

## ABSTRACT & REFERENCES

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### PUBLIC HEALTH: ISSUES OF SOCIAL AND HYGIENIC MONITORING

*O. M. Karaban, I. O. Voronzhev, S. I. Tkach*

The work is devoted to the implementation of social and hygienic monitoring as one of the composite observations, analysis and forecast of the population health in the country. It is also carried out in order to ensure the sanitary and hygienic and epidemiological welfare of the population. The analysis shows the main components that are used to identify and manage risks and shows what criteria can be used in assessing risks. WHO claimed Health for All. A special place is occupied by the platform of environmental epidemiology — International Society of Environmental Epidemiology (ISEE). The implementation of this direction is applied in both research and in practical fields. The purpose and tasks of domestic environmental epidemiology is to establish a relationship between the levels of interaction of negative environmental factors and indicators of the state of public health. This is extremely necessary for the development of standards for different risk factors, and for the introduction and development of various preventive measures.

As a result of the analytical analysis, an assessment of social and hygienic monitoring was found, which is needed to analyze morbidity of a person, the impact of hostilities on the body.

The system of social and hygienic monitoring is a system of systematic observation, assessment and prediction of the state of public health, taking into account the state of the external environment and its impact on humans. It is necessary to develop an integrated approach in order to eliminate the harmful effects of risk factors on the health of the population.

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### WORKBOOK FOR PERIODONTOLOGY AS ONE OF THE ELEMENTS OF THE EDUCATIONAL PROCESS

*N. V. Manashchuk, S. I. Boytsanyuk,  
N. V. Chorny, M. S. Zaliznyak*

The article demonstrates the expediency of students to use a workbook in practical classes using the «one day» method. Doing a practical assignment in a class still requires competent design and recording of your work.

The printed workbook consists of 15 sessions, each containing a topic, preparation questions, own practical

**Keywords:** social and hygienic monitoring, environmental epidemiology, risk management, prophylaxis, forecasting.

### REFERENCES

1. Zakon Ukrainy vid 09.01.2007 r. № 537 “Osnovni polozhennya rozvitku informacijnogo suspilstva v Ukrainy na 2007-2015 rr.” [Law of Ukraine of January 01, 2007 N 537 “Main provisions of information society development in Ukraine for 2007-2015”] [in Ukrainian].

2. Postanova Kabinetu Ministriv Ukrainy vid 22.02.2006 r. № 182 “Pro zatverdzhennya poryadku provedennya socialno-gigigienichnogo monitoringu” [Resolution of the Cabinet of Ministers of Ukraine of February 22, 2006 N 182 “On approving the procedure for social and hygiene monitoring”] [in Ukrainian].

3. Ukaz Prezidenta Ukrainy vid 20.10.2005 r. № 1497 “Pro pershochergove zavdannya vidnosno vtillennya novitnih informacijnih tehnologij” [Decree of the President of Ukraine of October 10, 2005 N 1497 “About priority measures for the implementation of progressive information technologies”] [in Ukrainian].

4. Kratkoe vvedenie v problemu osushestvleniya na urovne nacionalnogo zakonodatelstva: Mezhdunarodnye mediko-sanitarnye pravila [A brief introduction to implementation issues on the level of national legislation. International health regulations]. (2005). WHO. Zheneva [in Russian].

5. Ushkvarok, L.B. (2011). Ob aktualnosti ekologicheskoy epidemiologii v aspekte dokazatelnoj mediciny v poslediplomnom obrazovanii vracha [The relevance of environmental epidemiology in the aspect of evidence-based medicine in postgraduate doctoral education]. *Problemi bezpererвної medichnoyi osviti ta nauki — Problems of interrupted medical education and science*, 4, 5–10.

work and conclusions. The tasks assigned to the practical work correspond to those given in the practical guidelines for the practical ones for students.

The main advantages of workbook are: mastering certain knowledge, skills, consolidation and systematization of theoretical knowledge during training; targeting students for independent critical thinking and search activities; printed basis of working material allows to increase productivity of classwork, to solve more tasks at the same time. The convenient format of the workbook gives the opportunity to significantly increase the productivity of the lesson.

**Keywords:** workbook, student, parodontology.

## REFERENCES

1. Batih, V. M., Struk, V. I. (2016). *Systematyzovane vykladennia zmistu navchalnoi dystsypliny «Terapevtychna stomatolohiia»*. Navchalnyi posibnyk [Systematized description of study «Therapeutic Dentistry». Textbook]. Chernivtsi [in Ukrainian].

2. Kaidalova, L. H. (2010). *Profesiina pidhotovka fakhivtsiv farmatsevtychnoho profilu u vyshchykh navchalnykh zakladakh* [Professional training pharmacists at institution of higher education]. Kharkiv: NFaU [in Ukrainian].

3. Manashchuk, N. V., Chornii, N. V. (2014). *Vykladannia kursu parodontolohii v ramkakh kredytno — modulnoi systemy za metodykoiu yedynoho dnia* [Teaching periodontics course in scope of ECTS using method of integrated day]. *Medychna osvita — Medical education*, 3, 149–151 [in Ukrainian].

4. Prymirnyi navchalnyi plan pidhotovky fakhivtsiv druhoho (mahisterskoho) rivnia vyshchoi osvity haluzi znan 22 «Okhorona zdorovia» u vyshchykh navchalnykh zakladakh MOZ Ukrainy za spetsialnistiu 221 «Stomatolohiia» kvalifikatsii osvitnoi «Mahistr stomatolohii», kvalifikatsii profesiinoi «Likar-stomatoloh», 26.07.2016 roku.

5. *Protokoly nadannia medychnoi dopomohy za spetsialnostiami „ortopedychna stomatolohiia”, „terapevtychna stomatolohiia”, „khirurhichna stomatolohiia”, „ortodontiia”, „dytiacha terapevtychna stomatolohiia”, „dytiacha khirurhichna stomatolohiia”: Normatyvne vyrobnycho-praktychne vydannia*. (2007). Kyiv: MNIATs medychnoi statystyky; *MVTs „Medinform”* [in Ukrainian].

6. Cholak, I. S. (2015) *Robochyi zhurnal z farmakohnozii yak odyn iz vydiv samostiinoi roboty studentiv* [Pharmacology workbook as a type of independent work of students]. *Medychna osvita — Medical education*, 3, 112–114 [in Ukrainian].

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#### THEORETICAL ASPECTS OF A DECISION-MAKING PROCESS WITH EXAMPLES OF SITUATIONAL PROBLEMS FOR STUDENTS OF MEDICAL UNIVERSITIES

V. G. Knigavko, Yev. B. Radzishavska,  
A. S. Solodovnikov, O. O. Solodovnikova\*

*Having subject to own professional peculiarities every specialist in a varying degree meets the difficulties of decision making. However there are few fields for human activity where it is possible to apply decision making process as ordinary and basic professional skill. Medical activity being sequence of diagnosing and treatment is the typical representative of such a field. Methods of decision making are multipurpose and universal though their successful application substantially depends on professional qualification of the specialist who must have exact understanding of peculiarities of the system he studies and must know how to lay down the task. Department of Medical and Biological Physics and Medical Informatics at Kharkov National Medical University with support of Department of Biomedical Engineering of Kharkiv National University of Radio Electronics have developed and implemented the lecture and practical lesson «Decision making in medicine». It is argued by fact that the doctor meets the common problem in different medical tasks (patient data acquisition, diagnostics, and treatment tactics).*

*The purpose of the introduction of this topic is to find out the possibility of students mastering various specialties of questions regarding the practical application of elements of decision theory in professional practice. During the practical training, students receive initial data, perform analysis, and identify risk factors and disease factors. On the basis of this information, students formulate many alternatives, then choose the appropriate method of finding the optimal solution and apply the method to the diagnostic or therapeutic process.*

*This technique has been practiced in the classroom using situational tasks. Not only Ukrainian but also foreign students*

*took part in the classes, who appreciated their performance. The technique aroused very lively interest and continued discussion.*

**Keywords:** *decision-making process, education, medical informatics, Bayes's theorem.*

## REFERENCES

1. Danilchenko, T. V. (2015). *Sistema pidtrimki priynyattya rishen diagnostiki ta monitoring* [Support system of the diagnostic and monitoring decisions]. *Modelyuvannya ta informacijni sistemi v ekonomici — Modeling and information systems in Economics*, 91, 224–235 [in Ukrainian].

2. Petrov, E. G., Brynza, N. A., Kolesnik, L. V., Pisklakova, O. A. (2014). *Metody i modeli prinyatiya reshenij v usloviyah mnogokriterialnosti i neopredelennosti* : monografiya [Decision-making methods and models under conditions of multicriteria and uncertainty: monograph]. Herson: Grin D. S. [in Russian].

3. Chudna, R. V. Vladimirov, O. A. (2013). *Matematichni modeli priynyattya rishen v medichnij rehabilitaciyi* [Mathematical models of decision making in medical rehabilitation]. *Zbirnik naukovih prac spivrobotnikov NMAPO im. P. L. Shupika — Collection of scientific works of employees of NMAPE named after P. L. Shupyk*, 22(3), 124–131 [in Ukrainian].

4. Eliezer, S. Yudkowsky. (n.d.). *An intuitive explanation of Bayes' theorem* Retrieved from <http://yudkowsky.net/rational/bayes>.

5. Knigavko, V. G. Radzishavska, Yev. B., Levchenko, T. V., Solodovnikov, A. S. (2016). *The significance of bases of decision making theory for doctors training at medical universities. Areas of scientific Thought: materials of the XII International scientific and practical conference 2015/2016. Medicine. Sheffield. Sheffield. Science and education LTD. Vol. 13. (pp. 78-81).*

6. Radzishavska, Yev. Vysotska, O., Solodovnikov, A. (2018). *Decision Making Theory for Doctors Training at Medical Universities: Textbook for students of medical universities*. LAP LAMBERT Academic Publishing.

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**INFLUENCE OF ANESTHESIA METHOD ON THE DEVELOPMENT OF POSTOPERATIVE COMPLICATIONS IN LUMBAR SPINE SURGERY**

*M. V. Lyzohub*

*Background of study.* Lumbar spine surgery in prone position may be associated with non-specific (headache, nausea, vomiting, dizziness, postoperative delay of urination), and specific anesthesia-related complications (increase of intraocular pressure). The aim of the study was to reveal early postoperative complications associated with various types of anesthesia during lumbar spine surgery.

*Material and methods.* Anaesthesia-related complications were analyzed in 254 patients operated on the lumbar spine total intravenous (TIVA, n = 110) and spinal (SA, n = 144) anesthesia. We evaluated nonspecific complications: postoperative headache that occurred within the first 5 days after surgery (VAS score), postoperative delay of urination (according to requirements for catheterization of urinary bladder), nausea, vomiting, and dizziness (according to subjective evaluation from 1 (symptoms are absent) to 5 (maximal symptom)).

*Results.* The incidence of postoperative urinary retention was found to be more frequent in men older than 40 years in SA group (19 %) and significantly ( $p < 0.05$ ) exceeded the incidence of this complication in both women and patients in the TIVA group. Postoperative nausea was significantly stronger after TIVA ( $1.6 \pm 0.4$  points versus  $1.2 \pm 0.3$  points,  $p < 0.05$ ). Headache, dizziness and vomiting were very rare complications without a significant difference between the groups.

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**FEATURES OF PSYCHONEUROLOGICAL ADAPTATION IN PATIENTS WITH LATE-ONSET DEMYELINATING PATHOLOGY**

*M. E. Chernenko*

*In the article, the author analyzed modern scientific literary data on the late manifestation of the demyelinating pathology of the nervous system. The review presents modern ideas about the late onset of multiple sclerosis. The author focuses on epidemiology, clinical variability and features of the course of late onset, features of an MRI picture at late onset, gender imbalance in the population of patients with late onset of multiple sclerosis, morphological changes in the brain, prognosis, features of quality of life and the possibility of neuropsychiatric adaptation. It was revealed that the use of generally accepted criteria for MRI diagnostics of multiple sclerosis without taking into account the age-related characteristics of the neuroimaging picture predictably leads to diagnostic errors. In elderly patients with this pathology, a greater number of foci of demyelination in the cerebellum, frequent formation of confluent foci and diffuse cerebral atrophy, which indicates the predominance of their neurodegenerative process, are noted. Also in this group of patients there is a short interval*

*Conclusions.* Post-dural puncture headache in vertebral surgery under SA is extremely rare and does not exceed the frequency of non-specific headache in TIVA patients. The severity of postoperative nausea is higher in the TIVA group, despite the specific prevention. Postoperative delay in urination is most common in patients older than 40 years after SA.

**Keywords:** spine surgery, anesthesia, complications.

**REFERENCES**

1. Melissa M. Kwee, Yik-Hong Ho, Warren M. Rozen. (2015). The Prone Position During Surgery and its Complications: A Systematic Review and Evidence-Based Guidelines. *Int Surg*, 100(2), 292–303. doi: 10.9738/INTSURG-D-13-00256.1.
2. Merry A., Mitchell S. (2018). Complications of anaesthesia. *Anaesthesia*. Vol.73, S1, 7-11.
3. Jabbari A., Alijanpour E., Mir M., Bani hashem N., Rabiea S., Ali Rupani M. (2013). Post spinal puncture headache, an old problem and new concepts: review of articles about predisposing factors. *Caspian J Intern Med*. Vol. 4(1), 595–602.
4. Thakker A., Briggs N., Maeda A., Byrne J., Davey J., Jackson T. (2018). Reducing the rate of post-surgical urinary tract infections in orthopedic patients. *BMJ Open Qual*. Vol. 7(2). doi: 10.1136/bmjoq-2017-000177.
5. Gan T., Diemunsch P., Habib A., Kovac A., Kranke P., Meyer T. et al. (2014). Consensus Guidelines for the Management of Postoperative Nausea and Vomiting. *Anesthesia & Analgesia*. Vol. 118, Issue 1, 85–113. doi: 10.1213/ANE.0000000000000002.

*before the onset of a progressive course in comparison with younger patients. It was revealed that there is a shortage of publications about neurogenesis, suicidal behavior, quality of life of patients with late onset of multiple sclerosis. The lack of knowledge about the pathokineses, regional and gender specificity of the late debut of demyelinating pathology complicates the neuropsychiatric adaptation in patients with late onset of multiple sclerosis. It is concluded that an increase in the life expectancy of patients with multiple sclerosis needs a better knowledge of the characteristics of this disease in the group of elderly patients.*

**Keywords:** demyelination, multiple sclerosis, late onset of multiple sclerosis, LOMS, neuropsychiatric adaptation.

**REFERENS**

1. Yakupov, E. Z., Matveeva, T. V., Hakimova, A. R., Hafizova, I. F. (2010). Rasseyanyniy skleroz s pozdnim debyutom [Multiple late-onset multiple sclerosis]. *Nevrolog. vestnik. Zhurn. im. V. M. Behtereva — Neurological Bulletin. Magazine named after V.M. Bekhterev*, 1, 66–70 [In Russian].
2. Sanai, S. A., Saini, V., Benedict, R. H., Zivadinov, R., Teter, B. E., Ramanathan, M. et al. (2016). Aging and multiple sclerosis. *Multiple Sclerosis*, 22, 717-725. <https://doi.org/10.1177/1352458516634871>.

3. Noseworthy, J., Paty, D., Wonnacott, T., Easby, T., Ebers, G. (1983). Multiple sclerosis after age 50. *Neurology*, 33, 1537–1544. <https://doi.org/10.1212/WNL.33.12.1537>.
4. Arias, M., Dapena, D., Arias-Rivas, S., Costa, E., Lopez, A., Prieto, J. M. et al. (2011). Late onset multiple sclerosis. *Neurologia*, 26(5), 291–296. [https://doi.org/10.1016/S2173-5808\(11\)70061-X](https://doi.org/10.1016/S2173-5808(11)70061-X).
5. Bove, R., Musallam, A., Healy, B. C., Houtchens, M., Glanz, B. J., Khoury, S. et al. (2013). No sex-specific difference in disease trajectory in multiple sclerosis patients before and after age 50. *BCM Neurology*, 13 (73), 73. <https://doi.org/10.1186/1471-2377-13-73>.
6. Gafson, A., Craner, M. J., Matthews, P. M. (2017). Personalised medicine for multiple sclerosis care. *Multiple Sclerosis*, 23, 362–369. <https://doi.org/10.1177/1352458516672017>.
7. McDonald, W. I., Comston, A., Edan, G., Goodkin, D., Hartung, H.-P., Lublin, F. D. et al. (2001). Recommended Diagnostic Criteria for Multiple Sclerosis: Guidelines from the International Panel on the Diagnostic of Multiple Sclerosis. *Annals of Neurology*, 50, 1, 121–127. <https://doi.org/10.1002/ana.1032>.
8. Polman, C. H., Reingold, S. C., Edan, G., Filippi, M., Hartung, H.-P., Kappos, L. et al. (2005). Diagnostic Criteria for Multiple Sclerosis: Revision to the «McDonald Criteria». *Annals of Neurology*, 58, 6, 840–846. <https://doi.org/10.1002/ana.20703>.
9. Guillemin, F., Baumann, C., Epstein, J., Kerschen, P., Garot, T., Mathey, G. et al. (2017). Older Age at Multiple Sclerosis Onset Is an Independent Factor of Poor Prognosis: A Population-Based Cohort Study. *Neuroepidemiology*, 48(3-4), 179–187. <https://doi.org/10.1159/000479516>.
10. Etemadifar, M., Abtahi, S. H., Minagar, A., Akbari, M., Masaeli, A., Tabrizi, N. (2012). Late-onset Multiple Sclerosis in Isfahan, Iran. *Arch. Iran. Med.*, 15(10), 596–598. DOI:0121510/AIM.004.
11. Lotti, C. B. C., Oliveira, A. S. B., Bichuetti, D. B., Castro, J., Oliveira, E. M. L. (2017). Late onset multiple sclerosis: concerns in aging patients. *Arq. Neuro-Psiquiatr.*, 75, 7, 19–25. <https://doi.org/10.1590/0004-282x20170070>.
12. Song, J., Westerlind, H., McKay, K. A., Almqvist, C., Stridt, P., Kockum, I. et al. (2019). Familial risk of early- and late-onset multiple sclerosis: a Swedish nationwide study. *J. Neurol.*, 266(2), 481–486. <https://doi.org/10.1007/s00415-018-9163-6>.
13. Tremlett, H., Devonshire, V. (2006). Is late-onset multiple sclerosis associated with a worse outcome? *Neurology*, 67(6), 954–959. <https://doi.org/10.1212/01.wnl.0000237475.01655.9d>.
14. Loma, I., Heyman, R. (2011). Multiple sclerosis: pathogenesis and treatment. *Curr. Neuropharmacol.*, 9 (3), 409–416. <https://doi.org/10.2174/157015911796557911>.
15. Yurchenko, Yu. N., Yurchenko, A. N., Smagina, I. V. (2016). Epidemiologiya rasseyannogo skleroza v Bryanskoy oblasti [Epidemiology of Multiple Sclerosis in the Bryansk Region]. *Nevrologiya, neyropsihiatriya, psihosomatika*, 8(3), 31–33. [In Russian]. DOI: 10.14412/2074-2711-2016-3-31-33.
16. Hooge, J. P., Redekop, W. K. (1992). Multiple sclerosis with very late onset. *Neurology*, 42, 1907–1910. <https://doi.org/10.1212/WNL.42.10.1907>.
17. Polliack, M. L., Barak, Y., Achiron, A. (2001). Late-onset multiple sclerosis. *J. Am. Geriatr. Soc.*, 49(2), 168–171. <https://doi.org/10.1046/j.1532-5415.2001.49038.x>.
18. Kutepova, N.V., Belskaya, G.N., Lukashevich, I. G., Nikolaeva L. I. (2010). Kliniko-epidemiologicheskie aspektyi rasseyannogo skleroza na Yuzhnom Urale [Clinical and epidemiological aspects of multiple sclerosis in the South Urals]. *Nevrol. vestnik*, 1, 18–22. [In Russian].
19. Roohania, P., Emirua, T., Carpentera, A., Luzzio, Ch., Freeman, J., Scarberry, S. et al. (2014). Late onset multiple sclerosis: Is it really late onset? *Multiple Sclerosis and Related Disorders*, 3(4), 444–449. <https://doi.org/10.1016/j.msard.2014.02.004>.
20. Lorina, L. V., Gryaznova, P. A. (2018). Kliniko-epidemiologicheskie osobennosti pozdnego debyuta rasseyannogo skleroza [Clinical and epidemiological features of the late debut of multiple sclerosis]. *Doktor.Ru*, 1 (145), 6–9. [In Russian].
21. Lorina, L. V., Gryaznova, P. A. (2016). Kliniko-epidemiologicheskaya karakteristika debyuta rasseyannogo skleroza v Ryazanskoy oblasti [Clinical and epidemiological characteristics of the debut of multiple sclerosis in the Ryazan region]. *Med. alfavit*, 4(26), 43–45. [In Russian].
22. Sivertseva, S. A., Kandala, N. S., Efanova, S. A. (2011). Klinicheskaya karakteristika rasseyannogo skleroza v Tyumenskoy populyatsii [Clinical characteristics of multiple sclerosis in the Tyumen population]. *Med. nauka i obrazovanie Urala — Medical science and education of the Urals*, 3, 166–169. [In Russian].
23. Gordeev, Ya. Ya., Boyko, D. V., Shamova, T. M., Lebeyko T. Ya. (2013). Magnitno-rezonansnaya tomografiya v diagnostike pozdnego rasseyannogo skleroza [Magnetic resonance imaging in the diagnosis of late multiple sclerosis]. *Zhurnal Grodnenskogo gosudarstvennogo meditsinskogo universiteta — Journal of the Grodno State Medical University*, 4, 22–24.
24. Sepihanova, M. M., Sokolova, L. I. (2014). Sravnitelnyiy analiz urovnya invalidizatsii i pokazateley kachestva zhizni u bolnykh s rasseyannym sklerozom raznykh vozrastnykh grupp [Comparative analysis of the level of disability and quality of life indicators in patients with multiple sclerosis of different age groups]. *Ukr. nauk.-med. molodizh. Zhurnal — Ukrainian Scientific Medical Youth Journal*, 1, 111–114.
25. Sokolova, L., Sepikhanova, M. (2014). Comparative analysis of the quality of life in patients with multiple sclerosis of different age groups. *Eur. J. Neurol.*, 21, 1, 515.
26. Bronnum-Hansen, H., Stenager, E., Nylev Stenager, E., Coch-Henriksen N. (2005). Suicide among Danes with multiple sclerosis. *J. Neurol. Neurosurg Psychiatry*, 76, 1457–1459. <http://doi.org/10.1136/jnnp.2004.056747>.
27. Viner, R., Patten, S. B., Berzins, S., Bulloch, A. G. M., Fiest, K. M. (2014). Prevalence and risk factors for suicidal ideation in a multiple sclerosis population. *J. Psychosom. Res.*, 76(4), 312–316. <https://doi.org/10.1016/j.jpsychores.2013.12.010>.

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**PECULIARITIES OF SURGICAL TREATMENT OF TROCHANTERIC FEMORAL FRACTURES IN PATIENTS OF ELDERLY AND SENILE AGE**

V. O. Babalyan

A comparison of the results of treatment of proximal femoral fractures, (PPBK) in the elderly and senile. blocking intramedullary osteosynthesis (BIOS) with the proximal femoral nail (PBH) and bipolar hemiarthroplasty (BHA). The use of BHA reduces the operating time (BHA — 22.40 min; BIOS — 48.70 min) And intraoperative blood loss (121.20 ml — BHA and 292.50 ml — BIOS) with the need for blood transfusion measures (BHA — 2, 67 %, and BIOS — 23.53 % of patients). The possibility of developing deep peri-implant infection and wound hematoma with the need for its drainage in case of BHA (2.67 %) and a high risk of one-year mortality (14.67 %) in case of BHA compared with BIOS (8.82 %) were established. During the study, the advantages of the BIOS methodology over the BHA were clarified in terms of the dynamics of the HHS (Harris Hip Score) and VAS (Visual Analog Scale) indicators. It was proved that one year after the operation, 91.18 % of patients (BIOS) and 88.00 % (BHA) with a HHS of  $79.73 \pm 1.22$  (BIOS) and  $77.83 \pm 1.27$  (BHA) and manifestations of pain according to VAS —  $41.13 \pm 1.15$  and  $44.26 \pm 2.62$  (BIOS and BHA). It was stated that the treatment of fractures of the trochanteric segment of the PBG should be considered the best choice for patients with high levels of somatic health and bone quality. With a decrease in the characteristics of somatic status, BHA appears as a good alternative, providing an advantage over BIOS with a proximal nail through less painful manifestations in the early postoperative stages and a lower risk of repeated surgical interventions.

**Keywords:** fractures of the proximal femur, elderly and senile patients, blocking intramedullary osteosynthesis, proximal femoral nail, bipolar hemiarthroplasty.

**REFERENCE**

1. Kalchenko, A., Babalyan, V., Hurbanova, T., Maznyakov, S. (2016). Hirurgicheskoe lechenie osteoporoticheskikh perelomov proksimalnogo otdela bedrennoj kosti (obzor literatury) [Surgical treatment of osteoporotic fractures of the proximal femur (review)]. *Ortopediya, travmatologiya i protezirovanie — Orthopedics, traumatology and prosthetics*, 2, 111–119 [in Russian].
2. Babalyan, V. O., Gurbanova, T. S., Cherepov, D. V. at al. (2017). Mediko-socialni naslidki perelomiv proksimalnogo viddilu stegnovoyi kistki v osib pohilogo ta starechogo viku (oglyad literaturi) [Medical and social consequences of fractures of the proximal femur in the elderly and senile age (review)]. *Ortopediya, travmatologiya i protezirovanie — Orthopedics, traumatology and prosthetics*, 2017, 2, 130–134 [in Ukrainian]. <http://doi.org/10.15674/0030-598720172130-134>
3. Kalchenko, A. V., Babalyan, V. O., Hvisyuk, O. M. at al. (2017). Analiz operativnogo lecheniya lic pozhilogo i starcheskogo vozrasta s perelomami proksimalnogo otdela bedrennoj kosti metodom nakostnogo osteosinteza plastinoy

[Analysis of surgical treatment of elderly and senile patients with fractures of the proximal femur using a bone osteosynthesis with a plate]. *Travma — Trauma*, 18(3), 80–85 [in Russian].

4. Povoroznyuk, V. V., Grigor'yeva, N. V., Korzh, M. O. at al. (2016). Epidemiologiya perelomiv proksimalnogo viddilu stegnovoyi kistki v Ukraini: rezultati dvoh retrospektivnih doslidzhen [Epidemiology of fractures of the proximal femur in Ukraine: results of two retrospective studies]. *Ortopediya, travmatologiya i protezirovanie — Orthopedics, traumatology and prosthetics*, 4, 68–74 [in Ukrainian].

5. Pavlov, S. B., Kumechko, M. V., Litvinova, O. B. at al. (2016). Porushennya regulyatornih mehanizmv remodelyuvannya kistkovoyi tkanini v umovah eksperimentalnoyi hronichnoyi hvorobi nirok [Disorder of regulatory mechanisms of bone remodeling under conditions of experimental chronic kidney disease]. *Fiziologichnij zhurnal — Physiological journal*, 62(3), 54–59 [in Ukrainian].

6. Brunova, S., Ruzhenskaya, E. V. (2007). Stacionarnazameshayushie tehnologii pri okazanii psichiatricheskoy pomoshi pozhilym pacientam [Hospital-substituting technologies for the psychiatric care to elderly patients]. *Klinicheskaya gerontologiya — Clinical Gerontology*, 13(11), 47–50 [in Russian].

7. Levin, O. S. (2012). Umerennoe kognitivnoe rasstrojstvo: diagnostika i lechenie [Mild cognitive impairment: diagnosis and treatment]. *Effektivnaya farmakoterapiya. Nevrologiya i psichiatriya — Effective pharmacotherapy. Neurology and Psychiatry*, 5, 14–20 [in Russian].

8. Menshikova, L. V., Hramcova, N. A., Ershova, O. B. (2002). Blizhajshie i otdalennye ishody perelomov proksimalnogo otdela bedra u lic pozhilogo vozrasta i ih mediko-socialnye posledstviya (po dannym mnogocentrovogo issledovaniya) [The immediate and long-term outcomes of fractures of the proximal femur in elderly people and their medical and social consequences (according to a multicenter study)]. *Osteoporoz i osteopatii — Osteoporosis and osteopathy*, 1, 8–11 [in Russian].

9. Jolly, A., Bansal, R., More, A. R., Pagadala, M. B. (2019). Comparison of complications and functional results of unstable intertrochanteric fractures of femur treated with proximal femur nails and cemented hemiarthroplasty. *J. Clin. Orthop Trauma*, 10(2), 296–301. <https://doi.org/10.1016/j.jcot.2017.09.015>.

10. Zhu, L. J., Li, X. F., Liu, C., Lyu, C. Y. (2017). Clinical analysis of LPFP, PFNA and BPH in treating femoral intertrochanteric fractures in elderly patients. *Zhongguo Gu Shang*, 30(7), 607–611. <https://doi.org/10.3969/j.issn.1003-0034.2017.07.005>.

11. Görmeli, G., Korkmaz, M. F., Görmeli, C. A. et al. (2015). Comparison of femur intertrochanteric fracture fixation with hemiarthroplasty and proximal femoral nail systems. *Ulus Travma Acil Cerrahi Derg.* 21(6), 503–508. <https://doi.org/10.5505/tjtes.2015.96166>.

12. Güven, M., Kocadal, O., Akman, B. et al. (2016). Proximal femoral nail shows better concordance of gait analysis between operated and uninjured limbs compared to hemiarthroplasty in intertrochanteric femoral fractures. *Injury*, 47(6), 1325–1331. <https://doi.org/10.1016/j.injury.2016.03.009>.

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**FEATURES OF THE METABOLISM  
OF BIOGENIC AMINES AND THEIR PRECURSORS  
DURING PROLONGED EXPOSURE  
TO SODIUM FLUORIDE IN SMALL DOSES**

*I. Yu. Bagmut, I. L. Kolisnyk*

The pathophysiological mechanisms of fluoride intoxication were studied on the semi-mature rats of the Wistar population ( $N = 17$ ), weighing 180–210 g, which were daily intraductally injected with aqueous solutions of sodium fluoride at the rate of 20 mg/kg animal weight, with subtoxic long-term doses of 2 months. Prolonged, subtoxic intake of sodium fluoride into the body, led to the development of clinical signs of intoxication. At the end of the experiment, white rats were clogged with decapitation.

In the internal organs — the brain and liver were determined levels of biogenic monoamines and their precursors (adrenaline, noradrenaline, serotonin, tyrosine, DOPA, dopamine, tryptophan). The substrate content was estimated by Y. Endo, Y. Ogura [17]. For the binding of biogenic monoamines and their precursors, carboxymethylcellulose (CMC) from Reanal was used.

The analysis of the obtained data showed a similar mechanism of exchange of biogenic monoamines and their precursors — an increase in the content of adrenaline, norepinephrine, serotonin and tryptophan in the brain and liver of rats. Sodium fluoride at subtoxic dose increased ( $p < 0.05$ ) serotonin levels and tryptophan content at a dose of 1/10 LD<sub>50</sub> at day 20, 30, 50, and 60 of the experiment.

The serotonergic system is involved in the implementation of the effects of sodium fluoride at a dose of 1/10 LD<sub>50</sub>, as evidenced by the increase in rats of serotonin and tryptophan levels in the brain and reflects the enhancement of its functional potential at the central level.

The action of TNF at a dose of 1/10 LD<sub>50</sub> for 50 days is accompanied by an increase in the levels of norepinephrine and adrenaline in the brain and liver.

The obtained indicators of the dynamics of the studied substrates in the conditions of low-dose fluoride intoxication confirm the presence of activation of ergotropic and trophotropic functions aimed at providing structural-metabolic homeostasis.

**Keywords:** sodium fluoride, dopamine, adrenaline, norepinephrine, brain, liver.

**REFERENCES**

1. Bagmut, I. Yu., Zhukov, V. I. Nakonechnaya, O. A. (2013). Strukturno-funkcionalnij stan membran pid vplivom polietilenoksidiv v eksperimenti [Structural and functional state of membranes under the influence of polyethylene oxides in the experiment]. *Kharkivskij medichnij zhurnal. Teoretichna ta eksperimentalna medicina — Kharkov Medical Journal. Theoretical and experimental medicine*, 1, 18–24 [in Russian].

2. Boldyrev, A. A., Kyajvyaryajnen, E. I. Ilyukha, V. A. (2006). *Biomembranologiya [Biomembranology]*. Petrozavodsk: KarNC RAN [in Russian].

3. Nakonechnaya, O.A., Bagmut, I.Yu., Steczenko, S. A., Bondareva A.V. (2013). Vliyanie oligoefirmonoepoksida i oligoefirciklokarbonata na antioksidantnuyu sistemu i processy detoksikacii v podostrom opyte [Influence of oligoether monoepoxide and oligoether cyclocarbonate on antioxidant system and detoxification processes in subacute experience]. *Sovremennyy nauchnyy vestnik — Modern Scientific Bulletin*, 52(191), 48–55 [in Russian].

4. Gubskij, Yu. I. (2015). *Smert kletki: svobodnye radikaly, nekroz, apoptoz [Cell death: free radicals, necrosis, apoptosis]*. Vinnica: Nova kniga [in Russian].

5. Denisov, V. M., Rukavishnikova, S. M., Zhukov, V. I. (1999). *Biokhimiya miokarda, povrezhdenного adrenalinom [Biochemistry of myocardium damaged by adrenaline]*. Kharkov: Original [in Russian].

6. Cates, M. (1975). *Tekhnika lipidologii [The technique of lipidology]*. Moskva: Mir [in Russian].

7. Kolomytseva, I. K. (1986). *Mekhanizmy khimicheskoy chuvstvitelnosti sinapticheskikh membrane [Mechanisms of chemical sensitivity of synaptic membranes]*. Kiev: Naukova dumka [in Russian].

8. Anichkov, S. V., Novikov, N. A., Isaenko, V. V. (1974). Narushenie metabolizma pri razvitii nejrogennykh porazhenij serdca i vliyanie na nikh nekotorykh farmakologicheskikh sredstv [Metabolic disorders in the development of neurogenic lesions of the heart and the effect on them of some pharmacological agents]. *Patfiziologiya i eksperimentalnaya terapiya — Pathological physiology and experimental therapy*, 2, 50–51 [in Russian].

9. Novikov, K. N., Kotelevtsev, S.V., Kozlov, Yu. P. (2011). *Svobodno-radikalnye prozessy v biologicheskikh sistemakh pri vozdeystvii faktorov okruzhayushhej sredy [Free-radical processes in biological systems under the influence of environmental factors]*. Moskva: RUDN [in Russian].

10. Petrenko, A. Yu., Sukach, A. N., Roslyakov, A. D. (1991). [Isolation of rat hepatocytes by non-enzymatic method: detoxification and respiratory activity]. *Biohimiya — Biochemistry*, 56(9), 1647–1651. [in Russian].

11. Zaytseva, O. V., Knigavko, V. G., Bagmut, I. Y., Zhukov, V. I., Kocharova, T. V. (2014). Pidgostrij toksikologichnij vpliv novoyi grupi sintezovanih oligoefriv na proksidantno-antioksidantnij gomeostaz bilikh shhuriv [Subacute toxicological effects of a new group of synthesized oligoesters on the oxidative-antioxidant homeostasis of white rats]. *Visnik Lvivskogo universitetu. Seriya biologichna — Lviv University Bulletin. Biology series*, 68, 286–292 [in Ukrainian].

12. Bagmut, I. Yu., Zaitseva, O. V., Zhukov, V. I., Knigavko, V. G. (2014). Bookbinder Podostroe vliyanie oligoefirov na antiokislitelnyu aktivnost pecheni u belykh kryv [Subacute effect of oligoesters on the antioxidant activity of liver in white rats]. Key issues in modern science. 2014: *Materialy X mezhdunarodnoy nauchno-prakticheskoy konferenczii (Bolgariya, Sofiya, 17-25 aprelya 2014) — Proceedings of the 10th International Scientific and Practical Conference (April 17-25, 2014)*, 28. (pp. 80–85). Bulgaria, Sofia: Byal GRAD-BG [in Russian].

13. Brockhuse, R. M. (1974). Phospholipid structure of erythrocytes and hepatocytes. *Clinical Biochemistry*, 14(3), 157–158 [in English].

14. Pamplona, R. (2008). Membrane phospholipids, lipoxidative damage and molecular integrity: a causal role in aging and longevity. *Biochimica et Biophysica Acta*, 1777(10), 1249–1262 [in English].

15. Endo, Y. Y., Ogura, Y. (1975). A rapid and simple determination of histamine and polyamines. *Japan J. Pharmacol*, 25, 610–612.

16. Slabo, G., Kovacs, G. L., Telegdy, G. A. (1983). Modified screeninc method for rapid simultaneous determination of dopamine, noradrenaline and serotonin in the same brain region. *Acta Physiol Homo*, 61(1–2), 51–57.

17. Coskun, U., Simons K. (2011). Cellmembranes: the-lipidperspective. *Structure*, 19(11), 1543–1548.

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**THE EFFECT OF NON-STEROIDAL ANTI-INFLAMMATORY THERAPY IN THE CORRECTION OF THE COGNITIVE IMPAIRMENT FOR PATIENTS WITH CHRONIC CEREBRAL ISCHEMIA AND METABOLIC SYNDROME**

*T. S. Mishchenko, V. V. Sokolik, I. V. Zdesenko, V. G. Derevetska, I. V. Darii*

*The purpose of the research was to study the effectiveness of the use of non-steroidal anti-inflammatory drugs (NSAIDs) for the correction of the cognitive impairment (CI) for patients with chronic cerebral ischemia (CCI) and metabolic syndrome (MS).*

*The study involved 118 patients with CCI, divided in 2 groups: with and without MS. Each group was divided into 2 subgroups depending on the type of treatment: with the addition of NSAIDs to the basic therapy or not. The degree of cognitive impairment was determined according to the scales MoCA, FAB, Schulte tables. We determined serum concentrations of interleukin-6 (IL-6), interleukin-10 (IL-10), vasoendothelial growth factor (VEGF) by enzyme immunoassay.*

*It was found that MS did not significantly affect the level of cognitive impairment for patients with CCI before treatment, because it did not significantly differ when compared with patients with CCI without MS (according to the scales MoCA, FAB, Schulte tables). The addition of NSAIDs to the basic therapy for patients with CCI and MS led to a significant improvement in cognitive functions on all scales, while only the basic therapy had a little positive effect only on the test results with Schulte tables. For the patients with CCI without MS, the improvement in cognitive function did not depend on the addition of NSAIDs to the basic therapy. The concentration of VEGF in the blood serum of patients with CCI and MS significantly decreased in the subgroup of patients where NSAIDs were used in treatment, while in the group of patients with CCI without MS there was no reliable dynamics of the concentration of this biomarker as a result of treatment. The effect of basic therapy and basic therapy with the addition of NSAIDs on the serum level of the studied interleukins (IL-6 and IL-10) was not revealed for patients with CCI with or without MS.*

*Keywords: cognitive impairment, non-steroidal anti-inflammatory drugs, chronic cerebral ischemia,*

*cerebrovascular diseases, metabolic syndrome, vasoendothelial growth factor, interleukins.*

**REFERENCES**

1. Crichton G. E., Elias M. F., Buckley J. D., Murphy K. J., Bryan J., Frisardi V. (2012). Metabolic Syndrome, cognitive performance and dementia. *Journal of Alzheimer's Disease*. Vol. 30(2). (pp. 77-87). DOI: 10.3233/JAD-2011-111022.

2. Darii V. I. (2019). Hronichna nedostatnist' mozkovogo krovoobigu [Chronic insufficiency of cerebral blood circulation]. *Navchalnij posibnik dlya likariv interniv-nevrologiv ta nevrologiv - Tutorial for physicians interns-neurologists and neurologists*. Zaporizhzhia [in Ukrainian].

3. Poureiko T. Y. (2014). Problema kognitivnih rozladiv u nevrologichnij praktici [The problem of cognitive disorders in neurological practice]. *Bukovins'kij medichnij visnik - Bukovyna medical bulletin*, 4(72), 216-221 [in Ukrainian].

4. Mishchenko T. S. (2013). Discirkulyatornaya encefalopatiya: ustarevshij termin ili klinicheskaya real'nost'? [Discirculatory encephalopathy: an outdated term or clinical reality?] *Mezhdunarodnyj nevrologicheskij zhurnal «Praktikuyushchemu nevrologu» - International neurological journal "Practicing Neurologist"*, 2(56), 134-138 [in Russian].

5. Farooqui T., Farooqui A. A. (2013). *Metabolic syndrome and neurological disorders*. Willey-Blackwell, 1 edition. DOI: 10.1007/s00018-011-0840-1.

6. Mottillo S., Filion K. B., Genest J., Joseph L., Pilote L., Poirier P., Rinfret S., Schiffrin E. L., Eisenberg M. J. (2010). The metabolic and cardiovascular risk. A systematic review and meta-analysis. *Journal of the American College of Cardiology*. Vol. 56(14). (pp. 1113-1132). DOI: 10.1016/j.jacc.2010.05.034.

7. Reusch J. B. R., Low Wang C. C. (2011). Cardiovascular disease in diabetes: where does glucose fit in? *Journal of Clinical Endocrinology and Metabolism*. Vol. 96(8). (pp. 2367-2376). DOI: 10.1210/jc.2010-3011.

8. Luo L., Yang M., Hao Q., Yue J., Dong B. (2013). Cross-sectional study examining the association between metabolic syndrome and cognitive function among the oldest old. *Journal of the American Medical Directors Association*. Vol. 14(2). (pp. 105-108). DOI: 10.1016/j.jamda.2012.10.001.

9. Tripolt N. J. (2013). Short communication: Effect of supplementation with *Lactobacillus casei* Shirota on insulin sensitivity,  $\beta$ -cell function, and markers of endothelial function and inflammation in subjects with metabolic

syndrome - a pilot study. *Journal of Dairy Science*. Vol. 96(1). (pp. 89-95). DOI: 10.3168/jds.2012-5863.

10. Kovalenko L. V., Belova E. A., Verizhnikova L. N. (2013). Endotelial'naya disfunkciya i metabolicheskij sindrom [Endothelial dysfunction and metabolic syndrome]. *Vestnik SurGU - Bulletin of SurGU*, 3(17), 8-13 [in Russian].

11. Rasin M. S., Lavrenko A. V., Borzykh O. A., Rasin S. M., Kaydashev I. P. (2011). Metabolicheskij sindrom — bolezn' hronicheskogo nizkointensivnogo sistemnogo vospaleniya [Metabolic syndrome - the disease of chronic low-intensity systemic inflammation]. *Ukrainskyi terapevtichnyi zhurnal — Ukrainian therapeutic journal*, 4, 56-62 [in Russian].

12. Kopchak O.O. (2016). Kognitivni, psihoemocijni ta klinichni osoblivosti pri sudinnij patologii golovnogo mozku i metabolichnomu sindromi u osib riznogo viku [Cognitive, psycho-emotional and clinical features in vascular pathology of the brain and metabolic syndrome in persons of different ages]. *Avtoreferat disertacii doktora medichnih nauk - Abstract of the dissertation of doctor of medical sciences*. Kyiv [in Ukrainian].

13. Temp F. R., Marafija J. R., Milanesi L. H., Duarte T., Rambo L. M., Pillat M. M., Mello C. F. (2017). Cyclooxygenase-2 inhibitors differentially attenuate pentylene-tetrazol-induced seizures and increase of pro- and anti-inflammatory cytokine levels in the cerebral cortex and hippocampus of mice. *European Journal of Pharmacology*. Vol. 810. (pp. 15-25). DOI: 10.1016/j.ejphar.2017.05.013.

14. Russo A., Costagliola C., Delcassi L., Parmeggiani F., Romano M. R., Omo R., Semeraro F. (2013). Topical Nonsteroidal Anti-Inflammatory Drugs for Macular Edema. *Journal "Mediators of Inflammation"*. Vol. 2013. (pp. 1-11). DOI: 10.1155/2013/476525.

15. Xu L., Croix B. S. (2014). Improving VEGF-targeted therapies through inhibition of COX-2. PGE2 signaling. *Journal 'Molecular & Cellular Oncology'*. Vol. 1(4). (pp. e969154-1 - e969154-3). DOI: 10.4161/23723548.2014.969154.

16. Mishchenko T. S., Lapshina I. A., Mishchenko V. N. (2010). Hronicheskaya ishemiya mozga (kriterii diagnostiki, novye vozmozhnosti lecheniya) [Chronic cerebral ischemia (diagnostic criteria, new treatment options)]. *Ukrainskyi medichnij chasopis - Ukrainian medical chronicle*, 6(80), 101-104 [in Russian].

17. Mitchenko O. I., Karpachov V. V. (2011). Diagnostika i likuvannya metabolichnogo sindromu, cukrovogo diabetu, prediabetu i sercevo-sudinnih zahvoryuvan': rekomendacii asociacii kardiologiv Ukraini ta asociacii endokrinologiv Ukraini [Diagnostic and prevention of metabolic syndrome, diabetes, prediabetes and cardiovascular diseases: recommendations of the Association of Cardiologists of Ukraine and Association of Endocrinologists of Ukraine]. *Sercevo-sudinni zahvoryuvannya: rekomendacii z diagnostiki, profilaktiki ta likuvannya — Cardiovascular diseases: diagnostic, prophylaxis and treatment recommendations*, 68-79 [in Ukrainian].

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#### THE ROLE OF PRO-INFLAMMATORY CYTOKINES IN ACTIVATION LATENT INTRACELLULAR INFECTION IN AUTOIMMUNE RHEUMATIC DISEASES AND TUBERCULOSIS

Z. V. Yeloyeva, L. P. Kiselyova, N. I. Mamalui, T. A. Filonova, V. M. Savvo, S. A. Matviienko

According to the modern concept, the leading role in the development of autoimmune rheumatic diseases along with auto-reactive clones of T- and B-lymphocytes is played by mediators of intercellular interaction — cytokines. The leading role of cytokines in the pathogenesis of human disease is discussed in the mid-90s of the XX century. Representing polypeptide molecules, cytokines are pleiotropic in biological functions. Their effect depends on the concentration and cells of the producers. Blockers of pro-inflammatory cytokines, pools of T- and B-lymphocytes are included in the protocols for the treatment of many rheumatic diseases. At the same time, suppression of the cellular component of immunity, blocking the biological activity of mediators of intercellular interaction can cause activation of latent intracellular infection, the pro-inflammatory cytokines play a protective role in the development of this process. One of these infections is tuberculosis. The article presents a comparative analysis of the balance between a protective and pathogenic immune

response, the role of pro-inflammatory cytokines in the development of autoimmune rheumatic diseases and activation/blockade of intracellular infection (tuberculosis). The mechanisms of the development of autoaggression are described in detail, the key role of the pro-inflammatory cytokines IL-1, TNF- $\alpha$  and IL-6 in the immunopathology of juvenile idiopathic arthritis. Characterized signal transduction systems that ensure the binding of cytokines to cell receptors. The JAK-STAT signaling system is introduced, which involves Janus kinases and STAT transcription factors, the role of the JAK-STAT family in the immunopathogenesis of juvenile idiopathic arthritis (JAK 3). In a comparative analysis, was studied indicators of the levels of pro-inflammatory cytokines in patients with latent tuberculosis infection in comparison with uninfected ones. The data of their own observation of patients with rheumatoid arthritis of children with tuberculosis through the years from the onset of the underlying disease are presented.

**Keywords:** cytokines, juvenile idiopathic arthritis, tuberculosis.

#### REFERENCES

1. Kovalenko, V. M., Shuba, N. M., Kazimirko, V. K., Bortkevich, O. P. (2013). *Nacionalnij pidruchnik z revmatologiyi [National textbook of rheumatology]*. Kiyiv: MORION, 2013. 671 c.



2. Simbirtsev, A. S. (2018). *Citokiny v patogeneze i lechenii zabolevaniy cheloveka [Cytokines in the pathogenesis and treatment of human diseases]*. Sankt-Peterburg: Foliant [in Russian].

3. Avci, A. B., Feist, E., Burmester, G. R. (2016). Targeting GM-CSF in rheumatoid arthritis. *Clin. Exp. Rheumatol.*, 34 (98), 39-44.

4. Cavalli, G., Dinarello, C. A. (2015). Treating rheumatological diseases and co-morbidities with interleukin-1 blocking therapies. *Rheumatology (Oxford)*, Dec, 54 (12), 2134-2144.

5. Croft, M., Siegel, R. M. (2017). Beyond TNF: TNF superfamily cytokines as targets for the treatment of rheumatic diseases. *Nat. Rev. Rheumatol.*, 13(4), 217-233.

6. Fallahi-Sichani, M., Flynn, J. L., Linderman, J. J., Kirschner, D. E. (2012). Differential risk of tuberculosis

reactivation among anti-TNF therapies is due to drug binding kinetics and permeability. *J Immunol.*, 188 (7), 3169-3178.

7. Hashizume, M., Mihara, M. (2011). The roles of interleukin-6 in the pathogenesis of rheumatoid arthritis. *Arthritis*, 765624, 1-8.

8. Lynch, K., Farrell, M. (2010). Cerebral tuberculoma in a patient receiving anti-TNF alpha (adalimumab) treatment. *Clin Rheumatol*, 29(10), 1201-1204.

9. Lyadova, I. V., Panteleev, A. V. (2015). Th1 and Th17 Cells in Tuberculosis: Protection, Pathology, and Biomarkers. *Mediators Inflamm.*, 854507, 1-13.

10. McInnes, I. B., Buckley, C. D., Isaacs, J. D. (2016). Cytokines in rheumatoid arthritis — shaping the immunological landscape. *Nat Rev Rheumatol*, 12(1), 63-68.

11. McInnes, I. B., Schett, G. (2011). The pathogenesis of rheumatoid arthritis. *N Engl J Med*, 365(23), 2205-2219.

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**THE IMPACT OF IMMUNE MECHANISMS  
IN THE PATHOGENESIS OF CHRONIC  
APICAL PERIODONTITIS**

*Yu. V. Sidash*

*Ukrainian Medical Dental Academy, Poltava*

*In this paper the development of odontogenic foci of infection in the form of various nosological forms of chronic periodontitis is highlighted and observed in persons with general somatic diseases, which may be accompanied by changes in indicators of immunity at the general and local levels. It should be noted that the chronicity of the inflammatory process in the periodontium is a complex immunopathological process, which is influenced by the functional activity of immunocompetent cells, the production of certain immunoglobulins, cytokines, pathogenetic immune complexes and adhesive molecules and the like. The authors have proved the need for a detailed study of the immunopathological development of inflammation in the surrounding apical tissues of the teeth, T and B cell level of local immunity, for the purpose of correct pathogenetic treatment for the preservation of teeth with chronic apical periodontitis.*

**Keywords:** *chronic apical periodontitis, local immunity.*

**REFERENCES**

1. Mitronin, A.V. (2005). Printsipy, metody i sredstva lecheniya hronicheskogo periodontita pri kompleksnoy reabilitatsii patsientov. [Principles, methods and methods of treatment of chronic periodontitis in complex rehabilitation of patients]. *Stomatologiya*, 84, 60, 67-74 [in Russian].

2. Priyma, N.V. (2010). Kompleksnyy podhod k lecheniyu periodontita u bolnykh hronicheskim pielonefritom [A comprehensive approach to the treatment of periodontitis in patients with chronic pyelonephritis]. *Endodontist*, 2, 4, 14-16 [in Russian].

3. Robustova, T.G., Mitronin, A.V. (2007). Hronicheskii apikalnyi periodontit, prichinno-sledstvennaya svyaz ochagov infektsii s soputstvuyuschimi zabolevaniyami [Chronic apical periodontitis, causality of foci of infection with concomitant diseases]. *Rossiyskiy stomatologicheskii zhurnal*, 1, 38-42 [in Russian].

4. Shcherbyna, I.M. (1999). Osoblyvosti perebihu ta likuvannya khronichnoho periodontytu u pidlitkiv, infikovanykh tuberkulozom [Features of the course and treatment of chronic periodontitis in adolescents infected with tuberculosis] *Extended abstract of candidate's thesis*. Poltava [in Ukrainian].

5. Yudina, N.A. (2010). Profilaktika i lechenie stomatologicheskikh zabolevaniy u patsientov s ishemicheskoy boleznju serdtsa (eksperimentalno-klinicheskoe issledovanie) [Prevention and treatment of dental diseases in patients with ischemic heart disease]. (experimental clinical study) *Extended abstract of candidate's thesis*. Minsk [in Russian].

6. Tkachenko, P. I., Mytchenok, M. P., Sidash, Yu. V. (2013). Kompleksnyi pidkhid do likuvannya khronichnoho hranuliiuchoho periodontytu u khvorykh na tsukrovyy diabet II typu [A comprehensive approach to the treatment of chronic granulating periodontitis in patients with type II diabetes]. *Visnyk problem biolohii i medytsyny*, Vol. 1, 1,98, 252-256 [in Ukrainian].

7. Sashkina, T. I., Porfiriadis, M. P., & Volozhin, A. I. (2008). Rol immunnyy sistemy v razvitii giperergicheskogo vospalitelnogo protsessa v chelyustno-litsevoy oblasti [The role of the immune system in the development of the hyperergic inflammatory process in the maxillofacial region]. *Stomatologiya*, 6, 4-8 [in Russian].

8. Tkachenko, P.I., Gogol, A.M. (2002). Mestnyie zaschitnyie reaktsii polosti rta pri vospalitelnykh zabolevaniyakh chelyustno-litsevoy oblasti [Local protective reactions of the oral cavity in inflammatory diseases of the maxillofacial region]. *Aktualni problemy*

*suchasnoi medytsyny: Visnyk Ukrainskoi medychnoi stomatolohichnoi akademii*, 2, 2, 4, 20-23 [in Ukrainian].

9. Cherkashin, S. I. (1991). Patogenez, diagnostika, prognozirovanie i lechenie hroniosepticheskikh sostoyaniy pri periapikalnoy ochagovoy infektsii [Pathogenesis, diagnosis, prognosis and treatment of chronioseptic conditions in periapical focal infection] *Extended abstract of candidate's thesis*. Kiev [in Ukrainian].

10. Poletaev, A.B. (2008). *Immunofiziologiya i immunopatologiya [Immunophysiology and immunopathology]*. Izbrannyye glavyi. Moscow: MIA [in Russian].

11. Liapatas, S., Nakou, M., Rontogianni, D. (2003). Inflammatory infiltrate of chronic periradicular lesions: an immunohistochemical study. *Int. Endod. J.*, 36, 7, 464-471.

12. *Metody klinichnykh ta eksperymentalnykh doslidzhen v medytsyni [Methods of clinical and experimental research in medicine]*. (2003). I. P. Kaidashev (red.). Poltava: Polimet [in Ukrainian].

13. Petit, M.D, Hovenkamp, A.E, & Miedema, F. (2001). Phenotypical and functional analysis of T cells in periodontitis. *J. Periodontal Res.*, 36, 4, 214-220.

14. Erciyas, K., Orbak, R., & Kaya, H. (2006). The changes in T-lymphocyte subsets following periodontal treatment in patients with chronic periodontitis. *J. Periodontal Res.*, 41, 3, 165-170.

15. Donati, M., Liljenberg, B., & Berglundh, T. (2009). B-1a cells and plasma cells in periodontitis lesions. *J. Periodontal Res.*, 44, 5, 683-688.

16. Karaulov, A.V, Zemskov, A. M, Zemskov, V. M. (2002). *Klinicheskaya immunologiya i allergologiya: ucheb. posobie dlya sistemyi poslevuz [Clinical immunology and allergology: textbook for postgraduate doctors]*. A.V. Karaulov (red.). Moscow: MIA [in Russian].

17. Lebedev, K. A, Ponyakina, I.D. (1990). *Immunogramma v klinicheskoy praktike [Immunogram in clinical practice]*. Moscow: Nauka [in Russian].

18. Zharkova, O. A. (2006). Immunologicheskie i mikrobiologicheskie aspektyi hronicheskikh periodontitov [Immunological and microbiological aspects of chronic periodontitis]. *Vestnik Vitebskogo gosudarstvennogo meditsinskogo universiteta*, 5, 3, 105 [in Russian].

19. Sheshukova, O. V. (2009). Vyznachennia uchasti imunotsytiv u protsesakh rezorbtsii koreniv tymchasovoho zuba pry khronichnomu zapalnomu protsesi v periodonti [Determination of the participation of immunocytes in the processes of resorption of the roots of the temporary tooth in chronic inflammatory process in the periodontium]. *Ukrainskyi stomatolohichnyi almanakh*, 5, 47-48 [in Ukrainian].

20. Kabak, S. L. (2005). Mediatoryi lokalnoy rezorbtsii kostnoy tkani pri hronichskom apikalnom (verhushechnom) periodontite [Mediators of local bone resorption in chronic apical (apical) periodontitis]. *Sovremennaya stomatologiya — Modern Dentistry*, 4, 20-26. [in Russian].

21. Sheshukova, O. V. (2006). Zv'язok mizh naiavnistiu parodontopatohennoi infektsii u korenykh kanalakh i histolohichnymy osoblyvostiamy hranuliatsiinoi tkanyny pry khronichnomu periodontyti tymchasovykh zubiv [Relationship between the presence of periodontal pathogenic infection in root canals and histological features of granulation tissue in chronic periodontitis of temporary teeth]. *Visnyk problem biolohii i medytsyny — Problems of Biology and Medicine Journal*, 2, 413-416 [in Ukrainian].

22. Drannik, H. M, Prylutskiy, Chop`iak, V. V. (2006). *Klinichna imunolohiia ta alerholohiia [Clinical immunology and allergology]*. H.M. Drannik (red.). Kyiv: Zdorovia [in Ukrainian].

23. Yamaguchi, M, Kasai, K. (2005). Inflammation in periodontal tissues in response to mechanical forces. *Arch. Immunol Ther. Exp. (Warsz)*, 53, 5, 388-398.

24. Mitronin, A.V, Robustova, T. G, Maksimovskiy, Yu. M. (2005). Kliniko-immunologicheskaya charakteristika destruktivnykh form hronicheskogo periodontita [Clinical and immunological characteristics of destructive forms of chronic periodontitis]. *Rossiyskiy stomatologicheskii zhurnal — Russian Dentistry Journal*, 1, 29-34 [in Russian].

25. Tkachenko, P. I, Kaidashev, Miakushko, A. V. (2009). *Sposib otsinky klitynnoho imunitetu peryferiinoi krovi slyzovoi obolonky porozhnyny rota v diliansi perekhidnoi skladky prysinku rotovoi porozhnyny [Method for evaluating cellular immunity of peripheral blood of oral mucosa in the region of transitional fold of oral cavity]*. Patent Ukrainy № 40851 [in Ukrainian].

26. Napolnikov, L. V, Slavinskiy, A. A, Aksenova, T. V. (2005). Kompyuternaya morfometriya markerov azurofilnoy zernistosti neytrofilov krovi u patsientov s ostrym apikalnym periodontitom [Computer morphometry of markers of azurophilic granularity of blood neutrophils in patients with acute apical periodontitis]. *Sovremennaya stomatologiya — Modern Dentistry*, 2, 65-67 [in Russian].

27. Haitov, R. M, Pinegin, B. V, Yarilin, A. A. (2009). *Rukovodstvo po klinicheskoy immunologii. Diagnostika zabolevaniy immunnoy sistemyi [A guide to clinical immunology. Diagnosis of diseases of the immune system]: rukovodstvo dlya vrachey — a guide for doctors*. Moscow: GEOTAR-Media [in Russian].

28. Poletaev, A. B. (2007). *Klinicheskaya i laboratornaya immunologiya [A guide to clinical immunology. Diagnosis of diseases of the immune system]*. Izbrannyye lektsii — Selected lectures. Moscow: MIA [in Russian].

29. Nikol'yshyn, A. K. (2012). *Terapevtychna stomatolohiia [Therapeutic dentistry]: pidruch. dlia studentiv stomat. fak. vyshch. med. navch. zakl. IV rivnia akredytatsii. 2-e vyd, vypr. dop.* Vinnytsia: Nova knyha [in Ukrainian].

30. Sidash, Yu.V. (2010). Dynamika imunolohichnykh pokaznykiv kapilarnoï krovi u khvorykh z khronichnym verkhivkovym periodontytom

[Dynamics of immunological parameters of capillary blood in patients with chronic apical periodontitis]. *Aktualni problemy suchasnoi medytsyny: Visnyk Ukrainiskoi medychnoi stomatolohichnoi akademii — Up-to-date Problems of Modern Medicine: Bulletin of Ukraine Medical Stomatological Academy*, 10, 1 (29), 170-173 [in Ukrainian].

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**APPLICATION OF POLYTHERAPY IN LOCAL TREATMENT OF CHRONIC CANDIDOSIS STOMATITIS**

*I. Ju. Lytovchenko, E. V. Nikolishyna, N. M. Ilenko, A. V. Marchenko*

*Fungi of Candida genus belong to the pathogenic microflora of the oral cavity. Chronic candidiasis often occurs in the elderly and elderly with low reactivity, who use removable plastic prostheses (mainly atrophic form of candidiasis stomatitis) or in patients who use antibiotics, oral contraceptives, cytostatic drugs, corticosteroids.*

*Treatment of patients in the study group was considered effective in achieving positive results in the clinical picture of the disease and microbiological examination one month after the end of general and combined local therapy.*

*Our proposed combination topical antifungal therapy was performed as part of a comprehensive treatment for chronic candidiasis. General treatment included dieting, elimination of background pathology, and use of antifungal, hyposensitizing, immunobiological, and vitamin therapy. Local therapy of patients with atrophic and hyperplastic forms of chronic candidiasis stomatitis consisted in the application of the scheme developed at the department of therapeutic dentistry of UMSA, where several groups of antifungal agents are prescribed, which change throughout the day and course of treatment.*

**Keywords:** candidiasis, antimycotics, fungi of *Candida* genus.

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**INFLUENCE OF BLOOD PRESSURE AT THE LEVEL OF NEW BIOMARKERS OF INFLAMMATION OF GDF-15, P-SELECTIN AND GALECTIN-3 IN PATIENTS WITH HYPERTENSION IN COMBINATION WITH TYPE 2 DIABETES**

*A. O. Bilchenko*

*Despite the intensive study in recent years of new promising biomarkers of systemic inflammation, GDF-15, P-selectin and Galectin-3, the association of these markers with the level of blood pressure in patients with hypertension and type 2 diabetes remains unexplored. The aim of the study was to evaluate the effect of BP on the level of new biomarkers*

31. Shuhorova, Yu. A. (2008). *Kliniko-immunologicheskie aspekty i optimizatsiya metodov povtornogo lecheniya hronicheskikh form periodontitov* [Clinical-immunological aspects and optimization of methods of re-treatment of chronic forms of periodontitis]. *Extended abstract of candidate's thesis*. Samara [in Russian].

**REFERENCES**

1. Kytcevylyak, V. F. (2011). *Mikrobnaya flora polosti rta v norme i ee povrejdayuschie faktori* [The microbial flora of the oral cavity is normal and its damaging factors]. *Stomatolog — Dentist*, 10, 28-31 [in Russian].

2. Gordiyuk, M. M., Fesenko, Vol. I., Fesenko, Vikt. I. (2010). *Kandidoz shlynkovo-kishkovogo traktu ta porojnini rota: navch. posib*. [Candidiasis of the intestinal tract and the empty company: Textbook]. Dnipropetrovsk: «Porogy» [in Ukrainian].

3. Ilenko, N. M., Prihodko, M. E., Nikolishyna, E. V. (2005). *Osoblivosti kliniki i likuvannya kandidozu SOPR* [Special features of the clinical picture and the candidiasis of oral mucosa]. *Ukrainsky stomatologichnyy almanach — Ukrainian dental almanac*, 5, 12–13 [in Ukrainian].

4. Glazunov, O. A., Fesenko, V. I., Fesenko, D. V. (2012). *Effektivnost kombinatsii preparatov pivafutcin i bifiform v kompleksnom lechenii kandidoznogo stomatita* [Effectiveness of the combination of pimafucin and bifiform preparations in the complex treatment of candidosis stomatitis]. *Visnyk stomatologii — Dentistry Bulletin*, 1, 98-99 [in Russian].

5. Ilenko, N. M., Lytovchenko, I. Y., Petrushanko, T. O., Nikolishyna, E. V., Marchenko, A.V. (2019). *Sposib likuvannya hronichnogo kandidoznogo stomatitu* [The way of treating chronic candidal stomatitis], applicant and patentee is Ukrainian Medical Dental Academy: patent 135910 Ukraine, № u201901391; application from 11.02.2019; published 25.07.2019, Bulletin № 14 [in Ukrainian].

*of inflammation of GDF-15, P-selectin and Galectin-3 in blood plasma in patients with hypertension in combination with type 2 diabetes. The study included 121 patients, including 59 women and 62 men aged 40 to 87 years (mean age 64.7 ± 10.6 years). Patients included in the study were determined the levels of new biomarkers of inflammation: GDF-15, P-selectin, Galectin-3 and highly sensitive CRP (hs-CRP) using standard kits of reagents. Significant decrease in the level of GDF-15 was observed in patients with grade 3 hypertension compared with patients with grade 1 and 2. In contrast to the level of GDF-15, the level of P-selectin was significantly higher in patients with grade 3 hypertension (133.95 ± 28.13 ng/ml) compared with patients with grade 1 and 2 (111.50 ± 45.81 and 111.10 ± 35.60 ng/ml, respectively, p < 0.05), at the same*

time, the average level of Galectin-3 did not differ significantly in patients with different degrees of hypertension. A weak significant correlation was detected between P-selectin and SBP and DBP ( $r = 0.192, p = 0.035$  and  $r = 0.181, p = 0.047$ , respectively). A weak reliable correlation was also observed between GDF-15 level and diastolic blood pressure. No significant correlation was found between GDF-15 and SBP and PBP ( $r = -0.152, p = 0.172$  and  $r = 0.087, p = 0.345$ , respectively). A weak negative correlation was found between GDF-15 and DBP ( $r = -0.251, p = 0.023$ ). No correlation was found between P-selectin and PBP.

**Conclusion.** We found a weak reliable association of P-selectin levels with SBP and DBP, which reduced the effect of angiotensin II on the elevation of blood pressure and the level of GDF-15 with diastolic blood pressure in patients with type 2 hypertension and diabetes. The level of plasma Galectin-3 and hs-CRP is not associated with the level of «office» blood pressure in patients with hypertension and type 2 diabetes.

**Keywords:** systemic inflammation, blood pressure, cardiovascular risk, biomarkers of inflammation.

#### REFERENCES

1. Williams, B., Mancia, G., Spiering, W. et al. (2018). ESC/ESH Guidelines for the management of arterial hypertension. *Hypertens.* Vol. 36(12). P. 2284–2309.
2. Wang, Q., Wang, H., Wang, J. et al. (2018). Angiotensin II-induced Hypertension is Reduced by Deficiency of P-selectin Glycoprotein Ligand-1. *Sci Rep.* Vol. 8(1). P. 3223.

3. Sökmen, E., Uçar, C., Sivri, S. et al. (2019). Association Between Growth Differentiation Factor 15 and Non-Dipping Circadian Pattern in Patients with Newly Diagnosed Essential Hypertension. *Med. Princ. Pract.* May 23. [Epub ahead of print].

4. Yao, Y., Shen, D., Chen, R. et al. (2016). Galectin-3 Predicts Left Ventricular Remodeling of Hypertension. *J Clin. Hypertens (Greenwich)*. Vol. 18(6). P. 506–511.

5. Yang, F.F., Peng, F., Xing, Y.B. et al. (2017). Impacts of serum P-selectin on blood pressure control after PCI in patients with coronary heart disease complicated with hypertension. *Eur. Rev. Med. Pharmacol. Sci.* Vol. 21(3). P. 78–83.

6. Swirski, F.K., Nahrendorf, M. (2013). Leukocyte behavior in atherosclerosis, myocardial infarction, and heart failure. *Science*. Vol. 339(6116). P. 161–166.

7. Moriya, J. (2019). Critical roles of inflammation in atherosclerosis. *J. Cardiol.* V. 73(1). P. 22–27.

8. Li, X.F., Song, C.H., Sheng, H.Z. et al. (2015). P-selectin gene polymorphism associates with pulmonary hypertension in congenital heart disease. *Int. J. Clin. Exp. Pathol.* Vol. 8(6). P. 7189–7195.

9. Sökmen, E., Uçar, C., Sivri, S., et al. (2019). Relationship of growth differentiation factor-15 with aortic stiffness in essential hypertension. *Future Sci OA.* Vol. 14; 5(7). FSO406.

10. Standards of Medical Care in Diabetes. (2017). Standards of medical care in diabetes–2017. *Diabetes Care.* Vol. 40 (1).

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#### ANAMNESTIC CHARACTERISTICS OF ACUTE OBSTRUCTIVE BRONCHITIS IN CHILDREN INFECTED BY CHLAMIDIA

M. S. Diachenko

The article highlights the anamnestic features of the course of acute obstructive bronchitis in children against the background of infection with chlamydial infection. The goal is to study the features of the history of children with acute obstructive bronchitis with concomitant infection with chlamydial infection. Materials and methods: medical records of inpatients, laboratory and clinical examinations, orders of the Ministry of Health of Ukraine. Statistical processing of the results was carried out with the calculation of parametric and nonparametric criteria.

The study included 73 patients with acute obstructive bronchitis, infected with chlamydia and patients not infected with intracellular pathogens who were hospitalized under the conditions of pediatric ward of children of younger and older age of KNE "City Children's Clinical Hospital № 24", Kharkiv. Attention is focused on the fact that anamnestic data using system analysis make it possible to predict the consequences in the medical history of children with intracellular infections

of various somatic pathologies. At the same time, multivariate and correlation analyzes allow the development of new diagnostic criteria.

**Keywords:** medical history, children, acute obstructive bronchitis, intracellular pathogens, somatic pathology.

#### REFERENCES

1. Antypkyn, Yu. H., Lapshyn, V. F., Umanets, T. R. (2008). Retsydyvyruishchyi bronkhyt u detei: dyskussyonnie voprosi. [Recurrent bronchitis in children: discussion questions]. *Zdorove Ukraini — Health of Ukraine*, 18, 19–21. Ukrainian.

2. Arkhipova H. I., Makarenko Yu. S. (2012). Vplyv tiutiunopalinnia na orhanizm liudyny. [Infusion of tyutunopalinnia on the organism of people]. *Visnyk NAU — Bulletin of NAU*, 3, 140–142. Ukrainian.

3. Eloeva, Z. V., Krasnozhen, N. N., Diachenko, M. S. (2015). Osobennosti techeniya atypichno protekaiushchei patolohyy, vizvannoi persystyruishchymy vnutrykletochnymy ynfektsiyamy. [Features of the course of atypically occurring pathology caused by persistent intracellular infections]. *Mater. rehionalnoi nauk.-metod. konf. (26–27 liutooho 2014 roku) — Mater. regional science-method. Conf. (February 26–27, 2014)*, 29–32. Ukrainian.

4. Zaitseva, O. V. (2008). Bronkhoobstruktyvnyy syndrom v praktyke pedyatra. Rol ynhalatsyonnoi bronkholytycheskoi terapiy. [Broncho obstructive syndrome in pediatric practice. The role of inhaled bronchodilator therapy]. *Novosty medytsyny y farmatsyy — News of medicine and pharmacy*, 19, 12–13. Russian.

5. Maidannyk, V. H., Smiiian, O. I. (2017). Bronkhialna astma u ditei. [Bronchial asthma in children]. Sumy : Sumskyi derzhavnyi universytet [in Ukrainian].

6. Marushko, Yu.V., Hyshchak, T.V. (2018). Terapiia lykhomanky u ditei iz hostrymy respiratornymy zakhvoriuvanniamy. [Fever therapy in children with acute respiratory diseases]. *Ukrainskyi medychnyi chasopys. Ukrainian Medical Journal*, 1, 2–5. Ukrainian.

7. Moiseienko, R. O., Dudina, O. O., Hoida, N. H. (2017). Analiz stanu zakhvoriuvanosti ta poshyrenosti zakhvoriuvan u ditei v Ukraini za period 2011–2015roky. [Analysis of the incidence and prevalence of diseases in children in Ukraine for the period 2011–2015]. *Sovremennaia pedyatryia — Modern pediatrics*, 2, 17–27. Ukrainian.

8. Anser, S. A., Rose, W., Petrich, A., Richardson, S., Tran, D. J. Is virus coinfection a predictor of severity in children with viral respiratory infections? *Clin Microbiol Infect.* 2015 Mar; 21 (3):264. 1–6. DOI:10.1016/j.cmi.2014.08.024.

9. Chung, K. F., Wenzel, S. E., Brozek, J. L. International ERS/ATS guidelines on definition, evaluation and treatment of severe asthma. *Eur Respir J*, 2014, 43: 343–373.

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**FORMATION OF YOUTH' PROFESSIONAL COMPETENCE THROUGH PROFESSIONAL ORIENTATION EVENTS IN THE VOCATIONAL-TECHNICAL SCHOOLS SYSTEM**

*A. M. Shvets, A. V. Korobkova–Arzhannikova, T. V. Havrylova*

*Professional competence of a vocational-technical school graduate is a complex integrated concept that cannot be reduced to knowledge or skills alone, or personal qualities. The analysis of various definitions of professional competence of the future worker is performed in the review.*

*Therefore, in the modern conditions of development and development of a new educational paradigm, attention is being paid to the professional activity of the worker, the quintessence of which is professional competence in all the variety of its manifestations. The success indicators of professional competence are the large number of established professional careers, the rapid entry of young people into the labor market, the developed system of additional education, overall satisfaction of young citizens of the country with their professional life. But at the same time, there are no significant differences between them, which makes it difficult in general to analyze such a multidimensional concept as the professional competence of a modern worker.*

**Keywords:** *career guidance, competency-based approach, professional competence, qualification, adolescents, professional training.*

**REFERENCES**

1. Andreeva, L. I. (2012). Professionalnoe samoopredelenie shkolnikov v usloviyah innovatsionnoy deyatel'nosti obsheobrazovatel'nogo uchrezhdeniya [Professional self-determination of schoolboys in the conditions of innovative activity of educational institution], Kharkiv: Health Publ, 245, 134–138 [in Ukrainian].

2. Bech, I. D. (2017). Vibriani pitannya pro vihovannya osobistosti. [Selected questions about education of personality], Kyiv : LibId Publ, 848, 267–274 [in Ukrainian].

3. Dementev, I. V. (2018). The problem of professional self-determination of schoolboys in modern vocational guidance: the psychological and pedagogical aspects. *Rus. Institute of Higher School*. Vol. 5 (12). P. 248–255.

4. Dus, T. E. (2014). Podgotovka starsheklassnikov k osoznannomu vyboru professii v protsesse sotsialnoy raboty s molodezhyu [Preparing high school students to make a conscious choice of profession in the process of social work with young people], Vinnitsa: New book Publ., 255, 235–250 [in Ukrainian].

5. Grinshpun, S. S. (2014). «Academy X»: preparing american students for life and work. *Rus. Ped. J.* Vol. 4 (12). P. 103–108.

6. Klyueva, E. A. (2013). Tehnologiya sotsialnoy raboty s molodyozhyu. [The technology of social work with young people]. *Materialy naukovy-praktychnoi konferencii*. Vol. 5. P. 95–98. [in Russian].

7. Kuznetsov, V. V. (2007). Foreign experience in the organization of interaction of the labor market and vocational training system. *Public education*. Vol. 1(1). P. 194–199.

8. Marius, G. (2013). An ampirical investigation and validation of types of career orientation. *J. Clin. Med.* Vol. 2 (15). P. 1–5.

9. McLaren, M. (2016). The role of meaning and purpose in the career development of adolescents: a qualitative study. *Colorado: Plenum Publishers*. Vol. 2 (1). P. 72–75.

10. Reana, A. A. (2015). The adolescent psychology. *St. Petersburg : Evroznak Publ*. Vol. 7 (3). P. 48–53.

11. Sheh, S. A. (2013). Career guidance for yong people: The impact of the new duty on schools (literature reviewer). *Sixth Special Report of Session*. Vol. 18 (9). P. 1–16. doi:10.6084/m7.figshare.77531456.

12. Yakuba, Y. A. (2013). Professional competence — the basis of competitive graduates. *Education Policy*. Vol. 19 (5). P. 41–44. doi:10.6084/m9.figshare.775315.

13. Zhizhin, K. S. (2014). Information technology in the context of accelerating the training specialist. *Applied Informatics*. Vol. 6 (12). P. 19–21. doi:10.15561/18189172.2016.0502.

**HISTORY OF ORTHOPEDIC DENTISTRY  
DEPARTMENT 1 KHARKIV MEDICAL ACADEMY  
OF POSTGRADUATE EDUCATION**

*V. I. Grizodub, V. I. Bezsonov,  
L. O. Ivanishchenko, T. I. Pilipenko*

*The article is devoted to the history of the formation and development of the Department of Orthopedic Dentistry 1 Kharkiv Medical Academy of Postgraduate Education. The department was officially established in 1930 as the department of odontologists at the All-Ukrainian Institute for Advanced Medical Studies. Since 1931, the department became known as the dental department and dentists began to improve their qualifications in the department. In September 1941, the department ceased its work. In 1958, the department resumes work. Since 1959, the Ukrainian Institute of Advanced Medical Studies at the Department of Dentistry created an assistant professor specialization course for orthopedic and orthodontic doctors. In 1965 for the first time in the history of the institute, a separate department was created for the teaching of orthopedic dentistry, headed by M. A. Napadov.*

*The staff of the department under the guidance of prof. M. A. Napadov Developed the main domestic structural and auxiliary dental materials.*

*From 1992 to 1995 — he was in charge of the candidate sciences A. P. Golubnichy. From 1995 the department is headed by a doctor of medical sciences, professor Grizodub V. I.*

*Is head of the department of Professor V. I. Grizodub: 12 candidate dissertations were defended and approved by Candidate of Medical Sciences (I. Dnistransky, I. Isakov,*

*L. Ivanishchenko, K. V. Zhukov, A. A. Chelyapina, R. M. Badalov, D. V. Gryzodub, E. V. Gryzodub, S. Gordienko and 2 Author of foreign citizens).*

**Keywords:** *odontology, dentistry, department of orthopedic dentistry, PhD thesis, department.*

**REFERENCES**

1. Lisova, I. G. Istorija diyalnosti stomatologichnogo osередku pri Harkivskomu medichnomu tovaristvi [History of dental center activity at Kharkov Medical Society]. Ukrayinski medichni visti — Ukrainian Medical News: mat. XI z'yizdu VULT (28-10 veresnya 2011 roku) — materials of the XI VULT congress (September 28, 2011). (pp. 81-82). Harkiv [in Ukrainian].

2. Lisova, I. G. (2008). Shkola shelepno-licevoyi hirurgiyi ta hirurgichnoyi stomatologiyi na Slobozhanshini — rozvitok pislyadiplomnoyi osviti likariv [School of maxillofacial surgery and surgical dentistry in Slobozhanshchina — development of postgraduate education of doctors]. Harkiv: "FOP Tomenko Yu.I., m. Harkiv, vul Plehanivska, 16".

3. Napadov, M. A. (1956). Ispravlenie semnyh plastmassovyh protezov pri pomoshi plastmassy «AKR-100» [Correction of removable plastic prostheses using plastic «AKP-100»] Extended abstract of candidate's thesis. Moskva [in Russian].

4. Napadov, M. A. (1966). Nekotorye vidy zubo-chelyustnyh deformacij u detej, ih profilaktika, diagnostika i lechenie [Some types of dentoalveolar deformities in children, their prevention, diagnosis and treatment]. Extended abstract of Doctor's thesis. Harkov [in Russian].