

Interplay between hypertension and heart rate variability in cognitive functions

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Until now it has been difficult to examine the cognitive decline related to hypertension and to identify predictive variables of the progression to cognitive impairment in people with hypertension. With renaissance of heart rate variability as a marker of autonomic functionality, a series of researchers have underlined its role in cognitive functions. In line with evidence about autonomic dysfunctions in patients with hypertension this study aims to investigate whether the autonomic response can serve as a marker for the development of cognitive impairment in hypertensives. Specifically, the role of HRV as an index of autonomic functions was tested to understand the interplay between heart rate variability and blood pressure and to determine whether there is a synergistic role in predict cognitive performance. We adopt a neuropsychological battery and measure resting HRV in people with and without hypertension. The results evidenced the twisting association between the autonomic and cardiovascular systems on cognitive performance. A continuum from hypertension with autonomic dysfunctions to normotension without autonomic dysfunctions was evidenced. In particular, a pattern characterized by high hypertension and low HRV could be considered as a biomarker for the development of cognitive impairment. Identifying novel vascular biomarkers of cognitive impairment may facilitate an earlier evaluation of cognitive decline in preclinical phases. Surely further studies are needed to understand this association better.

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