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# **NEUROSCIENCE AND NEUROLOGICAL DISORDERS**

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#### ANXIETY AND DEPRESSION IN PATIENTS WITH "WHIPLASH" IN AUTO ACCIDENT

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Background: Whiplash is a specific type of neck injury that is caused by a auto accident. The term "whiplash" is used in neck injury during by a sudden collision of the car cause to quick movement backwards a head and hyperextension then hyperflexion of the neck. Whiplash is one of those injuries that does not develop right away. Approximately 12 to 24 hours after the accident, however, might to appear vestibular symptoms such as dizziness and / or vertigo, nausea, vomiting, blunt headaches, tinnitus, sometimes hearing loss, blurred vision and difficulty of concentration. Usually this turbulent and sudden symptomatic provoke a high degree of anxiety and depression in these patients.

Aim: The aim of this study was to evaluate the effect of 30 day treatment of vestibular symptoms on the symptoms of anxiety and depression after whiplash.

Patients and Methods: 35 patients (24 male, mean-aged 37.7 ± 11.2 and 11 women, mean aged 45.1 ± 13.4) took part in this investigation. All patients were without acute injuries and were diagnosed by clinical psychiatrist about absence of other psychiatric symptoms. The change in neurotological symptomatic was assessed based on standard clinical neurotological investigations. The degree of anxiety and depression was assessed by a HADS scale on the 3rd, 10th and 30th day after the accident.

Results: At the start of the study, a high level of anxiety was noted (HADS\_A mean score 13.2  $\pm$  3.7) and depression (HADS\_D - 7.6  $\pm$  2.1). At the 10th day of the therapy, a significant improvement in neurotological status of 53% of patients was observed, but complaints of mild dizziness and / or vertigo and unstable balance continue to exist, the level of anxiety and depression on the 10th day of the treatments was not reduced. An additional therapy appointed from a clinical psychiatrist together with otological treatment was included for this patient's group. On 30th day of treatment, vestibular dysfunction was in range typical for physiological for age. The postural instability decreased. Bad equilibrium was observed during stance with closed eyes only. A significant reduction of symptoms of anxiety and depression was found (HADS\_A - mean score  $8.1 \pm 3.5$  and HADS\_D -  $6.4 \pm 2.8$ ).

Conclusion: The current study shows that timely, adequate and comprehensive treatment of vestibular dysfunction and the symptoms of anxiety and depression improve faster the quality of life of patients with whiplash after auto accident.

### **BIOGRAPHY**

Katerina Stambolieva is Associate professor of physiology at the Institute of Neurobiology at the Bulgarian Academy of Sciences. Her scientific interests are in the field of neurophysiology, posture and equilibrium, prevention and treatment of diseases of the peripheral nervous system, motor and cognitive behavior, and vestibular rehabilitation.

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