

# **Cognitive and psychosocial sequelae following hypoxic brain injury**

## **Abstract in English**

Hypoxic brain injury leads to neuronal necrosis and to other cerebral changes which may affect psychosocial functioning. Although the pathophysiology of cerebral hypoxia is multifactorial, and it is not possible to reliably describe the unified clinical picture of hypoxia patients, the most commonly described psychosocial consequences of cerebral hypoxia are cognitive impairment, increased anxiety and depressive symptoms.

The aim of the present study is to characterize cognitive functioning and psychosocial changes of the patients exposing mild intermittent cerebral hypoxia (=chronic form of hypoxia, model of obstructive sleep apnea diagnosed by neurologist) and patients after severe one-time cerebral hypoxia (=acute form of hypoxia, model of cardiac arrest diagnosed by cardiologist). Regardless of the different etiology of particular hypoxia forms described in the theoretical part of the thesis, both forms may lead to neuronal death. In the experimental part we test a hypothesis comparing healthy individuals to patients with acute or chronic form of hypoxia in cognitive performance or anxiety and depressive symptoms.

We document a decreased cognitive performance and higher level of state anxiety in a group of patients after acute hypoxia. In contrast to these findings, according to our study, patients exposing chronic hypoxia do not show cognitive deficit or significant emotional changes. On the other hand, the results of the study show, that there is better cognitive performance and lower level of anxiety and depressive symptoms following three months of obstructive sleep apnea treatment.

These results point out the necessity of complex care of patients after hypoxia, which reduces the bio-psycho-social quality of life.

**Key words:** hypoxic brain injury, cognitive impairment, depression, anxiety, cardiac arrest, obstructive sleep apnea