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MENTAL DISORDERS IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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ABSTRACT: Goal. Analysis of the prevalence and structure of mental disorders among patients with systemic lupus erythematosus (SLE).

Material and methods. 115 patients with reliable SLE aged 34 (24-45) years (median and interquartile range) were included, the duration of the disease was 8

(4-17) years old. The activity of SLE was assessed using the SLEDAI scale. Mental disorders were diagnosed by a psychiatrist in accordance with ICD-10 using a number of psychiatric and psychological scales.

Results. Mental disorders were detected in 76 out of 115 (66%) patients. Anxiety-depressive spectrum disorders prevailed (83%): depressive episodes (40%), adjustment disorders (24%), generalized anxiety disorders (10%) and dysthymia (9%). Severe cognitive impairment was detected in 7% of patients. There were no differences in age, gender, duration and degree of SLE activity, duration and cumulative dose of HA and cytotoxics in patients with and without mental disorders.

Conclusion. Mental disorders are common among patients with SLE (66%). In their anxiety and depressive disorders occupy the main place in the spectrum (83%). The nature of the relationship between SLE and mental disorders requires further study.

Key words: Systemic lupus erythematosus, mental disorders.

INTRODUCTION

Mental illnesses, including affective (anxiety-depressive spectrum) and psychotic disorders, occur, according to foreign authors, in more than half of patients suffering from systemic lupus erythematosus (SLE). To date, no studies have been conducted in Russia to study the prevalence of mental disorders in patients with SLE. Mental disorders in SLE may be associated with direct damage to the central nervous system, secondary infection, and other comorbid diseases or taking certain medications, as well as being psychogenic reactions to stressors associated with the burden of chronic disease and, which is extremely rare, may be a manifestation of primary mental illness. In most cases, we can talk about the multifactorial genesis

of mental disorders that develop with a systemic disease. In 1999, the American College of Rheumatology (ACR) identified 19 neuropsychic syndromes that most fully characterize the manifestations of CNS lesion in SLE. To characterize In addition to psychosis, anxiety disorders, decreased cognitive ability (cognitive impairment), mood disorders, including

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depression, and a state of sudden loss of consciousness (delirious syndrome) are highlighted. The purpose of this study was to analyze the prevalence of mental disorders among patients with SLE.

MATERIALS AND METHODS OF RESEARCH

The study included 115 patients with reliable SLE, according to the diagnostic

criteria of the ACR. Women predominated among the patients – 106 people (92%). The age was 34 (24-45) years, the duration of the disease was 8 (4-17) years. The activity of SLE was assessed using the SLEDAI score scale. Meaning SLEDAI at the time of inclusion in the study was 9 (2-16) points. Damage Index (IP (SLICK/

ACR/DI)) It was 2 (0 – 3) points. All patients included in the study received glucocorticoids (HA), the daily dose of which in terms of prednisone was 12.5 (10-20)mg / day, the duration of taking GC is 10 (6-14) years, the cumulative dose is 49.7 g. (35, 6-79, 3); 40% patients at the time of inclusion in the study received cytotoxics: 25% – cyclophosphamide, 10% – azathioprine, 2% – methotrexate, 2% – cellsept (mofetil mycophenolate) and 1% – cyclosporine A. The level of antibodies in double-stranded DNA, antinuclear factor, IgG and IgM ACL and lupus anticoagulant (VA) were determined in the laboratory of Clinical Immunology and the laboratory of Clinical Trials of the Institute of Rheumatology

of the Russian Academy of Medical Sciences using standard methods. All patients included in the study, The following psychiatric and psychological scales and techniques were used: Hospital Anxiety and Depression scale and Depression Scale (HADS)), an anxiety scale Hamilton Anxiety Rating Scale, Montgomery-Asberg Depression Rating Scale (MADRS), scale of psychotraumatic situations and immediate reactions (Veltischev, 2007), scale of assessment of social adaptation (Holmes, Rahe, 1967), as well as a projective pathopsychological technique Pictograms (Luria, 1961) for the assessment of cognitive functions. Mental disorders were diagnosed in accordance with ICD-10 using a semi-structured interview. Methods of nonparametric statistics of the Statistica 6.0 program were used for statistical processing of the material. When comparing

the groups, the Mann-Whitney criterion was used, according to the paired t-criterion, the results are presented as a median with an interquartile range (25th – 75th percentile). The correlation analysis was carried out using Spearman's method. The differences were considered significant at $p<0.05$.

THE RESULTS AND THEIR DISCUSSION

Mental disorders were detected in 76 out of 115 (66%) patients. Among the identified disorders, anxiety-depressive spectrum disorders prevailed (83%): depressive episodes of varying severity (40%), adaptation disorders (24%), generalized anxiety disorder (10%) and dysthymia (9%). Severe cognitive impairment bordering on dementia was found in 7% of patients. Less pronounced cognitive impairments were found in almost all patients with depression and were considered by us as its manifestation. It is necessary to note separately the high incidence of violations sleep in patients with SLE approaching 90%. The majority of all sleep disorders (66%) were manifestations of anxiety-depressive disorders

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and disappeared during antidepressant therapy. The scales of psychotraumatic situations and assessments of social adaptation used in the study revealed a high incidence of psychotraumatic events in 47% of patients at the onset of SLE and 35% on the eve of SLE exacerbation. A comparison of patients with and without mental disorders did not reveal significant differences by gender, age, duration and degree of activity of SLE, as well as the duration of administration, cumulative dose and dose of HA taken at the time of inclusion in the study, duration of cytotoxic therapy and cumulative dose of cyclophosphamide. However, it should be noted that in patients with mental disorders, unlike patients without them, it is significantly more common ($p<0,05$) there were neurological manifestations of SLE – 45% and 19 %, respectively, generalized erythematous skin rashes (23% and 3 %, respectively), photodermatitis (38% and 18%, respectively). The majority of patients with mental disorders (61%) had a chronic (at the onset of the disease) course of SLE and only 17% had an acute one. Among patients without mental disorders, the distribution according to the variants of the course of SLE was more

uniform – 46% – chronic, 33% – acute and 21% – subacute. Patients with mental

disorders had a higher IP – 2 (0-3) and 1 (0-2), points, respectively. In patients with a disease duration of less than 2 years , acute stress and generalized anxiety disorders were significantly more common ($p=0.02$) and cognitive impairment and dysthymia were not detected at all. Adaptation disorders prevailed in patients with SLE duration of less than 5 years, and depressive episodes were detected with approximately the same frequency in patients with different disease duration. Delirium was diagnosed in the patient with high SLE activity, the duration of the disease was 4 years. Based on the data of modern foreign studies, from 17% to 75% of all SLE patients have mental disorders. Our work confirms these data. The most common mental disorders in SLE, according to the literature, are anxiety-depressive, including episodes of the so-called major depression (28-40% of patients), anxiety disorders (24-70%); adaptation disorders with anxiety and depressive symptoms (19-46% of patients). According to According to our data, depressive episodes were detected in 27%, dysthymia as a variant of depressive

disorder characterized by a relatively mild depressive mood lasting more than 2 years was found in 6% of patients; adaptation disorders – in 16% and generalized anxiety disorder occurred somewhat less frequently – in 7% of patients. In general, disorders of the anxiety-depressive spectrum were detected in more than half of the examined patients (56%). According to the literature, the second most common mental disorder is patients with SLE have cognitive impairments (in 75-80%), which include, first of all, memory and attention disorders. In most cases, they are caused by the presence of depression, adequate therapy of which leads to the restoration of cognitive functions. However, in cases of focal lesions and/or brain atrophy, cognitive impairment is irreversible and steadily progressing. According to our data, the incidence of cognitive impairment was slightly lower than indicated in the works of other authors. More or less pronounced cognitive impairments were noted in almost all patients with depression (27%), however, only 4% of their severity bordered on dementia. The presence of pronounced cognitive impairment in our patients, as in patients in other observations, was associated with persistently high levels of antiphospholipid antibodies (ACL, VA) and the presence of ONMC in the anamnesis. Psychosis, according to the literature, occurs in about 5% of patients with SLE and can be a manifestation of the activity of the underlying disease (often associated with an increase in

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antibody titer to ribosomal protein P), and to be associated with treatment with high doses of HA. In our study, no cases of psychosis were identified at the time of inclusion of patients in the study. However, a history of psychosis was diagnosed in 4% of all examined patients, and in 4 out of 5 cases it was associated with high SLE activity.

Delirium, or a state of sudden loss of consciousness, is more often a consequence of activity SLE, or may be caused by intoxication syndrome within the framework of a septic condition or taking a number of medications. It refers to rare manifestations of SLE. In our study , delirium was diagnosed in 1 patient with high SLE activity. The reason for the frequent occurrence of mental disorders in SLE remains unclear. Various mental disorders are often associated with high activity

SLE and regress as it decreases. Many authors trying to link mental disorders with high inflammatory activity of the disease are based on data confirming a positive correlation between the severity of depression and high levels of pro inflammatory cytokines and other inflammatory mediators even in the absence of chronic inflammatory disease. In our work, as in many others, did not reveal a clear link between the presence of mental disorders and the inflammatory activity of SLE

at the time of examination. This applies primarily to anxiety-depressive and cognitive disorders. The only mental disorder developing against the background of high activity and inadequate therapy of SLE, both according to the literature and according to their own observations, is delirious syndrome.

CONCLUSIONS

Thus, the severity of anxiety and depressive disorders is not always directly dependent on the activity of SLE. The relationship between increased SLE activity and the severity of depressive symptoms remains unclear – stress factors provoke depression and increased SLE activity, or high activity of the process leads to more pronounced depressive symptoms. Nevertheless, 74% of patients (35% in our study) report a direct association of increased symptoms of SLE with everyday stress. At the same time, prolonged distress with depressive manifestations, they are accompanied by an increase in the activity of SLE. In addition, chronic stress and anxiety-depressive symptoms may precede the manifestation of a systemic disease. Apparently, SLE and anxiety-depressive spectrum disorders are not in a causal relationship. A constructive search should be aimed at establishing the equivalence of clinical phenomena. This is a wide field for the development of a common pathogenetic and therapeutic concept. So, the results of the study confirmed the high frequency (66%) of mental disorders among patients with SLE, anxiety and depressive disorders occupy the main place in the spectrum (83%). In this sample of patients, there was no relationship between gender, age, duration and activity of the disease, the dose of HA and cytotoxics used for the treatment, and the presence of mental illness. The nature of the relationship between SLE and mental disorders requires further study.

LITERATURE

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INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

1. Khabibovna, Y. S., Alisherovna, K. M., Tashtemirovna, E. M. M., Nizamitdinovich, K. S., & Abdukadirovna, A. S. (2023). ANTITHROMBOTIC THERAPY IN CARDIOLOGICAL PATIENTS. *Journal of new century innovations*, *39*(1), 169-171.
2. Khabibovna, Y. S., Alisherovna, K. M., Totlibayevich, Y. S., & Davranovna, M. K. (2023). PAINLESS CARDIAC ISCHEMIA AND RHEUMATOID ARTHRIT. *Journal of new century innovations*, *29*(1), 98-105.
3. Khabibovna, Y. S., Alisherovna, K. M., Nizamitdinovich, K. S., Tashtemirovna, E. M. M., Abdukadirovna, A. S., & Jasurovna, J. S. (2023). DEPRESSION, ANXIETY AND QUALITY OF LIFE IN PATIENTS WITH ATRIAL FIBRILLATION. *Journal of new century innovations*, *39*(1), 185-189.
4. Khabibovna, Y. S., Alisherovna, K. M., Tashtemirovna, E. M. M., Totlibayevich, Y. S., Nizamitdinovich, K. S., & Baxtiyorovich, U. J. (2023). DIAGNOSTIC VALUE OF CYSTATIN C IN PATIENTS WITH HYPERTENSION AND OBESITY. *World Bulletin of Public Health*, *22*, 55-59.
5. Alisherovna, K. M., Erkinovna, S. D., Yazdonkulovna, X. M., & Zafarovna, C. M. M. (2024). ATRIAL FIBRILLATION IN THYROTOXICOSIS–DETERMINANTS OF DEVELOPMENT AND CONSERVATION. *Ta'lim innovatsiyasi va integratsiyasi*, *19*(4), 103-113.
6. Nizamitdinovich, K. S., Khabibovna, Y. S., Alisherovna, K. M., & Tashtemirovna, E. M. M. (2023). Spinal Injury for Rheumatoid Arthritis. *Miasto Przyszłości*, *40*, 426-432.
7. Khabibovna, Y. S., Alisherovna, K. M., Erkinovna, K. Z., & Djamshedovna, K. D. (2023). Gender Characteristics of the Course of Rheumatoid Arthritis. *Miasto Przyszłości*, *40*, 438-442.
8. Khabibovna, Y. S., & Alisherovna, K. M. (2024). STRESS TESTING IN PATIENTS WITH CORONARY HEART DISEASE. *Journal of new century innovations*, *45*(3), 28-33.
9. Alisherovna, K. M., Habibulloyevna, I. M., & Voxidovna, R. F. (2024). STRUCTURAL AND FUNCTIONAL FEATURES OF THE LEFT VENTRICLE IN PATIENTS WITH HEART FAILUREIN ISCHEMIC HEART DISEASE AND THYROTOXICOSIS. *Ta'lim innovatsiyasi va integratsiyasi*, *19*(4), 71-81.
10. Khabibovna, Y. S., & Xudoyberdiyevich, G. X. (2024). THE POSSIBILITIES OF COENZYME Q10 AS PART OF THE COMPLEX THERAPY OF PATIENTS WITH CHRONIC HEART FAILURE. *Spectrum Journal of Innovation, Reforms and Development*, *25*, 116-123.
11. Yarmukhamedova, S. K., Alisherovna, K. M., Tashtemirovna, E. M. M., & Nizamitdinovich, K. S. (2023). The Effectiveness of Trimetazidine in Arrhythmias. *Miasto Przyszłości*, *33*, 215-221.
12. Yarmukhamedova, S. K., & Gafforov, X. X. (2024). Indicators of daily blood pressure monitoring in patients with osteoarthritis with cardiovascular disorders in case of metabolic syndrome. *Science and Education*, *5*(4), 50-55.
13. Alisherovna, K. M., Ismatullayevich, M. A., & Nuriddinovna, E. N. (2024). FEATURES OF HEART FAILURE IN PATIENTS WITH CORONARY HEART DISEASE AND THYROTOXICOSIS. *Ta'lim innovatsiyasi va integratsiyasi*, *19*(4), 52-61.
14. Xaydarov, S. N., & Normatov, M. B. (2021). DETERMINATION OF IRON DEFICIENCY ANEMIA AT THE PREGNANCY PERIOD. *Scientific progress*, *2*(4), 325-327.
15. Yarmukhamedova, S., Nazarov, F., Mahmudova, X., Vafoeva, N., Bekmuradova, M., Gafarov, X., ... & Xusainova, M. (2020). Study of indicators of intracardial

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

hemodynamics and structural state of the myocardium in monotherapy of patients with arterial hypertension with moxonidin. *Journal of Advanced Medical and Dental Sciences Research*, *8*(9), 78-81.

16. Alisherovna, K. M., Yaxshiboyevich, U. M. R., & Yigitaliyevich, B. A. (2024). EVALUATION OF A NATRIURETIC PEPTIDE TO OPTIMIZE THE MANAGEMENT OF COMORBID PATIENTS WITH THYROTOXICOSIS AND HEART FAILURE. *Ta'lim innovatsiyasi va integratsiyasi*, *19*(4), 62-70.
17. Khabibovna, Y. S., & Buribaevich, N. M. (2020). Study Of Parameters Of Central Hemodynamics In Patients With Chronic Glomerulonephritis. *Достижения науки и образования*, (13 (67)), 57-59.
18. Buribayevich, N. M. (2022). Treatment of Chronic Heart Failure in Patients with Type 2 Diabetes Mellitus. *Central Asian Journal of Medical and Natural Science*, *3*(1), 183-186.
19. Alisherovna, K. M., Erkinovna, S. D., Duskobilovich, B. S., & Samandarovich, T. H. (2024). ARTERIAL HYPERTENSION IN THYROTOXICOSIS AND REMODELING OF THE LEFT VENTRICLE OF THE HEART. *Ta'lim innovatsiyasi va integratsiyasi*, *19*(4), 114-121.
20. Buribayevich, N. M. (2022). DIASTOLIC DYSFUNCTION AND REMODELING LEFT VENTRICLE DEPENDING ON THE CONTROL GLYCEMIA IN PATIENTS WITH TYPE 2 DIABETES MELLITUS. *Spectrum Journal of Innovation, Reforms and Development*, *7*, 96-100.
21. Buribayevich, N. M. (2022). FEATURES OF MANAGEMENT OF PATIENTS WITH CHRONIC HEART FAILURE AND DIABETES MELLITUS. *Spectrum Journal of Innovation, Reforms and Development*, *10*, 263-269.
22. Alisherovna, K. M., Akramovna, I. K., & Yorkinovna, E. N. (2024). CLINICAL AND MORPHOLOGICAL CRITERIA OF COLITIS IN PATIENTS WITH CHRONIC ISCHEMIC DISEASE OF THE DIGESTIVE SYSTEM. *Ta'lim innovatsiyasi va integratsiyasi*, *18*(6), 6-13.
23. Buribayevich, N. M. (2022). Index of Functional Changes in the Assessment Adaptive State of Comorbid Patients Treated with Trimetazidine. *Czech Journal of Multidisciplinary Innovations*, *10*, 42-48.
24. Khabibovna, Y. S., Alisherovna, K. M., Nizamitdinovich, K. S., & Totlibayevich, Y. S. (2023). Features of heart failure in patients with thyrotoxicosis. *Journal of new century innovations*, *29*(1), 89-97.
25. Alisherovna, K. M., Akramovna, I. K., & Baxtiyorovna, O. K. (2024). THE COURSE OF CHRONIC ISCHEMIC PANCREATITIS IN PATIENTS WITH CORONARY HEART DISEASE. *Ta'lim innovatsiyasi va integratsiyasi*, *18*(5), 231-239.
26. Yarmukhamedova, S., Nazarov, F., Mahmudova, X., Vafoeva, N., Bekmuradova, M., Gaffarov, X., ... & Xusainova, M. (2020). Features of diastolic dysfunction of the right ventricle in patients with hypertonic disease. *Journal of Advanced Medical and Dental Sciences Research*, *8*(9), 74-77.
27. Uzokov, J. B., Khusainova, M. A., Eshmamatova, F. B., & Mamadiyorova, M. M. (2023). Correction of violations rheology of blood in ischemic heart disease. *Science and Education*, *4*(2), 153-159.
28. Alisherovna, K. M., Akramovna, I. K., & Kairatovna, R. A. (2024). THE EFFECTIVENESS OF TREATMENT OF PATIENTS WITH OSTEOARTHRITIS WITH CARDIOVASCULAR DISORDERS IN METABOLIC SYNDROME. *Ta'lim innovatsiyasi va integratsiyasi*, *18*(5), 223-230.

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

29. Khaydarov, S. N., Khusainova, M. A., Uzokov, J. B., & Makhmudova, K. D. (2023). Heart failure and the risk of hypoglycemia. *Science and Education*, *4*(5), 222-231.
30. Khusainova, M. A., Khaydarov, S. N., Uzokov, J. B., & Karabayeva, G. K. (2023). KIDNEY CONDITION IN PATIENTS WITH CHRONIC HEART FAILURE. *Oriental renaissance: Innovative, educational, natural and social sciences*, *3*(2), 102-112.
31. Alisherovna, K. M., Davranovna, M. K., & Erkinovna, K. Z. (2024). CORONARY HEART DISEASE AND OSTEOPOROSIS IN POSTMENOPAUSAL WOMEN. *Spectrum Journal of Innovation, Reforms and Development*, *26*, 40-45.
32. Alisherovna, K. M., Mansurovna, M. D., Erkinovna, N. D., Farxodovna, X. R., Toxirovna, M. M., Tolibovna, R. D., & Yorkinovna, E. N. (2024). ARTERIAL HYPERTENSION AND THYROID STATUS IN PATIENTS OF DIFFERENT AGES. *Ta'lim innovatsiyasi va integratsiyasi*, *19*(4), 122-129.
33. Davranovna, M. K. D. K., Alisherovna, K. M., & Erkinovna, K. Z. (2024). CARDIAC ARRHYTHMIAS IN PATIENTS WITH RHEUMATOID ARTHRITIS. *Spectrum Journal of Innovation, Reforms and Development*, *26*, 65-71.
34. Erkinovna, K. Z., Alisherovna, K. M., & Davranovna, M. K. (2024). ARTERIAL HYPERTENSION AND ARRHYTHMIA. *Spectrum Journal of Innovation, Reforms and Development*, *26*, 72-78.
35. Nizamitdinovich, K. S., Alisherovna, K. M., & Erkinovna, K. Z. (2024). ASSESSMENT OF THE RISK OF DEVELOPING DIABETES MELLITUS FOR MEN. *Spectrum Journal of Innovation, Reforms and Development*, *26*, 114-123.
36. Alisherovna, K. M., Nizamitdinovich, K. S., & Erkinovna, K. Z. (2024). THE EFFECTIVENESS OF BISOPROLOL AND METFORMIN IN ARTERIAL HYPERTENSION AND METABOLIC SYNDROME. *Spectrum Journal of Innovation, Reforms and Development*, *26*, 106-113.
37. Akramovna, I. K., & Alisherovna, K. M. (2024). CAUSES OF ARRHYTHMIA DURING PREGNANCY. *Journal of new century innovations*, *45*(3), 34-41.
38. Uzokov, J. B., Khusainova, M. A., Bekmuradova, M. S., & Makhmudova, K. D. (2023). Dynamics of quality of life indicators during personalized rehabilitation of patients with rheumatoid arthritis with arterial hypertension. *Science and Education*, *4*(5), 196-204.
39. Khusainova, M. A., Bekmuradova, M. S., Makhmudova, K. D., & Uzokov, J. B. (2023). Echocardiographic changes of the left ventricle in bronchial asthma. *Science and Education*, *4*(5), 214-221.
40. Khusainova, M. A., Khaydarov, S. N., Uzokov, J. B., & Shonazarova, N. K. (2023). QUALITY OF LIFE IN PATIENTS WITH CHOLELITHIASIS IN THE LONG-TERM PERIOD AFTER CHOLECYSTECTOMY. *Oriental renaissance: Innovative, educational, natural and social sciences*, *3*(2), 231-239.
41. Khusainova, M. A., Khaydarov, S. N., Uzokov, J. B., & Shonazarova, N. K. (2023). QUALITY OF LIFE IN PATIENTS WITH CHOLELITHIASIS IN THE LONG-TERM PERIOD AFTER CHOLECYSTECTOMY. *Oriental renaissance: Innovative, educational, natural and social sciences*, *3*(2), 231-239.
42. Khusainova, M. A., Gafforov, K. K., Uzokov, J. B., & Tairova, Z. K. (2023). THE CHANGE IN THE QT INTERVAL IS A MARKER OF THE SEVERITY OF LIVER CIRRHOSIS. *Oriental renaissance: Innovative, educational, natural and social sciences*, *3*(2), 94-101.
43. Rustamovich, T. D., Alisherovna, K. M., Baxtiyorovich, U. J., & Abdurakhmonovich, M. M. (2022). Painless Cardiac Ischemia in Women with Rheumatoid Arthritis. *Texas Journal of Medical Science*, *13*, 95-98.

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

44. Alisherovna, K. M., Rustamovich, T. D., Baxtiyorovich, U. J., & Sobirovna, S. M. (2022). Diabetes Mellitus and Hyperglycemia in Patients with Rheumatoid Arthritis. *Texas Journal of Medical Science*, *13*, 99-103.
45. Alisherovna, K. M., Rustamovich, T. D., & Baxtiyorovich, U. J. (2022). The Use of Trimetazidine in Patients with Type 2 Diabetes Mellitus Who Have Suffered a Myocardial Infarction. *Czech Journal of Multidisciplinary Innovations*, *10*, 35-41.
46. Khabibovna, Y. S., Alisherovna, K. M., Tashtemirovna, E. M. M., & Baxtiyorovich, U. J. (2023). THE EFFECTIVENESS OF THYROSTATICS IN THE TREATMENT OF. *Journal of new century innovations*, *29*(1), 79-88.
47. Alisherovna, K. M., Akramovna, I. K., Bakhtiyorovich, U. J., Nizamitdinovich, K. S., Jasurovna, J. S., Kairatovna, R. A., & Abdukholikovna, E. S. (2023). Exacerbations of chronic obstructive pulmonary disease and coronary atherosclerosis. *Journal of new century innovations*, *39*(1), 176-178.
48. Baxtiyorovich, U. J., Alisherovna, K. M., & Mamasoliyevna, D. N. (2023). Features of cognitive impairment in patients with chronic kidney disease at predialysis stages. *World Bulletin of Public Health*, *22*, 49-54.
49. Alisherovna, K. M., Khabibovna, Y. S., Nizamitdinovich, K. S., & Bakhtiyorovich, U. J. (2023). CYSTATIN and KIDNEY FUNCTION. *Journal of new century innovations*, *38*(2), 220-225.
50. Bakhtiyorovich, U. J. (2024). METABOLISM REGULATOR IN PATIENTS WITH CHRONIC HEART FAILURE AND ANEMIA OF CHRONIC DISEASES. *Journal of new century innovations*, *45*(3), 3-12.
51. Bakhtiyorovich, U. J. (2024). FEATURES OF THE COGNITIVE STATUS IN WOMEN WITH IRON DEFICIENCY ANEMIA. *Spectrum Journal of Innovation, Reforms and Development*, *24*, 27-32.
52. Erkinovna, K. Z., Alisherovna, K. M., Bakhtiyorovich, U. J., & Djamshedovna, K. D. (2023). METABOLIC SYNDROME IN RHEUMATOID ARTHRITIS. *Journal of new century innovations*, *38*(2), 203-211.