

NEUROPSYCHOLOGY IN THE SERVICE OF PREVENTIVE MEDICINE AND STANDARD CLINICAL EXAMINATION

Kuzina N.V.

Paper offers practical techniques for conducting Neuropsychological studies and recommendations for content opinions issued on aged patients receiving ambulatory, as well as conditionally healthy citizens during examinations.

Objective: *To create a Neuropsychological study program of non-invasive adult population in order to prevent disturbances of the brain, strokes, falls in health during examinations and for diagnosis of age-related brain changes.*

Materials and methods: *Review and layout in accordance with specified objectives of early detection of organic brain dysfunctions and disorders of cognitive activity, sensitivity analysis and applicability in pursuit of predetermined objectives of order techniques offered in Neuropsychological albums, as well as selected subsidiary methods study of higher cognitive functions.*

Results: *Paper provides a list of Neuropsychological diagnostic methods recommended for introducing into examinations and approximate structure of proposed written opinion.*

Conclusion: *A standard has been suggested for non-invasive investigation techniques for the initial diagnosis and safety control during the examinations in the context of the preservation of higher mental functions and brain health.*

Keywords: *quality of life; preventive medicine; higher mental functions; clinical examination; stroke prevention; diagnosis of neuropsychological; cognitive impairment; behavioral disorders; organic brain disorders.*

Introduction

During the last decade more attention is being paid to preventive medicine [2, 4 and al.], early diagnosis, and in particular, – prophylaxis.

lactic medical examination of the population (including additional) [3, 11, 18, 19, 23, 26–28, 34, 37, 48, 66, 73, 77, 81, 83, 85, 98, 99] to optimize health care in terms of health insurance and considering the imperative of minimizing the costs and complying with the treatment standards. Whereas due to the presence of appropriate medical technology for heart attack and prevention of hypertension, diabetes, atherosclerosis, as well as consultation of mammology, mammography, research on HIV and other working age significantly reduces the risk of mortality measures has long been occupying a place in the minds of countrymen [58, 69, 85 and al.], the measures for early diagnosis and prevention of diseases of the brain (including vascular disease, geriatric change effects of teratogenic effects on the production of [17, 18, 19, 20, 22, 29, 33, 37, 47, 51, 53 56, 60, 62, 64, 67, 69, 71, 73, 78, 79, 86, 91], etc.), stroke prevention and disorders of higher mental functions [5, 6, 9, 12–16, 20, 21 , 25, 32, 35, 38, 39, 40, 42, 46, 49, 50, 52, 54, 55, 57, 59, 61- 63, 67, 70, 72, 74-76, 80, 84, 87–91, 93, 96, 100] aren't yet so familiar to the consumer. On the other hand, experience with the demands of customers in pharmacy (retail outlets – pharmacies State budget institution of Health “Center for Pharmaceutical QA” of the Department of Health of the City of Moscow, the observation time – April 2012 – March 2016 years) shows that up to 70–80% of the population over the age of 50 years applies to the pharmaceutical retail trade in order to purchase drugs specifically for the treatment of diseases and to mitigate the symptoms of cerebral, vascular and general cognitive impairment [36]. This refers to the observation relating to the demand for tablet form products “Mexidolum” (“Mexicor”), “Actovegin”, “Cavinton” (“Vinpocetine”), 5 mg / 10 mg, “Cinnarizinum”, “Picamilonum” 50 mg, “Trental” (“Pentoxifylline”) of 100 mg and 400 mg, “Phezam”, “Betaserc” (“Vestibo”, “Betaver”, “Betagistine”), 24 mg / 16 mg / 8 mg, ”Tanakan” (“Bilobil”, ”Ginkoum”, ”Ginkgo-Biloba”), “Nootropil” (“Piracetam”) 400 mg / 800 mg / 1200 mg, “Phenotropil”, “Milgamma Compozitum”, “Neuromultivit”, “Combilipen”, ampoules “Actovegin” 1 ml / 2 ml / 5 ml / 10 ml,

“Cerepro” 4 ml, “Cerebrolysin” 1ml / 2 ml / 5 ml / 10 ml, “Trental”, “Mexidolum” 2 ml / 5 ml, “Milgamma” et al. Pharmaceuticals taken in long tablet form, but on the background of symptoms (usually a general decline in cognitive function, memory, often undiagnosed persistent dizziness, tinnitus and others) significant improvements are no longer observed. In some cases, in addition to age-related changes, such violations are provoked teratogenic factors such as alcohol, smoking, exposure to chemical pollutants and conditions in producing or general adverse environmental conditions [10, 18, 19, 37, 57, 64, 76]. Young people and children born with impaired functioning of the structures of the brain [24, 29, 30, 62, 90] represent high-risk group. As a rule, in the diagnosis of mild cases or when it detects the first signs of violations are reduced at best to consult a neurologist, who appoints the patient quite expensive medications for long-term use, it does not guarantee complete rehabilitation. Many patients do not return to re-consult, taking these drugs uncontrollably for a long time. According to modern standards of service hospitals patients as outpatient and inpatient required standard unit is the rate of a clinical psychologist. A clinical psychologist is responsible for assisting in the detection of pre-medical during mass prophylactic medical examination of the first signs of higher mental functions disorders, dysfunctional manifestations in the brain. This approach in neuropsychology (serving the needs of preventive medicine) and in the diagnosis of patients with chronic conditions or working in hazardous occupations has become firmly established in the science in the 1970s. [6, 8, 10, 15–17, 20–24, 29, 31, 33, 44, 47, 51, 53–56, 59–62, 65, 68, 69, 79, 82, 86, 89, 91, 92, 94, 95, 97] Neuropsychological diagnostic role in the monitoring of healthy individuals working age and the age of patients age can hardly be overestimated: it is an important “input” (to determine the localization of organic brain lesions or to eliminate them), as well as for the current / total control of the state and confirm the effectiveness of therapeutic interventions, to avoid cumulative effect of exposure to teratogens on respondents of working age in dynamics

(for example, in hazardous industries with high noise levels, chemical exposure and others on working time of the contract).

The purpose

Discussion and reasoned recommendation is included in a standard clinical examination of the existing non-invasive low-cost and diagnostically reliable procedures that detect the early stages of dysfunction of brain structures, and as a consequence – early breach of higher mental functions, as well as characterizing the dynamics of the patient's condition at low cost, including processes described for mild cognitive impairment in the elderly.

Data for study

1) self-assembled “blinded” full neuropsychological testing protocols “Mental Health” clinic patients, Moscow; 2) neuropsychological written opinion (over 100), made during the initial reception, support and rehabilitation of patients suffering from disorders, including food, diseases of the nervous system and psyche in the clinic “Mental Health”, Moscow.

The object of study

The potential neuropsychological diagnostic techniques for use in the course of clinical examination for early detection of dysfunctions and organic brain lesions in patients of old age and contingent working in hazardous environments.

Subject of research

A set of techniques of structuring and sequencing for implementation in the clinical examination of the procedure and in the routine medical examinations for early detection of disorders of higher mental functions and brain dysfunction in patients with mass of preclinical diagnosis (in this case additional medical examination), at the patients aging, with the aim of monitoring the state of the brain, as well as

prevention of stroke and timely correction of gerontological changes in cognitive processes.

Fundamentals

The central task of neuropsychological research was based on the representation of the system structure of higher mental functions, – according to which each function is a complex functional system consisting of many units, – and assisted by the theory of dynamical localization, according to which the infringement of the same function takes place, therefore depending on different units affected, as well as basing the theory of neuroplasticity, – to determine the quality and qualification of the symptom as much as possible, and clearly indicate the zone the most likely mechanics of violations.

Methods

Analysis techniques, procedures implementing neuropsychological methods contained in diagnostic albums [8, 24, 65, 82, 92, 94, 95, 97] as well as the suitability of analysis for use during a baseline medical examination, clinical examination of certain additional techniques possessing such features as small time-consuming and high diagnostic ability to accurately determine the localization of dysfunction.

Evaluate and follow a comprehensive selection of neuropsychological diagnostic techniques and methods of physiological and psychological functional systems of the following criteria: 1) the diagnostic power / reliability (a) describe the presence of cognitive impairment; b) determining the localization of dysfunction), 2) the time required to conduct research and data processing, 3) the possibility of rehabilitating measures of the study; 4) the possibility of subsequent significant current change control, 5) the admissibility of the application in a high density stream of patients / conditionally healthy respondents in a medical examination, 6), the criterion of social good. The main criteria for selection are techniques – the ability to realize during exercise localization principle, the result of the accuracy, reproducibility exercise in dynamics.

At least to perform a minimum set of neuropsychological tests to patients, including jobs reading, arbitrary and on the instructions of drawing, play of words, phrases, images, association, reasoning and interpretation, the ability to reproduce the position of the body / identify the body posture / shape of the object, emotional gnosis and others. To determine with a high degree of probability the presence of disorders of higher mental functions in patients with lesions of the brain to distinguish between sensory and gnostic disorders, to determine their location, make syndromic analysis and analysis of neuropsychological factors.

Along with a set of exercises classical neuropsychological albums (in the traditional paper form and the automatic processing), neuropsychologists practitioners, depending on the specifics of the surveyed persons and the alleged violations can be optionally used, and even successfully developed (e.g., experimental methods B.V. Zeygarnik, T.G. Vizel et al.), non-invasive methods for the study of conservation areas of the brain and higher mental functions. The study is preceded by the establishment of compliance and gathering extensive medical history, which in neuropsychological diagnostics is briefly mentioned in the preamble to conclusion, including the purpose of the rational organization of medical examination of the electronic card member / patient.

Results of the study

In the course of neuropsychological studies of clinic patients in the outpatient reception, reinvestigation and dynamics in the office of clinical psychologist the conditional “standard” neuropsychological research and content writing neuropsychological conclusion of the diagnosis of adults was determined as relatively healthy, working-age, so and for aged patients to prevent aging and early detection of various cognitive dysfunctions, as well as areas of the brain.

Approximate volume extended neuropsychological conclusion may consist of up to 5 sheets of A4 format with half interval, size 14 (about 10 000 printed characters) in comparison with a brief (usually

with tenths symbol of preservation of a function / of the assignment), holding to a single sheet.

Before analyzing the results of neuropsychological album assignments summarizing of the history must be made, the survey basing on which to detect the causes of possible violations of the brain functioning. Order of birth is specified, with the special features of the birth, life history – about the health of the facts and length of life of the parents, significant diseases (injuries) patients from birth, affect the state of the brain (fever cases, concussions and al.). Accessibility of the patient productive contacts, specific judgment and thinking is described, including the ability to engage in dialogue, to observe interpersonal distance, to absorb the job and keep up the pace. Conclusion should list the patient's complaints of physical and cognitive negative subjective experiences, indicate the patient called significant events leading to shocks / changes in health / behavior, regularly affecting the general condition of the patient teratogenic microfactors, including manufacturing (e.g., day mode). It also shows features of the patient's psycho-emotional reactions in the area, condition of the patient's own self-assessment of higher mental functions and their changes over time, possible problems with the body perception, motor responses (the registration of hypochondria, gipernozognozia, anosognosia and al.). These data history – compared with the observation neuropsychologist during interviewing optionally in the evaluation of the statements used PANSS tests [103], the GAF and the PSP [104], YMRS [101] OASCL [102], and others from traditional psychological questionnaires because of the limited time and other research problems – may, nevertheless, be used in the test of K.Leongard, G.Shmishek "Accentuation of character and temperament" (1970) with the automatic processing and Minimult – "Multifactor diagnostics instruments "Minimult v 3.0 (An abbreviated version of the MMPI)" (compact, but reliable version of SMIL / MMPI) [1]. Inclusion of test methods of data gives reliable information about the violation of socialization, including violations of behavioral and psycho-emotional.

Actually the study begins with the initial testing of auditory-verbal memory: 1) play an immediate and deferred 10/5 words, 2) the reproduction of a series of 3 words with the study of contamination memory, 3) play two proposals to the study of contamination; reading and retelling of the text – reproduction and interpretation of the content of (direct / trace). Evaluated speech – distinguishing sounds, articulation, kinetics, nomination, understanding, intonation, relevance possession voice, simultaneously measured the acoustic nonverbal gnosis (the distinction of playing and rhythm). We investigate the patient's attention to the assessment of efficiency of performance (index of perception of tempo and sensorimotor reactions and attention), the rate of entry into operation level, mental stability, dynamics, time parameters and others. With Schulte tables (red-black square by Gorbov), sample Münsterberg, proofreading test. Held on the functional asymmetry of the sample (and possibly a deep survey using the "Profile" of the system). It is proposed to test a visual memory – without drawing a direct observation of the object / delayed 6 figures, as well as in optical-spatial gnosis: redraw/ copying figure by Taylor (left hand) and by Rey-Osterrieth (right hand) and delayed reproduction. Necessary sufficient jobs kinesthetic Gnosis / praxis: the identification of objects, dynamic test "fist rib palm" blind transfer poses for kinesthetic sample, two-handed sample control perception of body schema. This exercise should use Kraepelin, the sample to perform arithmetic operations on selective attention (Stroop test), job icons Association (pairs / simple / complex analogy), "Exclusion items" / "Exclusion concepts" (4–8 Series depending on the characteristics of the patient's response), the allocation of the essential features of the concept, analysis of the perception of the values of phraseology and proverbs. Written opinion on the patient / conditional healthy respondent, in addition to a gentle display history should include not only conclusions about the state of functions (including those with a score of), but also the results of the job with a list of proposed stimulus material (for the possibility of a repetition of research neuropsychologist with specific intervals, for example, during the clinical examination of the following

drugs or receiving end). It concludes with a description of the state of emotional and volitional, dynamics and arbitrary regulation of activity. General conclusion is completed by the identified violations and their localization in the cortex and subcortical structures.

Conclusion

Written neuropsychological conclusion of a document on the patients of working age, the activity of which is related to the influence of harmful factors during clinical examination, as well as on elderly patients (or on the testimony of any age), shall present at the general inspection the complaints related to violation of the functioning of the symptoms brain of unknown etiology, and would allow use low cost prenosological methods with a high degree of accuracy for judging the nature of the violations of higher mental functions and brain function in patients or in apparently healthy individuals, as well as provide valuable supporting material for later medical report and forecast further development of symptoms and fix the effectiveness of therapy by changing the results of their assignments.

References

1. MMPI v2.0. Laboratory PSITON: Professional computer diagnostics. <http://www.psyton.ru/leongard/15.html> (access date: 05.27.2016).
2. Avdeeva M.V. *Organizatsionnye formy i kontseptsiya razvitiya pervichnoy profilaktiki* [Organizational forms and the concept of primary prevention]. SPb., 2014. 147 p.
3. Agamov Z.H. *Sotsial'no-gigienicheskie i organizatsionnye aspekty sovershenstvovaniya dispanserizatsii naseleniya v gorodskoy poliklinike goroda Moskvy* [Sociohygienic and organizational aspects of improving the clinical examination of the population in the urban clinic Moscow City]: Abstr... cand. med. sc. M., 2013. 24 p.
4. Agapitov A.E. *Metodologiya pervichnoy meditsinskoy profilaktiki i sotsial'noy meditsiny* [Methodology of primary health prevention and social medicine]. Irkutsk, 2014. 167 p.

5. Alifirova V.M. *Insul't: Epidemiologiya, diagnostika, lechenie, profilaktika* [Stroke: epidemiology, diagnosis, treatment, prevention. Monograph.] Tomsk, 2009. 291 p.
6. Anikina M.A. *Kliniko-neyropsikhologicheskie osobennosti bol'nykh dementsiey s tel'tsami Levi s psikhoticheskimi narusheniyami* [Clinical and neuropsychological characteristics of patients with dementia with Lewy-bodies with psychotic disorders]: Abstr... cand. med. sc. M., 2013. 24 p.
7. Arefiev A.A. *Sovremennye podkhody optimizatsii dispanserizatsii rabotayushchego naseleniya* [Current approaches to optimize the clinical examination of the working population]: Abstr... cand. med. sc. SPb., 2010. 21 p.
8. Balashova E.Y., Kovyazina M.S. *Neyropsikhologicheskaya diagnostika* [Neuropsychological diagnosis. Stimulus materials.] 5th ed. M., 2015. 70 p.
9. Batukaeva M. M. *Mediko-organizacionnye meropriyatiya profilaktiki insul'ta sredi trudosposobnogo naseleniya Chechenskoy Respubliki* [Medico-organizational stroke prevention measures among the working population of the Chechen Republic]: Abstr... cand. med. sc. M., 2013. 26 p.
10. Baulina M.E. *Neyropsikhologicheskiy analiz sostoyaniya vysshikh psikhicheskikh funktsiy u bol'nykh geroinovoy narkomaniey* [Neuropsychological analysis of higher mental functions in patients with heroin addiction]. Abstr... cand. psychol. sc. M., 2002. 18 p.
11. Belyarov Y.A. *Organizatsiya i provedenie meditsinskikh osmotrov (obследований) rabotnikov* [Organization and carrying out medical examinations (surveys) Employees: Training and practical guide.] M., 2012. 39 p.
12. Berezhkova L.V. *Insul't: Profilaktika, lechenie, reabilitatsiya. Sovremенные способы лечения* [Stroke: Prevention, treatment, rehabilitation. Methods of treatment.] SPb., 2003. 126 p.
13. Bogatyreva M.D. *Profilaktika ishemicheskogo insul'ta u sel'skogo naseleniya Stavropol'skogo kraya* [Prevention of ischemic stroke in the rural population of Stavropol Territory]: Abstr... cand. med. sc. M., 2013. 26 p.

14. Boiko E.A. *Povyshenie effektivnosti kompleksnoy reabilitatsii bol'nykh v rannem periode ishemicheskogo insul'ta na sanatornom etape pod vliyaniem spetsial'nykh fizicheskikh uprazhneniy, kognitivnoy gimnastiki* [Improved complex rehabilitation of patients in the early phase of ischemic stroke at a sanatorium stage under the influence of special exercise, cognitive gymnastics]. Abstr... cand. med. n. Tomsk, 2010. 23 p.
15. Bomov P.O. *Defitsitarnye rasstroystva u bol'nykh shizofreniey s debyutom v pozdnem vozraste: Kliniko-neyropsikhologicheskiy i reabilitacionnyy aspekty* [Of deficit disorder in patients with schizophrenia debut in later life: Clinical and neuropsychological and rehabilitation aspects]. Abstr... cand. med. sc. Orenburg, 2007. 24 p.
16. Bochkova E.A. *Tserebral'naya gemodinamika i neyropsikhologicheskie osobennosti bol'nykh s nachal'nymi proyavleniyami nedostatochnosti krovosnabzheniya mozga pri sindrome vegetativnoy distonii* [Cerebral hemodynamics and neuropsychological characteristics of patients with initial manifestations of insufficient blood supply to the brain at a syndrome of a vegetative dystonia]. Abstr... cand. med. sc. Ivanovo, 2006 21.
17. Butova V.M. *Kliniko-fiziologicheskaya i neyropsikhologicheskaya kharakteristika bolezni Parkinsona* [Clinical and physiological and neuropsychological characteristics of Parkinson's disease]: Abstr... cand. med. sc. Ryazan, 2010. 28 p.
18. Bilkov E.S. *Sovershenstvovanie sistemy dispanserizatsii voennosluzhashchikh s ispol'zovaniem metodov donozologicheskoy diagnostiki fizicheskogo zdorov'ya* [Improvement of the system of military clinical examination using a preclinical diagnosis of physical health techniques]: Abstr... cand. med. sc. Kemerovo, 2010. 23 p.
19. Vavilitchev A.S. *Mediko-sotsial'nye aspekty sovershenstvovaniya sistemy organizatsii dispanserizatsii sotrudnikov organov bezopasnosti Rossii* [Medical and social aspects of improving the system of organization of medical examination of Russian security officers]. Abstr... cand. med. sc. Nizhny Novgorod, 2012. 24 p.
20. Vereyutina I.A. *Neyropsikhologicheskie rasstroystva na ranney stadii bolezni Parkinsona* [Neuropsychological disorders at an early stage of Parkinson's disease]: Abstr... cand. med. sc. M., 2013. 28 p.

21. Vorontsov M.M. *Podtipy ishemicheskogo insul'ta: ostryy period, faktory riska, techenie, invalidnost' i vtorichnaya profilaktika* [Subtypes of ischemic stroke: the acute phase, risk factors for, disability and secondary prevention]: Abstr... cand. med. sc. M., 2010. 24 p.
22. Garanina E.S. *Kliniko-neyropsikhologicheskaya kharakteristika pervichnogo i vtorichnogo parkinsonizma i prognozirovaniye ranney invalidizatsii bol'nykh* [Clinical and neuropsychological characteristics of primary and secondary parkinsonism and prediction of early disability of patients]: Abstr... cand. med. sc. Ivanovo, 2012. 20 p.
23. Gasanova A.Z. *[Mediko-organizatsionnye i sotsial'no-ekonomicheskie aspekty dispanserizatsii rabotayushchego gorodskogo naseleniya]* [Medical organizational and socio-economic aspects of the clinical examination of the working of the urban population]: Diss ... cand. med. sc. M., 2012. 180 p.
24. Glozman J.M. *Prakticheskaya neyropsikhologiya. Pomoshch' neuspavayushchim shkol'nikam* [Practical neuropsychology. Help poor schoolboys]. Saratov, 2013. 288 c.
25. Gurak S.V. *Povtornyj ishemicheskiy insul't u bol'nykh s arterial'noy gipertenziei i ego profilaktika* [Recurrent ischemic stroke in patients with hypertension and its prevention]: Abstr... cand. med. sc. M., 2005. 23 p.
26. *Dispansernoje nablyudenie bol'nykh khronicheskimi neinfektsionnymi zabolevaniyami i patsientov s vysokim riskom ikh razvitiya: Metodicheskie rekomendatsii* [Dispensary observation of patients with chronic non-communicable diseases and patients with a high risk of their development: Methodical recommendations] / Ed. Boytsov S.A., Chuchalin A.G. M., 2014. 112 p.
27. *Dopolnitel'naya dispanserizatsiya rabotayushchikh grazhdan: Organizatsionno-pravovye i kliniko-gigienicheskie voprosy. Uchebnoe posobie dlya vrachey* [General medical examination of working citizens: Organization-legal, clinical and sanitary issues. A manual for physicians] / Comp. V.P. Alexandrov, etc. SPb., 2009. 266 p.
28. Dorofeev M.A. *Sovershenstvovanie dispanserizatsii rabotayushchego naseleniya v usloviyakh modernizatsii zdravookhraneniya* [Improving

- clinical examination of the working population in the health conditions of modernization]: Abstr... cand. med. sc. M., 2010. 24 p.
29. Drozdova I.P. *Neyropsikhologicheskaya kharakteristika i oksidantnyy status u bol'nykh molodogo vozrasta s tserebral'nymi paroksizmami* [Neuropsychological characteristics and oxidative status in young patients with cerebral paroxysms] Abstr... cand. med. sc. Perm, 2011. 25 p.
30. Dubrovina N.B. *Kliniko-neyropsikhologicheskie osobennosti epilepsii u bol'nykh molodogo vozrasta* [Clinical and neurophysiological features of epilepsy in young patients]: Abstr... cand. med. sc. Ivanovo, 2004. 22 p.
31. Dyakova N.V. *Neyropsikhologicheskoe issledovanie zapominaniya i vosproizvedeniya poznykh komponentov dvizheniya u zdorovykh ispytuemykh i bol'nykh s ochagovymi porazheniyami mozga* [Neuropsychological research of storing and playback components postural movements in healthy subjects and patients with focal brain lesions]: Abstr... cand. med. sc. M., 2002. 25 p.
32. Dyachenko K.V. *Rezul'taty profilaktiki ishemicheskikh insul'tov u bol'nykh s ateroskleroticheskim stenozom sonnykh arteriy* [Results of prevention of ischemic stroke in patients with atherosclerotic carotid stenosis]: Abstr... cand. med. sc. Saratov, 2009. 26 p.
33. Egorova E.A. *Neyropsikhologicheskie osobennosti i kachestvo zhizni bol'nykh golovnoy bol'yu napryazheniya* [Neuropsychological features and quality of life in patients with tension-type headache]: Abstr... cand. med. sc. Nizhny Novgorod, 2009. 26 p.
34. Ephremova O.S. *Meditinskie osmotry rabotnikov organizatsiy. Novyy poryadok ikh organizatsii i provedeniya* [Medical examinations of employees of organizations. The new order of organizing and conducting]. 4th ed., Rev. and ext. M., 2014. 238 p.
35. Zhulev N.M. and other. *Tserebrovaskulyarnye zabolевания: Profilaktika i lechenie insul'tov* [Cerebrovascular Disease: Prevention and treatment of stroke]. M.: SPb., 2002. 384 p.
36. Zhuravskaya N.Y. *Izuchenie priverzhennosti lekarstvennoy terapii bol'nykh serdechno-sosudistymi zabolеваниями, perenessshikh mozgovoy*

- insul't* [The study medication adherence of patients with cardiovascular disease, after cerebral stroke]. Abstr... cand. med. sc. M., 2015. 24 p.
37. Zakurdaev V.V. *Совершенствование углубленного медицинского обследования в системе диспансеризации военнослужащих Министерства обороны Российской Федерации* [Improvement of in-depth medical examination in the system of medical examination of military personnel of the Russian Ministry of Defense]: Abstr... cand. med. sc. SPb., 2011. 25 p.
38. *Insul't. Sovremennye podkhody diagnostiki, lecheniya i profilaktiki: Metodicheskie rekomendatsii* [Stroke. Modern approaches of diagnostics, treatment and prevention: Guidelines] / Ed. V.I. Danilov, D.R. Hasanova. M., 2014. 246 p.
39. *Insul't: Diagnostika, lechenie, profilaktika. Rukovodstvo dlya vrachey Stroke*: [Diagnosis, treatment, prevention. A Guide for Physicians] / Ed. Z.A. Suslina, M.A. Piradov. 2nd ed. M., 2009. 281 p.
40. *Insul't: Printsydy diagnostiki, lecheniya i profilaktiki. Krat. ruk. dlya vrachey* [Stroke: Principles of diagnosis, treatment and prevention. compendium for Physicians] / Ed. N.V. Vereshchagin, etc. M., 2002. 175 p.
41. Kazantseva M.V. *Nauchnoe obosnovanie sovershenstvovaniya profilaktiki i rannego vyyavleniya onkologicheskikh zabolevaniy* [Scientific substantiation of perfection of prevention and early detection of cancer]: Abstr... dr. med. n. M., 2014. 48 p.
42. Kalenova I.E. *Prognozirovaniye klinicheskikh iskhodov infarkta mozga i razrabotka programmno-tselevogo metoda effektivnogo lecheniya i vtorichnoy profilaktiki* [Predicting outcomes of brain infarction and the development of program-target method of effective treatment and secondary prevention]. Abstr...dr. med. sc. M., 2014. 52 p.
43. Kandiba D.V. *Profilaktika insul'ta: Uchebnoe posobie* [Stroke Prevention: The manual]. SPb., 2013. 81 p.
44. *Karty prognozirovaniya vozniknoveniya mozgovykh insul'tov: Metod. rekomendatsii dlya lechebno-profilakticheskikh uchrezhdeniy* [Maps predicting occurrence of cerebral strokes: Method. recommendations for health care institutions] / Comp. N.S. Mis'yuk. M., 1985. 18 p.

45. Kertieva Z.A. *Epidemiologiya i puti sovershenstvovaniya meditsinskoy pomoshchi vzroslym bol'nym s ostrymi narusheniyami mozgovogo krovoobrashcheniya po ishemiceskому tipu* [Epidemiology and ways to improve the health care of adult patients with acute disorders of cerebral circulation on ischemic type]. Abstr... cand. med. sc. SPb., 2009. 17 p.
46. Kovalchuk V.V. *Printsipy organizatsii i effektivnost' razlichnykh metodov reabilitatsii bol'nykh posle insul'ta* [Principles of the organization and the effectiveness of various methods of rehabilitation of patients after stroke]: Abstr... dr. med. n. SPb., 2008. 41 p.
47. Korshunova Y.A. *Динамика клинико-нейропсихологических показателей у больных дисциркуляторной энцефалопатией с умеренными когнитивными нарушениями в процессе нейрометаболической терапии* [Dynamics of clinical and neuropsychological performance in patients with circulatory encephalopathy with mild cognitive impairment in the course of therapy neurometabolic]. Abstr... cand. med. sc. Nizhny Novgorod, 2009. 26 p.
48. Kosik N.V. *Optimizatsiya kontrolya organizatsii i poryadka provedeniya dopolnitel'noy dispanserizatsii* [Optimization of control of the organization and the order of an additional medical examination]. Abstr... cand. med. sc. Ryazan, 2010. 24 p.
49. Kryzhanovsky S.M. *Kompleksnaya otsenka faktorov riska bol'nykh s povtornym ishemiceskim insul'tom v ramkakh vtorichnoy profilaktiki* [Comprehensive assessment of risk factors for patients with recurrent ischemic stroke in secondary prevention]: Abstr... cand. med. sc. M., 2006. 26 p.
50. Kuznetsov A.N. *Ishemicheskiy insul't: Diagnostika, lechenie i profilaktika* [Ischemic Stroke: Diagnosis, treatment and prevention]. M., 2014. 131 p.
51. Levin O.S. *Kliniko-neyropsikhologicheskie i neyrovizualizatsionnye aspekty differentsial'noy diagnostiki parkinsonizma* [Clinical and neuropsychological and neuroimaging aspects of the differential diagnosis of parkinsonism]: Diss...dr. med. sc. M., 2003. 36 p.
52. Lipovetsky B.M. *Infarkt, insul't, vnezapnaya smert': Faktory riska, predvestniki, profilaktika* [Heart attack, stroke, sudden death: Risk factors, precursors, prevention]. SPb., 1997. 190 p.

53. Lunev A.D. *Kliniko-neyropsikhologicheskaya kharakteristika bol'nykh khronicheskoy toksicheskoy entsefalopatiey* [Clinical and neuropsychological characteristics of patients with chronic toxic encephalopathy]. Abstr... cand. med. sc. Nizhny Novgorod, 2003. 26 p.
54. Lutoshkina E.B. *Dinamika neyropsikhologicheskogo statusa i "kachestva zhizni" kak kriteriy effektivnosti differentsirovannogo kompleksnogo lecheniya bol'nykh khronicheskoy ishemiey golovnogo mozga* [Dynamics of neuropsychological status and “quality of life” as a criterion of differentiation of complex treatment of patients with chronic cerebral ischemia]: Abstr... cand. med. sc. Saratov, 2005. 23 p.
55. Malyukova N.G. *Neyropsikhologicheskie sindromy pri insul'takh v basseyne levoy sredney mozgovoy arterii* [Neyropsihologicheskie syndromes in stroke in the basin of the left middle cerebral artery]: Abstr... cand. med. sc. M., 2002. 21p.
56. Mantashova A.M. *Neyropsikhologicheskiy profil' i dinamika kognitivnykh narusheniy v assotsiatsii s urovnem sRAGE v syvorotke krovi u patsientov s bolez'n'yu Al'tsgeymera, sosudistymi i smeshannymi sosudisto-degenerativnymi kognitivnymi narusheniyami* [Neuropsychological profile and dynamics of cognitive impairment in association with sRAGE levels in the serum of patients with Alzheimer's disease, vascular and mixed vascular and degenerative cognitive impairment]: Abstr... cand. med. sc. Perm, 2014. 23 p.
57. Markin S.P. *Kompleksnye programmy profilaktiki mozgovykh insul'tov sredi naseleniya ekologicheski neblagopriyatnykh territoriy* [Complex cerebral stroke prevention programs among the population of ecologically unfavorable territories]. Diss ... dr. med. sc. M., 2004. 275 p.
58. Markina A.Y. *Sovershenstvovanie organizatsii dispansernogo nablyudeniya zhenshchin fertil'nogo vozrasta s onkologicheskimi zabolevaniyami reproduktivnoy sistemy* [Perfection of the organization of follow-up of women of childbearing age with cancer of the reproductive system]: Abstr... cand. med. sc. Orenburg, 2013. 22 p.
59. Martynova G.A. *Kliniko-neyropsikhologicheskie kharakteristiki raznykh tipov ishemiceskogo insul'ta u lits trudosposobnogo vozrasta v*

- ostrom periode zabolevaniya* [Clinical and neuropsychological characteristics of different types of ischemic stroke in people of working age in the acute stage of the disease]: Abstr... cand. med. sc. Ekaterinburg, 2009. 22 p.
60. Medvedeva A.V. *Neyropsikhologicheskie i elektrofiziologicheskie kharakteristiki pri bolezni Al'tsgeymera* [Neuropsychological and electrophysiological characteristics in Alzheimer's disease]: Abstr... cand. med. sc. M., 2010. 24 p.
61. Melnik E.A. *Dinamika nevrologicheskikh i neyropsikhologicheskikh narusheniy u bol'nykh s ishemiceskim insul'tom v nedominantnom polusharii golovnogo mozga na etapakh reabilitatsii* [Dynamics of neurological and neuropsychological disorders in patients with ischemic stroke in the non-dominant hemisphere of the brain at the rehabilitation stages]: Abstr... cand. med. sc. Novosibirsk, 2007. 22 p.
62. Morozova I.L. *Neyropsikhologicheskaya struktura zaderzhki psicheskogo razvitiya doshkol'nikov, prozhivayushchikh na territorii ekologicheskogo neblagopoluchiya* [Neuropsychological structure of mental retardation of preschool children living in ecological trouble]. Abstr... cand. med. sc. M., 2007 26 p.
63. Mochalov A.D. *Insul't: Profilaktika i metody lecheniya* [Stroke: Prevention and treatment methods]. M.; Nizhny Novgorod, 2006. 191 p.
64. Much E. A. *Prognozirovanie insul'ta i otsenka effektivnosti profilaktiki tserebrovaskulyarnykh zabolevaniy na osnove kompleksnogo analiza faktorov riska* [Prognozirovanie stroke and assessment of the effectiveness of prevention of cerebrovascular diseases on the basis of a comprehensive analysis of the risk factors]: Abstr... cand. med. sc. Novosibirsk, 2005. 22 p.
65. *Neyropsikhologicheskaya diagnostika: Al'bom* [Neuropsychological diagnostics: Album] / Ed. E.D.Homskaya. M., 2007. 47 p.
66. Ovod A.I. *Mediko-sotsial'nye aspekty profilaktiki sotsial'no znachimykh zabolevaniy v usloviyah provedeniya dopolnitel'noy dispanserizatsii grazhdan: Metodicheskie rekomendatsii* [Medical and social aspects of prevention of socially significant diseases in the conditions of an ad-

- ditional medical examination of the citizens: Guidelines] / Comp. A.I. Ovod, I.L. Kiselev, A.A. Mamaev. Kursk, 2011. 51 p.
67. Orlov A.E. *Vtorichnaya profilaktika ishemicheskogo insul'ta u bol'nykh s karotidnym stenozom* [Secondary prevention of ischemic stroke in patients with carotid stenosis]: Abstr... cand. med. sc. Kazan, 2007. 23 p.
68. Orlova E.V. *Neyropsikhologicheskie i immunokhimicheskie pokazateli u bol'nykh rasseyannym skleroza* [Neuropsychological and immunochemical characteristics in patients with multiple sclerosis]: Abstr... cand. med. sc. M., 2012. 24 p.
69. Pavlova Y.M. *Kompleksnaya kliniko-neyropsikhologicheskaya diagnostika distsirkulyatornoy entsefalopatii na fone arterial'noy gipertenzii i ateroskleroza* [Comprehensive clinical and neuropsychological diagnosis of vascular encephalopathy in the background of arterial hypertension and atherosclerosis]: Abstr... cand. med. sc. SPb., 2003. 26 p.
70. Parfenov V.A. *Profilaktika ishemicheskogo insul'ta i postinsul'tnaya spastichnost'* [Prevention of ischemic stroke and post-stroke spasticity]. M., 2014. 115 p.
71. *Perechni vrednykh i opasnykh proizvodstvennykh faktorov i rabot, pri vypolnenii kotorykh provodyatsya obyazatel'nye meditsinskie osmotry* [Lists of harmful and dangerous production factors and works, under which the compulsory medical examinations are conducted]. M., 2011. 100 p.
72. Pinchuk E.A. *Epidemiologiya i vtorichnaya profilaktika ishemicheskogo insul'ta v usloviyakh krupnogo promyshlennogo i kul'turnogo tsentra* [Epidemiology and secondary prevention of ischemic stroke in a large industrial and cultural center]. Abstr... cand. med. sc. Ekaterinburg, 2004. 22 p.
73. *Poryadok provedeniya obyazatel'nykh predvaritel'nykh i periodicheskikh meditsinskikh osmotrov (obsledovaniy) rabotnikov, zanyatykh na tyazhelykh rabotakh i na rabotakh s vrednymi i (ili) opasnymi usloviyami truda* [The procedure for mandatory preliminary and periodic medical examinations (surveys) workers engaged in heavy work or work in harmful and (or) hazardous working conditions] / Ed. A.Saprykin. SPb., 2012. 228 p.

74. *Protokol vedeniya bol'nykh. Insul't. Natsional'nyy standart Rossiyskoy Federatsii GOST R 52600.5-2008* [Treatment Protocol. Stroke. National Standard of the Russian Federation SS R 52600.5-2008]. M., 2009. V, 159 p.
75. *Profilaktika insul'ta v obshchevacheboj praktike: Uchebno-metodicheskoe posobie* [Stroke Prevention in General Practice: Teaching manual] / Ed. P. A. Lebedev and others. Samara, 2015. 63 p.
76. Rapackiy K.N. *Faktory riska i profilaktika povtornykh ishemicheskikh insul'tov* [Risk factors and prevention of recurrent ischemic stroke]: Abstr... cand. med. sc. M., 2005. 136 p.
77. Rastegaev V.V. *Rol' dispanserizatsii v ukreplenii zdorov'ya naseleniya, prozhivayushchego v usloviyah sel'skoy mestnosti* [Role of the clinical examination in the strengthening of health, living conditions in rural areas]. Cand ... dr. med. sc. M., 2011. 50 p.
78. Ryzhiy A.P. *Mediko-sotsial'nye aspekty zabolеваemosti i reabilitatsii bol'nykh tserebrovaskulyarnymi boleznyami v trudosposobnom vozraste* [Medical and social aspects of illness and rehabilitation of patients with cerebrovascular diseases in working age]: Abstract ... cand. med. sc. Ekaterinburg, 2012. 24 p.
79. Sagova M.M. *Vliyanie dvigatel'nykh i neyropsikhologicheskikh narusheniy na kachestvo zhizni bol'nykh s distsirkulyatornoy entsefalopatiей* [Influence of motor and neuropsychological disorders on quality of life of patients with circulatory encephalopathy]. Abstr... cand. med. sc. M., 2013. 24 p.
80. Sazonov I.E. *Mediko-sotsial'nye aspekty ostrogo insul'ta i puti ego profilaktiki v sovremennykh usloviyah* [Medical and social aspects of acute stroke and ways to prevent it in modern terms]: Abstr... cand. med. sc. Voronezh, 2011. 24 p.
81. Samsonov A.P. *Vliyanie innovatsionnykh tekhnologiy dispanserizatsii na effektivnost' regional'nogo zdravookhraneniya* [Influence of innovative technologies in the clinical examination of the effectiveness of regional health]. Abstr... cand. med. sc. Kemerovo, 2012. 22 p.
82. Semenovich S.A. *Neyropsikhologicheskaya korrektsiya v detskom vozraste. Metod zameshchayushchego ontogeneza: Uchebnoe posobie*

- [Neuropsychological correction in childhood. Textbook]. M., 2007. 474s.
83. Senizhuk A.I. *Otsenka effektivnosti organizatsii dopolnitel'noy dispanserizatsii grazhdan v usloviyah realizatsii natsional'nogo proekta «Zdorov'e»* [Evaluating the effectiveness of the organization additional medical examination of citizens in the implementation of the «Health» national project. For example «City of Chita» urban district]. Abstr... cand. med. sc. Khabarovsk, 2012. 22 p.
84. *Sistema prognozirovaniya vozniknoveniya mozgovykh insul'tov i ikh profilaktiki: Metod. rekomendatsii* [The system of forecasting occurrence of cerebral strokes and their prevention: Method. Recommendations] / Comp. A.E.Semak and others. Minsk, 1999. 37p.
85. Solovieva K.B. *Puti optimizatsii dispansernogo dinamicheskogo nablyudeniya muzhchin s faktorami serdechno-sosudistogo riska v Zapolyarnom rayone Kraynego Severa* [Ways of optimization of dynamic dispensary observation of men with the factors of cardiovascular risk in the Polar region of the Far North]: Abstr... cand. med. sc. Nizhny Novgorod, 2014. 25 p.
86. Trifonova O.V. *Kognitivnye izmeneniya u bol'nykh rasseyanym sklerozom: Klinicheskoe, neyropsikhologicheskoe i elektrofiziologicheskoe issledovanie* [Cognitive changes in patients with multiple sclerosis: clinical, neuropsychological and electrophysiological study]: Abstr... cand. med. sc. M., 2006. 27 p.
87. Tushemilov V.V. *Povtornyj ishemicheskiy insul't: Faktory riska, prognozirovanie i profilaktika* [Recurrent ischemic stroke: Risk factors, prognosis and prevention]. Abstr... cand. med. sc. Irkutsk, 2009. 19 p.
88. Urmancheeva L.F. *Reabilitatsiya bol'nykh ishemicheskim insul'tom i ego vtorichnaya profilaktika v Zabaykal'e* [Rehabilitation of patients with ischemic stroke and secondary prevention in the Trans-Baikal region]. Abstr... cand. med. sc. Irkutsk, 2006. 19 p.
89. Usoltseva N.I. *Dinamika dvigatel'nykh i neyropsikhologicheskikh funktsiy v ostrom i rannem vosstanovitel'nom periode ishemicheskogo insul'ta* [Dynamics motor and neuropsychological functions in

- the acute and early recovery period of ischemic stroke]: Abstr... cand. med. sc. M., 2011. 25 p.
90. Ushakova L.V. *Faktory risika i vtorichnaya profilaktika ishemicheskogo insul'ta u detey* [Risk factors and secondary prevention of ischemic stroke in children]: Abstr... cand. med. sc. M., 2010. 24 p.
91. Fedorova Y.B. *Sindrom myagkogo kognitivnogo snizheniya v pozdнем vozraste: Psikhopatologicheskaya struktura, psikhometricheskie i neyropsikhologicheskie kharakteristiki, prognoz* [Syndrome of mild cognitive impairment in later life: psychopathological structure, psychometric and neuropsychological characteristics, prognosis]. Abstr... cand. med. sc. M., 2007. 24 p.
92. Khomskaya E.D., Batova N.Y. *Mozg i emotssi. Neyropsikhologicheskoe issledovanie* [The brain and emotion. Neuropsychological research]. M., 1992. 179p. 93. Hutiyeva L.S. *Kliniko-epidemiologicheskaya kharakteristika, puti sovershenstvovaniya profilaktiki i okazaniya meditsinskoy pomoshchi bol'nym s ishemicheskim insul'tom v Respublike Ingushetiya* [Clinical and epidemiological characteristics, ways to improve the prevention and care of patients with ischemic stroke in the Republic of Ingushetia]. Abstr... cand. med. sc. Rostov-on-Don, 2014. 23 p.
94. Tsvetkova L.S. *Metodika neyropsikhologicheskoy diagnostiki detey* [Methods of diagnosing neuropsychological children]. Izd.2 th, ext. M., 1998. 128 p.
95. Tszyganok A.A. et al. *Neyropsikholog v reabilitatsii i obrazovanii* [Neuropsychologist in the rehabilitation and education]. M., 2015. 400 c.
96. Cherkasova O.A. *Tserebral'nye insul'ty. Osobennosti reabilitatsii u bol'nykh i invalidov trudosposobnogo vozrasta i ee vliyanie na sostoyanie zhiznedeyatel'nosti* [Cerebral stroke. Features of the rehabilitation of patients and disabled people of working age and its impact on livelihoods]: Abstr... cand. med. sc. SPb., 2013. 25 p.
97. Shamurov Y.S. et al. *Diagnosticheskiy neyropsikhologicheskiy al'bom. Neyropsikhologicheskie sindromy pri zbolevanii nervnoy sistemy*

- [The diagnostic neuropsychological album. Neuropsychological syndromes in diseases of the nervous system]. Chelyabinsk, 2014. 52 p.il.
98. Shastin I.V. *Organizatsionno-pravovye i ekonomicheskie aspekty provedeniya dopolnitel'noy dispanserizatsii v gosudarstvennom ambulatorno-poliklinicheskem uchrezhdenii* [Organizational and legal and economic aspects of the additional medical examination in the public outpatient clinics]. Abstr... cand. med. sc. M., 2010. 24 p.
99. Shipova V.M. *Mediko-ekonomiceskaya otsenka dispanserizatsii* [Medical and economic evaluation of the clinical examination]. M., 2014. 216 p.
100. Shirokov E.A. *Tekhnologiya preduprezhdeniya insul'ta: Pyat' lektsiy dlya vrachey obshchey praktiki* [Stroke prevention technology: Five lectures for general practitioners]. M., 2011. 95 p.
101. Young Mania Scale (YMRS). <http://www.psychiatry.ru/stat/87> (access date: 05.15.2016).
102. Scale openly show aggression Yudovsky (OASSL). <http://www.psychiatry.ru/stat/95> (access date: 05.15.2016).
103. Rating Scale Positive and Negative Syndrome (PANSS) for S.P. Kay, L.A. Opler and A. Fitsbeyn. <http://www.psychiatry.ru/stat/77> (access date: 05.15.2016).
104. GAF Scale and PSP Scale. <http://www.psychiatry.ru/stat/97> (access date: 05.15.2016).

DATA ABOUT THE AUTHOR

Kuzina Natalia Vladimirovna, Head of Post-graduate, Graduate and Additional Professional Education, Assistant Professor, Candidate of Philological Sciences, Clinical Psychologist, Psychotherapist, Pharmacist

Likhachev Russian Research Institute of Cultural and Natural Heritage

2, Cosmonauts Str, Moscow, 129366, Russian Federation

nvkuzina@mail.ru

SPIN-code: 2069-8510

ORCID: 0000-0001-9094-7182