

STRUCTURAL-DYNAMIC ORGANIZATION OF PHYTOCENOSES OF FOREST AND FOREST-STEPPE VEGETATION TYPES IN SOUTH-WEST PRE-BAIKAL

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ABSTRACT

The problem of assessment of the state of ecosystems and of the forecast of changes in them in the whole and in vegetation cover structure in particular is basic for modern biogeographic, geobotanical, biocoenotic and ecological studies. Studies of spatial-temporal organization of vegetation reflecting practically all environmental changes during a concrete time period for concrete physical-geographic conditions on any territory requires a synthesis of different research fields for studies of different types of phytocoenoses. At such approach, a phytocoenosis is considered as a system, which forms and develops as a unit and makes interdependent links with systems of other hierarchical level and ecotope conditions. Revealing of phytocoenoses structure and of their response to climatic fluctuations in the zones of contact of different vegetation types, communities typification and classification under transitional environmental conditions allows to determine trends of their formation under modern environmental conditions and to find out the development way of vegetation on the background of dynamics and variability of climate in a concrete region.

Key words: forest and forest-steppe, structural-dynamic organization of vegetation, South-West of Pre-Baikal

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IMPROVEMENT OF GREEN PUBLIC SPACE IN RESIDENTIAL COMPLEXES: A TOOL FOR GREEN COMMUNITY

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ABSTRACT

One of the critical issues in housing quality in urban areas is to develop and adopt effective strategies for enhancing the quality of community, eventually revitalizing the idea of green housing in contemporary residential complexes. Based on the assumption that the characteristics of contemporary residential communities might differ from those of traditional ones, this research aimed to reinterpret strategies for the activation of green public spaces in a modern context. This research conducted a questionnaire survey to investigate the conditions in selected residential complexes in metropolitan areas in Iran, and the residents' perceptions and demands on the concept of green community. Based on the results of the survey, planning scenarios as well as a green community model were proposed, then applicable methods and services extracted from the scenarios was developed.

Keywords: green community; residential complex; public space

DOPPLER ULTRASONOGRAPHY WAVEFORMS CHANGES IN IUGR AND THEIR VALUES IN THE RELEVANT MANAGEMENT OF PREGNANCY

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ABSTRACT

Intrauterine Growth Restriction (IUGR) means the ultrasonography recording by estimated foetal weight (EFW) below than 10th percentile for its gestational age. This group includes foetuses that do not reach their genetic potential for intrauterine growth and indicates a small foetus that is deprived compared to the previous ultrasonography assessment (usually for a placental reason). This retrospective study includes unique complicated pregnancies with IUGR, between 26-37 weeks GA, in the years 2014-2017 and is performed in University Hospital of Obstetrics and Gynecology “Koço Gliozheni”, in Tirana, Albania. The inclusion criteria in this study were: the exact age of pregnancy (LMGA or from the ultrasound before 20 weeks); EFW in ultrasound < p.10th; the early beginning of placental insufficiency is when PI > p.95th for GA and CPR < 1.04; all of the pregnant women included in this study had more than three Doppler ultrasonography examinations before delivery, where Doppler parameters of AU were obtained: presence of diastole, absence or reverse flow. Patients with chromosomal anomalies have been excluded from the study. The monitoring intervals and the moment of birth were done by the doctors who followed the pregnancy. Neonatal features, birth details, indications and birth delivery, age of pregnancy, birth weight, Apgar, are recorded for each patient. In the baby's birth day were recorded all the changes in the Doppler and the progression of Doppler abnormalities from one examination to the other. Although is calculated the time from the occurrence of abnormal Doppler until the baby was born.

Key words: age, artery, growth, gestational, intrauterine, restriction, umbilical.

BIOMASS ALLOCATION IN RELATION TO PRECIPITATION, TEMPERATURE AND SOIL PROPERTIES IN THE GRASSLAND OF CORUH RIVER BASIN, TURKEY: USING STRUCTURAL EQUATION MODELLING WITH AMOS

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ABSTRACT

Aboveground biomass (AGB) and belowground biomass (BGB) of grasslands are important parameters for characterizing regional and global carbon cycles in grassland ecosystems. Compared with the relatively detailed information acquired for AGB, data regarding the BGB has been poorly reported at the regional scales. In this study, AGB, BGB, and soil samples for their organic matter, texture and pH level were collected from the 49-plots across the grasslands of the four different sub-watersheds (Bicakcilar, Kilickaya, Oltu and Uzundere) within the Coruh River Basin to compare the differences in AGB, BGB, total biomass (TB) and the ratio of below to aboveground biomass (B/A) in those sub-watersheds. The relationships among parameters including AGB, BGB, TB, B/A, climate and soil were also examined. It was found that AGB, BGB and TB differed significantly among the grasslands of four sub-watersheds while B/A did not differ. Structural equation model (SEM) analyses indicated that mean annual precipitation (MAP) and mean annual temperature (MAT) were the strongest positive driver for the allocation of AGB, BGB and TB. AGB and TB were positively correlated with soil organic matter and negatively related with pH, whereas BGB and B/A were positively related with pH and negatively correlated with soil organic matter. Climatic variables, MAP and MAT, were negatively correlated. The results demonstrated that BGB and TB were positively correlated to MAP ($p < 0.01$) and were negatively related to MAT. B/A was negatively related to AGB ($p < 0.01$). With all data pooled, TB and MAP were strongly correlated, as the relationship between MAP and TB ($R^2 = 0.72$). These results indicated that increase in precipitation positively influence grassland biomass production in Coruh River Basin grasslands. In addition to these, precipitation and temperature had strong control on AGB, BGB and TB in semi-arid grassland ecosystems.

Keywords: aboveground biomass (AGB), belowground biomass (BGB), precipitation, temperature, structural equation model.

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IMPACT OF ARCHITECTURAL FEATURES ON ENERGY CONSUMPTION IN SCHOOLS: AN APPROACH TO ECOLOGICAL ARCHITECTURE

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ABSTRACT

Energy consumption of the public buildings in urban areas represents an important cost of the balance of economic life of city. Moreover, public buildings, in particular schools, should provide an environment with elevated comfort levels because students and teachers spend much time in these buildings. This study was intended to provide a scientific frame for development of a design guideline for sustainable school buildings. Based on a careful review of available literature, energy consumption strategies and performance levels that affect heating and cooling energy consumption in selected primary schools in Tabriz were analyzed as a reference baseline building. Computer simulations were performed using Energy Plus software to analyze the sensitivity of each of the influencing variable and energy strategies to overall performance of the school. Analysis of variance (ANOVA) was also conducted to estimate the relative importance of each factor to find out the priority of each energy factor.

Keywords: building, energy, process, sustainability

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A CASE STUDY ON CARBON FOOTPRINT IN ERZURUM CITY OF 2012, TURKEY

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ABSTRACT

Today, climate change is considered one of the greatest environmental problems of the world. It has observable serious effect on ecological system by reducing the biodiversity, threatening flora and fauna, affecting water, energy, carbon and other essential element cycle and shifting in the distributions of plant species which currently provides important ecosystem services by controlling erosion, soil conservation, carbon sequestration, nutrient cycling, and maintenance of water quality. Due to its global effect, Turkey has to deal with the challenges of climate change as well. As a parting in Appendix I of United Nations Framework Convention on Climate Change (UNFCCC), Turkey has an obligation to inform the UNFCCC, to develop and implement new policies for fighting climate change and to report the existing data of greenhouse gas emissions. In this work, we monitored carbon dioxide emissions which is the main greenhouse gas in the Erzurum City, Turkey with the fact that most of the global emissions are generated by cities. The main point of this study is to calculate carbon footprint of Erzurum city by GPC-Global Protocol for Community-Scale Greenhouse Gas Emissions, Pilot Version 1.0, and to establish a basement for further studies in order to reduce the using of fossil fuels by encouraging to spread the cleaner energy sources and renewable energy investments in the long period. The results also provide to guide for adverse effect of climate change by analyzing the current situation for further researches on environmental and ecological studies of Erzurum City.

Keywords: Climate change, Carbon footprint, Erzurum city.

BIOLOGICAL ACTIVITY OF EXTRACTS FROM THE MYCELIUM OF MEDICINAL MUSHROOM *INONOTUS RHEADES*

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ABSTRACT

The search for bioactive natural compounds potentially having antitumor activity - important problem of modern science. We have previously demonstrated high *in vitro* antiradical activity of water ethanol extracts (WEE) from the mycelium of *Inonotus rheades*. In the present study we evaluated the effect of 30% and 70% of WEE from mycelium *I. rheades* on the cell culture of human tumor cells HEP-2. 50% cell death is achieved after 24-h incubation in 53 µg/ml 70% WEE (dry weight), whereas 30% WEE at 550 µg/ml only, i.e. an order of magnitude difference between the concentrations, which indicates that high cytotoxic activity was shown WEE a radical change in the qualitative composition of extractives with increasing ethanol concentration. Incubation of cells with 250 mM H₂O₂ resulted in approximately 40% cell death, whereas pre-incubation with both 30% and 70% of WEE resulted in 100% survival of cells in a large range of concentrations. This indicates a WEE protective effect under oxidative stress. Thus, WEE of the mycelium *I. rheades* in high concentrations exhibit cytotoxic activity. At the same time, a wide range of concentrations extracts can neutralize the oxidative stress and cell death caused by the addition of H₂O₂.

Key words: antioxidant activity, cytotoxic activity, *Inonotus rheades*, mycelium

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ASSESSING AND MITIGATING STUDIES OF THE ENVIRONMENTAL AND ECOLOGICAL IMPACTS OF 2011 WINTER UNIVERSIADE IN ERZURUM, TURKEY

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ABSTRACT

Nowadays, the environmental and ecological impacts of international sporting events have received increasing attention despite its difficult assessment. These events have potential impact on local eco-systems by contributing greenhouse gas emissions related to climate change and utilizing more water and natural sources causing the water and soil pollution due to significant re-development of host city. Therefore, environmental management systems are required for mega sports events in terms of their contribution to air, water and soil pollution. This paper examines three such implementation processes that the mitigation for the greenhouse gases caused by newly constructed and renovated of existing buildings and transportation improvements caused by the contribution of new motor vehicles to city center and recycling the wastes for the environmental management of Erzurum 2011 Winter Universiade pre- and during games. Therefore, the aim of this study is to calculate the carbon dioxide emission related to climate change from re-insulated buildings designed for accommodation in Athletes Village, to reduce the transportation-based air pollution with emission controlling all motor vehicles newly joined in city traffic and to disseminate the waste recycling originated from sports venues with the recycling equipment during the games. It is achieved a 68.4% carbon reduction of total carbon dioxide emission with the insulation of re-constructed accommodation buildings while it is accomplished nearly 75% waste recycling of total wastes generated during 25th World Universities Winter Games which was hosted in Erzurum in 2011.

Keywords: Environmental management, sports events, recycling, greenhouse gas.

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COMPREHENSIVE ANALYSIS OF THE QUALITY OF WATER BODIES IN BAIKAL NATURAL TERRITORY

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ABSTRACT

This research is concerned with the sanitary-ecological and hydro-chemical condition of Lake Baikal's water and of surface and ground waters. The study revealed a tendency for changes in the chemical properties from the past to the present. The degree of safety of the water bodies for the population is determined.

Key words: Lake Baikal, surface and ground waters, comprehensive assessment, water quality, chemical elements, microorganisms.

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ENVIRONMENTAL ROLE OF URBAN LANDSCAPE INDICATORS IN OLDER DISTRICTS OF CITIES

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ABSTRACT

Despite the challenges of urban ecology and sustainability in older districts of cities in Iran, the environmental impacts of factors related to urban landscape on well-being of citizens, from a scientific point of view are yet to be studied. An environmental well-being indicator as a tool can be used for the assessment and monitoring of the impact of urban landscape on sustainable urban development and transformation of societies in the direction of urban sustainability, especially in older districts of cities. This study, therefore, was intended to develop a valid framework for environmental well-being indicators related to urban landscape for urban sustainability in older districts of cities, using Delphi method. The participants were selected among urban planning and design scholars and urban managers in EastAzarbaijan Province, Iran.

Keywords: ecology, landscape, urbanization

THE HIGH-SPEED RAIL HANDBOOK: A TECHNICAL GUIDE¹

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ABSTRACT

The project of the new railway line Turin Lyon is an exemplary case of unnecessary work. It should overlap a railway tunnel and an international railway line with modern features; traffic data show since 2000 a collapse of road and rail movements along the corridor Italian French interested; after 14 years of experimentation its modal transfer capacity has always given negative results; the new line would not be interoperable with the rest of the Italian and French network because it has its own, even different, links between the Italian and the French of the same line. The studies carried out on the energy consumption and CO₂ production of the Turin Lyon in the construction phase, which requires the excavation of 42 million cubic meters of rock, and the management of energy consumption of the ventilation and refrigeration of the base tunnel, give a negative energy balance for the new work. Finally, because the size of the necessary works and their enormous cost would have very heavy effects on the environment and on the resources to be dedicated to the critical issues of the remaining national network and to the real needs of citizens.

Keywords: High Speed Rail, Turin-Lyon, Environmental Impact, Cost-Benefit Assessment.

ROLE OF PUBLIC GREEN SPACE IN IMPROVEMENT OF HEALTH IN RESIDENTIAL AREAS

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ABSTRACT

With increasing global interest in creating healthy urban communities, most part of research in urban planning and public health has been progressing on this subject. While discussions and studies in Iran are beginning significant to occur at the macro level, most studies hitherto have centered round public health, with very few considerations to the role of public green spaces. This paper aimed to explore how individual characteristics and public green spaces in the urban community are correlated to the health level in cities, focusing on Iran. This study established a conceptual model to examine the relationship between public health in urban areas, individual attributes, and public green spaces and analyzed the effect of characteristics of public green space on health level using a multilevel regression model. The results revealed that, with the exception of some variables, the correlations between individual health of citizens and public green space variables are statistically significant.

Keywords: public green space; community; design; health.

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NONINVASIVE METHODS IN EVALUATION OF PORTAL HYPERTENSION

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ABSTRACT

Non-invasive methods that can be used reliably to determine the presence and estimate the degree of portal hypertension have been in great demand for at least 30 years. Despite substantial efforts to generate such a method, up until a few years ago only disappointing and unsatisfactory results were obtained. Since the primary cause of portal hypertension is the mechanical increase in intrahepatic resistance due to fibrosis and distortion of liver architecture, it is reasonable to assume that non-invasive parameters of liver fibrosis may indicate the presence of portal hypertension. PHT is a robust outcome measure which has proven prognostic significance in chronic liver disease and the potential for use in monitoring disease progression and treatment efficacy. In this paper we have outlined the pathogenesis of PHT and discussed a range of candidate serum biomarkers that have been identified. At present, transient elastography appears to represent the most promising noninvasive technique that could potentially replace HVPG measurement for PHT or endoscopy for variceal detection. The potential role of serum markers for the evaluation of PHT it is increasingly being assessed in prospective clinical studies. Further advances in our understanding of the underlying mechanisms responsible for the development and progression of PHT will continue to reveal additional biomarker targets.

Key words: portal hypertension, non invasive methods, elastography, serum biomarkers

EVALUATION OF PREVALENCE OF DIABETIC FOOT ULCER AND ITS RELATED FACTORS IN DIABETIC PATIENTS ADMITTED TO KHATAM-OL-ANBIA HOSPITAL IN SHOUSTAR DURING 2015-2016: A RETROSPECTIVE STUDY

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ABSTRACT

Background: Diabetes is a chronic disease that results in disruption of the production and function of insulin in the body. Foot ulcer is a major complication of diabetes mellitus with high morbidity, mortality and related costs. This retrospective study was conducted to investigate Evaluation of prevalence of diabetic foot ulcer and its related factors in diabetic patients admitted to Khatam-ol-Anbia Hospital in Shoushtar during 2015-2016. *Methods:* In this retrospective cross-sectional descriptive study, the data were analyzed from a report of diabetic patients referring to Khatam-ol-Anbia Hospital in Shoushtarduring 2015-2016 which included 1257 patients with diagnosis and history of diabetes that they were extracted from them and the required information was collected through a checklist of researcher-made files. The inclusion criteria for all diabetic patients were Type One and Two. Pregnant diabetes, cases without diabetes and incomplete cases (n =213) were excluded. Data were then entered into SPSS software version 17 and analyzed by descriptive statistics, Chi-square, Pearson's chi-square test, ANOVA, and nonparametric tests such as Mann-Whitney. The significance level was considered as P <0.05. *Results:* The sample included 1257 individuals with type 1 and type 2 diabetes with an average age of 58.6 ± 17.6. Of these, 43.2% were male and the rest were female and 18.6% were type 1 diabetes and the rest were type 2 diabetes. The prevalence of lower limb ulcers in the last two years was 9.1% (115). There was a significant relationship between the type of diabetes and the prevalence of lower limb ulcer in the past and before the last two years (P <0.05). *Conclusion:* The results of this study indicate that the prevalence of diabetic foot ulcer is much higher than other studies. It is recommended that diabetic foot care training, blood glucose control, proper diet and other necessary training for diabetics should be aimed at preventing and reducing diabetic foot ulcers to nurses who are the first line of the treatment team and They play a vital role in the prevention and care of diabetic foot, and nutritionists who play a vital role in educating the proper diet of patients, to be presented.

Keywords: Diabetic foot, foot ulcers, diabetic patients, prevalence

EVALUATION OF THE PREVALENCE OF LOWER LIMB AMPUTATION AND ITS RELATED FACTORS IN DIABETIC PATIENTS ADMITTED TO KHATAM-OL-ANBIA HOSPITAL IN SHOUSTAR DURING THE 2015-2016: A RETROSPECTIVE STUDY

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ABSTRACT

Background: Diabetes is the most common endocrine disorder. Among the complications of diabetes, the likelihood of a diabetic suffering from foot lesions is high, with more than 15% of these ulcers ultimately leading to amputations. This retrospective study was conducted to investigate the prevalence of lower limb amputation and its related factors in diabetic patients admitted to Khatam-ol-Anbia Hospital in Shoushtar during the 2015-2016. **Methods.** In this retrospective cross-sectional descriptive study, the data were analyzed from a report of diabetic patients referring to Khatam-ol-Anbia Hospital in Shoushtarduring 2015-2016. Then data were included 1257 patients with diagnosis and history of diabetes that they were extracted from them and the required information was collected through a checklist of researcher-made files. The inclusion criteria for all diabetic patients were Type One and Two. Pregnant diabetes, cases without diabetes and incomplete cases (n =213) were excluded. Data were then entered into SPSS software version 17 and analyzed by descriptive statistics, Chi-square, Pearson's chi-square test, ANOVA, and nonparametric tests such as Mann-Whitney. The significance level was considered as P <0.05. **Results:** The sample included 1257 individuals with type 1 and type 2 diabetes with an average age of 58.6 ± 17.6. Of these, 43.2% were male and female, and 18.6% were type 1 diabetes and the rest were type 2. The prevalence of amputation was 1.4% over the last two years. There was a significant relationship between the type of diabetes and the prevalence of amputation before 2 years (P=0/008). Also, people with lower literacy than those with a more literate level were significantly more likely to suffer from amputation before 2 years and over the past two years (P <0.05). **Conclusion:** Regarding the relatively high prevalence of limb amputations in diabetic patients in Shoushtar, it is recommended that training on the treatment, prevention and improvement of diabetic foot ulcer should be provided to the curative staff, especially nurses, in order to increase their ability to prevent diabetic foot ulcers. This reduces the risk of lower limb amputation and improves the quality of life in patients.

Keywords: Diabetes, diabetics, amputation, lower extremity, prevalence

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NUTRIENT RETRANSLOCATION INTO THE SOIL IN PURE AND MIXED STANDS OF PARROTTIA PERSICA, CASE STUDY: PATOM DISTRICT OF KHEYROUD FOREST

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ABSTRACT

In forest ecosystems nutrient cycling is a constant process that is carried out in different stages. Biological parts of this process begin with intake of nutrients from soil by trees, and continue until litter fall and litter decomposition. Nutrient retranslocation into the soil in pure and mixed stands of *Parrotia persica* (case study: Patom District of Kheyroud forest) was studied in this research. The nutrient level such as Carbon, Nitrogen, Phosphorous, Calcium, Magnesium and Potassium as well as several physical soil characteristics and biomass production was identified. Results indicated that nutrient retranslocation is quicker (in mixed stands of *Parrotia persica*, than pure stands, and nutrient retranslocation (With the exception of K), are significantly different between the stands. Additionally, it was observed that biomass production in pure stands is higher than mixed stands, indicating that decomposition in mixed stands is faster than pure stands. Furthermore, soil sample analysis results showed that the amount of all nutrients except Nitrogen and Potassium, in pure stands is more than mixed stands.

Key words: Nutrient retranslocation, pure stand, mixed stand, *Parrotia persica*, leaf, soil.

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ANTIPSYCHOTIC TREATMENT AND METABOLIC ALTERATION IN PATIENTS WITH SCHIZOPHRENIA

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ABSTRACT

Psychopharmacology has become more complex over the past decade or so, with many more medications available from different pharmacologic classes. To investigate the alterations of biochemical parameters, in patients with schizophrenia and bipolar disorders treated with atypical antipsychotic and antidepressants (Olanzapin, Risperidon, Clozapin, tricyclic antidepressants, SSRI, SNRI). Seventy four patients in prolonged treatment with schizophrenia and bipolar disorders were evaluated, 22 (29.7%) women and 52 (70.3%) men, aged between 11 and 65 years. Blood collection and examination were performed at our laboratory with autoanalyser SAT 450 and MAGLUM 800 PRL. Evaluation after repeated measurements indicated significant differences in comparing the mean values obtained in each patient. The indicators of development of metabolic syndrome showed a significant increase of lipid panel especially triglycerides, total cholesterol, fasting glucose, CK level and hepatic enzymes ($p < 0.01$). Plasma level of prolactin was significantly higher in patients with the predominant negative symptoms of schizophrenia $4.88 (\pm 3.72)$. This study supports the hypothesis that changes in the studied parameters are associated with the treatment with atypical antipsychotic and antidepressant drugs. Monitoring patients' blood compositions could result in better prognostic evaluations and aid in determining additional systemic treatment options.

Keywords: Measurements; Biochemical parameters; Schizophrenia; Bipolar disorders

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PREVALENCE OF POST STROKE DEPRESSION IN AMBULATORY PATIENTS

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ABSTRACT

Depression and humor change is a common and serious complication after cerebrovascular disease that may affect functional recovery and quality of life of patients. The purpose of the study is to assess the prevalence of depression after the stroke. This is a prospective study involving 183 patients aged 46-81 with stroke after hospitalization attending the Community Center for Mental Health in Tirana during 2012-2015. Depression was diagnosed by DSM-IV and DUI-II criteria. DASS-42 was also used for assessing symptoms of depression, anxiety and stress. The average age of the total patient is 65.8 (\pm 6.8) years (range 46-81 years). 31.7% of patients were female and most of them (68.3%) males. The highest frequency of depression is after 6 months (23.5%) of patients (95% CI 17.94 - 30.14); A significant trend of increasing the prevalence of depression has been found with increasing educational level and lowering the economic level ($p < 0.01$). Concerning medical history: Diabetes is an independent risk factor for hitting [OR = 2.41 95% CI 1.32 - 13.41 $p = 0.02$]. Of the Severity Assessment according to DUI-II with mild depression resulted (2.7%) of patients with moderate depression (6.6%) patients while severe-onset 26 patients (14.2%) prevailed. Given the negative impact of PSD, early detection and interference are important. Clinical implications are close observation of stroke and depression patients, especially during the first 3 months of the stroke and those with risk factors for PSD.

Key words: cerebrovascular disease, depression, risk factors