

POSTERS

1. ANXIETY OF PREGNANT WOMEN AND PARTNERS PRESENT AT CHILDBIRTH

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Backgrounds and aims:

Childbirth represents one of the most important events in the life of a family and an experience that a woman will remember and preciousely preserve until the rest of her life. The presence of the partner is, it is believed, an important factor in providing security and reducing the anxiety of a parturient woman. This research tried to establish whether the anxiety of the parturient woman decreases in the presence of the partner, starting from the fact that there is concern about the course and the outcome of the childbirth and thus an increased level of anxiety.

Patients and methods:

The sample consisted of 60 pregnant women that give birth in the presence of the partner, 60 pregnant women without a partner and 60 partners. The women were pregnant with their first child, had a negative psychiatric anamnesis, did not take anxiolytics during the course of pregnancy and did not have any gynecological complications. Two measuring instruments were used in the research: State – Trait Anxiety Inventory For Adults (STAI) and a Structured questionnaire.

Results:

With the STAI we examined anxiety as a state and a personality trait of pregnant women and their partners. Anxiety as a personality trait did not significantly statistically differ during the first parturient time between pregnant women with and those without the presence of the partner. Anxiety as a state of personality in the first parturient time did not significantly statistically differ between pregnant women with and those without the presence of the partner. Partners were examined in the first parturient time and there is 2,4 times more of them in the group with a high level of anxiety than women with partners. Day after the birth, the anxiety was significantly lower in both groups, which is logical and expected but statistically significantly lower is the level of anxiety in

pregnant women who gave birth without the presence of the partner from the ones where the partner was present.

Conclusions:

The presence of the partner does not have an effect on the reduction of anxiety in pregnant women, all the more because they also have a high level of anxiety which puts in question their presence at the childbirth as such.

2. COGNITIVE AND PHYSICAL FITNESS AS NON-DRUG THERAPIES AGAINST AGING AND DEMENTIA

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Backgrounds and aims:

Animal studies have revealed a substantial relationship between motor fitness, brain metabolism and function. A benefit of physical and cognitive fitness have also been demonstrated in old-age humans. The limited therapeutic effect of drug treatment in Alzheimer disease as well as in other forms of dementia in adults, has lead to a proposition of using the brain fitness technology in these conditions.

Methods:

The neurocognitive test battery contained tests of selected attention, verbal memory, general speed of information and verbal fluency. Cognitive tests should be connected with a graded physical activity program.

Results:

The results are promising and suggest that the brain fitness may serve as a neuroprotective trial for ageing humans and in dementive brain disorders.

Conclusions:

For people with Alzheimer disease the physical activity as well as brain fitness have a potential to alleviate the symptoms and to improve its management and quality of life of patients and of their carers.

3. IMPACT OF L-DOPA TREATMENT OF PATIENTS WITH PARKINSON'S DISEASE ON MONONUCLEAR SUBSETS AND PHAGOCYTOSIS IN THE PERIPHERAL BLOOD.

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Backgrounds and aims:

The question as to the role of immunological mechanisms in neuronal death of extrapyramidal cell systems in Parkinson's disease is till now not fully resolved. One of the approaches includes an examination of circulating blood cells.

Patients and methods:

In our studies consisting of 24 patients the peripheral blood was studied before and after medication with L-DOPA compounds.

Results:

Patients with Parkinson's disease demonstrated an increase of lymphocyte CD95/CD33 as well as a considerable number of cells dead by apoptotic processes. After treatment with L-DOPA both the percentage of CD95/CD3, acknowledged as an antigen marker characteristic for apoptotic cells as well as the number of cells dead by apoptotic processes were decreased.

Conclusions:

These findings thus indicate that levodopa treatment in Parkinson's disease has an impact on apoptotic processes in this instance, and this should be taken into consideration as a positive event in the pathomechanism effected by this treatment.

4. PERCUTANEOUS VERTEBROPLASTY: EARLY CLINICAL EXPERIENCE IN A BIPLANE NEUROANGIOGRAPHY SUITE INCLUDED DYNA-CT.

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Backgrounds and aims:

The aim of this study is to show the utility of percutaneous vertebroplasty in the treatment of metastatic and osteoporotic vertebral compression fractures under fluoroscopic guidance in a biplane neuroangiography suite with Dyna-CT.

Patients and methods:

We report our early clinical experience in 30 patients suffering from thoracic and low back pain due to vertebral osteoporotic compression fractures and lytic metastatic lesions of the spine. Patient selection was performed by physical examination and magnetic resonance tomography. 25 patients were treated with acute osteoporotic compression fracture, 5 patients with metastatic lesions. The patients were placed in prone position and the procedure was performed under simultaneous biplane fluoroscopy using bilateral transpedicular approach. We treated 12 patients at the thoracic level and 8 patients at the lumbar level. The amount of cement injected ranged from 4ml up to 12ml. To prove correct site of the cement a Dyna-CT was obtained.

Results:

Complete pain relief was observed in 90% of patients with osteoporotic fractures and in 80% of patients with metastatic lesions. In 4 patients asymptomatic cement leakage was noted.

Conclusions:

Over the last 10 years, the treatment of metastatic and osteoporotic vertebral compression fractures using vertebroplasty has shown to be safe and efficient for pain relief.

This image-guided neurointerventional procedure in a biplane neuroangiography suite using also Dyna-CT allows a precise deposition of the cement to stabilize the vertebral body.

5. CILIA DOMINATE NEAR VENTRICULAR WALL CEREBROSPINAL FLUID FLOW

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Backgrounds and aims:

There is a growing body of evidence suggesting that cerebrospinal fluid (CSF) flow in the ventricular space contributes to neuronal guidance. However, it is unknown whether this is achieved predominantly through beating of the ependymal cilia or by macroscale pulsation of the ventricles and choroid plexus.

Methods:

We employed magnetic resonance imaging (MRI) to acquire subject-specific brain motion and cerebrospinal fluid flow.

Using computational fluid dynamics (CFD), we evaluated the relative contributions of macroscale pulsatile CSF dynamics and cilia-induced flow on the shear forces at the ventricular wall.

Results:

When macroscale CSF pulsation is considered without the influence of motile cilia, periodic flow reversals along the ventricular surface can be observed. This results in close to zero time-averaged shear stress on the ventricular walls. In the presence of cilia motion, flow is forced in the anterior direction throughout the cardiac cycle close to the wall, with sharper velocity gradients due to the local flow acceleration. This results in three orders of magnitude increase in wall shear stress.

Conclusions:

Our findings suggest that neuronal guidance mediated by CSF flow is likely to be dominated by the action of the ependymal cilia. Conversely, CSF dynamics in the center regions of the ventricles are influenced mostly by wall motion and choroid plexus pulsation.

6. EVALUATION AND IMPROVEMENT OF MEDICAL CARE SYSTEM IN MANAGEMENT OF HEADACHES (HA) PATIENTS

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Backgrounds and aims:

Being a major health problem, headache is also associated with certain financial burden (which was equal to 360 billion roubles in 2010 for migraine alone). The headache management system should be improved and financial losses should be reduced to solve this problem.

Methods:

Data of the Federal service for State statistics for 2010 and our own questionnaires for migraine patients were used to study the management of HA in the six Moscow and Moscow region outpatient clinics.

Results:

The headache system management was found to be ineffective. Total work input losses related to migraine were 61.8 million human-days. To solve the problem, a national program for HA management is required including educational of the community, foundation of 9 multidisciplinary HA

centers, training of physicians and nurses in HA management, education of local healthcare authorities in the field of social and economical aspects of the HA distribution of funds depending on needs of each region and application of effective treatment

Conclusions:

Medical care should consist of 3 levels: first-general practitioners give primary care to 80-90% of HA patients; second-neurologists treat 10-15% of the patients and remaining 5-10% of patients will be treated in specialized HA centers. The treatment in such centers is proved to be cost-effective with 10.3% economy of the direct medical expenses as compared to the standard therapy. Losses of the working days are reduced by a half, saving about the 10 billion rubles each year for migraine only.

7. EFFECTS OF HYPOTHYROIDISM ON CELL PROLIFERATION AND NEUROBLASTS IN THE HIPPOCAMPAL DENTATE GYRUS IN A RAT MODEL OF TYPE 2 DIABETES

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Backgrounds and aims:

We observed how the hypothyroid state affects diabetic states and modifies cell proliferation and neuroblast differentiation in the hippocampal dentate gyrus (DG).

Methods:

For this, 0.03% methimazole, an anti-thyroid drug, was administered to 7-week-old, pre-diabetic Zucker diabetic fatty (ZDF) rats by drinking water for 5 weeks, and the animals were sacrificed at 12 weeks of age.

Results:

At this age, corticosterone levels were significantly increased in the ZDF rats compared to those in the control (Zucker lean control, ZLC) rats. Methimazole (methi) treatment in the ZDF rats (ZDF-methi rats) significantly decreased corticosterone levels and diabetes-induced hypertrophy of adrenal glands. In the DG, Ki67 (a marker for cell proliferation)- and doublecortin (DCX, a marker for neuronal progenitors)-immunoreactive cells were much lower in the ZDF rats than those in the ZLC rats. However, in ZDF-methi rats, numbers of Ki67- and DCX-immunoreactive cells were similar to those in the ZLC rats

Conclusions:

These suggest that methi significantly reduces diabetes-induced hypertrophy of the adrenal gland and alleviates the diabetes-induced reduction of cell proliferation and neuronal progenitors in the DG.

8. DIFFERENTIAL EFFECTS OF TREADMILL EXERCISE ON CYCLOOXYGENASE-2 IN THE RAT HIPPOCAMPUS AT EARLY AND CHRONIC STAGES OF DIABETES

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Backgrounds and aims:

Cyclooxygenase-2 (COX-2) is believed to be a multifunctional neural modulator that affects synaptic plasticity in the hippocampus

Methods:

In the present study, we investigated the differential effects of treadmill exercise on COX-2 immunoreactivity in the dentate gyrus in early and chronic diabetic stages in Zucker diabetic fatty (ZDF) rats and lean control (ZLC) rats. To this end, ZLC and ZDF rats at 6 or 23 weeks of age were put on a treadmill with or without running for 1 h/day for 5 consecutive days at 16-22 m/min for 5 weeks or 12-16 m/min for 7 weeks, respectively

Results:

Treadmill exercise in prediabetic and chronic diabetic rats significantly reduced blood glucose levels. In particular, exercise in the prediabetic rat blocked the onset of diabetes. COX-2 immunoreactivity was mainly detected in the granule cell layer of the dentate gyrus and stratum pyramidale of the CA3 region in all groups. COX-2 immunoreactivity was significantly increased in these regions of ZLC and ZDF rats after treadmill exercise in the early diabetic stage. However, COX-2 immunoreactivity was not changed in these regions in ZDF rats after treadmill exercise in the chronic stage.

Conclusion:

These results suggest that treadmill exercise in diabetic animals in the chronic stage has limited ability to cause plasticity in the dentate gyrus.

9. HYPOTHYROID STATES MITIGATE THE DIABETES-INDUCED REDUCTION OF CALBINDIN D-28K, CALRETININ, AND PARVALBUMIN IMMUNOREACTIVITY IN TYPE 2 DIABETIC RATS.

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Backgrounds and aims:

In this study, we investigated the differences in calbindin D-28k (CB), calretinin, (CR) and parvalbumin (PV) immunoreactivity in the hippocampus of Zucker diabetic fatty (ZDF) rats and Zucker lean control (ZLC) rats. In addition, we observed the effects of hypothyroidism on the levels of immunoreactivity of these proteins in ZDF rats.

Methods:

For this study, 7-week-old ZDF rats were used, and methimazole treatment was continued for 5 weeks to induce hypothyroidism. The animals were sacrificed at 12 weeks of age.

Results:

ZDF rats showed increased blood glucose levels compared to those in ZLC rats. Methimazole intervention significantly reduced total and free T3 levels, and it ameliorated the increase of blood glucose levels in ZDF rats. In ZLC rats, CB, CR, and PV immunoreactivity was detected in regions of the hippocampus proper. In vehicle-treated ZDF rats, CB, CR, and PV immunoreactivity was significantly decreased in the hippocampus. However, in the methimazole-treated rats, CB, CR, and PV immunoreactivity was significantly increased compared to that in the vehicle-treated rats.

Conclusion:

These results suggest that hypothyroidism ameliorated the diabetes-induced reduction of CB, CR, and PV immunoreactivity in the hippocampus.

10. CARPAL TUNNEL SYNDROME, CONTRIBUTION TO THE DIAGNOSIS AND TREATMENT

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Carpal tunnel syndrome is a progressive and painful hand condition as a result of a median entrapment neuropathy in

the wrist. The median nerve passes through a fibro-osseous tunnel and it is surrounded by tendons of flexor muscles, ulnar artery and other connective tissue. Irritation or compression of the nerve produces numbness, paresthesia and causalgia. With the progression of the condition some patients develop weakness of the small muscles of the hand innervated by median nerve. It is not present in patients with physiologic variation in innervation of small hand muscles as it is all ulnar hand.

In most cases, the etiology of carpal tunnel syndrome is clear. Most are due to physical activity related to the wrist, especially in relation to certain occupations. Carpal tunnel syndrome may also develop during pregnancy. It can also be caused by hypothyroidism, diabetes, autoimmune disorders and fractures of the wrist bones or their luxation. Less common causes are neurofibromas, Schwann sheath cysts or lipomas. Carpal tunnel syndrome is three times more likely to develop in women than in men. It usually occurs between the ages of 30 and 50. We obtained the same results in our study. Clinical assessment by history, taking into account the physical examination as well, support the diagnosis of carpal tunnel syndrome, but electromyoneurography confirms the diagnosis. Some doctors may also recommend the ultrasound procedure and MR of the wrist.

Treatment of the carpal tunnel syndrome regularly begins with physical methods to reduce the intensity of symptoms. It is necessary to define the etiologic factor and try to remove it or treat the primary disease. If the results are not satisfactory and the patient continues to have great difficulties, surgical treatment is an option.

11. HOW TO HELP PREVENT NECK PAIN CAUSED BY POSTURE

Authors: Marija Dumančić, Sandra Morović, Dubravka Blažević Sudarević, Maja Kovačiček, Aida Filipčić, Vida Demarin Aviva Medical Center, Nemetova 2, 10 000 Zagreb, Croatia Neck pain is a common regional pain syndrome usually arising from undefined mechanical or musculoskeletal disturbance. Lifetime prevalence of chronic neck pain (pain lasting more than 3 months) is about 70%, with about 40% of subjects reporting pain within the last month.

There are several causes of neck pain, some of the most common being occupation-related neck pain and trauma (i.e. whiplash injury). A clear relationship has been demonstrated between the nature of occupation and neck pain, with higher frequencies of neck pain in those with sedentary jobs. Majority of these patients suffer chronic neck stiffness and pain. Other conditions associated with neck pain include poor posture, lower education level, depression, and self-reported heavy workload.

As one of the most frequent medical problems, neck pain causes patients to seek medical help. Despite this, many individuals still suffer in silence.

Even though many advances have been made in diagnostics and treatment of neck pain, we believe prevention of neck pain is the key. Therefore, to help prevent the most common occupation-related neck pain and provide relief, we suggest several effective exercises suitable for your workplace. Regular exercise will help you avoid unpleasant neck pain and postpone the need for medical treatment.

Exercises may improve pain by restoring muscle function, optimizing posture to prevent muscle overload, and increasing the strength and endurance of your neck muscles.

12. EXERCISING RELIEVES CERVICOGENIC HEADACHES CAUSED BY THE UPPER CROSSED SYNDROME

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Headaches represent a universal problem affecting millions of people worldwide. It is pain in the head or neck region and can be a symptom of a number of different conditions disturbing the pain-sensitive structures around the brain, which are head and neck are the cranium, muscles, nerves, arteries and veins, subcutaneous tissues, eyes, ears, sinuses and mucous membranes.

Cervicogenic headache is pain perceived in the head, caused by musculoskeletal tissues innervated by cervical nerves. The pain is commonly unilateral, lasting from hours to weeks, moderate intensity, spreading into frontal, temporal, and orbital regions. Degenerative changes of cervical spine and upper cervical joints are also associated with pathophysiology of cervicogenic headaches, by causing lack of movement and dysfunction causing irritation to pain-sensitive structures. Pain characteristics may be similar to migraine headaches by its intensity, unilateral involvement, nausea, vomiting, and even ocular symptoms. However, cervicogenic headache never changes sides, and originates from the neck.

The upper crossed syndrome was described by Vladimir Janda, a Czech neurologist who referred to it as tightness of the upper trapezius, pectoralis major, and levator scapulae, accompanied by weakness of the rhomboids, serratus anterior, middle and lower trapezius, and the deep neck flexors (i.e. scalene muscles).

Careful and exact diagnosis is extremely important due to

treatment differences of different types of headaches. We suggest several effective exercises suitable for effective pain relief. Regular exercise will help you avoid unpleasant headache and postpone the need for medical treatment. It will also reduce pain by restoring muscle function, optimizing posture to prevent muscle overload, and increasing the strength and endurance of your neck muscles.

13. SUBACUTE SCLEROSING PANENCEPHALITIS – CASE REPORT

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Backgrounds and aims:

Subacute sclerosing panencephalitis (SSPE) is a rare chronic, progressive encephalitis that affects primarily children and young adults, caused by a persistent infection of immune resistant measles virus.

Patients and methods:

On admission to hospital, a 14-year-old girl (with history of primary measles infection before the age of 2 years) was diagnosed with SSPE based on the clinical picture, electroencephalogram, cerebrospinal fluid studies, cerebral magnetic imaging (MI), and measles serology. The initial clinical picture was epileptic seizures and a change in personality, followed by progressive tic-like involuntary movements and mental impairment for 8 months, then a rapidly progressive course with myoclonus and spasticity.

Results:

Characteristic periodic activity (Rademecker complex) is seen on EEG showing widespread cortical dysfunction, the white matter of both the hemispheres and brainstem are affected (MI). After the patient was treated with oral ribavirin and intraventricular interferon- α (IFN- α), his condition stabilized and the neurological disability index score improved slightly. There were no major side effects during treatment except for a transient initial elevation of body temperature that lasted for several days.

Conclusion:

Oral ribavirin and intraventricular IFN- α appear to be safe and effective. Early identification and aggressive treatment of SSPE is important.

14. CEREBROSPINAL FLUID AND SERUM URIC ACID LEVELS IN PATIENTS WITH CLINICALLY ISOLATED SYNDROME SUGGESTIVE OF MULTIPLE SCLEROSIS

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Introduction/Aims:

To analyze and compare CSF and serum UA levels in CIS patients with those in controls and to correlate these findings with demographic and clinical characteristics and routine CSF parameters.

Patients/Methods:

The study comprised 62 CIS patients (44 in relapse and 18 in remission) and 56 patients with other inflammatory (n=5) and non-inflammatory neurological diseases (n=51). UA levels were determined by a commercially available spectrophotometric method. Routine CSF analyses were performed using standard methods. Neurological disability was estimated using the Expanded Disability Status Scale (EDSS).

Results:

Both CSF and serum UA levels did not differ significantly between CIS patients and controls regardless of disease phase (relapse or remission). Both CSF and serum UA levels were significantly lower in females with CIS than in males with this disorder (p=0.0028 and p=0.0003, respectively) and controls (p=0.003 and p<0.0001, respectively). CSF UA levels correlated significantly with CSF/serum albumin quotient as a marker of the blood-brain-barrier state (Spearman correlation quotient, r=0.458; p=0.003) and with EDSS score (Spearman correlation quotient, r=0.255; p=0.046).

Conclusion:

These results do not support some previous findings implicating that UA might be intrinsically lower in MS patients, but detection of lower serum and CSF UA levels in our female patients with CIS might suggest that potentially it could be one of the factors that contribute to the higher prevalence of MS in females.

15. CONVENTIONAL THERAPY VERSUS A “TEST IN-TRAIN OUT” WALKING PROGRAM TO IMPROVE PHYSICAL FUNCTIONING IN CHRONIC STROKE PATIENTS. A RANDOMIZED PILOT STUDY

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Introduction/Aims:

In stroke survivors the recovery of independent walking after rehabilitation is progressively affected by deconditioning, with decreased ambulatory function and increased cardiovascular risk. Interventions effective on performance, safe and sustainable for patients and for the sanitary health system should be identified. An effective, low cost, structured home-based exercise program has been recently proposed for patients with peripheral arteriopathy and patients on dialysis, being based on walking sessions prescribed at hospital and performed at home (Test in-Train Out, Ti-To). The study aims to compare the effects on physical functioning of chronic stroke patients of a 10 weeks supervised conventional rehabilitation versus a Ti-To program.

Patients/Methods:

For this single-centre randomized controlled study, from a potential sample of 276 rehabilitated stroke survivors, 16 eligible chronic patients with hemiplegia following ischemic or hemorrhagic stroke, and able to walk without assistance, gave written informed consent and were enrolled. The study was approved by the local Ethical Committee. Patients were randomized into 3 groups for a 10-weeks period: i) FKT group performing a supervised rehabilitation program (stretching, balance exercises, supervised walking and stair climbing) of 1-hour sessions thrice a week (n=6); ii) Ti-To group performing a structured home-based exercise program based on walking sessions (20 min/day, six times/week at prescribed, progressively increasing speed paced by a metronome) with hospital checkups after 4 and 8 weeks, and phone contacts every 10 days; iii) A control group (C) (n=4) with no treatment.

Outcome measures at baseline and at the end of the intervention were: 6-minute Walking-Distance test (6MWD), Timed “up and go” test (TUG), Stair test (ST), and 5-times Sit-to-stand-to-sit test (5-STs).

Results:

Patients (n=16, 11 males) were aged 67.2±10.6 years (range: 39-78 years) with a time since stroke of 5.7±3.5 years (range: 1-12 years). 6MWD significantly increased in FKT (201±104 to 251±127 m, P<0.05) and Ti-To (250±114 to 306±116 m, P<0.05), without difference between groups, and not in C (344±48 to 277±109 m). TUG and ST also significantly improved in FKT and Ti-To (P<0.05), whereas not in C. 5-STs not significantly increased in FKT and Ti-To, and was stable in C.

Conclusion:

In a sample of chronic stroke patients, both a traditional supervised rehabilitation treatment and Ti-To program, equally improved physical functioning compared to control. Ti-To program, by a safe structured home-based exercise, counters deconditioning and favours patient's mobility with minimal use of sanitary personnel.

16. CHARACTERISTICS OF PHANTOM LIMB PAIN IN LOWER LIMB AMPUTEES – EXPERIENCE DURING PROSTHETIC SUPPLY

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Introduction/Aims:

The amputation of a limb is commonly followed by the sensation that the body part that has been cut off is still present. These phantom sensations in 50-80 % of patients are painful. Phantom limb pain must be differentiated from non-painful phantom phenomena, residual-limb pain, and non-painful residual-limb phenomena. The aim of this study was to determine the characteristics of post-amputation phantom limb pain in lower limb amputees during prosthetic supply.

Patients/Methods:

Data were collected in unit of prosthetics in medical rehabilitation hospital during 2012. Lower limb amputees attending the prosthetic supply were administered a questionnaire sur-

vey of their pain experiences. Forty-five amputees participated in the study. A questionnaire assessed the following questions: cause of amputation, date, preamputation pain, presence or absence of phantom pain, intensity of pain (visual analogue scale), phantom and residual-limb sensations, residual-limb pain and therapy.

Results:

Forty-five lower limb amputees (thirty males and sixteen females; mean age 66.15 years) completed the questionnaire survey. Mean time since amputation to admission for prosthetic supply was 4.26 months. According to the level of amputations there were: 28 trans-femoral, 9 trans-tibial, 7 bilateral amputations and 1 hip disarticulation. The most common diseases that resulted in amputation were: obstructive vascular diseases 42.22%; both obstructive vascular disease and diabetes mellitus 31.11%; diabetes mellitus 20.00% and trauma 6.66%. The prevalence of phantom limb pain was 46.66%, phantom limb sensation 80.00% and residual-limb pain 31.11%. Phantom limb pain occurred immediately after amputation in 16 (35.55%) amputees and between 1 month and 6 months in 5 (11.11%) amputees. Average VAS pain intensity was 5.19. Six amputees (13.33%) had feeling of persistent pain and others reported episodic pain with no need for continuous treatment. One patient has twice had surgery for recurrent neuromas. Preamputation pain has existed in 51.11% of amputees in seven days to nine years time frame.

Conclusion:

The study suggests that phantom limb pain, phantom limb sensation and residual limb pain are common after a lower limb amputation. For most, the pain was episodic and not particularly disabling. However, refractory pain may significantly worsen the functioning of patients and result in poor quality of life.

17. TACHYCARDIA AS A NEGATIVE PROGNOSTIC FACTOR FOR STROKE OUTCOMES

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Introduction/Aims

The outcome of stroke, especially lethal one is significant, as in the hemorrhagic as well as in ischemic stroke. The goal was

to show the impact on the stroke outcome of tachycardia correlated with lesion localization.

Patients/Methods:

Material for our work was patients who were treated due to the stroke at the Neurology Clinic Sarajevo in the period from 31 March 2013 until 01 January 2013. A total of 544 stroke patients were treated in the reporting period, 221 (44.6%). There were 70.9% patients with ischemic and 29.1% with hemorrhagic stroke. Each patient underwent ECG, which registered tachycardia during admission and on third day of hospitalization.

Results:

Results: In relation to the presence of tachycardia on admission there were statistically significant differences in the group of patients with hemorrhage and ischemia in relation to presence of tachycardia ($p < 0.01$). In the group of patients with hemorrhage coma was more present (78.9%), while tachycardia was statistically more often in those with loss of consciousness than in the group with coma. Group of patients with ischemia has 52.75% of the patients with tachycardia without statistical correlation between the presence and absence of disorders of consciousness. Midline lesions were statistically more often associated with paroxysmal tachycardia in relation to the lateral lesions ($p < 0.01$). Statistical analysis shows that there are statistically significant differences between observed groups $\chi^2=35.576$, $p=0.0001$. Lethal outcome of hemorrhagic stroke was 55.45%, 32.6% for ischemia. A significant statistical significance of ischemic and hemorrhagic stroke compared to the lethal outcome correlated with the registered tachycardia and medial lesion localization.

Conclusion:

Conclusion: Tachycardia on admission in patients with stroke is a relevant negative predictor for stroke outcome. Medial localization of changes significantly affects the occurrence of tachycardia and lethal outcome of stroke which is statistically significantly more associated with hemorrhagic stroke.

18. STROKE IN YOUNG AND ELDERLY POPULATION

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Stroke is a major public health problem in the Republic of Croatia and the world, and lately the age limit is shifted to a lower age group. The aim of this study was to examine the

differences between the two groups in order to improve early diagnostics, optimal treatment and primary as well as secondary prevention of stroke. The study included 415 subjects (221 women and 223 men), of whom 29 were under the age of 55 and an average age of 42.07 ± 4.80 years, while the rest had an average of 75.35 ± 8.03 years. The most common risk factors for cerebrovascular disease in younger population was hypertension, smoking and excessive alcohol consumption. Older population apart from hypertension suffered from diabetes, hyperlipidemia and ischemic heart disease as well as chronic heart failure. Commonly analyzed laboratory parameters were: sedimentation, total leukocyte count, CRP *, glucose, total cholesterol*, HDL, LDL and triglycerides ** (values marked by asterisk were found significantly different between groups). Total cholesterol, LDL and triglycerides were higher in the younger age group but the levels of CRP were higher in the elderly, as previously expected. In both groups, there were about 13% of patients suffering from hyperlipidemia. Hyperlipidemia was present among 50% of younger patients, while 60% of elderly had hyperlipidemia and were already receiving statin therapy. This result was unexpected since incidence of dyslipidemia is expected to increase with the age. Further investigations are necessary to explore possible causes of this result.

Key words: Stroke, hyperlipidemia, young population

19. NEUROLOGICAL SYMPTOMS IN DEMYELINATING DISEASE MIMICKING AN ACUTE ISCHAEMIC STROKE-CASE REPORT

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Background

The case presented here highlights the role of a correct diagnosis for proper targeting of therapy. Demyelinating disease should be considered even in older patients with focal and fluctuating neurological symptoms. Magnetic resonance imaging (MRI), cerebrospinal fluid (CSF) analysis and Visual evoked potentials (VEP) are crucial to provide an accurate diagnosis.

Case presentation

In March 2013, a 50-year-old woman was admitted with acute left hemiplegia and severe dysarthria, which occurred three days ago. Ten days earlier the patient had intense vertigo, nausea, vomiting, diplopia, speech difficulty and unstable gait. Neurological status on admission showed reduced verbal fluency with severe dysarthria, bilateral rhythmic ny-

stagmus more to the right, left hemiplegia, vivid generalized muscle tendon reflexes with asymmetry in the right and positive Babinski sign on the right. In the following days fundus, MRI of the brain and lumbar puncture were performed. MRI of the brain showed hypersignal changes in T2 and FLAIR images. CSF electrophoresis showed mild immune activity in the central nervous system (with elevated albumin, IgG index 1.17 and IgG synthesis in CNS 16.1 mg/24h). VEP showed a prolonged latency in P100 on the right eye. Therefore, disseminated demyelinating process was diagnosed and intravenous methylprednisolone treatment was initiated (1 g / day for 5 days) with a subsequent progressive improvement of the neurological symptoms.

Discussion

Our case has shown that sudden, rapid and unusual neurological deficits can be observed in multiple sclerosis (MS). In that age, there are a wide range of diseases in the differential diagnosis, including ischemic cerebrovascular events. Cerebrovascular ischaemic diseases may be presented by fluctuating and focal neurological symptoms, suggesting pathological processes in large and small blood brain vessels. But, demyelinating diseases, whose main representative is MS, are usually represented by repetitive episodes of neurological dysfunction in young people, especially women, in the inclusive period of 10 to 59 years of age. The presented case demonstrates rare cases with late onset of the disease by the age of 50. The correct diagnosis of these two entities is essential for proper treatment.

20. SYNDROME OF AN INAPPROPRIATE ANTIDIURETIC HORMONE SECRETION IN AN ANTI-AQUAPORIN-4 POSITIVE PEDIATRIC PATIENT WITH NEUROMYELITIS OPTICA SPECTRUM DISORDERS

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Background:

Neuromyelitis optica spectrum disorders (NMOSD) in childhood is a rare disease with diverse clinical presentation. Although reported in adults with NMOSD, syndrome of an inappropriate antidiuretic hormone secretion (SIADH), has not been described so far in pediatric patients with this disorder.

Case report:

A previously healthy girl experienced the first episode of en-

cephalopathy with fever preceded by intractable vomiting at the age of 14 years. Physical examination revealed no signs of edema, while serum biochemical analyses showed hyponatremia and criteria for SIADH diagnosis were fulfilled. Laboratory analyses for CNS infection were negative. Routine CSF findings were normal. Brain magnetic resonance imaging (MRI) showed a nonenhancing T2-weighted hyperintensity in hypothalamus, basal ganglia and right thalamus. The patient was treated with acyclovir and antibiotics, with no improvement, high-dose intravenous methylprednisolone (500mg/m², daily) for 5 days was then administered, followed by oral prednisone tapering for 20 days. She recovered completely, but eight months later, vomiting, hiccup and respiratory failure occurred. CSF analysis revealed elevated protein level (2.23g/L), normal glucose and cell count; oligoclonal bands were negative. The patient had hyponatremia (128 mEq/L) with increased urine sodium concentration (121 mEq/L). Criteria for the diagnosis of SIADH were again fulfilled. She was euthyroid with elevated anti-thyroglobulin and antithyroid microsomal antibodies, and normal/negative other serological tests for autoimmunity. New enhancing brainstem (bulbar) lesion and a non-enhancing cerebellar MRI lesion were detected. The patient was treated with high-dose methylprednisolone (1000mg/day, in intravenous infusion) for 5 days, and with the restriction of the fluid intake and osmotic diuretics, followed by minor neurological improvement. Therefore, intravenous immunoglobulins (IVIG) were administered (100g/day, 2 days) and patient recovered completely. Afterwards, she was treated monthly, with IVIG, 0.4g/kg/day, during 5 months and oral steroids were applied for 3 months. The patient was relapse-free for 17 months, when she experienced cerebellar manifestations. She was tested for anti-aquaporin 4 antibodies in serum and the findings was positive (90.8U/mL; Enzyme-Linked Immunosorbent Assay). Rituximab was introduced with good response.

Conclusion:

Patient with pediatric NMOSDs may present with SIADH, even as one of the initial manifestations, of this severe CNS inflammatory demyelinating disorder.

21. DERMATOMYOSITIS IN ELDERLY, DISEASE THAT SHOULD BE RECOGNIZED – CASE REPORT

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Introduction/Objectives

Dermatomyositis is a chronic autoimmune condition, characterized by the subacute onset of symmetrical, proximal mu-

sle weakness and muscle inflammation, accompanied by distinctive skin lesions. Our aim was to present late onset, importance in differential diagnosis with other conditions and the possibility of underlying malignancy.

Participants, Materials/Methods

A 70 years male presented with history of symmetrical, proximal muscle weakness, muscle pain, cough, reduced appetite, remarkable weight loss, constipation, erythematous forehead lesion. Clinical symptoms had subacute course, three months prior to hospitalization. Initially, the clinical picture included erythematous forehead lesion, cough and constipation. The patient had noticed difficulty in climbing stairs and standing from a seated position, and a month later also proximal upper limb weakness in difficulty overhead activities. There was no history of fasciculations. The muscular weakness was gradually progressive. Waking was highly compromised; cough had taken greater course a month before admission. The patient has uncontrolled diabetes mellitus (type 2) and he was complaining about hypesthesia in distal parts of lower limbs. Series of tests were carried out prior to hospitalization: complete blood count; electromyography (EMG); lumbar puncture; prostigmin test; cervical magnetic resonance imaging (MRI); sensory evoked potentials (SEP); thyroid profile; PSA. Bedside somatic examination revealed erythematous forehead lesion; inspiratory crackles in the lung bases. The neurological examination revealed proximal, symmetrical muscle weakness, muscle pain on grasping, generalized hypotony, proximal hypotrophy of upper limbs, generalized areflexia. No fasciculations were seen in any of the muscle. Plantar reflexes were normal. We have made complete blood count; electromyography; sensory evoked potentials; ocular fundus exam; chest radiography; electrocardiography (ECG).

Results

With the results our case satisfied all the criteria for the definite diagnosis. We began the treatment with high-dose corticosteroids, supportive and symptomatic therapy. Improvement was seen including improved muscle strength, decreased pain and resolution of skin involvement. The patient tolerated the treatment well, no significant side effects occurred.

Conclusions

It is essential to recognize early manifestations, investigate and suspect dermatomyositis, institute the therapy early, and search for malignancy. It has to be differentiated from similar conditions. Further investigation is necessary.

22. COMPARATIVE ANALYSIS OF ELECTROENCEPHALOGRAPHIC ABNORMALITIES IN ASEPTIC NONHERPETIC MENINGITIS AND MIGRAINE

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Introduction:

Viral nonherpetic meningitis is mostly caused by around 30 types of nonpolioenteroviruses. Electroencephalographic record in inflammatory CNS diseases characterises the loss of alpha rhythm and appearance of theta waves. EEG abnormalities occur by nonneurotropical viral infections of CNS without clinical signs of encephalitis, so that in aseptical nonherpetic meningitis often detect nonspecific diffuse or focal EEG abnormalities.

Similar pathological EEG registered in same patients with migraine .

Objectives:

Comparison of patients with aseptic meningitis with pathological and normal EEG, according to age, sex, duration of symptoms and cerebrospinal fluid results.

Definition frequencies of electroencephalographic abnormalities in aseptic meningitis towards migraines without aura group patients. Comparison of EEG abnormalities in patients with migraine according to age and sex.

Methods:

Adult patients with aseptic meningitis in acute phase disease which was confirmed by liquor examination were investigated .

Migraine without aura group contains adults without evidence of meningeal inflammation, epilepsy, previous head trauma, psychiatric or neurologic disease. EEG recordings were evaluated according to standards for age.

Statistical method: χ^2 test, $p < 0,05$

Results:

The study included 51 patients with aseptic meningitis, female 50,9%, male 49%, aged 18 – 60.

Pathological EEG: 35 patients 68,62%, female 41,17% , male 27,4% (diffuse abnormalities 40%, focal 60%).

Duration of the symptoms: 7 – 14 days

Examination of the CFS: range of the cell count/mm³: 6-2560, $X \pm SD$ 375,21 \pm 530,48;

level of protein: range 0,20-1,22 g/L

The study included 55 patients with migraine without aura

(female 78,18%, male 21,81 %), aged 21-68, $X \pm SD$ 40,34 \pm 11,39

Pathological EEG: 20 patients 36,36% (female 23,63 % , male 12,72%)

Conclusion:

51 adult patients with aseptic nonherpetic meningitis were treated at the County Hospital Požega, Department of Infectology. Pathological electroencephalographic record confirmed 68,62 % of the patients with clear mental status and absence of focal neurological signs which indicates the progress an infectious encephalopathy, clinically silent parenchymal inflammation remains questionable.

Statistically significant difference in patients with aseptic meningitis with pathological and normal EEG according to sex ($p = 0,50$), age ($p = 0,259$), duration of symptoms ($p = 0,471$),

CSF cell count ($p = 0,380$) and level of protein ($p = 0,542$) wasn't confirmed.

In 55 cases of migraines without aura, pathological EEG was detected in 36,33 % , without statistically significant difference between patients with pathological and normal EEG to age ($p=0,1486$) and sex ($p=0,073$).

Significantly more patients with aseptic meningitis had pathological electroencephalographic than patients with migraine ($p=0.002$).

Key words: aseptic nonherpetic meningitis, migraine without aura, EEG

23. COGNITIVE IMPAIRMENT IN PATIENTS RECEIVING ANTIANDROGEN THERAPY

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Introduction:

Cognitive abilities and serum testosterone levels naturally decline with age. Low serum testosterone levels are known to be associated with increased vascular risk and musculoskeletal, but also with neurological and psychiatric cognitive consequences. Patients with locally advanced prostate cancer, which is hormone sensitive/dependent, are often treated using antiandrogene therapy, which artificially further lowers serum testosterone levels until castration levels are reached.

Our aim was to evaluate the relationship of cognitive changes and serum testosterone levels in patients with prostate cancer receiving antiandrogene therapy.

Methods:

Thirty-four consecutive male patients diagnosed with locally advanced prostate cancer and receiving antiandrogene therapy (mean age $72,7 \pm 5,5$ years) were included in our study, while 35 healthy males, matched for age and vascular risk factors profile, served as controls. Vascular risk factors were assessed and cognitive evaluation was performed using MMSE and Montreal Cognitive Assessment (MoCA).

Results:

Serum testosterone levels were significantly lower in patients ($p < 0,01$). MMSE scores were within normal range in all subjects. When assessed using MoCA, PC patients more often scored below normal range (88%) when compared to controls (63%). In patients, significantly lower scores on MoCA subtests of verbal recall, attention and visuospatial abilities were observed ($p < 0,05$).

Conclusion:

Although indications for antiandrogene therapy in patients with prostate cancer are nowadays expanding, clinicians need to be well-aware of its side-effects, including cognitive impairment. MoCA can be used as a practical tool for evaluation and follow-up of cognitive changes in those patients.

24. DISSECTIONS OF CRANIOCERVICAL ARTERIES AND VASCULAR RISK FACTORS

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Introduction:

Cervical artery dissection (CAD) can occur at any age, but is considered one of the most common causes of stroke in young adults. There is an association between migraine and stroke. Several small to medium sized studies indicated a link between CAD and migraine.

AIM: To assess the incidence of vascular risk factors in consecutive patients with CAD.

Methods:

The data of 20 consecutive patients with CAD diagnosed from January 1st to December 31st 2012. The neurosonolo-

gical finding, clinical picture, risk factors and recanalization rate and recurrence rate were analyzed.

Results:

During one year 20 consecutive patients (18/20 <40 years old) were diagnosed with CAD. Neurosonology findings of dissection were separated into direct and indirect signs. Direct signs were: echolucent hematoma/string sign (35%), double lumen present (10%) and stenosis and/or occlusion of an arterial segment usually not affected by atherosclerosis (55%). Indirect signs were: increased or decreased pulsatility index (PI) upstream or downstream of the suspected lesion (40%), >50% difference in blood flow velocity (BFV) compared to the unaffected side (60%) and intracranial collateral flow (35%).

Head and neck MR, MRA or CTA confirmed the diagnosis. Multivessel involvement was present in 4 patients, affection of one carotid artery in 9 and one vertebral artery in 7 patients.

Hyperlipidemia was present in 11, arterial hypertension and migraine in 7, diabetes mellitus in 3, heart disease in 4 and smoking in 2 patients.

Head or neck pain was the dominant symptom in 19/20 patients, followed by ischemic symptomatology in 17/20 (15 patients presented with ischemic stroke and 2 had TIA), only one patient had intracranial hemorrhage.

Follow up during one year showed recanalization rate: 10/20, while recurrence rate was 0/2

Conclusion:

In this cohort of patients with CAD hyperlipidemia and arterial hypertension appear to be the most common risk factors, followed by heart disease and diabetes. Also, the migraine was present more common than in general population.

25. EVALUATION OF VENOUS CIRCULATION IN NEURODEGENERATIVE DISEASE

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Introduction:

The aim of the study was to evaluate presence of changes in venous circulation by means of Color coded Doppler Flow imaging (CDFI) in patients with previously established diagnosis of neurodegenerative disease (Parkinson disease, dementia, multiple sclerosis).

Patients/Methods:

We included in the study 60 volunteers, sex and age adjusted, divided into 4 groups- 3 groups according to the underlying disease (10 patients in each group) and 30 controls in the 4th group. Head and neck venous circulation was evaluated by means of CDFI in supine and sitting position. All patients were tested for hemodynamic and morphological changes of venous circulation (according to international criteria).

Result:

We found that there is increased number of patients with venous circulation changes in groups with neurodegenerative disease in correlation with controls ($p < 0,05$), there was no statistically significant differences in presence of changes in venous circulation between the groups with established neurodegenerative disease. Changes of venous circulation were present in control group as well.

Conclusion:

We can conclude that there is some correlation between changes in venous circulation and neurodegenerative disease, head and neck CDFI is good, real time method in evaluation of these changes.

26. ROLE OF ENDOTHELIAL FUNCTION PARAMETERS IN EVALUATION OF PATIENTS WITH FABRY DISEASE

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Introduction:

Fabry disease (Anderson-Fabry disease) is an X-linked recessive lysosomal storage disorder resulting from the deficient activity of the lysosomal hydrolase, α -galactosidase A (α -Gal A) which leads to progressive accumulation of globotriaosylceramide (Gb3) in various cells, predominantly in endothelium and vascular smooth muscles, with clinical manifestations affecting major organs including the nervous system. Early initiation of therapy- prior to significant disease manifestations or complications may result in better outcomes for patients.

Patients/Methods:

In our study, we evaluated endothelial function parameters (beta stiffness-BS and intima-media thickness-IMT measured in common carotid artery in standardized manner) in 5 pa-

tients with confirmed Fabry disease after they suffered ischemic stroke.

Results:

There was no statistically significant increase in IMT in correlation with normal sex and age adjusted values ((right ACI 0.47 ± 0.09 vs. 0.43 ± 0.07 , left ACI 0.54 ± 0.07 vs. 0.46 ± 0.09 ; $p > 0.05$), while there was increase in BS values in Fabry population (right 6.48 ± 2.4 vs. 5.18 ± 2.12 , left 6.78 ± 2.18 vs. 5.27 ± 2.03 ; $p < 0,05$).

Conclusion:

Our results have shown that beta stiffness index is a good tool in recognition of early endothelial dysfunction in Fabry patients, while IMT is more relevant marker for long term follow up of such patients.

27. INTRAARTERIAL FIBRINOLYSIS OF THE ACUTE BASILAR ARTERY THROMBOSIS-CASE REPORT

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80 year old patient was admitted to our neurological clinic due to vertigo and instability, routine neurological and radiological exams were performed. CTA showed a severe stenosis of left subclavian artery, occlusion of left vertebral artery and ostial stenosis of the right vertebral artery. She had significant difference in blood pressure between left and right arm, atrial fibrillation and she was on warfarin therapy. After clinical consultation she underwent endovascular stenting of the left subclavian artery which went without incident. After the procedure she had same blood pressure on both of her arms, and patient seemed to recover well after the procedure. The patient went to sleep around 11 pm and she was in adequate verbal contact. During the night, around 3 am, she was alert. In the morning, around 5 am patient could not wake up, neurological evaluation showed GCS 6. Patient was sent to emergency CT exam and showed hyperdense distal part of basilar artery in meaning of acute thrombosis which was verified on CTA.

After consultation with referring neurologist, preparations for endovascular treatment started. Preprocedural MR DWI was performed and minor ischemic changes were seen in right thalamic region. Angio suite was ready and vertebrobasilar DSA confirmed acute basilar artery thrombosis. Bifascicular system was introduced through the right vertebral artery and microcatheter was delivered proximally to the thrombus. 15 mg of fibrinolytic agent alteplase (Actilyse) was delivered all together with control angio runs to verify thrombus dissolution. Last control angiogram showed complete thrombus res-

olution with patent basilar artery.

Patient went to neurocritical care unit, CT scan performed next day did not show any signs of acute ischemia or hemorrhage. She recovered remarkably and at demission from hospital GCS was 15.

28. VERTEBRAL ARTERY DISSECTION PRESENTING AS BULBAR PALSY

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Background:

Vertebral artery dissection (VAD) is a disease of an infrequent occurrence, but it is also a leading cause of stroke in young and otherwise healthy patients. The overall incidence of VAD is approximately 1-1.5 per 100000, although it is suspected that a proportion of cases in people with mild symptoms which remains underdiagnosed, particularly in the absence of trauma is also possible consequence of VAD. One of the consequences of VAD is stroke and the underlying mechanism of the stroke is either thromboemboli formation or haemodynamic insufficiency due to severe stenosis or occlusion at the dissection site. Here we report a case of spontaneous dissection presenting as a bulbar palsy with mild symptomatology.

Case report:

32-year old, previously healthy male patient, smoker, presented to us few hours after developing symptoms of dysphagia, dysarthria, hiccups and paresthesia in the left extremities and on neurological examination a left horizontal-rotatory nystagmus and weaker pharyngeal and palate reflex. Initial neuroradiological assessment with MRI showed ischemia in the right lateral part of the spinal cord, while MRI angiography verified a hypoperfusion in the distal portion of right vertebral artery due to dissection. After base cardiological and immunological examination, including trans-oesophageal echocardiogram, dissection etiology remained still unknown. The patient was treated initially with antiplatelet agents and transferred to warfarin after establishing a diagnosis. Six months later, control MRI angiography did not show any vascular or brain abnormalities and warfarin was excluded from therapy, whereas neurological status was normal.

Conclusion:

Our case implies that in differential diagnosis of bulbar palsy with mild symptomatology vertebral artery dissection should be considered and MRI angiography should be done to exclude it.

Keywords:

vertebral artery dissection, dysphagia, dysphonia, hiccups, MRI angiography

28a. ONE YEAR STUDY OF VERTIGO IN THE NEUROLOGICAL EMERGENCY ROOM

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Vertigo, dizziness and syncope are the most common referral in the neurological emergency room. However, only 10% of patients have true neurological cause of such a state.

The aim of this retrospective study was to assess the causes, risk factors, and imaging modalities in patients with vertigo. One year data of patients examined in emergent neurological outpatient department were analyzed. Patients were referred from general practitioner, emergency physician, and other specialist or were brought by relatives to the clinic without being previously seen by a health service. Demographic data, risk factors, early imaging evaluation rate and findings and rates of admittance were analyzed.

From January 1st to December 31st 2010 were 700 patients (453 females), mean age 59±17years with vertiginous symptomatology. There were 284 (41%) patients with symptoms starting the same day, 295 (42%) had symptoms for less than 7 days, 67 (9%) had symptoms that lasted from 7-30 days, and 54 (8%) had symptoms lasting more than one month. CT scan was performed in 183/700 patient, showing ischemia in 10, cerebral hemorrhage in 3 and brain tumor in 4 patients. Neurosonological evaluation was performed in the emergency room in 146/700 patients. There were 3 stenoses or occlusion of the vertebral artery, and 17 stenosis or occlusion of the carotid artery. Out of 700 patients, 104 (15%) were admitted to the Neurology Department and 96 (13%) were referred to other emergency departments.

Although vertigo is a common referral to the neurological emergency room, only one quarter of patients need emergency neurological work-up.

29. HYPOTHYREOSIS AND DEPRESSION

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Introduction/Aims:

Depression is considered the earliest described disorder in the history of medicine and in recent time it belongs to the most frequent mental disorder.

Depression is a leading medical problem in female population. On the other hand, hypothyreosis is the most frequent thyroid disease, which predominantly affects women.

Depressive episodes are characterised by loss of interest, being in a bad mood, reduced life energy, anhedonia, low self-esteem and self-confidence, feeling of being guilty and worthlessness.

Sometimes, they are accompanied by sleeping disorder, bad appetite and suicidal tendencies. There are common symptoms of hypothyreosis and depressive episodes such as fatigue, exhaustion, loss of libido and menstrual cycle.

Objectives: Evaluation of incidence of thyroid hormone imbalance in patients with depression.

Patients/Methods:

Examination of thyroid hormones in hospitalized patients in psychiatric ward of Sremska Mitrovica General Hospital (Dg: F32, F33 according to ICD during period from May to October in 2012)

Results:

We have examined 40 patients with depression. 11 patients had increased TSH or decreased T3 or T4 hormone. 27,5% of the total number of patients had hormonal imbalance.

Conclusion: There is a significant percentage of subclinical and clinical hypothyreosis in the population of depressed patients.

30. "THE SUICIDE DISEASE" AND SUICIDALITY – THE PILOT STUDY

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Backgrounds and aims:

Trigeminal neuralgia (TN), also known as Tic Douloureux, Fothergill Disease, Trifacial Neuralgia and "The Suicide Disease" is a disorder of the fifth cranial nerve characterized by attacks of intense, stabbing pain affecting one side of the face. The exact cause of trigeminal neuralgia is still not fully understood. Although there is a little evidence that patients with TN are more likely to commit suicide, the name "Suicide Disease" has been used because trigeminal neuralgia can cause agonizing pain and many (more than 100) years ago there was little that could be done to relieve this pain.

Patients and methods:

A total of 30 TN patients with 6 months or longer in duration of pain (15 female and 15 male) and 30 pain-free age- and gender-matched controls (15 female and 15 male) were examined. A standardized diagnostic protocol was applied to all of them, consisting of the following: 1) demographic data and estimation of overall pain on the visual analog scale (VAS) in the time of evaluation and through the month before; 2) evaluation of presence of neuropathic pain measured by Leeds assessment of neuropathic signs and symptoms (LANNS); 3) evaluation of emotional status using the Beck Depression Inventory II with special interest of the question about suicidality.

Results:

The intensity of facial pain ranged from VAS 3 to VAS 10 being slightly higher in the group of female patients suffering from significant level of depression as well as in the group of male patients suffering from moderate depression. Significant level of depression were documented in 6,67% of both female and male patients, moderate in 40,0% of both female and male patients and low level of depression in 46,67% female and 53,33% of male patients. 6,67% of female patients and whole control group did not show depressive symptoms. There is no male patient with any kind of positive answer about suicidal tendency. Only one female patient with low level of depression informed us about suicidal ideas but lack of intent to commit a suicide. Two female patients did not answer to the question about suicide for reasons about which we can only speculate.

Conclusions:

Our preliminary results show strong correlation between chronic TN and depression. It seems that occurrence of depression does not depend of the severity of pain but of the existence of chronic pain syndrome per se. Degree of suicidality measured among our TN sufferers did not show correlation.

tion strong enough to justify the old name of the disease as "The Suicide Disease".

31. PHYSICAL PUNISHMENT CHILDREN - FREQUENCY AND FORM OF PUNISHMENT

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Backgrounds and aims:

Physical punishment is part of raising children and it is at the centre of interest for psychologists, pedagogues, jurists etc. Corporal punishment can be defined as the use of physical force intended to cause pain, but not injury, for the purpose of correcting or controlling a child's behavior.

The aim of this paper is to establish the type of possible physical punishment by parents in higher grades of elementary school children, how often parents use physical punishment, which methods of physical punishment they use and children's own attitudes about physical punishment.

Patients and methods:

Data for this research was collected from a sample of 552 primary school pupils from Canton Sarajevo, age 11 to 14. The children completed "Form for Students" (my own construction).

Results:

Results showed that a prevalence of physical punishment of children aged 11 to 14 was 59%. This figure relates to the year preceding this research. The frequency of physical punishment occurred at an average of 14,6 times per year. The most frequent manners of physical punishment was slapping and striking with an open hand on the buttocks. A high percent of the punished children (94%) think that physical punishment is harmful.

Conclusions:

Besides such a legal procedure there is as well a need for additional ways to change the behaviour of many parents and it is also necessary to include teachers.

32. CSF OUTFLOW ALONG SPINAL NERVES - A NEURORADIOLOGICAL DOCUMENTATION

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Introduction:

Quincke in 1872 demonstrated that CSF is flowing out from the subarachnoid spaces along spinal nerves into peripheral tissues. CSF outflow through the cribriform plate near olfactory nerves was extensively demonstrated whereas poorly investigated along brain nerves and rarely along spinal nerves. From clinical observations it was hypothesized, that CSF may interact at the peripheral CSF outflow pathway (PCOP) with nerves and at wind up in peripheral tissues (Bechter, 2011). We further demonstrated that leukaemia cells followed the PCOP into periphery including subcutaneous tissues (Schmitt et al, 2011). PCOP associated pathogenetic mechanisms, not been proven yet, have the potential to better understand pathogenetic aspects in neuroinflammatory disorders including subgroups of severe psychiatric disorders, associated with low level neuroinflammation, e.g schizophrenia, or in fibromyalgia.

Methods:

Analysis of CSF flow pattern in a case undergoing myelography from diagnostic reasons was performed.

Results:

In a human subject supposed to lumbar myelography we demonstrate CSF flowing from the subarachnoid spaces down the lumbar nerves, making a distance of 50.8 mm in 30 minutes (neuroradiological documentation by various angles, time points).

Conclusion:

Apparently there is physiological CSF outflow along spinal nerves, involving a considerable outflow volume so that is easy visible and within time frame making sense of relevant contributions to hypothesized pathophysiology. These findings support the PCOP hypothesis which requires however much more research on anatomical details and the far reaching important pathogenetic questions raised, especially for neuroinflammation including low level neuroinflammation and even systemic inflammation.

Bechter K., *The peripheral cerebrospinal fluid outflow pathway - physiology and pathophysiology of CSF recirculation: a review and hypothesis*. Neurol Psychiatry Brain Res, 2011. 17(3): p. 51-66

Bechter K., *Updating the Mild Encephalitis Hypothesis of Schizophrenia*. Prog Neuropsychopharmacol Biol Psychiatry, 2013. 42: 71-91

Schmitt M. et al., *Spreading of Acute Myeloid Leukemia Cells by Trafficking along the Peripheral Outflow Pathway of Cerebrospinal Fluid*. Anticancer Res, 2011. 31(6): p. 2343-5

33. FEELINGS OF TURNDOWN AND FUTILITY IN ONE WOMAN PENSIONER: HAGIOTHERAPEUTIC ACTIVITY IN PSYCHOTHERAPEUTIC TREATMENT

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Introduction:

to show the life in short and the former professional life in short of one 71 years old pensioner woman. Happiness, love, self-esteem and self-confidence have been the basis of quality of life during all human periods of life. Therefore the any person of the third period of life mustn't feel loneliness, useless and forgetful in the own ambiance.

Methods:

The aim of this paper is he worked as the educator of children and youth at one educative house where she also was the head. Another aim of this paper was to show pieces of the individual hagiotherapy of this women because she had felt so loss and useless one certain time after her pension. The methode of psychtheraputic interview was used on the first phase of this treatment and after that the individual hagiotherapy was conducted through the next three months in setting twice weekly of 45 minutes.

Results:

The clarification of the actual psychotopical place was made in the first part of this hagiotherapy. The confrontation against explored materials was made in the middle part of the hagiotherapeutic treatment. Seeking the solutions was made on the end of this therapy. The importance of one satisfaction in the former active work was result of the clarification. The feelings of loneliness and useless in the pension was result of the confrontation. The advices to parentes who were taken their place in one prayer group (as our client) due their children problems were results of seeking solutions. The care for old and ill persons out the group was also result of the seeking solutions.

Conclusion:

The discussion or instead of conclusion of this paper is if there is our very easy neglecton to ability of the people in pension or if we very easy deprivate ourself of their belief, love and hopefulness what are so need in every periods of our life.

34. THE PAD SYNDROME: PAIN, ANXIETY, AND DEPRESSION

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Introduction

The association of chronic pain, anxiety, and depression is not a novelty. The high prevalence of the co-morbidity between these three disorders is far beyond the chance of mere co-existence. The strength of the epidemiological association, the positive correlation between symptom clusters, and the putative common neurobiological basis for the three disorders, highlight the possibility of a syndromal pattern.

Methods:

A systematic review was conducted including appraisal of selected literature focused on the epidemiology of this co-morbidity, nature and strength of this association, the common neurobiology, and the available psychopharmacological treatments.

Results:

We argue that viewing the relationship of chronic pain anxiety, and depression in a gestalt of a syndromal portrait is important to facilitate proper holistic treatment of this common, costly, and disabling condition. Such outlook can improve global functioning; eliminate lingering sub-threshold symptoms, decrease morbidity and mortality, improve outcomes and quality of life, and will hopefully congregate treatment efforts, psychopharmacological developments, and research.

Conclusion:

The association between chronic pain, anxiety, and depression may represent a syndrome with common underpinnings.

35. ANXIOLISIS IN SERVIS ANALGESIA

Authors: Josipa Sanja Gruden Pokupec, Zdenka Gruden, Vladimir Gruden, Zagreb

Introduction:

Common depression is considered caused by a trauma and stress due to occurrence of unexpected turn of events in our lives. Since we are discussing about mental pain and stress, people tend to hide the manifestations of depression.

Psychoanalysis consider that depression is a form of defense mechanism stemming from anxiety and pain which is an etiological and therapeutic phenomenon of fear and depression.

The correlation of anxiety and pain in general is incomplete in etiological sense in Stomatology. For instance, stomatodynia and orofacial pain are results of psychosomatic in nature.

Based on our research with 120 patients who exhibit stomatodynia (stomatopyrosis) and orofacial pain, 80% of patients successfully responded to psychiatric medication and autogenous training.

During the treatment with autogenous training of psychosomatic diseases particularly diseases of locomotor system, this was helped to decrease tension similar to somatic and psychiatric illnesses which brought analgetic effects.

Conclusion:

Therefore, psychoanalysis claim that etiological factors such as psychiatric and psychosomatic diseases such as fear and anxieties open the doors for oral medication and psychotherapy as options for treatments.

36. PSYCHOTHERAPY IN THE TREATMENT OF THE PAIN AND SOMATIZATION

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Introduction:

The pain and somatization are the frequent complication of the different types of depressive disorder, or they persist as an autonomous disorder. In the presentation the author will point out and elaborate the process of the psychotherapeutic treatment of the pain and somatization through psychodrama method, by the use of the role theory, symbolization and enactment.

Methods:

The method is psychodrama.
The participants are the patients in the long term therapy of depression.

Results:

Reduction of the symptoms, insight and improvement of the quality of the every day life

Conclusion:

Psychodrama method allows therapeutic approach toward the

patients with a pain and somatization disorder through expression, behavioral-cognitive level and the psycho-dynamic level, which leads to successful and comprehensive treatment of the patient.

37. THE INFLUENCE OF FAMILIARITY WITH FAMILY MEMBERS ON ANXIETY AND DEPRESSION OF PATIENT AFTER CANCER DIAGNOSIS

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Introduction:

To evaluate the influence of familiarity with family members on anxiety and depression of patient after cancer diagnosis.

Patients/Methods:

A multicenter cross-sectional survey was conducted with 990 cancer patients in 2011. The familiarity with family members was assessed as 5-Likert scale by asking "Do you feel more familiar with my family member after cancer diagnosis?" Anxiety and depression were assessed by the Hospital Anxiety and Depression Scale. Multivariate logistic regression models were used.

Results:

Patients who reported improved familiarity with their family members felt less anxiety in univariate (OR, 0.78; 95% CI, 0.67-0.91) and in multivariate (OR, 0.76; 95% CI, 0.65-0.90) logistic regression model adjusting sex, age, marital status, level of education, having religion, household income, and cancer stage at the time of survey. They also felt less depression in univariate (OR, 0.55; 95% CI, 0.46-0.65) and in multivariate (OR, 0.55; 95% CI, 0.46-0.65) logistic regression model.

Conclusion:

Improved familiarity with family members was related with reduced anxiety and depression of cancer patient after cancer diagnosis.

38. STUDYING BRAIN CONNECTIVITY IN BIPOLAR DEPRESSED PATIENTS DURING TOTAL SLEEP DEPRIVATION BY MEANS OF A TMS/EEG APPROACH

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Introduction / Aims:

There is a growing body of evidence suggesting that the pathogenesis of mood disorders is linked with a dysregulation in the immune system, leading to elevated serum concentrations of different cytokines. After passing the blood-brain barrier, cytokines can impair the glutamate-buffering capacity of astrocytes, causing oligodendrocyte death through glutamate excitotoxicity. Consistently, in patients with bipolar disorder, post-mortem gene expression studies demonstrate downregulation of key oligodendrocyte and myelination genes, and neuroimaging studies suggest disrupted white matter (WM) integrity, which could alter the functional connectivity between different brain areas. It is tempting to speculate that critical bipolar illness phases could be associated with altered functional connectivity, with opposite findings in stable euthymia. Sleep deprivation is a fast-acting therapy for depression, with response rates similar to those observed with antidepressant drugs, but with clinically relevant improvements of mood in a matter of hours after the beginning of treatment. However, the electrophysiological effects of sleep deprivation in the human brain are not known.

Methods:

We studied if total sleep deprivation (TSD) therapy causes changes in functional connectivity between different brain areas. We collected, during the TSD period, electroencephalographic (EEG) potentials evoked by transcranial magnetic stimulation (TMS) in twenty-two patients with bipolar disorder during a depressive episode. In order to quantify functional connectivity, we used Significant Current Scattering (SCS), a recently developed index that measures the average distance of significantly activated sources from the site of stimulation.

Results:

We demonstrated a pattern of steady functional connectivity throughout TSD treatment, both in responders and in nonresponders. Nonresponders always showed lower cortical functional connectivity, on average, than responders.

Conclusion:

Clinical improvement after sleep deprivation does not appear to be linked with better functional connectivity. We can hypothesize that the differences described between responders and nonresponders are due to higher anatomical and function-

nal impairment, already present at the beginning of the treatment, of cortical circuits.

39. THE EFFECTS OF TOTAL SLEEP DEPRIVATION ON CORTICAL EXCITABILITY IN BIPOLAR PATIENTS DURING A DEPRESSIVE EPISODE: A TMS-HDEEG STUDY

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Introduction / Aims:

During depressive episodes, a reduction in slow-wave sleep was reported in many studies. According to the synaptic homeostasis hypothesis, slow-wave sleep decreases if synaptogenesis and synaptic potentiation are hampered. Sleep deprivation therapy response rates are similar to those observed with antidepressant drugs, but the response becomes clinically relevant in a matter of hours after the beginning of treatment, whereas drugs need weeks. However, the electrophysiological effects of sleep deprivation in the human brain are not known. It has been demonstrated, in rats, that the more wakefulness is prolonged, the more synaptogenesis and synaptic potentiation are promoted. Synaptogenesis and synaptic potentiation are associated with higher cortical excitability.

Methods:

We studied if total sleep deprivation (TSD) therapy causes changes in human cortical excitability. We collected, during the TSD period, electroencephalographic (EEG) potentials evoked by transcranial magnetic stimulation (TMS) in twenty-two IAPatients with bipolar disorder during a depressive episode. Cortical excitability was measured both from the local and global EEG response to TMS.

Results:

We demonstrated a pattern of increasing cortical excitability throughout TSD treatment. This increase was more pronounced in responders. Nonresponders always showed lower cortical excitability, on average, than responders.

Conclusion:

These findings suggest that in humans sleep deprivation promotes synaptogenesis and synaptic potentiation, consistently with previous animal studies; moreover, they suggest that the

promotion of synaptogenesis and synaptic potentiation is linked with the response to TSD, consistently with previous studies on other therapeutic tools for depression, such as ECT or antidepressant drugs. A noninvasive measurement of the changes in cortical excitability associated with mood disorders could be a fundamental tool in disentangle their pathophysiology.

40. DEPRESSION AND SUICIDALITY AMONG ELDERLY PATIENTS AFTER SUFFERING A STROKE

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Introduction / Aims:

Depression may occur as a result of vascular disease in a significant subpopulation of elderly persons. In these people, depression mainly affects those with chronic medical illnesses and cognitive impairment, causes suffering, family disruption, and disability, worsens the outcomes of many medical illnesses, and increases mortality. Age-related intertwined with disease-related processes such as atherosclerosis, inflammatory, immune and endocrine changes compromise the integrity of important brain pathways (frontostriatal, amygdala, hippocampus) and increase vulnerability to depression. Recent studies indicate a high frequency of depression in older patients with cardiovascular and cerebrovascular diseases, and the possibility of a bidirectional relationship between depression and vascular disease. The concept of vascular depression is clinically challenging therefore also represents a great burden for neurologists and psychiatrists. Often associated with depression is also suicidality and elderly have the highest risk of completed suicide than any other age group worldwide. Since these issues reflect our everyday clinical work we decided to conduct a research involving the post-stroke elderly patients.

Patients / Methods:

Our research was conducted in Department of Neurology in Clinical Hospital Centre Osijek. We included post-stroke patients (women and men equally) above age 60 and with intact communication skills during their treatment in our Clinic. Each patient were given scales for assessment of depressive symptoms (Hamilton depression rating scale HAM-D), suicidality (Columbia suicide severity rating scale CSSR-S) and the list for assessment of borderline personality symptoms

(Borderline Symptom List BSL) with examination of mental state (MMSE). These scale were given prior to antidepressant treatment and two weeks following the treatment.

Results:

The obtained results shown greater incidence of depressive symptoms in post-stroke women and higher incidence of affirmative symptoms for borderline personality structure. In the group of male patients were more often the suicidal ideations with only moderate symptoms of depression.

Conclusion:

In this research we found that both groups were having some form of depressive symptoms with variable manifestation intensity from which resulted suicidal ideations in some patients. These results again confirmed the necessity for interdisciplinary approach to such patients and the need for more vigorous treatment of depression in elderly.

41. NEUROPSYCHIATRIC EVALUATION OF TRAUMATIC BRAIN INJURY

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Introduction:

Traumatic brain injury (TBI) is a major cause of disability. Assessment and treatment of TBI typically focus on physical and cognitive impairments, yet psychological impairments represent significant causes of disability and poor quality of life. Major depressive disorder (MDD) and coexisting anxiety may be the most common and disabling psychiatric condition in individuals with TBI.³ More elaborative studies may prove more informative and credible in recognition of this important secondary condition. Hence, the present study is designed

Aims & Objective:

To investigate the prevalence and determinants of depression and anxiety in patients of TBI and its relationship with injury characteristics. This study has also tried to understand the relationship of depression and anxiety to quality-of-life outcome in a prospectively studied sample of TBI.

Material & Method:

156 Mild to moderate TBI patients of 18 years or older age were included in study after applying appropriate inclusion and exclusion criteria. Apart from recording their socio-demographic profile and injury history, all participants were assessed on PHQ-9, GAD-7, WHOQOL-BREF and GCS to

assess depression, anxiety, quality of life and severity of trauma respectively. All patients were subjected to neuro-radiology to localize site of injury.

Results:

Depression and anxiety was found in 46 v/s 29 percent cases respectively with majority (60%) of depressed cases qualifying for moderate severity as compare to anxiety. First three month after TBI was associated with maximum occurrence of depression and anxiety (68 % v/s 54 %). Strong correlation was found between severity of trauma and severity of depression and anxiety. Brain parenchyma contusion was most commonly implicated site to cause depression and anxiety with predominant involvement of left temporal and frontal lobe. Quality of life was poor in moderate head injury cases than the mild cases. Depressed and anxious patients had significantly poor quality of life than those who were not irrespective of their severity of injury.

Conclusion:

TBI patients must be evaluated for concomitant mood and anxiety disorders. Timely treatment for these disorders may improve overall outcome and quality of life.

42. PTSD - YESTERDAY, TODAY, TOMORROW

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In 1980, the American Psychiatric Association added PTSD to the third edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-III) classification scheme, but its history goes back much earlier and is associated mostly with war trauma. The concept of disorder as we know it today has a long and interesting history. The first descriptions of stress-related disorder are associated with the history of warfare. Also, there are descriptions of stress, mostly anxious reactions in the American Civil War participants, and more frequent and pronounced during the combatants in the First World War. The concept of shell shock was defined during the World War II together with appearance of Great stress reactions diagnostic category in the first edition of the DSM. PTSD was first mentioned in DSM III as a separate diagnostic category as a result of a difficult experience America had to face with the return of Vietnam veterans from the battlefield. DSM III development team in its considerations took into account three key factors, stressor, personality characteristics exposed to stressor and symptoms. The founder of today's Department of Psychological Medi-

cine, University Hospital Center Zagreb, Stephen Bettelheim 1945, wrote interesting articles on war neuroses and therapeutic approaches and about the impact of social climate on the chronification of the disease. Nevertheless, Croatian psychiatry was found unprepared for this disorder. Therapeutic approach has changed over the years, from the initial debriefing and ventilation, to group therapy with homogeneous and heterogeneous composition which remained basic concept in the treatment of psychotraumatized patients.

Today, the clinical picture of PTSD is largely a matter of comorbidities, from mood disorders, various forms of addiction, to the concepts of the new, post-traumatic embitterment syndrome. The department of neurosis and borderline conditions of Neuropsychiatric Hospital "Dr. I. Barbot" in addition to traditional group psychotherapy has introduced behavioral approach based on the construct of self-acceptance. Self-acceptance is defined as the recognition and full adoption of yourself, including all your personal faults, weaknesses and early life processes. Crucial is to achieve a sense of happiness and mental health.

Even today, when we talk about PTSD there are unresolved relationship issues on intensity of stressors, premorbid personality, and their interplay in the development of the disorder. There are open issues of deferred onset of symptoms, duration of the disorder, the possibility of cure and chronicity.

Keywords: PTSD, DSM, self-acceptance

43. DEPRESSIVE SYMPTOMS IN SCHIZOPHRENIA

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Introduction:

Depressive symptoms in schizophrenia are important not only because they contribute significantly to the suffering caused by the illness but also because they exacerbate deficits in psycho social functioning and commonly precede attempted and completed suicide.

Objectives:

It is important to define and clinically assess such symptoms accurately as there is now increasing evidence that they can be treated successfully.

Aims:

The authors assessed the presence and severity of depressive symptoms, as well as their associations with other clinical and socio-demographic measures, in a group of patients with schizophrenia, who were not in a major depressive episode or diagnosed with schizoaffective disorder. And also possible differences in frequency of depressive symptoms in inpatient and outpatient group.

Methods:

Thirty adult inpatients with schizophrenia and 30 comparison subject with schizophrenia in outpatient treatment were studied. Depressive symptoms were rated primarily with the Hamilton Depression Rating Scale. M.I.N.I. Screen and M.I.N.I were used to screen out other disorders and confirm the diagnosis of schizophrenia. Socio-demographic questionnaire that was used was designed specifically for this study.

Results:

Our results indicate significant presence of depressive symptoms in all study subjects. Mean value of total HAM-D score for the whole sample was $15,63 \pm 7,724$, corresponding to mild depression. Average total score was significantly higher in the subgroup of inpatients ($18,97 \pm 6,636$) compared with ($12,3 \pm 7,373$) in outpatients.

Conclusions:

The results indicate significant presence of depressive symptoms in patients diagnosed with schizophrenia. This should probably be reflected in guidelines for evaluation and treatment of these patients.

44. NEW APPROACH OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION USING FOR THE TREATMENT OF RESISTANT EPILEPSY

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Backgrounds and aims:

Some new technologies are developed today to reduce seizures and to improve quality of life in resistant epilepsy: DBS, VNS, tDCS and rTMS. The study was designed to evaluate the therapeutic effect of new technology of low-frequency repetitive transcranial magnetic stimulation which was combined with low doses of anticonvulsants what can help to avoid of side AEDs effects.

Patients and methods:

Thirty-six patients with epilepsy (mean age 28.1 ± 2.9 years)

who take low doses of anticonvulsants were studied (EEG before and after 1, 5, 10 rTMS procedures and then every month; neuropsychological tests, QOLIE-31, SSQ before and after rTMS course every month). rTMS (1 Hz, 20% MMI intensity of big ring coil (Neurosoft)) was performed during ten consecutive days over the temporal lobe projection with focusing on hippocamp.

Results:

Seizure frequency per week after 10 rTMS decreased following rTMS treatment compared with baseline period (2.3 vs. 0.17 per week; $P=0.016$) which corresponds to 82.9% reduction. There were no seizures to end of third month in 66.8% and to termination of sixth month in 27.8% of patients ($p<0.05$). Presence of paroxysmal EEG activity disappeared at 40% of patients during one month after combined therapy ($p<0.05$). Antidepressive and antianxious effect was obtained at 46% of depressive subjects direct after rTMS course ($p<0.004$). The common QOLIE-31 point significantly increased during one and three months after rTMS ($p<0.05$).

Conclusions:

New technology of low-frequency rTMS delivered into temporal lobe with focusing on hippocamp and combined with low doses of anticonvulsants had a determining function and leads to significant antiepileptic effect, improves the psychological condition and quality of life of patients with resistant epilepsy.

45. DYSTINCTIVENESS OF HYPERTRIGLICERIDEMIA AS A PROGNOSTIC RISK FACTOR IN ISCHEMIC AND HEMORRHAGIC STROKE IN CORRELATION WITH ESR INFLAMMATORY PARAMETERS

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Introduction/Aims:

Stroke is the second leading cause of death and the leading cause of permanent disability in modern man. The results of recent studies indicate that stroke is preventable by recognizing the risk factors and their timely elimination. This is why numerous studies of new risk factors which lead to stroke are being performed especially due to the indication of the importance of inflammation in the development of atherosclerotic lesions in blood vessels which in turn lead to the development of vascular disease and stroke.

Patients / Methods:

The aim of this study was to determine the values of triglycerides in the blood of patients with ischemic and hemorrhagic stroke, according to the distribution by sex and age, then to determine their role as risk factors in the onset of stroke and to confirm the correlation between hypertriglyceridemia and inflammatory parameters, ESR value in the speed of eritrocit deposition, then finally to enable the prevention and proper treatment and reduce maladies caused by this devastating disease. The survey data was analyzed by examining the history of a total of 450 patients with stroke who were treated in the Department of Neurology of the General Hospital in Dubrovnik in two years period. Patients were divided into two groups: group A consists of 393 (87.33%) patients with ischemic stroke and in group B which was composed of 57 (12.67%) patients with hemorrhagic stroke, which corresponds to the representative sample of the results of previous studies. A data analysis according to sex and age, triglyceride values and ESR in the blood was done in both groups. Furthermore cholesterol and C-reactive protein (CRP) and the analysis of the ultrasonographic findings of the scans of the blood vessels of the neck with an extracranial color Doppler device on Aloka Prosound α 6. For statistical analysis of the data used, the t-test was used to obtain independent samples. Furthermore the chi-square test (χ^2) test and ANOVA test was done with SPSS V.20.0 (Statistical Package for Social Sciences). For better clarity in the overview of the results, tables and graphs were used.

Results:

The average age of all patients with stroke was 73.23 years and 75.66 years in patients with ischemic stroke and 70.89 years in patients with hemorrhagic stroke. The result of the study was statistically significant hypertriglyceridemia values in both groups studied ($p = 0.006$), with a value of statistical significance $p < 0.05$. There was a statistically significant correlation and elevated triglyceride value and ESR ($p = 0.007$), and their correlation with carotid artery stenosis, which was statistically highly significant in the group of patients with stenoses of 50% and $> 75\%$ ($p < 0.001$).

Conclusion:

It can be concluded that the statistically significant triglyceride as a risk factor, and correlation with inflammatory parameters ESR as a prognostic indicator can contribute to the prevention and proper treatment of vascular changes, the development of atherosclerosis and stroke.