

ferred to geriatric units. Patient condition at discharge was not stated in 22 (1.8%) questionnaires, 770 (67.0%) patients were discharged in improved condition, 77 (6.7%) in unchanged condition, 9 (0.8%) in deteriorated condition, and 272 (23.7%) patients died during the treatment. The collection and analysis of data on stroke patients could greatly improve our perception of stroke in the Croatian population.

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**SHORT-TERM OUTCOME OF STROKE**

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Clinical characteristics and short-term outcome of stroke were analyzed in patients treated at the Osijek Department of Neurology. The study included 67 patients, mean age 68.24 years. There were 34 women (mean age 71.41 years) and 33 men (mean age 64.85 years). Data from the patient history and treatment protocol were thoroughly analyzed. The aim of the study was to determine more precise indicators of short-term stroke outcome in our population, which would enable comparison with data from other countries and facilitate patient prognosis. The following indicators were obtained: first ever stroke was recorded in 50 (74.6%) and recurrent stroke in 17 (25.4%) patients; ischemic stroke was diagnosed in 59 (88.0%) and hemorrhagic stroke in 8 (12.0%) patients. The following complications of stroke were recorded: pneumonia in 11.9%, urinary infection in 25.4%, deep venous thrombosis in 3% and consciousness disturbances in 28.4% of patients, whereas decubitus was not recorded at all. Total disease outcome and grade of functional deficit in survivors expressed by modified Rankin scale (RS) were as follows: complete recovery and independence (RS grade 0 and 1) were recorded in 11.0%; moderate neurologic deficit and partial dependence on other people's help (RS grade 2 and 3) in 26.9%; severe neurologic deficit and complete dependence on other people's help (RS grade 4 and 5) in 40.2%; and death (RS 6) in 20.9% of patients. On discharge the condition was improved as compared with the condition on admission in 68.7%, unchanged in 7.5%, and deteriorated in 3.0% of patients, while 20.9% of patients died. Upon the treatment at the Osijek Department of Neurology, 13.4% of patients were transferred to other hospital departments, 13.4% were referred to thermal resorts, 10.5% were referred to geriatric units, and 41.8% of

upućeno je na rehabilitaciju, 59 (5,1%) bolesnika premješteno je na gerijatrijske odjele. U 22 (1,8%) upitnika nije navedeno stanje bolesnika kod otpusta, 770 (67,0%) bolesnika otpušteno je u poboljšanom stanju, 77 (6,7%) u nepromijenjenom stanju, 9 (0,8%) u pogoršanom stanju, a 272 (23,7%) bolesnika preminulo je tijekom liječenja. Sakupljanje i obrada podataka o bolesnicima s preboljelim moždanim udarom moglo bi značajno unaprijediti naše spoznaje o moždanom udaru u našoj populaciji.

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**KRATKOROČNI ISHOD MOŽDANOG UDARA**

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Autori su istraživali kliničke značajke i kratkoročni ishod moždanog udara (MU) u bolesnika liječenih na Neurološkoj klinici u Osijeku. Studijom je obuhvaćeno 67 bolesnika prosječne starosti 68,24 godina (34 žene prosječne starosti 71,41 godina i 33 muškarca prosječne starosti 64,85 godina). Detaljno su analizirani podaci iz povijesti bolesti i protokola liječenja. Cilj ovoga istraživanja bio je utvrditi preciznije pokazatelje kratkoročnog ishoda MU u našoj populaciji, što omogućuje usporedbu s podacima iz drugih zemalja i olakšava prognozu bolesti. Dobiveni su sljedeći pokazatelji: prvi MU zabilježen je u 50 (74,6%), a recidivirajući MU u 17 (25,4%) bolesnika. U 59 (88,0%) bolesnika radilo se o ishemijskom MU, a u 8 (12,0%) bolesnika o hemoragijskom MU. Zabilježene su sljedeće komplikacije bolesti: pneumonija u 11,9%, uroinfekcija u 25,4%, duboka venska tromboza u 3%, poremećaj svijesti u 28,4%, dok dekubitusi nisu zabilježeni niti u jednog bolesnika. Ukupan ishod bolesti i stupanj funkcijskog deficita preživjelih bolesnika izražen modificiranom Rankinovom ljestvicom (RS) bio je sljedeći: 11,0% bolesnika potpuno se oporavilo i neovisni su o tuđoj pomoći (0. i 1. stupanj RS), 26,9% bolesnika ima umjeren neurološki deficit i djelomice ovisi o tuđoj pomoći (2. i 3. stupanj RS), 40,2% bolesnika ima težak neurološki deficit i potpuno su ovisni o tuđoj pomoći (4. i 5. stupanj RS), a umrlih (6. stupanj RS) je bilo 20,9%. Stanje pri otpustu u odnosu na stanje pri prijmu poboljšano je u 68,7%, nepromijenjeno u 7,5%, pogoršano u 3,0%, a umrlo je 20,9% bolesnika. Nakon provedenog neurološkog liječenja premješteno je na druge odjele 13,4%, upućeno u toplice 13,4%, upućeno u gerijatrijske ustanove 10,5%, a kući otpušteno 41,8% bolesnika. Studija pokazuje razorno obilježje MU, opseg i težinu posljedica koje ova bolest ostavlja na zdravlje pučanstva, izazivajući funkcijska oštećenja i dramatičan pad kvalitete života oboljelih.

patients were discharged for home care. The study pointed to the debilitating character of stroke, and to the extent and severity of its sequels, causing functional disabilities and dramatic deterioration of the patient quality of life. At the same time, results of the study pointed to the need of ensuring better conditions for the diagnosis, management, rehabilitation and prevention of this serious disease.

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#### **RELATION BETWEEN RISK FACTORS FOR ISCHEMIC CEREBROVASCULAR DISEASES – SMOKING, DIABETES MELLITUS AND HYPERTENSION**

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Age, duration of diabetes mellitus, and cigarette smoking are risk factors for ischemic cerebrovascular disease. Cigarette smoking was found to increase the levels of cholesterol, phospholipid acids and dihomogammalinolic acid. Many studies have confirmed the correlation of cigarette smoking and cholesterol level with the morbidity and mortality from ischemic cerebrovascular disease (ICVD). The present study included 201 patients with ICVD, 87 women and 114 men, mean age 70.4 years (84.2 and 67.1 years in women and men, respectively). There was no significant sex difference according to hypertension, i.e. 55% of women and 44% of men had already been treated for hypertension. Diabetes mellitus was present in 27.5% of women and 18.4% of men, and smoking in 65.7% of men and only 6.9% of women. However, there was a significant sex difference according to the age at onset of ICVD, as women suffered ICVD at an older age than men, the difference being as high as 17 years. Diabetes mellitus and hypertension were equally present in the two sexes. Smoking habit was significantly more common among men, who also suffered ICVD at significantly younger age than women, pointing to a evident correlation between age at ICVD onset and cigarette smoking. Studies of other authors confirm the high risk of ICVD in smokers as compared to nonsmokers of both sexes.

Istodobno rezultati studije upozoravaju na potrebu stvaranja boljih uvjeta za dijagnostiku, liječenje, rehabilitaciju i prevenciju ove teške bolesti.

51.

#### **ODNOS POJEDINIH ČIMBENIKA RIZIKA ZA ISHEMIJSKU CEREBROVASKULARNU BOLEST – PUŠENJA, DIJABETES MELITUSA, HIPERTENZIJE**

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Dob, trajanje dijabetesa, hipertenzija i pušenje su čimbenici rizika za nastanak ishemijske cerebrovaskularne bolesti. Autori nalaze da pušenje povećava razinu kolesterola i fosfolipidnih kiselina, te fosfolipid dihomogammalinolne kiseline. Više studija potvrđuje povezanost pušenja i razine kolesterola s morbiditetom i mortalitetom od ishemijske cerebrovaskularne bolesti.

Ispitivanje je obuhvatilo 201 bolesnika s ishemijskom cerebrovaskularnom bolešću (ICVD), 87 žena i 114 muškaraca. Srednja dob ispitanika bila je 70,4 godine; srednja dob oboljelih žena bila je 84,2 godine, a muškaraca 67,1 godinu. Nije bilo značajne spolne razlike u učestalosti hipertenzije; ranije se zbog hipertenzije liječilo 55,2% žena i 44,7% muškaraca. Dijabetes melitus je imalo 27,5% žena i 18,4% muškaraca; pušilo je 65,7% oboljelih muškaraca, ali samo 6,9% oboljelih žena. Dakle, značajna je dobn razlika među spolovima oboljelih od ICVD, žene obolijevaju u podmakloj životnoj dobi, čak s dobnom razlikom od 17 godina prema muškarcima. Oba spola gotovo podjednako boluju od hipertenzije i dijabetesa. Muškarci koji ranije obolijevaju od ICVD također su značajno češće pušači. Iz navedenoga se može postaviti korelacija između dobi oboljelih od ICVD i pušenja. Studije drugih autora potvrđuju visok rizik od ICVD kod muškaraca i žena koji puše u odnosu prema nepušačima.

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### PREVALENCE OF ISCHEMIC STROKE AMONG PATIENTS WITH CEREBROVASCULAR DISEASES

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The prevalence of ischemic stroke recurrence is the subject of continuous reconsideration among the professionals as well as the patients and their families. This study included 164 patients with the diagnosis of ischemic stroke made on the basis of clinical picture and computed tomography findings. There were 78 women and 86 men, mean age 66.5 and 78.0 years, respectively. The majority of patients (75.6%), both male and female, had not experienced any previous ischemic attacks, whereas 9.75% of patients (8.5% of men and 1.2% of women) had previously had one or more transient ischemic attacks (TIA). Stroke recurrence was recorded in 14.6% of patients (8.5% of women and 6.0% of men). Results of the study indicated that the great majority of stroke patients (75.65%) suffered first ever in lifetime stroke, whereas 24.35% or almost one third of the patients had already had an ischemic attack. These data point to the importance of follow-up and secondary prevention in patients with ischemic stroke, because of the high probability of stroke recurrence.

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### STROKE IN THE ELDERLY POPULATION OF CROATIA

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In the census year of 2001, the proportion of individuals aged >65 in Croatia was as high as 15.62% of the population (N=4437460), with a statistically significant age-sex differentiation (male 12.41% and female 18.61%). The intensive rise in the proportion of elderly population in Croatia has led to a discrepancy between the specific health care needs of the elderly and meeting of these needs. The structure of health care usage has thus changed, with a marked increase in the geriatric health care consumption. Over the last few decades, the circulation mortality and morbidity rates have been on an increase,

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### UČESTALOST ISHEMIJSKIH ISPADA U BOLESNIKA S CEREBROVASKULRNOM BOLEŠĆU

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Učestalost recidiva ishemijske cerebrovaskularne bolesti među oboljelima predmetom je stalnih preispitivanja stručnjaka, ali i oboljelih i njihovih obitelji. Ispitivanje je obuhvatilo 164 bolesnika s utvrđenom ishemijskom cerebrovaskularnom bolesti (klinička slika, kompjutorska tomografija), oba spola, 78 žena i 86 muškaraca. Srednja dob oboljelih žena bila je 66,5 godina, a muškaraca 78 godina. Većina ispitanika, 75,6%, nije ranije imala ishemijskih napadaja, podjednako žene i muškarci, dok je 9,75% oboljelih već ranije imalo jednu ili više tranzitornu ishemijsku ataku (TIA), i to 8,5% muškaraca i 1,2% žena. Ponovljenu cerebrovaskularnu bolest doživjelo je 14,6% oboljelih, gotovo podjednako muškarci i žene, tj. 8,5% žena i 6,0% muškaraca. Naše istraživanje upućuje da najveći broj akutno oboljelih od ishemijske cerebrovaskularne bolesti (75,65%) oboljevaju po prvi put, dok ih je 24,35%, odnosno gotovo trećina oboljelih već ranije imala ishemijske napadaje. Navedeno upućuje na važnost praćenja i sekundarne prevencije bolesnika s ishemijskim moždanim udarom zbog visoke vjerojatnosti njegovog recidiva.

53.

### MOŽDANI UDAR U HRVATSKOM STARAČKOM PUČANSTVU

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U Hrvatskoj je popisne 2001. godine udio ljudi starijih od 65 godina iznosio čak 15,62% od ukupne populacije (N=4437460), sa statističkom značajnošću dobno-spolne diferencijacije (muškarci 12,41% i žene 18,61%). Posljedice intenzivnog rasta starijeg pučanstva u Hrvatskoj dovode do nerazmjera između osobitosti zdravstvenih potreba starijih ljudi i njihovog zadovoljenja. Struktura korištenja zdravstvene zaštite time je promijenjena s izrazitim povećanjem gerijatrijske zdravstvene potrošnje. Naime, u Hrvatskoj posljednjih desetljeća dolazi do porasta stope morbiditeta i mortaliteta od cirkulacijskih bolesti, što dovodi i do po-

leading to an increase in the proportion of functionally disabled elderly people, who account for even 21.36% of total elderly population in Croatia. This is confirmed by the gerontologic analytical structure of hospitalizations of individuals aged  $\geq 65$  according to the most common groups of diseases in Croatian hospitals in 2000, showing the circulatory system diseases to be at the highest first place in this age group, accounting for 59.4% of hospitalizations. The second most common cause of hospitalization in this age group were diseases of the eye and adnexa oculi, accounting for the disturbing proportion of 59.2%. The group of endocrine diseases, nutritional and metabolic diseases were on the third place with 37.6%, followed by the group of neoplasms with 37.4%. The rate of particular causes of hospitalization in the elderly for the City of Zagreb varies, pointing to the need of monitoring and assessment of the health care needs of this population, and thus of the cause of their hospitalization, both according to the regions of Croatia and for the City of Zagreb. The prevalence of the circulatory system diseases as the cause of death in Croatia continued to increase in 2000, accounting for the disturbing proportion of 53.16% of all causes of death (N=50246) in 2000. In younger old age of 65-74 years, the circulatory system diseases as the cause of death accounted for 27.36%, in medium old age of 75-84 years for 32.96%, and in very old age of  $\geq 85$  years for 25.06% of deaths. Additional gerontologic analysis of the leading causes of death in those aged  $\geq 65$ , in the group of circulatory system diseases (I00-I99) pointed to stroke (I64), which was on the first place with 25.87%, followed by chronic ischemic heart disease (I25) with 19.69%, and acute myocardial infarction (I21) with 13.06%. In the analytical gerontologic public health monitoring of the health care needs of geriatric patients, the gerontologic indicator of the magnitude of the prevalence of stroke and its sequels involving functional abilities is of special analytical importance. Namely, gerontologic analysis of the recorded health state of the elderly and their functional abilities at the geriatric hospital "F" in 2000, with gerontologic indicators of their leading diagnoses according to group of diseases as defined by the International Classification of Diseases and States, points to the first place of circulatory diseases (I00-I99) with 54.3% of a total of 589 geriatric patients (59.7% in women and 43.2% in men). Further analysis of the leading individual diagnoses within this group of diseases shows a high prevalence of hypertensive (51.1%) and cerebrovascular diseases (24.5%) with the highest proportion of stroke, especially in women, as the most common causes of hospitalization in geriatric patients. This gerontologic analysis also confirms that the functional ability in the elderly is their major health characteristic and the main criterion

rasta broja funkcijski onesposobljenih starijih ljudi s njihovim značajnim udjelom od čak 21,36% u ukupnom hrvatskom staračkom pučanstvu. To potvrđuje i gerontološko-analički prikaz strukture hospitalizacija osoba sa 65 i više godina po najučestalijim skupinama bolesti u bolnici Hrvatske u 2000. godini, koji pokazuje kako visoko prvo mjesto u ovoj dobnoj skupini zauzimaju bolesti cirkulacijskog sustava s udjelom od 59,4%. Zanimljiva je daljnja pojavnost drugog mjesta po rangu učestalosti uzroka hospitalizacije 65-godišnjaka zbog skupine bolesti oka i očnih adneksa s udjelom od zabrinjavajućih 59,2%. Na trećem mjestu ranga učestalosti nalazi se skupina endokrinih bolesti, bolesti prehrane i metabolizma s 37,6%, dok je na četvrtom mjestu skupina bolesti novotvorina s udjelom od 37,4%. Veličina pojave uzroka hospitaliziranih starijih ljudi je za Grad Zagreb različita, što ukazuje na nužnost praćenja i procjene zdravstvenih potreba starijih ljudi, a time i uzroka njihove hospitalizacije i po regijama Hrvatske i za Grad Zagreb. Veličina pojave skupine cirkulacijskog sustava kao uzroka smrti u Hrvatskoj u 2000. godini je i dalje u porastu sa zabrinjavajućim udjelom od 53,16% od sveukupnog broja uzroka smrti (N=50246) u 2000. godini. U ranijoj starosti od 65-74 godine skupina bolesti cirkulacijskog sustava kao uzrok smrti pojavljuju se s udjelom od 27,36%, u dobi srednje starosti od 75-84 godine s 32,96% i duboke starosti od 85 i više godina s 25,06%. Daljnja gerontološka analiza vodećih uzroka smrti starijih ljudi od 65 i više godina unutar skupine cirkulacijskih bolesti (I00-I99) ukazuje na moždani udar (I64) koji je na prvom mjestu s udjelom od 25,87%, zatim slijede kronična ishemijska bolest srca (I25) s 19,69% i akutni infarkt miokarda (I21) s udjelom od 13,06%. U analitičko-gerontološkom javnozdravstvenom praćenju zdravstvenih potreba gerijatrijskih bolesnika posebno analitičko mjesto dobiva gerontološki pokazatelj veličine pojavnosti moždanog udara te njegovih posljedica na funkcijsku sposobnost. Naime, gerontološka analiza utvrđenog zdravstvenog stanja starijih bolesnika i njihove funkcijske sposobnosti u gerijatrijskoj bolnici "F" u 2000. godini, s gerontološkim pokazateljima o njihovim vodećim dijagnozama po skupinama bolesti prema Međunarodnoj klasifikaciji bolesti i stanja ukazuje na prvo mjesto prisutnih bolesti cirkulacijskog sustava (I00-I99) s udjelom od 54,3% od ukupno 589 gerijatrijskih bolesnika (kod žena taj udio iznosi 59,7%, a kod muškaraca 43,2%). Daljnjom raščlambom vodećih pojedinačnih dijagnoza unutar te skupine bolesti uočava se izrazita pojavnost hipertenzivnih bolesti (51,1%) i cerebrovaskularnih bolesti (24,5%), s najvećim udjelom moždanog udara, i to u žena, kao najčešćih razloga hospitalizacije gerijatrijskih bolesnika. I ova gerontološka analiza potvrđuje kako je funkcijska sposobnost starijih ljudi njihovo glavno zdrav-

for institutional geriatric care. In the monitoring of health care needs and in identification of the magnitude of health care consumption of the elderly, of utmost importance is also the public health gerontologic analysis of pharmacoeconomic indicators. Thus, the analysis of pharmacoeconomic indicators at the geriatric hospital "F", obtained from the study of drug consumption in geriatric patients, shows that the greatest proportion of drugs were used for circulatory disorders, i.e. 49.3% of 3916 prescribed drugs. Drugs used for nervous system diseases were on the second place (17.7%), followed by drugs for gastrointestinal system diseases (15.2%). All these gerontologic public health indicators clearly point to the need of the implementation of the Program of health care measures and procedures for health care of the elderly, with systematic and regular determination, recording and follow-up of functional abilities (Official Gazette of the Republic of Croatia, 30/2002). Also, the effects of inappropriate habits and occupation on health status and functional ability in the elderly should be determined, followed-up, studied and assessed, because of their unambiguously demonstrated risk for the occurrence of circulatory system diseases, especially stroke, in the elderly female population.

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#### **INCIDENCE OF STROKE IN CENTRAL DALMATIA (SPLIT – DALMATIA COUNTY) DURING THE WAR IN CROATIA (1991 – 1995)**

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Although the health consequences of war are mostly observed through the number of casualties and wounded, war actions definitely influence, directly or indirectly, the occurrence of other types of health disorders in the population at large. Therefore, we conducted this retrospective study of the incidence of stroke in Central Dalmatia (Split – Dalmatia County) during the war in Croatia (1991 – 1995). The aim of the study was to assess the possible association between the war activities and occurrence of stroke in the population exposed to the situation of armed conflict. The data collected were compared with those on the stroke incidence in the pre-war period (1986 – 1990). There was no statistically significant difference in the rate of stroke between the two periods, however, a significant increase in the incidence of primary cerebral hemorrhage was recorded during the war period. The possible causes of the increase in the number of patients with cerebral hemorrhage are discussed.

stveno obilježje i glavni kriterij za institucijsku gerijatrijsku skrb. Nadalje, u praćenju zdravstvenih potreba i utvrđivanju veličine zdravstvene potrošnje starijih bolesnika od velike je važnosti i javnozdravstvena gerontološka analiza farmakoekonomskih pokazatelja. Tako analiza farmakoekonomskih pokazatelja u gerijatrijskoj bolnici "F", dobivenih na osnovi istraživanja potrošnje lijekova gerijatrijskih bolesnika, pokazuje da se najviše lijekova rabilo za bolesti cirkulacijskog sustava, 49,3% od ukupno 3916 propisanih lijekova. Na drugom mjestu po potrošnji su lijekovi koji se primjenjuju kod bolesti živčanog sustava (17,7%), a na trećem oni za bolesti probavnog sustava (15,2%). Prethodno navedeni gerontološko-javnozdravstveni pokazatelji nedvojbeno ukazuju na zdravstvenu potrebu primjene Programa zdravstvenih mjera i postupaka u zaštiti zdravlja starijih ljudi, uza sustavno i redovito utvrđivanje, evidenciju i praćenje funkcijske sposobnosti (Narodne novine, 30/02). Nadalje nužno je utvrditi, pratiti, proučavati i procjenjivati utjecaj negativnog oblika zdravstvenog ponašanja, kao i utjecaj zanimanja na zdravstveno stanje i funkcijsku sposobnost starijih ljudi zbog nedvojbeno dokazanog njihovog rizičnog čimbenika za nastanak bolesti cirkulacijskog sustava, poglavito moždanog udara u staračkom ženskom pučanstvu.

54.

#### **INCIDENCIJA MOŽDANOG UDARA U REGIJI SREDNJE DALMACIJE (ŽUPANIJA SPLITSKO-DALMATINSKA) TIJEKOM RATNIH ZBIVANJA U REPUBLICI HRVATSKOJ (1991.-1995.)**

Lušić I<sup>1</sup>, Matijaca M<sup>1</sup>, Pavelin S<sup>1</sup>, Titlić M<sup>1</sup>, Sučević D<sup>1</sup>, Janković S<sup>2</sup>, Buća A<sup>2</sup>.

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Premda se zdravstvene posljedice rata najčešće promatraju kroz broj poginulih i ranjenih osoba, nesumnjivo je da ti događaji, posredno ili neposredno, utječu i na pojavu drugih vidova zdravstvenih poremećaja u populaciji. U tom je cilju provedeno i ovo retrospektivno istraživanje incidencije moždanog udara u regiji srednje Dalmacije (Županija splitsko-dalmatinska) tijekom rata u Republici Hrvatskoj (1991.-1995.). Osnovni cilj je bio utvrditi postoji li ikakva povezanost ratnih zbivanja i pojave moždanog udara u populaciji izloženoj situaciji neposrednog ratnog sukoba. Prikupljeni su podaci uspoređeni s podacima o incidenciji moždanog udara u prijeratnom razdoblju (1986.-1990.). Nije utvrđena značajna razlika u stopi obolijevanja od moždanog udara tijekom dvaju ispitivanih vremenskih razdoblja, no zabilježen je značajan porast incidencije primarnog moždanog krvarenja tijekom trajanja ratnog sukoba.

55

### PRIMARY STROKE PREVENTION AT A FAMILY PHYSICIAN OFFICE

Prić L<sup>1</sup>, Mesić S<sup>2</sup>, Soldo-Butković S<sup>3</sup>.

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Hypertension is one of the major risk factors for stroke. The aim of the study was to identify potential individuals at risk by the method of screening in a population of school children and adults. The screening included 350 subjects (school children and adults) who visited their family physician for any reason whatsoever during 5 days of the week. The screening procedure included blood pressure measurement in sitting position; history data on hypertension and stroke in close relatives; data on cigarette smoking and alcohol consumption; and body weight and height measurement with calculation of body mass index. The measures of primary stroke prevention can be performed in the family physician's routine in primary health care. This very important segment has been neglected in daily work, when the shortage of time during the patient visit precludes these widely available procedures to regularly perform.

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### VERTEBROBASILAR DOPPLER AND RADIOLOGIC FINDINGS IN PATIENTS WITH CERVICOGENIC HEADACHE

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<sup>1</sup>Department of Physical Medicine and Rehabilitation, <sup>2</sup>University Department of Neurology, Osijek University Hospital, Osijek, Croatia

Cervicogenic headache (CH) is a complex clinical entity characterized by profound unilateral skeletomuscular pain at the craniocervical junction and occipital area of the head, accompanied by vegetative reactions and many symptoms. Hemodynamic changes in the vertebrobasilar (VB) arterial siphon and radiologic changes in CH patients were analyzed. Study group included 50 patients, 42 women and 8 men, aged 20-60 years. Standard and functional images of the cervical spine, and transcranial Doppler (TCD) of the VB siphon (standard position, maximal anteflexion and dorsiflexion, left and right rotation of the head) were per-

ba u Republici Hrvatskoj. Raspravljani su mogući uzroci porasta broja bolesnika s moždanim krvarenjem.

55.

### PRIMARNA PREVENCIJA MOŽDANOG UDARA U ORDINACIJI LIJEČNIKA OBITELJSKE MEDICINE

Prić L<sup>1</sup>, Mesić S<sup>2</sup>, Soldo-Butković S<sup>3</sup>.

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Hipertenzija je jedan od najvećih rizika za razvoj moždanog udara. Cilj rada bio je probirom (*screening*) u školskoj i odrasloj populaciji uočiti potencijalne rizične pojedince. Probir je proveden u 350 osoba (školska i odrasla populacija) koji su posjetili svog liječnika obiteljske medicine u razdoblju od uzastopnih 5 radnih dana zbog bilo kojeg razloga. Probir je uključivao sistematsko mjerenje krvnog tlaka u sjedećem položaju, uzimanje anamnestičkih podataka o hipertenziji i moždanom udaru u bližih srodnika, te uvid u ovisnosti – pušenje i konzumacija alkohola, te mjerenje visine i težine uz izračunavanje indeksa tjelesne mase. Rutinskim radom liječnika obiteljske medicine u primarnoj zdravstvenoj zaštiti moguće je provoditi mjere primarne prevencije moždanog udara. Ovo vrlo važno područje zanemareno je u svakodnevnom radu gdje nedostatak vremena pri konzultaciji onemogućava provođenje ovih vrlo pristupačnih postupaka.

56.

### VERTEBROBAZILARNI DOPLER I RADIOLOŠKI NALAZ U BOLESNIKA S CERVIKOGENOM GLAVOBOLJOM

Kadojić M<sup>1</sup>, Kadojić D<sup>2</sup>.

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Cervikogena glavobolja (CG) kompleksan je klinički entitet obilježen dubokom unilateralnom skeletomuskularnom boli kraniocervikalnog prijelaza i zatiljnog dijela glave, što je praćeno vegetativnim reakcijama i brojnim popratnim simptomima. Analizirali smo hemodinamske promjene u vertebrobazilarnom (VB) arterijskom slivu i radiološke promjene u bolesnika sa CG. Ispitana je skupina od 50 bolesnika (42 žene i 8 muškaraca, dobi između 20 i 60 godina). Učinjene su standardne i funkcijske snimke vratne kralježnice i transkranijски dopler (TCD) VB sliva (snimanje u standardnom položaju glave, maksimalnoj antefleksiji i dorzofleksiji, rotaciji glave ulijevo i udesno). Funkcijski TCD

formed. Functional TCD of the VB siphon was altered in 78% of patients. The pathologic findings included compressive cervical syndrome in 28%, vasospasm in 51.3%, atherosclerotic flow retardation in 10.25%, and a combination of atherosclerotic and compressive alterations in 10.25% of patients. Standard radiograms showed degenerative changes in 78% of patients, mostly mild changes localized at C4-C7 segments. Straightening of the physiological lordosis of the cervical spine was recorded in 58% of patients. Functional radiograms revealed abnormalities in 34% of patients, mostly instability (n=11), functional block (n=5), and congenital block (n=1). There was a statistically significant correlation between compressive syndrome detected by ultrasound and radiographically revealed grade of degenerative changes. Results of the study showed that functional TCD of the VB siphon and radiographic findings of cervical spine could provide useful data on the etiopathogenesis of the disease and for the differential diagnosis from other diseases with similar clinical symptomatology. Therefore, these diagnostic methods should be regularly used on evaluating patients with CH.

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#### **NOVEL OPERATIVE TECHNIQUES IN THE EXTRACRANIAL ARTERY SURGERY: OUR EXPERIENCE**

Lehner V<sup>1</sup>, Lučev N<sup>2</sup>, Pinotić K<sup>1</sup>, Čandrić K<sup>1</sup>, Ištvančić T<sup>1</sup>.

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The operative methods of cerebral revascularization in cerebrovascular disease undergo fast and dynamic changes, which can considerably influence further course of the disease. This retrospective study included 112 patients operated on (147 operations) for cerebrovascular disease and stenotic lesions of the aortic arch arteries. The latest operative methods in the treatment of stenotic lesions of the carotid siphon and subclavian-vertebral arteries are presented. Because of the small sample, the analysis of operative results on internal carotid arteries did not provide definite answer concerning closed endarterectomy *versus* eversion technique and 'classic' patch technique. Transposition methods have objectively shown better patency of the operated arteries than bypass operations, however, neither here did the statistical analysis of the results of clinical follow-up over a 5-year period yield definite answer at the level of significance ( $p < 0.05$ ), although the number of complications and restenoses was lower.

VB sliva bio je izmijenjen u 78% ispitanika. Među patološkim nalazima u 28% nađen je kompresivni cervikalni sindrom, u 51,3% vazospazam, u 10,25% aterosklerotsko usporenje protoka, te u 10,25% kombinacija aterosklerotskih i kompresivnih promjena. Standardni radiogrami pokazali su degenerativne promjene u 78% ispitanika. Najčešće se radilo o lakšim promjenama, lokaliziranim pretežito na segmentima C4-C7. Izravnjanje fiziološke lordoze vratne kralježnice nađeno je u 58% ispitanika. Funkcijski radiogrami pokazali su abnormalnosti u 34% ispitanika, najčešće nestabilnost (n=11), funkcijski blok (n=5) i kongenitalni blok (n=1). Zapažena je statistički značajna povezanost između kompresivnog sindroma nađenog ultrazvukom i stupnja degenerativnih promjena utvrđenih radiografski. Rezultati istraživanja pokazuju da funkcijski TCD VB sliva i radiografski nalazi vratne kralježnice mogu dati korisne informacije u pojašnjenju etiopatogeneze ove bolesti i diferencijalnoj dijagnozi prema drugim bolestima koje imaju sličnu kliničku simptomatologiju, te su nezaobilazne dijagnostičke pretrage u obradi bolesnika s CG.

57.

#### **NOVIJE OPERATIVNE TEHNIKE U KIRURGIJI EKSTRAKRANIJALNIH ARTERIJA – NAŠA ISKUSTVA**

Lehner V<sup>1</sup>, Lučev N<sup>2</sup>, Pinotić K<sup>1</sup>, Čandrić K<sup>1</sup>, Ištvančić T<sup>1</sup>

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Operacijske metode revaskularizacije mozga u cerebrovaskularnoj bolesti mijenjaju se vrlo dinamično, što može imati znatnog upliva na daljnji tijek bolesti. Retrospektivnom studijom obuhvaćeno je 112 operiranih bolesnika (147 operacija) sa cerebrovaskularnom bolešću i stenotskim promjenama na arterijama luka aorte. Prikazane su najnovije operacijske metode u liječenju stenotskih promjena karotidnog sliva i subklavijsko-vertebralnih arterija. Zbog premalog uzorka, analiza rezultata operacija na unutarnjim karotidnim arterijama nije dala definitivni odgovor glede zatvorene endarterektomije u odnosu na everzionu tehniku i 'klasičnu' patch tehniku. Transpozicijske metode operacija pokazuju objektivno bolju točnost operiranih arterija u odnosu na operacije premoštavanja. Ni ovdje statistička analiza rezultata kliničkog praćenja kroz petogodišnje razdoblje nije dala definitivni odgovor na razini značajnosti ( $p < 0,05$ ), premda je broj komplikacija i restenoza bio manji.

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