

ABSTRACT&REFERENCES

DOI: 10.15587/2519-4798.2018.149293

ANALYSIS OF POST OPERATION PERIOD AFTER PRIMARY HIP ARTHROPLASTY IN PROXIMAL FEMORAL FRACTURE DEPENDING ON POSTSURGERY WOUND DRAINAGE

p. 4-7

Volodymyr Babalian, PhD, Associate Professor, Department of Traumatology, Anaesthesiology and Military Surgery, Kharkiv Medical Academy of Postgraduate Education, Amosova str., 58, Kharkiv, Ukraine, 61176

E-mail: babalyanvladimir@gmail.com

ORCID: <http://orcid.org/0000-0003-4149-2542>

Drainage of postoperative wounds for a long time remained the obligatory stage of operative intervention at arthroplasty of a hip joint. But recently in many clinics there are a tendency for a total refusal from this stage. The results of the research highlight only the positive features of these changes, but our experience has shown both an improvement and a decrease in the outcome of treatment.

The aim of the research is to establish the expediency of refusing to drain postoperative wounds after hip replacement with fractures of the proximal thigh.

Material and methods. *The analysis of 44 patients with fractures of the proximal thigh after the initial replacement with unipolar prosthesis with a dual movement head was performed. Representative groups have been formed depending on the use of post-operative wound layer drainage. In the postoperative period, an assessment of pain syndrome for VAS was used. We applied a visual assessment of health (EQ VAS) and questionnaires EQ-5D-5L. Hidden blood loss = $BCC \times (\text{hematocrit before} - \text{hematocrit after})$, where hematocrit before is the value of the indicator for the operation, hematocrit after – the value of the index for 7 days after the operation. The determination of the volume of circulating blood (BCC) was carried out using the formula by Nadler, Hidalgo and Bloch: $PBV = K1 \times \text{height (m)}^3 + K2 \times \text{weight (kg)} + K3$, where $K1 = 0.3669$, $K2 = 0.03219$, $K3 = 0.6041$ for men; $K1 = 0.3561$, $K2 = 0.03308$, $K3 = 0.1833$ for women.*

Results. *The intensification of pain syndrome was detected up to 3 days after the postoperative term in the case of failure of layer drainage. There was no statistically significant difference in the indicators of the quality of life assessment, but the patient's ability to raise the straightened limb with refusal of drainage was observed more often than 2 days compared with 4 days in patients who performed layered drainage of postoperative wound. Significantly improved hemodynamic rates to 7 days of the postoperative period and consequently reduced blood loss. Twice times more often, hyperemia of the postoperative wound was observed in the event of withdrawal from drainage. Increase the length of the hip circumference and regress to 7 days. According to the assessment of the questionnaire EQ-5D-5L, there was no statistically significant difference in the assessment of the quality of life of the affected, depending on drainage.*

Conclusions. *Denial from drainage improves hemodynamic rates in the postoperative period in the study group, slightly increasing the pain syndrome from the first to the third day. Refusal from the layered drainage of the postoperative wound with the fractures of the proximal thigh section in the primary arthroplasty is reasonable*

Keywords: *proximal femoral fracture, primary hip replacement, drainage, blood loss, hemoconcentration*

References

1. Poluliakh, M. V., Herasymenko, S. I., Sulyma, V. S., Yuriichuk, L. M. (2008). Pervynne endoprotezuvannia pry cherez- ta mizhvertelnykh perelomakh stehnovoi kistky u khvorykh pokhyloho ta starechoho viku. *Travma*, 9 (4). Available at: <http://www.mif-ua.com/archive/article/20425>
2. Haiko, H. V., Kukurudza, L. P., Torchynskyi, V. P., Pidhaietskyi, V. M., Sulyma, O. M., Osadchuk, T. I. (2003). Endoprotezuvannia kulshovoho suhloba u khvorykh pokhyloho viku pry perelomakh proksymalnoho viddilu stehnovoi kistky. *Totalne i reviziine endoprotezuvannia velykykh suhlobivz. Kyiv-Lviv*, 11–15.
3. Berend, K. R., Hanna, J., Smith, T. M., Mallory, T. H., Lombardi, A. V. (2005). Acute hip arthroplasty for the treatment of intertrochanteric fractures in the elderly. *Journal of Surgical Orthopaedic Advances*, 14 (4), 185–189.
4. Parvizi, J., Porat, M. (2011). Draining wounds: No time to procrastinate. *Orthopedics Today*. Available at: <https://www.healio.com/orthopedics/hip/news/print/orthopedics-today/%7Ba52f5269-d323-4cde-8340-32d2b4181f15%7D/draining-wounds-no-time-to-procrastinate>
5. EQ-5D-5L | About. Available at: <https://euroqol.org/eq-5d-instruments/eq-5d-5l/about/>
6. Tikhilov, R. M., Shubnyakov, I. I., Myasoedov, A. A., Pliev, D. G., Karelkin, V. V., Berezin, G. V. (2018). Total hip in case of hip bone ankylosis different etiology, reasons and result. *Modern Problems of Science and Education*, 2. doi: <http://doi.org/10.17513/spno.27426>
7. Whynes, D. K. (2008). Correspondence between EQ-5D health state classifications and EQ VAS scores. *Health and Quality of Life Outcomes*, 6 (1), 94. doi: <http://doi.org/10.1186/1477-7525-6-94>
8. EQ-5D-5L User Guide Basic information on how to use the EQ-5D-5L instrument (2015). Available at: https://euroqol.org/wp-content/uploads/2016/09/EQ-5D-5L_User-Guide_2015.pdf
9. Nadler, S. B., Hidalgo, J. U., Bloch, T. (1962). Prediction of blood volume in normal human adults. *Surgery*, 51, 224–232.
10. Bourke, D. L., Smith, T. C. (1974). Estimating Allowable Hemodilution. *Anesthesiology*, 41 (6), 609–611. doi: <http://doi.org/10.1097/0000542-197412000-00015>
11. Khadzkou, Y. K., Balaboshka, K. B. (2017). The role of vacuum drainage in total knee replacement. *Vestnik of Vitebsk State Medical University*, 16 (4), 73–80. doi: <http://doi.org/10.22263/2312-4156.2017.4.73>

DOI: 10.15587/2519-4798.2018.147730

EVALUATION OF THE SAFETY AND TOLERANCE OF ORAL 25 % MALTODEXTRIN AS A CARBOHYDRATE DRINK DURING PREOPERATIVE FASTING IN CHILDREN

p. 8-13

Iryna Kyselova, Assistant, Department of Child Anesthesiology and Intensive Care, Shupyk National Medical Academy of Postgraduate Education, Dorohozhytska str., 9, Kyiv, Ukraine, 04112
E-mail: iv30@ukr.net
ORCID: <http://orcid.org/0000-0002-9083-8223>

Andriy Biliaiev, MD, Professor, Head of Department, Department of Child Anesthesiology and Intensive Care, Shupyk National Medical Academy of Postgraduate Education, Dorohozhytska str., 9, Kyiv, Ukraine, 04112
E-mail: criticalcare@ukr.net
ORCID: <http://orcid.org/0000-0003-3913-2900>

Iryna Potebnya, Head of Department, Department of Radiology, Kyiv Municipal Childrens Hospital No.1, Bogatyrska str., 30, Kyiv, Ukraine, 04209
ORCID: <http://orcid.org/0000-0002-8197-9729>

The aim of the study was to estimate safety and tolerance of oral 25 % maltodextrin 5 ml/kg two hours before induction of anaesthesia in children.

Methods: sixty patients 2–17 years old scheduled for orthopaedic surgery were divided into two groups. Patients in group “M” received 5 ml/kg of 25 % maltodextrin as a carbohydrate drink two hours before the surgery. Patients in group “K” were fasted according to current recommendation for preoperative fasting. A present of the gastric content before induction and its volume and pH after induction was evaluated. Cases of bronchial aspiration were registered. In group “M” tolerance of preoperative oral 25 % maltodextrin was estimated.

Results: the gastric content defined seldom by ultrasound examination before induction in both groups. Volume of gastric content from gastric tube after induction was comparable (0.4 ± 0.28 ml/kg in group “M” vs. 0.5 ± 0.44 ml/kg in group “K”, $p=0.68$), but pH of gastric content was significantly higher in group “M” (2.86 ± 0.99 vs. 2.10 ± 0.9 , $p < 0.001$). We did not register any cases of bronchial aspiration nor patient’s complaints after preoperative administering of 25 % maltodextrin. Children drank a carbohydrate drink for 1 (63 %) or 2 (37 %) ingestions.
Conclusions: the oral administration of 25 % maltodextrin two hours before induction of anaesthesia is well tolerated and does not lead to the risk of aspiration complications in children. Using of 25 % instead of 12.5 % solution of maltodextrin allows choosing the optimal volume for a child with saving energy value of a carbohydrate drink

Keywords: preoperative fasting in children, maltodextrin, carbohydrate drink, paediatric surgery, paediatric anaesthesia

References

1. Habre, W., Disma, N., Virag, K., Becke, K., Hansen, T. G., Jöhr, M. et. al. (2017). Incidence of severe critical events in paediatric anaesthesia (APRICOT): a prospective multicentre

observational study in 261 hospitals in Europe. The Lancet Respiratory Medicine, 5 (5), 412–425. doi: [http://doi.org/10.1016/s2213-2600\(17\)30116-9](http://doi.org/10.1016/s2213-2600(17)30116-9)

2. Roberts, R. B., Shirley, M. A. (1974). Reducing the Risk of Acid Aspiration During Cesarean Section. Anesthesia & Analgesia, 53 (6), 859–868. doi: <http://doi.org/10.1213/00000539-197453060-00010>

3. Rove, K. O., Edney, J. C., Brockel, M. A. (2018). Enhanced recovery after surgery in children: Promising, evidence-based multidisciplinary care. Pediatric Anesthesia, 28 (6), 482–492. doi: <http://doi.org/10.1111/pan.13380>

4. Smith, I., Kranke, P., Murat, I., Smith, A., O’Sullivan, G., Sreide, E. et. al. (2011). Perioperative fasting in adults and children. European Journal of Anaesthesiology, 28 (8), 556–569. doi: <http://doi.org/10.1097/eja.0b013e3283495ba1>

5. Practice Guidelines for Preoperative Fasting and the Use of Pharmacologic Agents to Reduce the Risk of Pulmonary Aspiration: Application to Healthy Patients Undergoing Elective Procedures: An Updated Report by the American Society of Anesthesiologists Task Force on Preoperative Fasting and the Use of Pharmacologic Agents to Reduce the Risk of Pulmonary Aspiration (2017). Anesthesiology, 126 (3), 376–393. doi: <http://doi.org/10.1097/aln.0000000000001452>

6. Sumpelmann, R., Becke, K., Brenner, S., Breschan, C., Eich, C., Höhne, C. et. al. (2016). Perioperative intravenous fluid therapy in children: guidelines from the Association of the Scientific Medical Societies in Germany. Pediatric Anesthesia, 27 (1), 10–18. doi: <http://doi.org/10.1111/pan.13007>

7. Bilku, D., Dennison, A., Hall, T., Metcalfe, M., Garcea, G. (2014). Role of preoperative carbohydrate loading: a systematic review. The Annals of The Royal College of Surgeons of England, 96 (1), 15–22. doi: <http://doi.org/10.1308/003588414x13824511650614>

8. Kehlet, H. (2011). Fast-track surgery—an update on physiological care principles to enhance recovery. Langenbeck’s Archives of Surgery, 396 (5), 585–590. doi: <http://doi.org/10.1007/s00423-011-0790-y>

9. Hofman, D. L., van Buul, V. J., Brouns, F. J. P. H. (2015). Nutrition, Health, and Regulatory Aspects of Digestible Maltodextrins. Critical Reviews in Food Science and Nutrition, 56 (12), 2091–2100. doi: <http://doi.org/10.1080/10408398.2014.940415>

10. Song, I.-K., Kim, H.-J., Lee, J.-H., Kim, E.-H., Kim, J.-T., Kim, H.-S. (2016). Ultrasound assessment of gastric volume in children after drinking carbohydrate-containing fluids. British Journal of Anaesthesia, 116 (4), 513–517. doi: <http://doi.org/10.1093/bja/aew031>

11. Gawęcka, A., Mierzewska-Schmidt, M. (2014). Przewodząca doustna podaż roztworu węglowodanów u dzieci – ocena tolerancji i odpowiedzi metabolicznej – doniesienie wstępne. Anestezjologia Intensywna Terapia, 46 (2), 61–64. doi: <http://doi.org/10.5603/ait.2014.0013>

12. Tudor-Drobjewski, B. A., Marhofer, P., Kimberger, O., Huber, W. D., Roth, G., Triffiterer, L. (2018). Randomised controlled trial comparing preoperative carbohydrate loading with standard fasting in paediatric anaesthesia. British Journal of Anaesthesia, 121 (3), 656–661. doi: <http://doi.org/10.1016/j.bja.2018.04.040>

13. Brady, M. C., Kinn, S., Ness, V., O’Rourke, K., Randhawa, N., Stuart, P. (2009). Preoperative fasting for preventing perioperative complications in children. Cochrane Database

of Systematic Reviews. doi: <http://doi.org/10.1002/14651858.cd005285.pub2>

14. Braga, M., Ljungqvist, O., Soeters, P., Fearon, K., Weimann, A., Bozzetti, F. (2009). ESPEN Guidelines on Parenteral Nutrition: Surgery. *Clinical Nutrition*, 28 (4), 378–386. doi: <http://doi.org/10.1016/j.clnu.2009.04.002>

15. Perlas, A., Davis, L., Khan, M., Mitsakakis, N., Chan, V. W. S. (2011). Gastric Sonography in the Fasted Surgical Patient. *Anesthesia & Analgesia*, 113 (1), 93–97. doi: <http://doi.org/10.1213/ane.0b013e31821b98c0>

16. Spencer, A. O., Walker, A. M., Yeung, A. K., Lardner, D. R., Yee, K., Mulvey, J. M., Perlas, A. (2014). Ultrasound assessment of gastric volume in the fasted pediatric patient undergoing upper gastrointestinal endoscopy: development of a predictive model using endoscopically suctioned volumes. *Pediatric Anesthesia*, 25 (3), 301–308. doi: <http://doi.org/10.1111/pan.12581>

17. Bouvet, L., Bellier, N., Gagey-Riegel, A.-C., Desgranges, F.-P., Chassard, D., De Queiroz Siqueira, M. (2018). Ultrasound assessment of the prevalence of increased gastric contents and volume in elective pediatric patients: A prospective cohort study. *Pediatric Anesthesia*, 28 (10), 906–913. doi: <http://doi.org/10.1111/pan.13472>

DOI: 10.15587/2519-4798.2018.147805

STATE OF ANTICOAGULANT AND FIBRINOLYTIC SYSTEMS OF BLOOD IN PATIENTS WITH HYPERTENSION IN COMBINATION WITH NON-ALCOHOLIC FATTY LIVER DISEASE

p. 14-18

Nataliia Bazhenova, Postgraduate Student, Department of Internal Medicine No. 1, Bogomolets National Medical University, T. Shevchenko blvd., 13, Kyiv, Ukraine, 01601;

Doctor, Admission Department, Kyiv Railway Clinical Hospital No. 2 of branch «Health center» of the Public Joint Stock Company «Ukrainian Railway», Povitroflotskyi ave., 9, Kyiv, Ukraine, 01049

E-mail: dr.bazhenova@gmail.com

ORCID: <http://orcid.org/0000-0002-5640-4317>

Aim of the research. To determine the state of the anticoagulant and fibrinolytic activity of blood in patients with hypertension and concomitant non-alcoholic fatty liver disease.

Methods. 132 patients were examined. 45 patients with hypertension stage II (HT) with concomitant non-alcoholic fatty liver disease (NAFLD), 31 patients with NAFLD without HT, 41 patients with HT without concomitant NAFLD. The control group – 15 healthy individuals of comparable age and sex. To achieve the aim the study of the anticoagulant and fibrinolytic link was carried out by special laboratory studies.

Results. When compared with the control group, the level of Antithrombin III decreased by 16.4 % in the HT group ($p < 0.01$) and in the NAFLD group ($p < 0.01$), HT+NAFLD – by 20.3 % ($p < 0.001$). The level of Protein C in patients with hypertension decreased by 26 % ($p < 0.001$), with NAFLD – by 9.5 % ($p < 0.05$), with NAFLD+HT – by 14.1 % ($p < 0.01$). Plasminogen decreased in HT – by 15 % ($p < 0.001$), NAFLD – by 20.9 %

($p < 0.001$), NAFLD+HT – by 16.5 % ($p < 0.001$). The duration of Hageman-dependent fibrinolysis is increased in all groups compared to control: in the HT group – by 47 % ($p < 0.001$), in the NAFLD group – by 78 % ($p < 0.001$), in the NAFLD+HT group – 2.4 times ($p < 0.001$).

Conclusions. Suppression of anticoagulant hemostasis is observed in patients with hypertension and with NAFLD. The decrease in the fibrinolytic activity of the blood system is reflected in the extension of the dissolution time of the fibrin clot in the group of patients with hypertension, NAFLD, NAFLD combined with HT. The level of plasminogen decreased to the same extent in patients with hypertension and with the combination of hypertension and NAFLD but isolated NAFLD had a stronger effect on this indicator. NAFLD is a risk factor for thrombophilic changes in the blood

Keywords: hypertension, non-alcoholic fatty liver disease, anticoagulant, blood fibrinolytic activity

References

1. Williams, B., Mancia, G., Spiering, W., Agabiti Rosei, E., Azizi, M., Burnier, M. et. al. (2018). 2018 ESC/ESH Guidelines for the management of arterial hypertension. *European Heart Journal*, 39 (33), 3021–3104. doi: <http://doi.org/10.1093/eurheartj/ehy339>

2. Gajalakshmi, V., Lacey, B., Kanimozhi, V., Sherliker, P., Peto, R., Lewington, S. (2018). Body-mass index, blood pressure, and cause-specific mortality in India: a prospective cohort study of 500 810 adults. *The Lancet Global Health*, 6 (7), e787–e794. doi: [http://doi.org/10.1016/s2214-109x\(18\)30267-5](http://doi.org/10.1016/s2214-109x(18)30267-5)

3. Lewington, S., Clarke, R., Qizilbash, N., Peto, R., Collins, R. (2002). Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet*, 360 (9349), 1903–1913. doi: [http://doi.org/10.1016/s0140-6736\(02\)11911-8](http://doi.org/10.1016/s0140-6736(02)11911-8)

4. Momot, A. P. (2015). The problem of thrombophilia in clinical practice. *Russian Journal of Children Hematology and Oncology*, 2 (1), 36–48. doi: <http://doi.org/10.17650/2311-1267-2015-1-36-48>

5. Lee, K. W., Lip, G. Y. H. (2003). Effects of Lifestyle on Hemostasis, Fibrinolysis, and Platelet Reactivity. *Archives of Internal Medicine*, 163 (19), 2368. doi: <http://doi.org/10.1001/archinte.163.19.2368>

6. Junker, R., Heinrich, J., Schulte, H., Erren, M., Assmann, G. (1998). Hemostasis in normotensive and hypertensive men: results of the PROCAM study. The prospective cardiovascular Münster study. *Journal of Hypertension*, 16 (7), 917–923. doi: <http://doi.org/10.1097/00004872-199816070-00004>

7. Woodward, M., Lowe, G. D., Rumley, A., Tunstall-Pedoe, H., Philippou, H., Lane, D. A., Morrison, C. E. (1997). Epidemiology of coagulation factors, inhibitors and activation markers: The Third Glasgow MONICA Survey. II. Relationships to cardiovascular risk factors and prevalent cardiovascular disease. *British Journal of Haematology*, 97 (4), 785–797. doi: <http://doi.org/10.1046/j.1365-2141.1997.1232935.x>

8. Makris, T. K., Tsoukala, C., Krespi, P., Hatzizacharias, A., Gialeraki, A., Papargyriou, J. et. al. (1997). Haemostasis balance disorders in patients with essential hypertension. *Thrombosis Research*, 88 (2), 99–107. doi: [http://doi.org/10.1016/s0049-3848\(97\)00222-3](http://doi.org/10.1016/s0049-3848(97)00222-3)

9. Corseaux, D., Ollivier, V., Fontaine, V., Huisse, M.-G., Philippe, M., Louedec, L. et al. (2002). Hemostasis imbalance in experimental hypertension. *Molecular Medicine*, 8 (4), 169–178. doi: <http://doi.org/10.1007/bf03402009>

10. Rinella, M. E. (2015). Nonalcoholic Fatty Liver Disease. *JAMA*, 313 (22), 2263–2273. doi: <http://doi.org/10.1001/jama.2015.5370>

11. Bril, F., Cusi, K. (2017). Management of Nonalcoholic Fatty Liver Disease in Patients With Type 2 Diabetes: A Call to Action. *Diabetes Care*, 40 (3), 419–430. doi: <http://doi.org/10.2337/dc16-1787>

12. Byrne, C. D., Targher, G. (2015). NAFLD: A multisystem disease. *Journal of Hepatology*, 62 (1), S47–S64. doi: <http://doi.org/10.1016/j.jhep.2014.12.012>

13. Fotbolcu, H., Zorlu, E. (2016). Nonalcoholic fatty liver disease as a multi-systemic disease. *World Journal of Gastroenterology*, 22 (16), 4079–4090. doi: <http://doi.org/10.3748/wjg.v22.i16.4079>

14. Potze, W., Siddiqui, M. S., Boyett, S. L., Adelmeijer, J., Daita, K., Sanyal, A. J., Lisman, T. (2016). Preserved hemostatic status in patients with non-alcoholic fatty liver disease. *Journal of Hepatology*, 65 (5), 980–987. doi: <http://doi.org/10.1016/j.jhep.2016.06.001>

15. Kopeck, A. K., Joshi, N., Luyendyk, J. P. (2016). Role of hemostatic factors in hepatic injury and disease: animal models de-liver. *Journal of Thrombosis and Haemostasis*, 14 (7), 1337–1349. doi: <http://doi.org/10.1111/jth.13327>

16. Essalmani, R., Susan-Resiga, D., Guillemot, J., Kim, W., Sachan, V., Awan, Z. et al. (2017). Thrombin activation of protein C requires prior processing by a liver proprotein convertase. *Journal of Biological Chemistry*, 292 (25), 10564–10573. doi: <http://doi.org/10.1074/jbc.m116.770040>

17. Chapin, J. C., Hajjar, K. A. (2015). Fibrinolysis and the control of blood coagulation. *Blood Reviews*, 29 (1), 17–24. doi: <http://doi.org/10.1016/j.blre.2014.09.003>

18. Jin, R., Krasinskas, A., Le, N.-A., Konomi, J. V., Holzberg, J., Romero, R., Vos, M. B. (2016). Association between plasminogen activator inhibitor-1 and severity of liver injury and cardiovascular risk in children with non-alcoholic fatty liver disease. *Pediatric Obesity*, 13 (1), 23–29. doi: <http://doi.org/10.1111/ijpo.12183>

DOI: 10.15587/2519-4798.2018.148880

THE ROLE OF IL-6 GENE (-174 C/G) POLYMORPHISM IN PATIENTS WITH ACUTE BRUCELLOSIS

p. 19-22

Elchin Huseynov Mammad oglu, PhD, Associate Professor, Department of Infectious Diseases, Azerbaijan Medical University, Bakihanov 23 Narimanovsky district, Baku, Azerbaijan, AZ1022

E-mail: elchinhuseynov@mail.ru

The interrelationship of the IL-6 polymorphism (-174C/G) and susceptibility to brucellosis is well known.

The aim: to determine the polymorphism of IL-6 (-174C/G) in patients with acute brucellosis

Materials and methods. The article presents the results of a

survey of 120 patients with acute brucellosis. The control group consisted of 30 healthy individuals. Patients of both groups are ethnic Azerbaijani who permanently reside in the Republic of Azerbaijan. The diagnosis of brucellosis was made on the basis of complaints, anamnesis, epidemiological and clinical data and the results of a specific study. Specific research methods were carried out by ELISA with the detection of IgM and IgG for brucella. In addition to the specific diagnostic data, the diagnosis of acute brucellosis took into account the duration of clinical symptoms up to 3 months after the first complaints appeared. All patients were tested for IL-6 polymorphism (-174C/G). The exclusion criteria for the study were age up to 18 years, confirmation of the diagnosis of subacute or chronic brucellosis, the presence of severe chronic comorbidity, which could significantly affect the reliability of the results. A detailed description of patients with brucellosis is presented. Among the surveyed individuals, men of young working age dominated. The criterion of severity was the following symptoms: fever, sweating, chills, headache, insomnia, low blood pressure, tachycardia, hepatosplenomegaly, levels of pro-inflammatory and anti-inflammatory cytokines.

Results. Mild disease was established in 74 (61.7 %) people, while severe - only in 11 (9.1 %) patients. There were no statistically significant differences between different IL-6 genotypes between patients with brucellosis and healthy individuals. It was established that allele G was detected almost 3 times more often in patients with acute brucellosis compared to allele C.

Conclusions. No statistically significant difference between different IL-6 genotypes (-174 C/G) in patients with brucellosis and healthy individuals was detected. The GC IL-6 genotype was significantly more often associated with severe brucellosis, while the GG genotype with mild

Keywords: brucellosis, cytokine, interleukin-6, polymorphism, gene, severity, immunopathogenesis, genotype, interleukin-4, susceptibility

References

1. Pappas, G., Memish, Z. A. (2007). Brucellosis in the Middle East: A Persistent Medical, Socioeconomic and Political Issue. *Journal of Chemotherapy*, 19 (3), 243–248. doi: <http://doi.org/10.1179/joc.2007.19.3.243>

2. Doganay, M., Aygen, B. (2003). Human brucellosis: an overview. *International Journal of Infectious Diseases*, 7 (3), 173–182. doi: [http://doi.org/10.1016/s1201-9712\(03\)90049-x](http://doi.org/10.1016/s1201-9712(03)90049-x)

3. Rubach, M. P., Halliday, J. E. B., Cleaveland, S., Crump, J. A. (2013). Brucellosis in low-income and middle-income countries. *Current Opinion in Infectious Diseases*, 26 (5), 404–412. doi: <http://doi.org/10.1097/qco.0b013e3283638104>

4. Nourbakhsh, F., Borooni, S., Barangi, S., Tajbakhsh, E. (2017). Diagnosis of clinical and laboratory findings of brucellosis in Isfahan. *International Archives of Health Sciences*, 4 (2), 48. doi: http://doi.org/10.4103/iahs.iahs_1_17

5. Buzgan, T., Karahocagil, M. K., Irmak, H., Baran, A. I., Karsen, H., Evirgen, O., Akdeniz, H. (2010). Clinical manifestations and complications in 1028 cases of brucellosis: a retrospective evaluation and review of the literature. *International Journal of Infectious Diseases*, 14 (6), e469–e478. doi: <http://doi.org/10.1016/j.ijid.2009.06.031>

6. Kazak, E., Akalin, H., Yilmaz, E., Heper, Y., Mistik, R., Sınırtaş, M. et al. (2016). Brucellosis: a retrospective evaluation

tion of 164 cases. Singapore Medical Journal, 57 (11), 624–629. doi: <http://doi.org/10.11622/smedj.2015163>

7. De Figueiredo, P., Ficht, T. A., Rice-Ficht, A., Rossetti, C. A., Adams, L. G. (2015). Pathogenesis and Immunobiology of Brucellosis. The American Journal of Pathology, 185 (6), 1505–1517. doi: <http://doi.org/10.1016/j.ajpath.2015.03.003>

8. Rodriguez-Zapata, M., Matias, M. J., Prieto, A., Jonde, M. A., Monserrat, J., Sanchez, L. et. al. (2010). Human Brucellosis Is Characterized by an Intense Th1 Profile Associated with a Defective Monocyte Function. Infection and Immunity, 78 (7), 3272–3279. doi: <http://doi.org/10.1128/iai.01385-09>

9. Asaei, S., Rasouli, M., Moravej, A. (2013). Interleukin-8 but not interleukin-6 variant may affect susceptibility to brucellosis. Iranian Journal of Immunology, 10 (3), 158–166. Available at: http://iji.sums.ac.ir/article_16830.html

10. Rudofsky Jr., G., Schlotterer, A., Reismann, P., Engel, J., Grafe, I., Tafel, J. et. al. (2009). The -174G>C IL-6 Gene Promoter Polymorphism and Diabetic Microvascular Complications. Hormone and Metabolic Research, 41 (4), 308–313. doi: <http://doi.org/10.1055/s-0028-1119373>

11. Manginas, A., Tsiavou, A., Chaidaroglou, A., Giannoulis, G., Degiannis, D., Panagiotakos, D., Cokkinos, D. V. (2008). Inflammatory cytokine gene variants in coronary artery disease patients in Greece. Coronary Artery Disease, 19 (8), 575–582. doi: <http://doi.org/10.1097/mca.0b013e32831286e8>

12. Budak, F., Göral, G., Heper, Y., Yılmaz, E., Aymak, F., Baştürk, B. et. al. (2007). IL-10 and IL-6 gene polymorphisms as potential host susceptibility factors in Brucellosis. Cytokine, 38 (1), 32–36. doi: <http://doi.org/10.1016/j.cyto.2007.04.008>

13. Belozherov, E. S. (1985). Brutsellez. Leningrad: Meditsina, 184.

14. Karaoglan, I., Pehlivan, S., Namiduru, M., Pehlivan, M., Kiliçarslan, C., Balkan, Y., Baydar, I. (2009). TNF-alpha, TGF-beta, IL-10, IL-6 and IFN-gamma gene polymorphisms as risk factors for brucellosis. New Microbiologica, 32 (2), 173–178. Available at: http://www.newmicrobiologica.org/pub/allegati_pdf/2009/2/173.pdf

15. Gunal, O., Yigit, S., Yalcin, A. D., Celik, B., Barut, S., Demir, O. et. al. (2017). The IL4-VNTR P1 Allele, IL4-VNTR P2P2 Genotype, and IL4-VNTR_IL6-174CG P2P1-GG Genotype Are Associated with an Increased Risk of Brucellosis. Japanese Journal of Infectious Diseases, 70 (1), 61–64. doi: <http://doi.org/10.7883/yoken.jjid.2015.550>

DOI: 10.15587/2519-4798.2018.148791

FEATURES OF CHANGES IN ANTICOAGULANT HEMOSTASIS SYSTEM IN PATIENTS WITH HYPERTENSIVE DISEASE WITH CONCOMITANT HYPERURICEMIA

p. 22-26

Maria Valigura, Postgraduate Student, Department of propaedeutics of internal medicine No. 1, O. O. Bohomolets National Medical University, T. Shevchenko blvd., 13, Kyiv, Ukraine, 01601

E-mail: marrigo85@gmail.com

ORCID: <http://orcid.org/0000-0002-9027-6259>

Aim of the research was to study the state of anticoagulant and fibrinolytic units of the hemostasis system in patients with hypertension associated with hyperuricemia.

Materials and methods. We surveyed 133 people (80 male and 53 female), whose average age was 56.19 ± 7.29 years, all patients were divided into 3 groups. The first main group was 54 patients with arterial hypertension with concomitant hyperuricemia, the second group was made up of 50 patients with hypertension and normal uric acid levels, and the third – 15 patients with hyperuricemia without increase in blood pressure, and the control group consisted of 14 practically healthy subjects comparable in age and sex. Hyperuricemia was determined at uric acid levels >7 mg/dL (>413 μ mol/L). The activity of anticoagulant and fibrinolytic units of hemostasis was studied as a result of conducting of special laboratory tests: antithrombin III, protein C, plasminogen and XIIa-dependent fibrinolysis. Non-parametric statistical methods were used to analyze the data: U-Mann-Whitney, probable differences were considered at $p < 0.05$.

Results. In the examination of patients, we found suppression of the activity of antithrombin III, in the first group of patients, 23 % was large in terms of the control group, while the difference between the groups (in groups I and II) was 18.3 %. The protein C activity in the first group was reduced by 25.7 % compared with the control group and by 14.8 % less than that of group II. When comparing the parameters of the anticoagulating potential of blood groups among patients, it was determined that the level of antithrombin III was the lowest in patients with group I, namely 18.3 % when compared with group III ($p < 0.001$) and 23.1 % when compared with II group ($p < 0.001$). The protein C was the lowest in patients in group I by 14.8 % compared with group III ($p < 0.001$) and by 25.7 % when compared with group II ($p < 0.001$).

Plasminogen (PG) was suppressed in all groups of patients: at hypertension by 16.7 % ($p < 0.01$), with hyperuricemia by 32.1 % ($p < 0.001$), with hypertension with concomitant hyperuricemia by 26.7 % ($p < 0.001$). A significant increase in the activity of indicators of Hageman-dependent fibrinolysis was also found, in group I of patients with combined course of Hageman-dependent fibrinolysis, it was 3.5 times more ($p < 0.001$), compared to the control group, in group II patients this indicator was 2.2 times more than in patients of the control group ($p < 0.001$), and in group III patients 2.8 times ($p < 0.001$).

Conclusion. In hypertensive disease without concomitant hyperuricemia, AT III and protein C decreased, reflecting the anticoagulant potential of blood plasma, and in hypertensive patients associated with concomitant hyperuricemia, an even greater decrease in plasma hemostasis and prolonged fibrinolysis time was observed

Keywords: hyperuricemia, hypertension, antithrombin III, protein C, Hageman-dependent fibrinolysis, atherosclerosis

References

1. Versteeg, H. H., Heemskerk, J. W. M., Levi, M., Reitsma, P. H. (2013). New Fundamentals in Hemostasis. Physiological Reviews, 93 (1), 327–358. doi: <http://doi.org/10.1152/physrev.00016.2011>

2. Platonova, T. N., Gornitskaya, O. V., Chernyshenko, T. M. et. al. (2013). Determination of protein C activity and its role in clinical laboratory diagnosis. Laboratory diagnostics, 3, 3–8.

3. Lucking, A. J., Gibson, K. R., Paterson, E. E., Faratian, D., Ludlam, C. A., Boon, N. A. et al. (2013). Endogenous Tissue Plasminogen Activator Enhances Fibrinolysis and Limits Thrombus Formation in a Clinical Model of Thrombosis. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 33 (5), 1105–1111. doi: <http://doi.org/10.1161/atvbaha.112.300395>

4. Barkagan, Z. S., Momot, A. P. (2001). Diagnosis and controlled therapy of haemostasis disorders. Moscow: Nyedimed, 296.

5. Droste, D. W., Ringelstein, E. B. (2002). Evaluation of Progression and Spread of Atherothrombosis. *Cerebrovascular Diseases*, 13, 7–11. doi: <http://doi.org/10.1159/000047783>

6. Leys, D. (2001). Atherothrombosis: A Major Health Burden. *Cerebrovascular Diseases*, 11, 1–4. doi: <http://doi.org/10.1159/000049137>

7. Bokarev, I. N., Bokarev, M. I. (2002). Thrombophilia, venous thrombosis and their treatment. *Clinical medicine*, 5, 4–8.

8. Volterrani, M., Iellamo, F., Sposato, B., Romeo, F. (2016). Uric acid lowering therapy in cardiovascular diseases. *International Journal of Cardiology*, 213, 20–22. doi: <http://doi.org/10.1016/j.ijcard.2015.08.088>

9. Tuttle, K. R., Short, R. A., Johnson, R. J. (2001). Sex differences in uric acid and risk factors for coronary artery disease. *The American Journal of Cardiology*, 87 (12), 1411–1414. doi: [http://doi.org/10.1016/s0002-9149\(01\)01566-1](http://doi.org/10.1016/s0002-9149(01)01566-1)

10. Platonova, T. M., Savchuk, O. M., Chernyshenko, T. M. (2000). Determination of the activity of the tissue activator plasminogen and the content of soluble fibrin in the plasma of patients with various pathological conditions. *Laboratory diagnostics*, 2, 15–17.

11. Borghi, C., Rosei, E. A., Bardin, T., Dawson, J., Dominiczak, A., Kielstein, J. T. et al. (2015). Serum uric acid and the risk of cardiovascular and renal disease. *Journal of Hypertension*, 33 (9), 1729–1741. doi: <http://doi.org/10.1097/hjh.0000000000000701>

12. Crouse, J. R., Toole, J. F., McKinney, W. M., Dignan, M. B., Howard, G., Kahl, F. R. et al. (1987). Risk factors for extracranial carotid artery atherosclerosis. *Stroke*, 18 (6), 990–996. doi: <http://doi.org/10.1161/01.str.18.6.990>

13. Nieto, F. J., Iribarren, C., Gross, M. D., Comstock, G. W., Cutler, R. G. (2000). Uric acid and serum antioxidant capacity: a reaction to atherosclerosis? *Atherosclerosis*, 148 (1), 131–139. doi: [http://doi.org/10.1016/s0021-9150\(99\)00214-2](http://doi.org/10.1016/s0021-9150(99)00214-2)

14. Kanellis, J., Watanabe, S., Li, J. H., Kang, D. H., Li, P., Nakagawa, T. et al. (2003). Uric Acid Stimulates Monocyte Chemoattractant Protein-1 Production in Vascular Smooth Muscle Cells Via Mitogen-Activated Protein Kinase and Cyclooxygenase-2. *Hypertension*, 41 (6), 1287–1293. doi: <http://doi.org/10.1161/01.hyp.0000072820.07472.3b>

15. Kang, D.-H., Park, S.-K., Lee, I.-K., Johnson, R. J. (2005). Uric Acid-Induced C-Reactive Protein Expression: Implication on Cell Proliferation and Nitric Oxide Production of Human Vascular Cells. *Journal of the American Society of Nephrology*, 16 (12), 3553–3562. doi: <http://doi.org/10.1681/asn.2005050572>

16. Fang, J., Alderman, M. H. (2000). Serum uric acid and cardiovascular mortality the NHANES I epidemiologic follow-up study, 1971–1992. *National Health and Nutrition Ex-*

amination Survey. *Jama*, 283 (18), 2404–2410. doi: <http://doi.org/10.1001/jama.283.18.2404>

17. Corry, D. B., Eslami, P., Yamamoto, K., Nyby, M. D., Makino, H., Tuck, M. L. (2008). Uric acid stimulates vascular smooth muscle cell proliferation and oxidative stress via the vascular renin–angiotensin system. *Journal of Hypertension*, 26 (2), 269–275. doi: <http://doi.org/10.1097/hjh.0b013e3282f240bf>

18. Romney, G., Glick, M. (2009). An Updated Concept of Coagulation With Clinical Implications. *The Journal of the American Dental Association*, 140 (5), 567–574. doi: <http://doi.org/10.14219/jada.archive.2009.0227>

19. Lucking, A. J., Gibson, K. R., Paterson, E. E., Faratian, D., Ludlam, C. A., Boon, N. A. et al. (2013). Endogenous Tissue Plasminogen Activator Enhances Fibrinolysis and Limits Thrombus Formation in a Clinical Model of Thrombosis. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 33 (5), 1105–1111. doi: <http://doi.org/10.1161/atvbaha.112.300395>

DOI: 10.15587/2519-4798.2018.148744

THE PROGNOSIS MODEL OF TREATMENT EFFICIENCY FOR PULMONARY TUBERCULOSIS IN INTENSIVE PHASE OF ANTITUBERCULOSIS THERAPY

p. 27-32

Olga Hovardovska, Postgraduate Student, Department of Phthiology and Pulmonology, Kharkiv National Medical University, Nauky ave., 4, Kharkiv, Ukraine, 61022

E-mail: olgasencheva98@gmail.com

ORCID: <http://orcid.org/0000-0003-0361-895X>

Olga Schevchenko, MD, Professor, Head of Department, Department of Phthiology and Pulmonology, Kharkiv National Medical University, Nauky ave., 4, Kharkiv, Ukraine, 61022

E-mail: diva5002007@yahoo.com

ORCID: <http://orcid.org/0000-0002-5476-3981>

Olexandr Arseniev, PhD, Associate Professor, Department of Pharmacoinformatics, National University of Pharmacy, Pushkinska str., 53, Kharkiv, Ukraine, 61002

E-mail: 6090251.a@gmail.com

ORCID: <http://orcid.org/0000-0002-9807-0853>

Search of ways to improve the treatment efficacy of pulmonary tuberculosis is the main task of phthiology at the present stage of its development. According to our opinion, one of such way is the prediction of outcomes of anti-tuberculosis therapy intensive phase at its initial stage, which will allow to make correction of the treatment regimen opportunely.

The aim of the study was to determine informative indicators for predicting the efficacy of treatment of patients with pulmonary tuberculosis in the intensive phase of anti-tuberculosis therapy. Based on the results, to create a model for predicting the efficacy of treatment for tuberculosis in the intensive phase for the correction of the treatment regimen.

Materials and methods: 80 patients with active pulmonary tuberculosis, which were registered in categories 1 and 2, were

examined. The patients were divided into groups: the first group of 30 patients with positive effect, the second group of 50 patients with delayed or negative treatment effect at the end of the intensive phase. The control group consisted of 20 healthy individuals. The sampling of diagnostic material was performed at the beginning of therapy. The results of clinical analysis of blood, as well as serum levels of neopterin, C-reactive protein, creatinine, ceruloplasmin, haptoglobin, seromukoid were evaluated. To achieve this goal, the nonparametric χ^2 criterion and correspondent analysis were used.

Results: There are 3 parameters with threshold values identified, which could be transformed into dichotomous indicators, of the 11 studied indices. These 3 variables are: the proportion of lymphocytes in the leukocyte formula, the content of neopterin, and seromuroids in the serum. Using correspondence analysis method, the formula to predict the result of the intensive phase from the initial values of the indicated variables was derived. Approbation of the formula showed high prediction accuracy (>80 %) for both groups.

Conclusions: With the help of the developed formula, which takes into account the initial indicators of serum neopterin and seromuroid and the proportion of lymphocytes in the leukocyte formula, the efficacy of treatment of pulmonary tuberculosis in the intensive phase of tuberculosis therapy can be predicted

Keywords: pulmonary tuberculosis, anti-tuberculosis therapy, neopterin, predicting of treatment efficacy, correspondence analysis

References

- Petrenko, V. I. (2014). Do mizhnarodnoho dnia borotby z tuberkulozom: «Okhopyty try miliony: vyviavyty, likuvaty, vylikuvaty tuberkuloz. Tuberkuloz, lehenevi khvoroby, VIL-infektsiia, 1, 5–7. Available at: http://nbuv.gov.ua/UJRN/Tlkhvil_2014_1_3
- Feshchenko, Yu. I., Melnyk, V. M., Turchenko, L. V. (2016). Pohliad na problemu borotby z tuberkulozom v Ukraini. Ukrainysky pulmonolohichnyi zhurnal, 3, 5–10.
- WHO Global tuberculosis report 2018 (2018). Geneva: World Health Organization. Available at: https://www.who.int/tb/publications/global_report/en/
- Kurpita, V., Kuzin, I. V., Terleieva, Ya. S., Zabolotko, V. M., Nedospasova, O. P. et. al. (2018). Tuberkuloz v Ukraini: analityko-statystychnyi dovidnyk. Kyiv: DU «Tsentra hromadskoho zdorovia Ministerstva okhorony zdorovia Ukrainy», 105.
- Sigal, G. B., Segal, M. R., Mathew, A., Jarlsberg, L., Wang, M., Barbero, S. et. al. (2017). Biomarkers of Tuberculosis Severity and Treatment Effect: A Directed Screen of 70 Host Markers in a Randomized Clinical Trial. EBioMedicine, 25, 112–121. doi: <http://doi.org/10.1016/j.ebiom.2017.10.018>
- Eisenhut, M. (2013). Neopterin in Diagnosis and Monitoring of Infectious Diseases. Journal of Biomarkers, 2013, 1–10. doi: <http://doi.org/10.1155/2013/196432>
- Berdyugina, O. V., Ershova, A. V. (2015). Issledovanie urovnya neopterinu pri raznykh formakh tuberkuleznogo vospalitel'nogo protsessu. Meditsynskiy al'yans, 4, 68–72.
- Esmedyaeva, D. S., D'yakova, M. E., Blyum, N. M., Kartashova, T. S. (2011). Biokhicheskie osobennosti fibrozno-kavernoznogo tuberkuleza legkikh razlichnogo reneza. Vestnik Sankt-Peterburgskogo universiteta. Seriya 11. Meditsina, 3, 105–111.
- Immanuel, C., Rajeswari, R., Rahman, F., Kumaran, P. P., Chandrasekaran, V., Swamy, R. (2001). Serial evaluation of serum neopterin in HIV seronegative patients treated for tuberculosis. International Journal of Tuberculosis and Lung Disease, 5 (2), 185–190.
- Cesur, S., Aslan, T., Hoca, N., Cimen, F., Tarhan, G., Cifci, A. et. al. (2014). Clinical importance of serum neopterin level in patients with pulmonary tuberculosis. International Journal of Mycobacteriology, 3 (1), 5. doi: <http://doi.org/10.1016/j.ijmyco.2014.01.002>
- Skogmar, S., Schon, T., Balcha, T. T., Sturegard, E., Jansson, M., Bjorkman, P. (2015). Plasma Levels of Neopterin and C-Reactive Protein (CRP) in Tuberculosis (TB) with and without HIV Coinfection in Relation to CD4 Cell Count. PLOS ONE, 10 (12), e0144292. doi: <http://doi.org/10.1371/journal.pone.0144292>
- Titarenko, O. T., Dyakova, M. E., Manicheva, O. A., Esmedyaeva, D. S., Dogonadze, M. Z., Alexeyeva, N. P. et. al. (2014). Mycobacterium tuberculosis biological properties and characteristics of the inflammatory reaction in patients with infiltrative pulmonary tuberculosis. Russian Journal of Infection and Immunity, 4 (3), 221. doi: <http://doi.org/10.15789/2220-7619-2014-3-221-228>
- Unifikovanyi klinichniy protokol pervynnoi, vtorynnoi (spetsializovanoi) ta tretynnoi (vysokospetsializovanoi) medychnoi dopomohy doroslym (2014). Nakaz MOZ Ukrainy No. 620. 04.09.2014. Available at: <https://www.slideshare.net/ssuser3330b2/620-4092014>
- Hovardovska, O. O. (2018). Rol neopterinu ta biomarkeriv zapalennia u monitorynhu efektyvnosti likuvannia lehenevoho tuberkulozu. Ukrainysky zhurnal medytsyny, biolohii i sportu, 3 (7 (16)), 90–96.
- Kobzar', A. I. (2012). Prikladnaya matematicheskaya statistika. Moscow: FIZMATLIT, 816.
- Greenacre, M. (2007). Correspondence Analysis in Practice. London: Chapman & Hall/CRC, 274. doi: <http://doi.org/10.1201/9781420011234>
- Nessonova, M. N. (2018). Matematicheskie modeli i metody postroeniya klassifikatorov v meditsine. Lambert Academic Publishing, 212.
- Khantaeva, N. S., Mikhalevich, I. M., Kulesh, D. V. (2011). Analiz i prognozirovanie epidemiologicheskikh pokazateley po tuberkulezu na osnove ispol'zovaniya mnogomernykh metodov issledovaniya. Byulleten' Vostochno-Sibirskogo nauchnogo tsentra Sibirskogo otdeleniya Rossiyskoy Akademii meditsinskikh nauk, 2 (78), 184–189.
- Heffernan, C., Doroshenko, A., Egedahl, M. L., Barrie, J., Senthilvelan, A., Long, R. (2018). Predicting pulmonary tuberculosis in immigrants: a retrospective cohort study. ERJ Open Research, 4 (2), 00170–2017. doi: <http://doi.org/10.1183/23120541.00170-2017>
- Romanowski, K., Balshaw, R. F., Benedetti, A., Campbell, J. R., Menzies, D., Ahmad Khan, F., Johnston, J. C. (2018). Predicting tuberculosis relapse in patients treated with the standard 6-month regimen: an individual patient data meta-analysis. Thorax. doi: <http://doi.org/10.1136/thoraxjnl-2017-211120>

21. Khantaeva, N. S., Mikhalevich, I. M., Kulesh, D. V. (2011). Analiz i prognozirovanie epidemiologicheskikh pokazateley po tuberkulezu na osnovе ispol'zovaniya mnogomernykh metodov issledovaniya. Byulleten' Vostochno-Sibirskogo nauchno-tsentra Sibirskogo otdeleniya Rossiyskoy Akademii meditsinskikh nauk, 2 (78), 184–189.

22. P'yaznova, T. V., Kagan, E. S., Abros'kina, A. A. (2017). Postroenie integral'nogo pokazatelya kompleksnoy otsenki faktorov riska neeffektivnogo iskhoda protivotuberkuleznoy terapii. Fundamental'naya i klinicheskaya meditsina, 1 (1), 33–38.

DOI: 10.15587/2519-4798.2018.148972

THE CHARACTERISTICS OF PROFIBROSIS MARKERS AND ENDOTHELIAL DYSFUNCTIONS IN ASTHMA PATIENTS WITH OBESITY AND DIABETES MELLITUS TYPE 2

p. 33-37

Galyna Yeryomenko, PhD, Associate Professor, Department of Propedeutic of Internal Medicine No. 2 and Nursing Care, Kharkiv National Medical University, Nauky ave., 4, Kharkiv, Ukraine, 61022

E-mail: galyna0512@ukr.net

ORCID: <http://orcid.org/0000-0001-5569-8918>

Tetyana Ospanova, MD, Professor, Department of Propedeutic of Internal Medicine No. 2 and Nursing Care, Kharkiv National Medical University, Nauky ave., 4, Kharkiv, Ukraine, 61022

E-mail: t.ospanova1@gmail.com

ORCID: <http://orcid.org/0000-0001-7201-5162>

Tetyana Bezditko, MD, Professor, Department of Propedeutic of Internal Medicine No. 2 and Nursing Care, Kharkiv National Medical University, Nauky ave., 4, Kharkiv, Ukraine, 61022

E-mail: tvbezdetko@gmail.com

The urgency of asthma (A) and comorbid pathologies such as diabetes mellitus type 2 (DM2) and obesity is doubtless in internal medicine.

The aim. To study the effects of profibrotic mediators, endothelial dysfunction markers and homeostasis on the pulmonary and renal functions in patients with moderately severe and uncontrolled A.

Materials and methods. The study involved 252 patients with: A – group I (n=62), A+DM2 – group II (n=105), A+obesity – group III (n=85). General clinical methods of examination were combined with assessments of the respiratory unction, loop flow volume, fasting blood glucose level, insulin level, HOMA-IR, MCP-1, IL-8, MMP-9, endothelin-1(ET-1), von Willebrand factor (VWF) and glomerular filtration rate (GFR).

Results. Group II had the longest duration of the illness and the state of carbohydrate metabolism subcompensation. FEV₁ in the groups: I=64.0 [44.5; 69.3] %, II=51.0 [44.2; 78.0] %, III=57.0 [44.5; 69.3] %; group III had the highest BMI. Groups II developed hyper glycaemia, II and III groups higher HOMA-IR and ET-1 concentration. All groups showed differently strong positive relationships between HOMA-IR and MCP-1. In group II,

an excessive concentration of MCP-1 as the marker of fibrosis with progressing signs of a renal involvement was restrained by a proportional increase of fibrolysis indicator MMP-9 in favour of adaptive responses. A negative correlation with GFR and a positive one with albuminuria confirmed engagement of MCP-1 into tubulointerstitial damage processes. VWF was elevated in all patients and increasing with augmentation and severity of the course of A with comorbid states and involvement of vascular endothelium.

Conclusions. A patients with comorbid states developed higher levels, versus isolated A and the controls, of MCP-1, IL-8 and MMP-9 in blood, therewith revealing the participation of these molecular mediators in affection of the lungs and kidneys by the universal mechanism of formation of fibroplastic changes in the respiratory tract and tubulointerstitial fibrosis

Keywords: asthma, diabetes mellitus type 2, obesity, cytokines, profibrotic markers, endothelial dysfunction

References

1. Delyagin, V. M., Arakcheyeva, E. E., Urazbagambetov, A., Budchanov, Yu. I. (2012). Genetika bronkhial'noy astmy i atopii [Genetics of bronchial asthma and atopy]. Medical Council, 5, 33–39.

2. Global Initiative for Asthma (GINA) (2017). Available at: www.ginasthma.org

3. Feshchenko, Y. I. (2016). Bronkhialna astma u sviti ta v Ukraini: yak pokrashchyty yii kontrol? [Asthma around the world and in Ukraine: how to improve its control?]. Health of Ukraine, 3 (35), 11.

4. Radchenko, O. M., Slaba, O. R. (2014). Fenotyp bronkhialnoi astmy z ozhyrinniam [Phenotype of bronchial asthma with obesity]. Asthma and Allergy, 2, 19–21.

5. Nathan, D. M., Davidson, M. B., DeFronzo, R. A., Heine, R. J., Henry, R. R., Pratley, R., Zinman, B. (2007). Impaired Fasting Glucose and Impaired Glucose Tolerance: Implications for care. Diabetes Care, 30 (3), 753–759. doi: <http://doi.org/10.2337/dc07-9920>

6. Basha, B., Samuel, S. M., Triggle, C. R., Ding, H. (2012). Endothelial Dysfunction in Diabetes Mellitus: Possible Involvement of Endoplasmic Reticulum Stress? Experimental Diabetes Research, 2012, 1–14. doi: <http://doi.org/10.1155/2012/481840>

7. Kutyryna, I. M., Rudenko, T. E., Savelyeva, S. A., Shvetsov, M. Y., Shestakova, M. V. (2013). Kardiorenal'nyi sindrom u bol'nykh khronicheskoy bolezni'yu pochek i sakharnym diabetom [Cardiorenal syndrome in patients with chronic kidney disease and diabetes mellitus]. Diabetes Mellitus, 3 (60), 90–96.

8. Narizhna, A. V. (2015). Fibrotychni pokaznyky (MSR-1, MMR-9) u khvorykh z dysfunktsiieiu nyrok na tli KhSN ta tsukrovoho diabetu 2-ho typu zalezno vid rivnia shvydkosti klubochkovoi filtratsii [Fibrotic parameters (MCP-1, MMP-9) in patients with kidney dysfunction on the background of CHF and type 2 diabetes, depending on the level of glomerular filtration rate]. Ukrainian Cardiology Journal. Kyiv, 172.

9. Pertseva, T. A., Nudga, N. P. (2011). Astma i ozhyrenie: kakova vzaimosvyaz'? [Asthma and obesity: what is the relationship?]. Ukrainian Pulmonology Journal, 3, 61–64.

10. Taylor, B., Mannino, D., Brown, C., Crocker, D., Twum-Baah, N., Holguin, F. (2008). Body mass index and asth-

ma severity in the National Asthma Survey. *Thorax*, 63 (1), 14–20. doi: <http://doi.org/10.1136/thx.2007.082784>

11. Kochemasova, T. V. (2000). Sostoyanie endoteliya i adgeziya leykotsitov pri sakharnom diabete [Condition of endothelium and adhesion of leukocytes in diabetes mellitus]. *Diabetes Mellitus*, 3, 59–62.

12. Biletskyi, S. V., Novytska, O. Z., Petrynych, O. A., Kazantseva, T. V. (2014). Stan vuhlevodnoho, lipidnoho obminu ta shvydkist klubochkovoi filtratsii u khvorykh na hipertoniichnu khvorobu II stadii ta v poiednanni z tsukrovym diabetom typu 2 [The state of carbohydrate, lipid metabolism and glomerular filtration rate in patients with hypertension and stage and in combination with type 2 diabetes]. *Bukovinian Medical Herald*, 18, 2 (70), 8–10.

13. Pinhasov, B. B., Leutov, Y. V., Deev, D. A., Selyatiatskaya, V. G. (2017). Stratifikatsiya riska razvitiya i tyazhesti metabolicheskogo sindroma u patsientov terapevticheskogo profilya [Stratification of risk of development and severity of metabolic syndrome in patients of therapeutic profile]. *Clinical Medicine*, 5, 412–418

14. Mueller, N. T., Koh, W.-P., Odegaard, A. O., Gross, M. D., Yuan, J.-M., Pereira, M. A. (2013). Asthma and the risk of type 2 diabetes in the Singapore Chinese Health Study. *Diabetes Research and Clinical Practice*, 99 (2), 192–199. doi: <http://doi.org/10.1016/j.diabres.2012.11.019>

15. Baffi, C. W., Winnica, D. E., Holguin, F. (2015). Asthma and obesity: mechanisms and clinical implications. *Asthma Research and Practice*, 1 (1). doi: <http://doi.org/10.1186/s40733-015-0001-7>

16. Holguin, F., Bleeker, E. R., Busse, W. W., Calhoun, W. J., Castro, M., Erzurum, S. C. et al. (2011). Obesity and asthma: An association modified by age of asthma onset. *Journal of Allergy and Clinical Immunology*, 127 (6), 1486–1493. doi: <http://doi.org/10.1016/j.jaci.2011.03.036>

17. Agapitov, L. I., Belozherov, Yu. M., Misernitsky, Y. L. (2012). Endotelin-1 i faktor Villebranda v razvitii legochnoy gipertenzii u detey s khronicheskoy bronkholegochnoy patologiyey [Endotelin-1 and Willebrand factor in the development of pulmonary hypertension in children with chronic bronchopulmonary pathology]. *Clinical Laboratory Diagnostics*, 1, 11–13.

18. Levey, A. S., Inker, L. A., Coresh, J. (2014). GFR Estimation: From Physiology to Public Health. *American Journal of Kidney Diseases*, 63 (5), 820–834. doi: <http://doi.org/10.1053/j.ajkd.2013.12.006>

19. Voronina, M. S., Shilkina, N. P., Vinogradov, A. A., Butusova, S. V. (2014). Interleukiny 4, 6, 8 v patogeneze revmatoidnogo artrita i ego oslozhneniy [Interleukins 4, 6, 8 in the pathogenesis of rheumatoid arthritis and its complications] *Cytokines and inflammation*, 13 (1), 5–10.

20. Gereng, Y. N., Sukhodolo, I. V., Pleshko, R. I., Ogorodova, L. M., Bukreyeva, Y. B., Selivanova, P. A. et al. (2009). Morfologicheskie markery remodelirovaniya slizistoy obolochki bronkhov pri tyazheloy forme bronkhial'noy astmy i khronicheskoy obstruktivnoy bolezni legkikh [Morphological markers of remodeling of the bronchial mucosa in the severe form of bronchial asthma and chronic obstructive pulmonary disease]. *Pulmonology*, 4, 35–39.

21. Chen, J., Muntner, P., Hamm, L. L., Jones, D. W., Batuman, V., Fonseca, V. et al. (2004). The Metabolic Syndrome

and Chronic Kidney Disease in U.S. Adults. *Annals of Internal Medicine*, 140 (3), 167–174. doi: <http://doi.org/10.7326/0003-4819-140-3-200402030-00007>

22. Polyakov, V. V., Senatorova, A. S. (2012). Klinicheskoe znachenie endotelial'noy disfunktsii u detey s retsidi-viruyushhim obstruktivnym bronkhitom i bronkhial'noy astmoy [Clinical significance of endothelial dysfunction in children with relapsing obstructive bronchitis and bronchial asthma]. *International Medical Journal*, 2, 32–35.

23. Spirina, M. M., Bednyakova, A. V., Voronina, L. P., Polunina, O. S., Sevostyanova, I. V. (2011). Analiz urovnya interleukina-8 pri bronkhial'noy astme [Analysis of the level of interleukin-8 at bronchial asthma]. *Astrakhan Medical Journal*, 6 (2), 139–142.

24. Bondar, I. A., Klimontov, V. V., Parfenteva, E. M., Romanov, V. V., Nadeyev, A. P. (2011). Mochevaya ekskretsiya kollagena IV tipa – ranniy marker fibrozirovaniya pochek pri sakharnom diabete [Urinary excretion of type IV collagen as an early marker of renal fibrosis in patients with diabetes mellitus]. *Diabetes mellitus*, 4, 29–31.

25. Voronina, L. P., Yatsenko, M. K., Trubnikov, G. A., Afanasyev, Y. A., Uklistaya, T. A., Polunina, O. S. (2004). Rol' endotelina-1 v razvitii khronicheskoy obstruktivnoy patologii legkikh [The role of endothelin-1 in the development of chronic obstructive pulmonary pathology]. *Fundamental research*, 6, 45–46.

DOI: 10.15587/2519-4798.2018.149295

CRITERIA OF DIAGNOSTICS OF INTRACELLULAR INFECTION IN CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA

p. 38-45

Sergey Matvienko, Postgraduate Student, Department of Pediatrics, State institution «Kharkiv Medical Academy of Postgraduate Education», Amosova str., 58, Kharkiv, Ukraine, 61176

E-mail: Samatvienko5@gmail.com

ORCID: <http://orcid.org/0000-0001-8415-9489>

Community-acquired pneumonia is the largest group of pneumonia, which the doctor has to meet daily in outpatient practice and in the hospital.

The interest in this problem is due to the fact that no final response has been received regarding the prevalence of intracellular pathogens with this disease, the role of herpes viruses, mixed associations, the entire spectrum of immuno-pathological changes caused by persistence of infection in the child's body.

Undetermined criteria for the diagnosis of pneumonia on the background of intracellular infection with herpes virus persistence, which are based on clinical, anamnestic and paraclinical indicators.

The aim of the study was to determine the criteria for the diagnosis of intracellular infection in children with community-acquired pneumonia with the development of a diagnostic algorithm for this cohort.

Methods. A comprehensive survey of 120 children hospitalized for community-acquired pneumonia was conducted. The average age of patients was 6.9±0.2 years. Verification of the diag-

nosis was carried out on the basis of a complex of clinical and anamnestic, laboratory and radiological data. The determination of pathogens was established on the basis of: bacteriological culture of material from the pharynx, nose on the flora with an antibiogram, bacteriological culture of sputum on the flora with an antibiogram. The presence of *Streptococcus pneumoniae*, *Haemophilus influenzae* in smears from the pharynx, nose, sputum was determined by real-time polymerase chain reaction. The method of immunoassay was determined immunoglobulin classes M and G to *Ch. pneumoniae*, *M. pneumoniae*, the presence of antibodies to herpes viruses (human herpes virus 6th type, cytomegalovirus, Epstein-Barr virus).

According to the results of the polymerase chain reaction in real-time determined the presence of DNA *Ch. pneumoniae*, *M. pneumoniae*, herpes viruses. Using heterogeneous sequential Wald-Genkin procedures, diagnostic factors (DF) and diagnostic informativity (I) of symptoms were determined with the formation of generalized and reduced algorithms for diagnosing intracellular infection with herpesvirus persistence in children with community-acquired pneumonia.

As a result of the study, community-acquired pneumonia was diagnosed in 38.3 % of patients against intracellular infection with herpes virus persistence (*Mycoplasma pneumoniae*, *Chlamydia pneumoniae*, cytomegalovirus, Epstein-Barr virus, human herpes virus 6th type).

Considering that all types of examination of patients differ in significant diagnostic information, this made it possible to form an algorithm for diagnosing intracellular infection with herpes virus persistence in children with community-acquired pneumonia.

The obtained properties of the algorithms have a positive significance for clinical practice, since it is better to overestimate the unfavorable clinical situation than to admit the absence of a proper assessment.

Conclusions. The highest diagnostic information in the diagnosis of intracellular infection of children with community-acquired pneumonia are: the contents of monocytes ($I=1.84$); the number of replacements of ABT ($I=1.65$); the nature of the adaptation reactions of the body ($I=1.39$); severity of pneumonia ($I=1.34$); dimensions of the main area of darkening in the lungs ($I=1.31$); conducting infusion therapy ($I=1.27$); body temperature ($I=1.12$) and the form of pneumonia ($I=1.12$).

The high diagnostic reliability of the proposed algorithm allows recommending it for clinical use

Keywords: community-acquired pneumonia, intracellular pathogen, intracellular infection, diagnostic criteria, diagnostic algorithm

References

1. Cardinale, F., Cappiello, A. R., Mastrototaro, M. F., Pignatelli, M., Esposito, S. (2013). Community-acquired pneumonia in children. *Early Human Development*, 89, 49–52. doi: <http://doi.org/10.1016/j.earlhumdev.2013.07.023>
2. Harris, M., Clark, J., Coote, N., Fletcher, P., Harnden, A. et al. (2011). British Thoracic Society guidelines for the management of community acquired pneumonia in children: update 2011. *Thorax*, 66, 1–23. doi: <http://doi.org/10.1136/thoraxjnl-2011-200598>

3. Rudan, I., Boschi-Pinto, C., Biloglav, Z., Mulholland, K., Campbell, H. (2008). Epidemiology and etiology of childhood pneumonia. *Bulletin of the World Health Organization*, 86 (5), 408–416. doi: <http://doi.org/10.2471/blt.07.048769>

4. Esposito, S., Francesca Patria, M., Tagliabue, C., Longhi, B., Sferazza Papa, S., Principi, N.; Chalmers, J. D., Pletz, M. W., Aliberti, S. (Eds.) (2014). CAP in children // European respiratory monograph 63: Community-acquired pneumonia. 2014. P. 130–139. doi: <http://doi.org/10.1183/1025448x.10003913>

5. Picot, V. S., Bénét, T., Messaoudi, M., Telles, J.-N., Chou, M., Eap, T. et al. (2014). Multicenter case-control study protocol of pneumonia etiology in children: Global Approach to Biological Research, Infectious diseases and Epidemics in Low-income countries (GABRIEL network). *BMC Infectious Diseases*, 14 (1). doi: <http://doi.org/10.1186/s12879-014-0635-8>

6. Manikam, L., Lakhanpaul, M. (2012). Epidemiology of community acquired pneumonia. *Paediatrics and Child Health*, 22 (7), 299–306. doi: <http://doi.org/10.1016/j.paed.2012.05.002>

7. Levenets, S. S., Renchkovska, S. O., Pranik, N. O. (2014). Pneumonia in children: nastanovi, realii, mozhlivosti. *Actual nutrition pediatric, obstetrics and gynecology*, 2, 30–31.

8. Bhuiyan, M. U., Snelling, T. L., West, R., Lang, J., Rahman, T., Borland, M. L. et al. (2018). Role of viral and bacterial pathogens in causing pneumonia among Western Australian children: a case-control study protocol. *BMJ Open*, 8 (3), e020646. doi: <http://doi.org/10.1136/bmjopen-2017-020646>

9. Benet, T., Sanchez, V., Messaoudi, M. et al. (2017). Microorganisms Associated With Pneumonia in Children. *Clinical Infectious Diseases*, 65 (4), 604–612.

10. Gorbich, O. A., Chistenko, G. N. (2016). Features of community-acquired pneumonia in childhood. *Medical Journal: Scientific and Practical Journal*, 3, 61–65.

11. Lee, W.-J., Huang, E.-Y., Tsai, C.-M., Kuo, K.-C., Huang, Y.-C., Hsieh, K.-S. et al. (2016). Role of Serum *Mycoplasma pneumoniae* IgA, IgM, and IgG in the Diagnosis of *Mycoplasma pneumoniae*-Related Pneumonia in School-Age Children and Adolescents. *Clinical and Vaccine Immunology*, 24 (1). doi: <http://doi.org/10.1128/cvi.00471-16>

12. Wishaupt, J. O., Versteegh, F. G. A., Hartwig, N. G. (2015). PCR testing for Paediatric Acute Respiratory Tract Infections. *Paediatric Respiratory Reviews*, 16 (1), 43–48. doi: <http://doi.org/10.1016/j.prrv.2014.07.002>

13. Tsaregorodtsev, A. D., Ruzhitskaya, E. A., Kisteneva, L. B. (2017). Persistent infections in pediatrics: A modern view on the problem. *Rossiyskiy Vestnik Perinatologii i Pediatrii (Russian Bulletin of Perinatology and Pediatrics)*, 62 (1), 5–9. doi: <http://doi.org/10.21508/1027-4065-2017-62-1-5-9>

14. About the hardening of the key protocols in the field of medical help for the specialist of pulmonology (2007). The order of the Ministry of Health of Ukraine No. 128. 19.03.2007. Available at: http://old.moz.gov.ua/ua/portal/dn_20070319_128.html

15. Garkavi, L. Kh., Kvakina, E. B., Ukolova, M. A. (1990). Adaptive reactions and body resistance. Rostov on Don: Pub. Rostov University, 224.

16. Garkavi, L. Kh., Kvakina, E. B., Kuzmenko, T. S., Shikhlyarova, A. I. (2002). Antistress reactions and activation therapy. P. 1. Ekaterinburg: Philanthropist, 196.

17. Gubler, E. V. (1978). Computational methods of analysis and recognition of pathological processes. Moscow: Medicine, 294.

18. Yulish, E. I., Chernyshova, O. E., Konyushevskaya, A. A. (2014). Typical course of atypical pneumonia. Child health, 5 (56), 78–82.

DOI: 10.15587/2519-4798.2018.148475

NOMOGRAMS OF VASCULARIZATION INDICES OF UTERINE HEALTH WOMEN, STUDIED WITH THE USE OF THREE-DIMENSIONAL ENERGY DOPPLEROGRAPHY

p. 46-54

Kirill Yakovenko, Postgraduate student, State Institution «Grigoriev Institute for Medical Radiology of National Academy of Medical Sciences of Ukraine», Pushkinska str., 82, Kharkiv, Ukraine, 61024

E-mail: kiras2001@ukr.net

ORCID: <http://orcid.org/0000-0001-7237-8078>

Tamara Tamm, MD, Professor, Head of Department, Department of Surgery and Proctology, Kharkiv Medical Academy of Postgraduate Education, Amosova str., 58, Kharkiv, Ukraine, 61176

E-mail: tamm_ti@ukr.net

ORCID: <http://orcid.org/0000-0001-6372-2092>

Elena Yakovenko, PhD, Associate Professor, Department of Genetics, Obstetrics, Gynecology and Fetal Medicine, Kharkiv Medical Academy of Postgraduate Education, Amosova str., 58, Kharkiv, Ukraine, 61176

E-mail: yakovenkoelen@ukr.net

ORCID: <http://orcid.org/0000-0001-6604-6077>

Differential diagnosis of benign and malignant tumors using the Doppler method is based on the fact that the blood supply of these tumors has its own peculiarities.

The aim of the research is to study the nomograms of volumetric blood flow rates of the body and cervix of healthy women of different ages by means of three – dimensional angioplasty in search of differential diagnostic criteria for simple, proliferating leiomyoma and sarcoma of the uterus in the long term.

Materials and methods. 157 practically healthy women were examined. The patients were divided into women of reproductive age, women in perimenopausal women and climacteric women. With the help of 3D uterine reconstruction using the energy mapping function and VOCAL (Virtual Organ Computer Aided Analysis), an objective assessment of the hemodynamics of the body and the cervix was performed by calculating the vascularization index (VI), which characterizes the percentage ratio of blood vessels to a certain extent tissues, blood flow index (FI), which characterizes the intensity of blood flow, which shows the volume of blood cells that move in the vessels at the time of the study and vascularization – flow index (VFI), which is an indicator of perfusion of the organ.

Results. As a result, the nomograms of the volumetric blood flow (VI, FI, VFI) parameters of the uterus body were improved, and the nomograms of the volumetric blood flow (VI, FI, VFI) pa-

rameters of the cervix of healthy women were designed and the patterns of their changes depending on age were determined.

The authors have established that the technique of three-dimensional echography-3D – reconstruction of the uterus in angiography with the use of the VOCAL option with the determination of volumetric blood flow parameters allows to objectively evaluate the degree of vascularization of the body and cervix of healthy women of all ages, preventing a subjective approach to assessing hemodynamics, which is present in the two-dimensional energy Doppler mapping mode.

Conclusions. Based on the obtained results, the development of differential diagnostic criteria for benign, borderline and malignant tumors of myometrium with the determination of quantitative parameters of 3D – energy dopplerography will be based on the prospect, which will significantly increase the level of ultrasound diagnostics in gynecologic oncology and will allow to develop a rational tactic for treating patients.

Keywords: three-dimensional echography, VOCAL option, nomograms, hemodynamics of the uterus body and cervix

References

1. Bulanov, M. N. (2012). Ul'trazvukovaya ginekologiya: kurs lektsiy [Ultrasonic gynecology: a course of lectures: in two parts]. Ch. II: Gl. 14–24. Moscow: Publishing House Vidar, 456.
2. Zaporozhchenko, M. B. (2015). Sostoyaniye regional'noy gemodinamiki v sosudakh matki u zhenshchin reproduktivnogo vozrasta s leyomiomoy matki [The state of regional hemodynamics in uterine vessels in women of reproductive age with uterine leiomyoma]. Arta Medica, 1 (54), 41–44.
3. Adamyan, L. V. (Ed.) (2015). Mioma matki: diagnostika, lecheniye, reabilitatsiya. Klinicheskiye rekomendatsii po vedeniyu bol'nykh [Uterine fibroids: diagnosis, treatment, rehabilitation. Clinical recommendations for managing patients]. Moscow: GBOU VPO «The First Moscow State Medical University», 101.
4. Bulun, S. E. (2013). Uterine Fibroids. New England Journal of Medicine, 369 (14), 1344–1355. doi: <http://doi.org/10.1056/nejmra1209993>
5. Rauh-Hain, J. A., del Carmen, M. G. (2013). Endometrial Stromal Sarcoma. Obstetrics & Gynecology, 122 (3), 676–683. doi: <http://doi.org/10.1097/aog.0b013e3182a189ac>
6. Reed, N. (2012). The management of uterine sarcomas. Gunes publish, 399–404.
7. Ozerskaya, I. A.; Rodionova, L. S. (Ed.) (2013). Ekhografiya v ginekologii [Echography in gynecology]. Moscow: Publishing House Vidar, 564.
8. Ozerskaya, I. A., Devitskiy, A. A. (2014). Ul'trazvukovaya differentsial'naya diagnostika uzlov miometriya v zavisimosti ot gistologicheskogo stroyeniya opukholi [Ultrasound differential diagnosis of myometrium nodes depending on the histological structure of the tumor]. Medical imaging, 2, 110–121.
9. Anisimov, A. V. (2010). VOCAL – kolichestvennyy analiz v trekhmernoy ekhografi [VOCAL – quantitative analysis in three-dimensional echography]. SonoAce Ultrasound, 21, 89–95.
10. Ozerskaya, I. A., Shcheglova, Ye. A., Sirotinkina, Ye. V., Dolgova, Ye. P., Shul'gina, S. V. (2010). Fiziologicheskiye izmeneniya gemodinamiki matki u zhenshchin reproduktivnogo, peri- i postmenopazal'nogo periodov [Physiological changes in the hemodynamics of the uterus in women of reproductive, peri- and postmenopausal periods]. SonoAce Ultrasound, 21, 40–56.

11. Lysenko, O. V. (2013). Primeneniye trekhmernoy ekhografii s optsiyey energeticheskogo dopplera v diagnostike giperplasticheskikh protsessov v endometrii [Application of three-dimensional echography with the option of an energy Doppler in the diagnosis of hyperplastic processes in the endometrium]. The Russian Bulletin of the Obstetrician-Gynecologist, 5, 70–74.

12. Kim, A., Lee, J. Y., Chun, S., Kim, H. Y. (2015). Diagnostic utility of three-dimensional power Doppler ultrasound for postmenopausal bleeding. Taiwanese Journal of Obstetrics and Gynecology, 54 (3), 221–226. doi: <http://doi.org/10.1016/j.tjog.2013.10.043>

13. Ozerskaya, I. A. Devitskiy, A. A. (2014). Izmeneniye gemodinamiki matki, porazhennoy miomoy u zhenshchin reproduktivnogo i premenopauzal'nogo vozrasta [Change in hemodynamics of the uterus affected by myoma in women of reproductive and premenopausal age]. Medical visualization, 1, 70–80.

14. El-Mazny, A., Abou-Salem, N., ElShenoufy, H. (2013). Three-dimensional power Doppler study of endometrial and subendometrial microvascularization in women with intrauterine device-induced menorrhagia. Fertility and Sterility, 99 (7), 1912–1915. doi: <http://doi.org/10.1016/j.fertnstert.2013.01.151>

15. Lysenko, O. V. (2013). Ispol'zovaniye trekhmernoy ekhografii s optsiyey energeticheskogo dopplera pri podozrenii na giperplaziyu endometriya u zhenshchin pozdnego reproduktivnogo vozrasta [Use of three-dimensional echography with the option of energy Doppler with suspicion of endometrial hyperplasia in women of late reproductive age]. Journal of Obstetrics and Women's Diseases: Proceedings of the II National Congress "Discussion Issues of Modern Obstetrics" and the Pre-Congress Training Course of the XI World Congress on Perinatal Medicine, LX II (2), 126–132.

DOI: 10.15587/2519-4798.2018.149241

MODERN SYSTEM OF PSYCHOPROPHYLAXIS OF AUTOAGGRESSIVE BEHAVIOR IN PATIENTS WITH BIPOLAR AFFECTIVE DISORDER

p. 55-58

Hanna Kozhyna, Doctor of Medical Sciences, Professor, Head of Department, Department of Psychiatry, Narcology and Medical Psychology, Kharkiv National Medical University, Nauky ave., 4, Kharkiv, Ukraine, 61022

E-mail: amkozhyyna888@gmail.com

ORCID: <http://orcid.org/0000-0002-2000-707X>

Dina Takhtashova, PhD, Senior Researcher, Department of Psychiatry, Narcology and Medical Psychology, Kharkiv National Medical University, Nauky ave., 4, Kharkiv, Ukraine, 61022

E-mail: dinatachtashova217@gmail.com

ORCID: <http://orcid.org/0000-0001-5697-0207>

Galina Koltsova, Doctor Psychiatrist, Kharkiv Regional Clinical Psychiatric Hospital No. 3, Akademika Pavlova str., 46, Kharkiv, Ukraine, 61068

E-mail: kolcovagg2017@gmail.com

ORCID: <http://orcid.org/0000-0002-0069-604X>

The aim. To develop a pathogenetically justified system of psycho prophylaxis of auto-aggressive behavior in BAD patients on the basis of studying the features and formation.

Material and methods of the research. To solve the goal, following the principles of bioethics and deontology, a comprehensive clinical, psychopathological and psycho-diagnostic examination of 117 patients with BAD with signs of auto-destructive behavior; of both sexes, at an average age of 40.5±5.5 years was carried out. Research methods: clinical, psychopathological, psycho-diagnostic, statistical.

Results. In the course of the work, it was found that 48.7±2.4 % of the surveyed registered an affective version of auto-aggressive behavior; 31.5±1.9 % – true, 19.8±1.1 % – a demonstrative version and described their features depending on the polarity of the affect.

Auto-aggressive behavior in the manic episode of BAR was associated with the prevalence of irritable mania in combination with a high level of frustration in the sphere of active life and independence of actions, a high level of internality in the field of achievements and low failures in the industry.

With a depressive episode of BAR - the prevalence of dreary depression, combined with a high level of frustration in the field of love and family relationships, a high level of internality in the field of family relationships and failures.

With a mixed episode of BAR – a combination of irritable mania and anxious depression in combination with a pronounced degree of frustration in the material and domestic sphere, a high level of internality in the area of failures and a low level of internality in the field of performance.

A pathogenetically substantiated system for the prevention of auto-aggressive behavior in patients with BAR has been developed, which consists of five stages: crisis therapy, a comprehensive diagnosis, basic and supportive therapeutic and preventive measures, and socio-psychological assistance. And it includes the use of methods of pharmacotherapy, psychotherapy and psychosocial therapy.

Conclusions. Based on the obtained data in the course of the work, a pathogenetically substantiated system for the prevention of suicidal behavior of BAR patients has been developed, which consists of five stages: crisis therapy, a comprehensive diagnosis, main and supportive treatment and preventive measures, and socio-psychological assistance. The means of therapeutic influence at all stages were applied in the form of pharmacotherapy, psychotherapy and psychosocial care

Keywords: bipolar affective disorder, depressive episode, manic episode, mixed episode, frustration, psycho-prophylaxis program

References

1. Takhtashova, D. R. (2014). Program for a differentiated prevention of a suicidal behavior in patients with bipolar affective disorders. Ukrain's'kyi visnyk psykhonevrolohi, 22 (1 (78)), 91–96.

2. Kapczynski, N. S., Narvaez, J. C., Magalhaes, P. V., Buckner, J., Peuker, A. C., Loreda, A. C. et. al. (2016). Cognition and functioning in bipolar depression. Revista Brasileira de Psiquiatria, 38 (3), 201–206. doi: <http://doi.org/10.1590/1516-4446-2014-1558>

3. Kozhyna, H. M., Korostii, V. I., Zelenska, K. O. (2014). Mekhanizmy formuvannya ta shliakhy profilaktyky suit-

sydalnoi povedinki u khvorykh na depresyvni rozlady. Kharkiv: KhNMU, 76.

4. Maruta, N. O., Verbenko, G. M. (2016). Cognitive impairments in patients with bipolar affective disorder (clinical features, diagnosis, therapy). *Ukrains'kyi visnyk psikhonevrolohi*, 24 (3 (88)), 5–10.

5. Vieta, E., Langosch, J. M., Figueira, M. L., Souery, D., Blasco-Colmenares, E., Medina, E. et. al. (2013). Clinical management and burden of bipolar disorder: results from a multinational longitudinal study (WAVE-bd). *The International Journal of Neuropsychopharmacology*, 16 (8), 1719–1732. doi: <http://doi.org/10.1017/s1461145713000278>

6. Maruta, N. O., Verbenko, G. M. (2014). Features of clinical symptoms at different stages of the flow of bipolar affective disorder. *Ukrains'kyi visnyk psikhonevrolohi*, 22 (3 (80)), 77–82.

7. Chaban, O. S., Khustova, E. A. (2011). Bipolar Depression: Problems of Diagnosis and Therapy. *NeuroNews*, 5 (32), 18–22.

8. Kozhina, A. M., Gaychuk, L. M. (2009). Modern strategies in the bipolar affective disorder treatment. *Mental health*, 3-4 (24-25), 60–62.

9. Ocheretyanaya, N. (2011). Bipolar disorder: clinical review. *Health of Ukraine*, 4 (19), 36–37.

10. Trotta, A., Murray, R. M., MacCabe, J. H. (2014). Do premorbid and post-onset cognitive functioning differ between schizophrenia and bipolar disorder? A systematic review and meta-analysis. *Psychological Medicine*, 45 (2), 381–394. doi: <http://doi.org/10.1017/s0033291714001512>

11. Cole, A. J., Scott, J., Ferrier, I. N., Eccleston, D. (1993). Patterns of treatment resistance in bipolar affective disorder. *Acta Psychiatrica Scandinavica*, 88 (2), 121–123. doi: <http://doi.org/10.1111/j.1600-0447.1993.tb03424.x>

12. Haustava, E. A., Bezcheyko, V. G., Romaniv, A. P. (2012). Modern aspects of bipolar depression diagnosis and treatment. *Neuro News*, 1 (36), 38–42.

13. Kozhina, A. M., Rezunenko, O. Yu. (2017). Sovremennyye strategii v reabilitatsii patsiyentov s bipolyarnym afektivnym rasstroystvom. *Psikhiatriya. psikhoterapiya i klinicheskaya psikhologiya*, 8 (1), 78–83.

DOI: 10.15587/2519-4798.2018.149283

CLINICAL-PSYCHOPATHOLOGIC AND PATHOPSYCHOLOGICAL FEATURES OF ADAPTATION DISORDERS IN COMPUTER ADDICTED INDIVIDUALS

p. 59-62

Yuliia Starodubtseva, Postgraduate Student, Department of Psychiatry, Narcology and Medical Psychology, Kharkiv National Medical University, Nauky ave., 4, Kharkiv, Ukraine, 61022

E-mail: ustarodubceva83@gmail.com

ORCID: <http://orcid.org/0000-0002-9845-4902>

The aim. *Comprehensive study of clinical, psychopathological and pathopsychological features of adaptation disorders in persons with computer addiction.*

Materials and methods. 147 patients with adaptation disorders (F43.21, F43.22). The main group consisted of 85 patients with signs of computer addiction according to the results of AUDIT-like tests, the control group – 62 patients with no signs of addictive behavior. The average age of the patients was 27.0±3.0 years.

Methods of the research: clinical and anamnestic; clinical-psychopathological, using AUDIT-like tests for a comprehensive assessment of addictive status (Linsky I. V., Minko A. I., Artemchuk A. P., et al., 2009); psycho-diagnostic using the hospital anxiety and depression scale (HADS) (Zigmond A.S., Snaith R.P., 1983); Clinical scales of anxiety and depression by Hamilton (M. Hamilton, 1967), adapted to ICD-10 (G. P. Panteleeva, 1988) (HDRS) scales of situational and personal anxiety by C. D. Spielberger (in adaptation by Yu. L. Khanin, 1981); enquirer of neuro-psychological stress by Nemchin T.A. (1984); statistical.

Results of the research. The structure of computer addiction in the main group of surveyed was as follows: intrusive surfing (46.2 %), computer games (22.3 %); virtual dating (6.4 %); passion for online gambling (13.7 %); cybersex (1.4 %).

Depression of mood dominates in the clinical picture of eradication adaptation in persons with computer addiction; internal stress with inability to relax; increased susceptibility to previously neutral stimuli; irritability; asthenic symptoms; loss of interest in work or school, family and friends; sleep-wake cycle disorders.

According to the psychodiagnostic examination data, the main group of examined showed clinical signs of anxiety and depression on a hospital scale; severe depressive and disturbing episodes on the Hamilton scale; high drop situational and personal anxiety according to the method of C. D. Spielberger; a high level of severity of neuropsychic stress on a scale T. A. Nemchin.

Conclusions. For the clinical picture of adaptation disorders in individuals with computer addiction, a characteristic is decreased mood background; irritability, tendency to affects; disturbing manifestations; hyperesthesia; sleep-wake cycle disorders; clinical manifestations of anxiety and depression on the HADS scale; severe depressive and disturbing episodes on the HDRS scale; high drop situational and personal anxiety; excessive mental stress

Keywords: adaptation disorders, computer addiction, anxiety, depression, psychological stress, asthenia

References

1. Denisenko, M. M. (2017). Sotsialna frustrovanist v formuvanni adiktivnoyi povedinki pri nevrotichnih rozladah. *Wschodnioeuropejskie Czasopismo Naukowe*, 1 (9 (25)), 30–37.

2. Aymedov, K. V. (2007). Klinicheskie aspektyi sovremennoy addiktologii (literaturnyy obzor). *Visnyk psihatriyi ta psihofarmakoterapiyi*, 1 (11), 136–145.

3. Kozhina, G. M., Krasnikova, S. O., Gaychuk, L. M., Zelenska, K. O. (2011). Spetsyfika adaptatsiyin reaktsiy studentiv pershogo kursu do navchalnoyi diyalnosti u vischomu navchalnomu zakladi. *Medichna psikhologiya*, 6 (3 (23)), 14–17.

4. Terasaki, D. J., Gelaye, B., Berhane, Y., Williams, M. A. (2009). Anger expression, violent behavior, and symptoms of depression among male college students in Ethiopia. *BMC Public Health*, 9 (1). doi: <http://doi.org/10.1186/1471-2458-9-13>

5. Maruta, N. O., Kolyadko, S. P., Kalenska, G. Yu., Denisenko, M. M. (2016). Addiktivnyy status i veduschie strategii

sovladaniya u bolnyh s nevrotycheskimi rasstroystvami i lits obschey populyatsii: sravnitelnyy aspekt. Psihiatriya, psihoterapiya i klinicheskaya psihologiya, 7 (4), 501–511.

6. Kozhina, G. M., Korostiy, V. I. (2014). Komorbidnist nehimichnih addiktsiy ta psihosomatichnyh zahvoryuvan. Dovzhenkivski chitannya: «Problema prihilnosti hvorih narkologichnogo profilyu do terapiyi. Potreba v likuvanni ilikuvannya za potreboyu». Kharkiv, 85–95.

7. Revenok, O. A., Aymedov, K. V., Koroshnichenko, D. M. (2011). Adiktivna komorbidnist u suchasny narkologichny praktitsi. Arhiv psihiatriyi, 17 (2 (65)), 92–95.

8. Maruta, N. A. (2013). Problema komorbidnosti v sovremennoy psihiatrii. Teoreticheskiy, klinicheskiy, terapeuticheskiy i organizatsionnyye aspektyi. Zdorov'ya Ukrayini, 12, 38–39.

9. Osuhovskaya, E. S. (2012). Adaptatsionnyye rasstroystva u muzhchin i zhenshin, stradayuschih patologicheskoy sklonnostyu k azartnyim igram. Psihichne zdorov'ya, 1, 76–81.

10. Sartorius, N., Holt, R. I. G., Maj, M. (Eds.) (2015). Comorbidity of Mental and Physical Disorders. Key Issues in Mental Health. Basel: Karger, 179, 188. doi: <http://doi.org/10.1159/000366509>

11. Melnik, V. O. (2011). Analiz suchasnogo stanu psihichnyh ta povedinkovyh rozladiv, pov'yazanih z patologichnim vikoristanniam komp'yuteru ta Internet-merezhi. Psihichne zdorov'ya, 1 (30), 22–25.

12. Tabachnikov, S. I., Harchenko, E. M., Prib, G. A. (2010). Psihologichni osoblivosti osib iz zalezhnistyu vid azartnih igor. Arhiv psihiatriyi, 16 (4 (63)), 39–43.

13. Osuhovska, O. S., Aymedov, K. V. (2010). Doslidzhennya rozpovsyudzhnosti ta osoblivostey zalezhnosti vid azartnih igor yak formi nehimichnoyi adiktsiyi sered gromadyan Ukrayini. Arhiv psihiatriyi, 1 (60), 58–63.

14. Denisenko M. M. (2016). Osoblivosti ta varianti spivvidnoshennya riznih adiktivnyh tendentsiy u hvorih na nevrotychni rozladi. Eksperimentalna i klinichna meditsina, 3 (72), 99–107.