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Cognitive and motor reaction times in Obstructive Sleep Apnea syndrome. A study based on computerized measures

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Introduction: Obstructive Sleep Apnea syndrome (OSAs) is often reported as mainly associated with executive dysfunction. Although delayed reaction times in patients with OSAs have also been reported (Kilpinen et al., 2014), sensitivity of processing speed has not often been assessed.

The aim of this study is to provide sensitive and reliable measures to clarify whether different components of information processing speed (i.e., cognitive and motor responses) are equally impaired in OSAs.

Methods: Thirty-three patients with OSAs were compared with thirty healthy controls. The MoCA test was administered to assess participants' global neuropsychological profile. Cognitive and motor reaction times were measured by using a detector panel which allows to distinguish between stimulus encoding, decision processing, and selection of the appropriate motor response.

Results: The performance of patients with OSAs at the MoCa test was significantly worse than controls' and significant differences in motor responses were found between the two groups.

Discussion: The results of our study support the hypothesis of a slight decline in the cognitive status of patients with OSAs and also identify significant slowing down in the motor component of responses. It could be hypothesized that slower motor responsiveness is the cause of the global cognitive profile of patients with OSAs. A number of studies investigating motor movements and reaction times in aging have showed that these skills are impaired (Myerson, 2007; Mattay et al., 2002). In light of these data it can be suggested that hypoxia might accelerate aging processes by compromising first of all the motor component of reaction times.

References: Kilpinen R et al. *Acta Neurol Scand.* (2014)

Myerson J et al. *J Exp Anal Behave.* (2007)

Mattay VS et al. *Neurology* (2002)

Keywords: Action & Executive functions; patients; group study; adults; degenerative (dementias); behavioural, computerized measures.

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