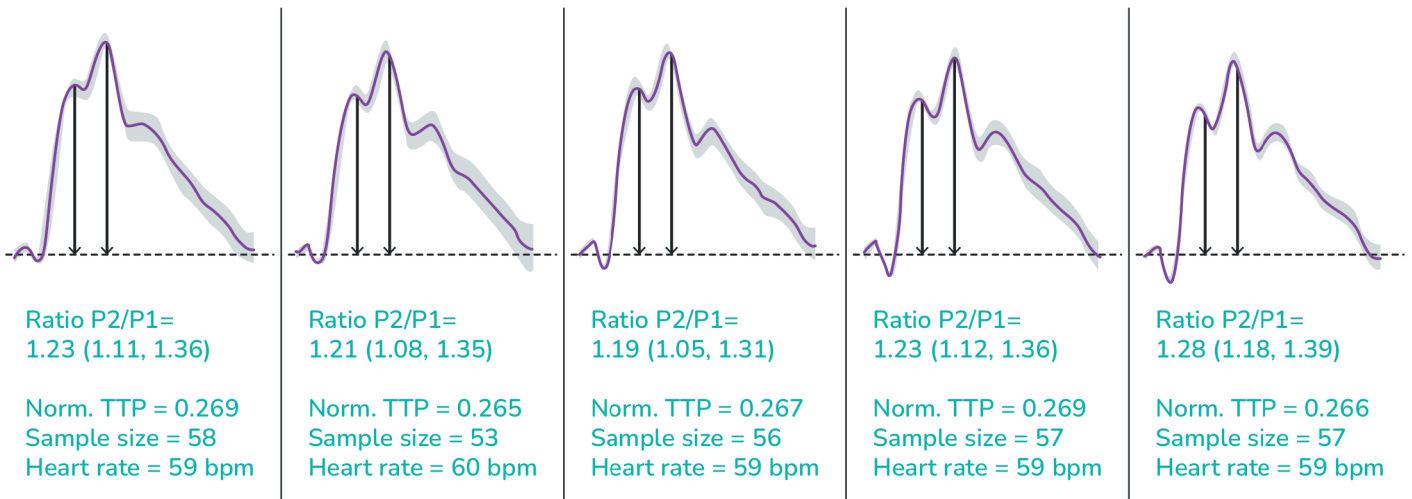


#Original article

noninvasive monitoring, chronic stroke and sedentary behavior

Title: Noninvasive Intracranial Pressure Monitoring in Chronic Stroke Patients with Sedentary Behavior: A Pilot Study. Ocamoto et al. Acta Neurochirurgica Supplement (2021).

Objective: Verify whether there is a relationship between cerebral compliance and sedentary behavior during the chronic stage of stroke by means of a noninvasive intracranial pressure (ICP) monitoring device.



Key: Sample of niICP data collection during a postural maneuver. P2: tidal peak. P1: systolic peak. Norm. TTP: normalized time to peak. Heart rate: heart beats per minute.

Methodology: Monitoring was recorded on eight patients with moderate sensorimotor impairment, hemiparesis caused by stroke in the middle cerebral artery, at least 6 months post-stroke, scoring between 26 and 30 on the Mini Mental State Examination, without more than one episode of stroke or bilateral stroke and without any pre-existing neurological disorder or severe heart, pulmonary, or renal disease.

Each patient wore a StepWatch Activity Monitor™ (SAM) placed continuously on the non-paretic ankle for 7 days. The Brain4care® noninvasive device continuously monitored the ICP pulse waveform morphologies during a postural change maneuver involving 15 minutes in the supine position and 15 minutes in orthostatic position.

Main findings
 In the supine and orthostatic positions, the P2/P1 ratios were 0.84 ± 0.14 and 0.98 ± 0.17

There was a high positive correlation ($r = 0.881$, $p = 0.004$) between the P2/P1 ratio and the percentage of downtime. No correlation was observed between the P2/P1 ratio and the number of steps walked per day ($p = 0.183$).

People in the chronic stage of stroke who spend prolonged time in inactivity have a higher P2/P1 ratio, suggesting reduced cerebral compliance. Considering the reduction in cerebral compliance observed, these findings may be associated with impaired cerebral autoregulation.

Conclusion: There is a correlation between sedentary behavior and a decrease in cerebral compliance. Thus, ICP monitoring during the late stage of a stroke could guide treatment to reduce sedentary behavior and the risks of recurrent stroke and cardiovascular diseases.



For more details, see the full article: DOI: 10.1007/978-3-030-59436-7_12

Reference: Ocamoto GN, Spavieri Junior DL, Matos Ribeiro JA, Frigieri Vilela GH, Catai AM, Russo TL. Noninvasive Intracranial Pressure Monitoring in Chronic Stroke Patients with Sedentary Behavior: A Pilot Study. Acta Neurochir Suppl. 2021;131:55-58. doi: 10.1007/978-3-030-59436-7_12. PMID: 33839818.

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