

patients, smoking 64% patients, hyperlipidemia 51% patients and diabetes mellitus 8% of patients. Among these patients, 30% of them had ipsilateral stenosis and 9% had ipsilateral occlusion or subocclusion of extracranial carotid arteries. The possible cardiac embolic pathogenic mechanism among our patients (including atrial fibrillation, which is most common, mitral stenosis, myocardial infarct, mitral insufficiency, open foramen ovale and combined mitral valve defects) is found in 9% of TIAs.

**Conclusions:** Although by definition TIA's cause no residual disability, they indicate an imminent high risk of a more serious cerebrovascular and cardiovascular event. Therefore, patients risk factors should be identified and appropriate action should be taken to reduce the patient's overall vascular risk.

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### Is asymptomatic carotid artery stenosis really asymptomatic?

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**Introduction/Objectives:** Asymptomatic carotid artery stenosis (ACAS) contributes stenosis of one or both internal carotid arteries, without cerebral ischemia related to it (transient ischemic attack, cerebral infarction, amaurosis fugax). Several studies showed that ACAS is not really asymptomatic and it is frequently associated with cognitive decline.

This study was aimed to analyze association between vascular risk factors, especially insulin resistance, and cognitive decline in 100 patients with ACAS and 50 age-, sex- and educational level healthy matched control subjects.

**Participants, Materials/Methods:** Insulin resistance was tested by homeostasis assessment model (HOMA IR), plasma insulin levels by radioimmunoassay, levels of total-, LDL-, HDL- cholesterol, triglycerides and plasminogen activator inhibitor-1 were measured. Carotid plaques characteristics and intima-media thickness (IMT) were determined by ultrasound system (ALOKA Alpha 10, Japan). We used detailed neuropsychological testing to examine attention and concentration, memory, executive and visual constructional functions, motor performance, language and speech. Study was prospective and all patients were followed-up for 2 years.

**Results:** In comparison with controls, ACAS patients had significantly lower results on all neuropsychological tests at the beginning ( $F [1.71] = 6.37; P < 0.001$ ), and after 2 years of follow-up, with further cognitive decline from the baseline ( $F [1.71] = 71.12; P < 0.001$ ). Insulin resistance was significantly associated with memory, language and visuospatial disturbances ( $CC = -0.3891; P < 0.001$ ) and carotid plaques characteristics with attention, executive and motor functions ( $CC = -0.4662; P < 0.001$ ).

**Conclusions:** ACAS is not asymptomatic, because it is associated with specific profile of cognitive impairment. Specific risk factors predict cognitive decline in certain neuropsychological domains, and this could have important therapeutical implications.

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### Unusual neck artery branching as a cause of transient ischemic attacks

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The case of a 50-year-old patient who was received in the neurology department because of repetitive transient alter, left hemifacial, palsies and right hemiplegic attacks is present. Risk factors for a cerebrovascular disease were arterial hypertension and smoking. Transient attacks occurred two times before last hospital treatment. In that period (2006–2008) an EMG, CT and MR of the brain and spinal cervical cord and even a cervical myelography has been done with normal results, except cervical degenerative spondylotic changes. Routine color Doppler analysis of the carotid arteries was also normal according the patients age. A vertebral artery examined by Color Doppler showed that right one is lean and short. After the last similar attack at September 2008th, again the complete hospital examination occurred, this time with an MSCT angiography of the aortal arch, carotid and vertebral arteries. An unusual, atypical, common starting point of the brachio-cephalic aortic branch and left common carotid artery, together with a thin and lean, right vertebral artery has been found. Last one could be followed up to CII–CIII cervical segment. According to the above findings, authors opinion is that this atypical neck and brain vascularisation was the origin of clinical disturbances. Color Doppler findings of vertebral artery defects must be sometimes verified with, a proper radiological investigation.

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### Early treatment of cerebrovascular insult with atorvastatin application

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**Introduction/Objectives:** Given the above-mentioned pathophysiological processes that occur during the stroke, and the extreme importance of atherosclerosis behind most strokes, we felt that the early i.e. urgent treatment of stroke provided room for treatment of the very process of atherosclerosis i.e. taking advantage of additional effects of hipolypemic agent Atorvastatin (Atorvox), aimed at improvement of the total survival rate, better outcome and reduction of neurological damage in patients who suffered stroke.

**Participants, Materials/Methods:** During 2-month observation of the work of the emergency service of “JU Dom Zdravlja Fojnica” medical center and its family medicine department, a group of eleven patients (seven males and four females) was covered, year of birth ranging from 1925–1950. All patients carried certain risk from development of cerebrovascular insult (Diabetes, smoking, hyperlipidemia, atrial fibrillation), and were admitted at the emergency service in 20 to 70 minutes.

Upon admittance, urgent laboratory tests (complete blood picture, blood sugar level, transaminases, CK) and ECG were made. Anti-edematous therapy was applied, norotrophic, O<sub>2</sub> through a mask, antihypertensives (Urapidil), Atorvastatin (Atorvox) 80 mg PER OS, and the patients were urgently sent to the neurological department of the Cantonal Hospital in Travnik, where they arrived in 55 minutes average.

**Results:** All 11 patients were hospitalized for 24 days in average. During hospitalization, they underwent CT, laboratory tests, and received supportive therapy without any active thrombolytic treatment (rt-PA). None of the patients had increased values of

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liver enzymes or creatine kinase recorded, neither during nor after hospitalization. Ten patients could function independently and perform daily activities, with minor or more serious motor problems, while one patient needed help during movement. Upon release from the hospital, all patients took routine laboratory tests, including among other things liver enzyme values and creatine kinase. All tests showed normal values, and thus there was no need to terminate the Atorvastatin (Atorvox) therapy.

**Conclusions:** Analysis of recorded cases during the urgent ICV treatment, regardless of the etiology (ischemic or hemorrhagic) showed that early Atorvastatin administration, practically immediately upon insult, in a maximum one-off daily dose of 80 mg is safe from the aspect of increase in liver enzyme values. Thus, there were no cases of hepatotoxicity related to myolysis cases recorded in literature, and creatine kinase was observed.

The observed group was relatively small and the observance period too short, and thus the total assumed effect, given the pharmacological effects, could not be fully evaluated.

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### Response to negative feedback in poststroke depression

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**Introduction/Objectives:** Several studies (e.g., Beats, Sahakian, Levy, 1996; Elliott et al., 1997) report a "catastrophic response to perceived failure" as a specific motivational deficit in depressive patients.

**Participants, Materials/Methods:** In an attempt to identify potential (dis)similarities between poststroke and primary ("purely psychiatric") depression, we administered, offering appropriate feedback, three cognitively demanding tasks (Stroop Word-Color Test, Wisconsin Card Sorting Test, Tower of London Test) to several groups of intellectually intact subjects: poststroke ( $n = 32$ ) and primary ( $n = 32$ ) unipolar depressives (based on DSM-IV criteria) and non-depressive control aged subjects with ( $n = 31$ ) or without ( $n = 33$ ) stroke (all groups being equivalent in respect to the main relevant psycho-demographic variables). The data were analysed using the common statistical procedures.

**Results:** The results showed in both groups of depressives (relative to non-depressives) a similar significantly raised probability of failure to subsequent problems following a failure on a given one. There were not enough subjects in order to obtain statistically significant data to correlate the frontal lobe location of the stroke and such response to negative feedback in poststroke depressives.

**Conclusions:** These results suggest a remarkable similarity of poststroke and primary unipolar depression. Moreover, they might offer an explanation for the classical (Goldstein, 1939) "catastrophic reaction" reported in brain lesioned subjects.

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### Distorted cognitive schemas of self and the world in poststroke depression

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**Introduction/Objectives:** A debate persists on whether major depression following stroke is in any way different from the primary ("purely psychiatric") depression.

Several studies suggest that dysfunctional cognitive schemas of self and the world (with a deeper dependence of self-worth on the evaluation of others and on the estimated success of own performance) characterize primary depression thinking.

**Participants, Materials/Methods:** In order to figure out if this is the case with the poststroke depression too, we administered the Sentence Completion Task (as conceived by Teasdale et al., 1995) alongside the classical Self-Esteem Scale (of Rosenberg, 1963, 1965) and common scales for depression (including Beck's and Hamilton's) to poststroke ( $n = 31$ ) and primary ( $n = 32$ ) unipolar depressives (based on DSM-IV criteria) and to control non-depressive subjects with ( $n = 31$ ) or without ( $n = 33$ ) stroke (all groups being equivalent in respect to the main relevant psycho-demographic variables).

**Results:** The analyses of the data using common statistical procedures showed a large similarity of dysfunctional answers between the two groups of depressed patients (as opposed to the non-depressed group), suggesting that the same type of distorted cognitive schemas is operating in each form of depression. Moreover, at follow-up, the success of pharmacological treatment (proved by the decrease of the levels of depression on specific scales) seems to be associated in both clinical groups with a return to more functional (realistic) cognitive models of self and the world.

**Conclusions:** These results plead for the similarity of poststroke and primary unipolar depression.

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### Alternations of level of consciousness in acute stroke

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**Introduction:** Alternations of level of consciousness, which comprises deficient arousal, stupor, and rarely deep coma, is frequent at the acute stroke.

**Objectives:** To determine the frequency of alternations of level of consciousness in acute stroke and its association with certain laboratory findings.

**Patients and methods:** We retrospectively analyzed 249 patients with acute stroke at the Department of Neurology, University Clinical Center Tuzla, in the period from 1<sup>st</sup> July to 31<sup>st</sup> December 2008. The stroke was confirmed in all patients by computerized tomography within 24 hours after hospitalization. According to the type of stroke, patients were divided into two groups: ischemic and hemorrhagic. Assessment of alternation of level of consciousness is performed by Glasgow Coma Scale<sup>1</sup> and National Institute of Health Stroke Scale<sup>2</sup> immediately after admission. Blood tests (sedimentation, leukocytes, glucose, potassium, sodium, urea, creatinine) were done within first 12 hours after admission.

**Results:** Alternation of level of consciousness in acute stroke had 64 patients (25.7%). Somnolence was more frequent comparing to sopor and comma (56.2% vs. 17.2% vs. 26.6%,  $P = 0.0003$ ). Patients with hemorrhagic stroke had statistically significant more often alternations of level of consciousness comparing to patients with ischemic stroke (53.1% vs. 19%,  $P < 0.0001$ ). Patients with alternations of level of consciousness in acute stroke had statistically significant pronounced leukocytosis, hyponatremia, elevated urea and creatinine ( $P < 0.02$ ).

**Conclusion:** In a quarter of patients with acute stroke alternations of level of consciousness occurred, primary considering somnolence, more often in hemorrhagic stroke. These

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