Neuropsychiatric consequences in obstructive sleep apnoea syndrome & traffic safety

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Introduction Obstructive Sleep Apnoea Syndrome (OSAS) lead to physical problems like hypertension and arrhythmias ad mostly to neuropsychiatric consequences like Brain atrophy, Depression Anxiety and Insomnia. Apart from a multitude of physical complaints, OSAS patients suffer from excessive daytime sleepiness, reduced sustained attention, limited memory processes and cognitive functions. Among other aspects, such a decline in performance influences the persons affected in their ability to drive a car. Considering the poor knowledge of reliable facts of etiology in neuropsychiatric diseases could show unusually clean-cut conditions of interference with the mechanism of mental and sensory motor plasticity.

Methods In our study we used neuropsychological and neuropsychiatric methods: in different patient groups in a sleep laboratory. Over the past five years we have been testing more than 2000 patients. During admission to the clinic, all patients were selected according to their clinical diagnosis (ICD10) and all patients were examined neurologically, neuropsychologically and psychologically. All test persons must not suffer from any severe psychiatric disorders. The study was carried out involving all groups of randomly selected patients with OSAS on a number of neuropsychiatric parameters.

Results Testing of neuropsychiatric diseases and difficulties and quality of life revealed a highly significant difference between healthy persons and OSAS patients (p < 0.05). Examination of specific domains of neuropsychiatric diseases and quality of life, untreated OSAS patients had inferiority scores than those who had undergone therapy. After more than 6 weeks nCPAP therapy, the neuropsychiatric diseases of the OSAS patients, and quality of life improved to a significant degree (p < 0.05). Analysis of the degree of severity showed for OSAS that on the whole, there is a significant difference concerning neuropsychiatric diseases and quality of life.

Discussion The study revealed that patients with OSAS who's neuropsychiatric problems and deficits concerning their vigilance achievements, their memory processes and their quality of life. The improvement if vigilance achievements and memory processes show a lower driving fitness (traffic safety) in untreated patients and increasing traffic safety in treated patients. In summary, based on our results, it is to be said that although a continuous nCPAP therapy improves the OSAS symptoms; neuropsychiatric consequences and the quality of life require longer-term degeneration.

Sudden onset of disease while driving a fourwheeled vehicle: a retrospective analysis for commercial driver in Japan

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Recent progress in automotive technologies and continuous upgrades in global safety standards have considerably improved automotive collision safety. Sudden onset of the signs and symptoms of the diseases while driving fourwheeled vehicles is a crucial cause of traffic accidents. Because such accidents are not due to a human error, and can endanger the lives of other road users, detailed analysis and preventive measures are required to enhance road traffic safety. We retrospectively analyzed 211 commercial drivers (taxis, 70; trucks, 53; buses, 88) in whom the sudden onset of any signs and symptoms of the diseases had obliged them to stop driving, from data collected by the Ministry of Land, Infrastructure, Transport and Tourism, Japan from 2004 through 2006. Cerebrovascular disease was a major cause of traffic-related incidents (28.4%), followed by cardiac diseases (23.2%), syncope (8.5%), and digestive diseases (8.1%). Of the 76 fatalities, cardiac disease was the most frequent (50.0%), followed by cerebrovascular (32.5%) and aortic (7.9%) diseases. Of the 187 drivers in whom sudden onset of signs or symptoms of a disease occurred while in control of a moving vehicle, 66 (35.3%) avoided collisions by attempting avoidance maneuvers (breaking or steering). However, subsequent traffic accidents occurred due to drivers losing control (64.7%), also resulting in injury to passengers and other road users. In 76 of 88 incidents involving bus drivers, an average of 13.9±14.1 passengers traveled by bus and of those, an average of 5.2±5.6 passengers in 10 buses became injured. Seventeen of 70 taxi drivers caused subsequent accidents that resulted in injury to passengers or road users of 1.7±1.5 (mean±SD) per accident. Ten of 53 truck drivers also caused accidents with a mean injured person among road users of 5.6±6.7. The persons had enough holidays (7 to 9 days) within one month of the onset. Those who had caused accidents had been on 7-9 days of holiday within one month of onset.