Impact Factor: 9.9 ISSN-L: 2544-980X

Quality of Life in Patients With Gout

Khasanov Farrukhjon Sheraliyevich [1]

Abstract: The aim is to identify factors associated with poor quality of life (QOL) in patients with gout. Materials and methods. The study included 175 patients (153 men and 22 women) with a reliable diagnosis of gout. The average age of patients was 48.0±12.3 years, the median duration of the disease was 5.7 [3.0; 12.3] years, the number of arthritis attacks per year was 3 [1; 5], the average serum uric acid level (MC) was 510±120 mmol/L. 31.4% of patients took allopurinol, 40.5% had chronic arthritis, 36.5% – subcutaneous tofuses, 23% – coronary artery disease (CHD), 76% – arterial hypertension (AH), 15.4% – type 2 diabetes mellitus (DM), 10.2% – chronic kidney disease (CKD) with glomerular filtration rate <60 ml/min, 56% – obesity, 5.1% – chronic heart failure (CHF), 9.1% – a history of vascular disasters. To identify correlations between the QOL indicators according to the EQ-5D, SF-36v1 questionnaires, the functional status (FS) according to HAQ and the clinical characteristics of the disease, as well as comorbid diseases, a correlation analysis according to Pearson and Spearman was performed. Multiple regression analysis was used to identify the factors that worsen QOL. Results and discussion. Negative correlations were found between the indicators of QOL according to SF-36 and age, duration of illness, serum MC levels, the presence of chronic arthritis, tofu, taking allopurinol, diuretics, alcohol, as well as hypertension, coronary heart disease, obesity, vascular catastrophes, CKD and CHF. After conducting a multiple regression analysis, a direct relationship was revealed between the deterioration of FS in HAQ and the female sex, old age, the number of inflamed joints and the frequency of arthritis attacks, the coefficient of multiple determination was 0.41. QOL by EQ It was inversely correlated with age, the number of inflamed joints, the frequency of arthritis attacks, taking diuretics, and obesity (R2=0,33). Reduction of the physical component of the questionnaire's health SF-36 correlated with an increase in age, the number of inflamed joints, the frequency of arthritis attacks and the presence of CKD (R2=0.3), a weak association was noted between the deterioration of the psychological component of health and the female sex, an increase in the number of inflamed joints, vascular catastrophes (R2=0.1).

Conclusion. A decrease in QOL in gout is independently associated with an increase in the number of inflamed joints, the frequency of arthritis attacks, old age, female sex, and comorbid diseases (CKD, obesity, vascular disasters).

Key words: gout; quality of life; comorbid diseases.

INTRODUCTION

Gout is the most common form of inflammatory arthritis caused by the deposition of sodium monaurate (MUN) crystals formed as a result of prolonged hyperuricemia. Gout is accompanied by periodic debilitating painful attacks of arthritis (gout outbreaks) and, if left untreated, can cause the formation of tofuses and the development of destructive arthropathy. The disease is usually associated with renal, metabolic, and cardiovascular comorbidities that worsen the prognosis of gout. The disease develops due to violations of purine metabolism, as a result, the concentration of uric acid in the blood increases significantly. The disease was known in Ancient Greece, and in the Middle Ages it was called the "disease of kings and aristocracy", because only these classes could consume alcohol and meat products in such quantities to create an increased load on the kidneys — this led to the development of gout.

The purpose of this study is to identify the factors associated with low QOL in gout patients.

[1] Samarkand State Medical University, Samarkand, Uzbekistan

MATERIALS AND METHODS OF RESEARCH

205 gout patients were invited to participate in a one-stage study, 175 (85%) of whom (153 men and 22 women) agreed. Informed consent was signed by all participants in the study. The criteria for inclusion in the study were a reliable diagnosis of gout, verified in accordance with the criteria of S. Wallace, and age over 17 years old. Synovial fluid or subcutaneous fluid contents were examined in all patients. by polarizing microscopy in order to identify crystals of sodium monaurate. The study did not include patients with other inflammatory rheumatic diseases or oncological pathology. Patients completed QOL and FS assessment questionnaires: Short Form-36 v1 (SF-36), EuroQool-5D (EQ-5D), Health Assessment Questionnaire – Disability Index (HAQ). After completing the questionnaires, gout patients were first prescribed or adjusted therapy according to management standards and clinical recommendations. Three questionnaires were excluded from the processing, which included missing answers to questions. The average age of patients at the time of inclusion in the study was 48.0±12.3 years (from 17 to 77 years). The median [25th; 75th percentile] disease duration was 5.7 [3.0; 10.6] years. At the time of inclusion in the study, 104 (59%) patients had a recurrent course, 71 (41%) had chronic arthritis (chronic arthritis was considered with a continuous course of >3 months). The frequency of arthritis attacks in the calendar year preceding the study, the presence of subcutaneous tofuses, and comorbid diseases were evaluated. The diagnoses of arterial hypertension (AH), coronary artery disease (CHD), and chronic heart failure (CHF) were established in patients in accordance with the criteria of the All-Russian Scientific Society of Cardiology (2009). Patients who received antihypertensive drugs at the time of inclusion in the study were also diagnosed with hypertension. The diagnosis of type 2 diabetes mellitus (DM) was carried out in accordance with with the criteria of the World Health Organization. Chronic kidney disease (CKD) was reported with a drop in glomerular filtration rate (GFR) below 60 ml/min (stage II and higher according to K/DOQI classification, 2002). An assessment of anthropometric parameters was also carried out, and the body mass index value was determined. (BMI; Quetelet index, kg/m^2). With a BMI >30 kg/m^2, obesity was diagnosed.Statistical processing of the obtained results was carried out using a package of application programs Statistica 8.0 (StatSoft Inc., USA). Simple descriptive statistics and nonparametric correlation analysis using the Spearman and Pearson method were used. To identify the most significant factors associated with With low QOL, multiple regression analysis was used to determine the coefficient of determination (R2), indicating the proportion of the explained variance of the dependent indicat or. The higher the coefficient of determination, the more significant the influence of the identified factors on the change in the dependent indicator.

THE RESULTS AND THEIR DISCUSSION

Clinical characteristics of 175 patients included in the study were dominated by men (87.4%). Slightly more than half of the patients had subcutaneous and intraosseous tofuses, hypertension was noted in 76% of cases, obesity (56%) and coronary heart disease (23%) were the most common among other comorbid diseases, one in seven was diagnosed with type 2 diabetes, and one in ten had CKD. When conducting a simple correlation analysis, direct and inverse correlations were found between QOL indicators and parameters such as gender, age, duration of illness, serum the level of uric acid (MC), the presence of chronic arthritis, tofuses, taking allopurinol, diuretics, alcohol, as well as comorbid diseases. The EQ-5D index was inversely correlated with the presence of chronic arthritis, CFS, and the age of patients. Index HAQ correlated with CFS, the presence of chronic arthritis, and tofuses. A negative correlation was observed between CFS, the presence of chronic arthritis, tofuses, and FKD of the SF-36 questionnaire, based on the values of the scales The gender of the patients influenced the outcome of the SF-36 questionnaire. At the same time, the female gender was associated with lower indicators. Better than men. The deterioration of the FCZ of the SF-36 questionnaire was associated with clinical manifestations of gout, as well as the presence of hypertension, coronary heart disease, CKD and vascular catastrophes in patients. To identify the most significant factors that worsen QOL in patients with gout, a multiple regression analysis was performed. It turned out that on The QOL of gout patients was influenced primarily by the clinical manifestations of the disease itself: CFS and the frequency of arthritis attacks, and an independent correlation of QOL with these indicators was noted when using all the questionnaires included in the analysis. The role of comorbid diseases should not be

underestimated: for example, QOL according to SF-36 was significantly lower in the presence of CKD and vascular catastrophes, and for QOL according to EQ-5D was negatively affected by obesity. A decrease in QOL according to the HAQ, EQ-5D, and SF-36 cumulative scales was associated with an increase in age, female gender, and diuretic medications. Despite the large number of studies devoted to the efficacy and safety of medicines for gout, our work is the first in the Russian Federation conducted to identify the main causes of a decrease in QOL in patients with gout. Unlike most similar studies, in our study the proportion of patients who agreed to participate in it was extremely high – 85%. For comparison, it was only 23%. All the patients who participated in this study had a reliable diagnosis of gout, confirmed by the detection of sodium monaurate crystals, which is also an undoubted advantage of our work. In addition, all our patients were examined and examined in detail, unlike many studies where materials from common databases were used to assess the effect of gout on QOL. Thus, in the study, only 82% of patients suspected to be diagnosed with gout according to the survey data. To the disadvantages of our This work can be attributed to the fact that the study is simultaneous and does not allow assessing the effect on QOL of the dynamics of clinical parameters and drug therapy for gout. In our work, we used several QOL research tools at once. In addition to the HAQ questionnaire, which evaluates patients' FS and is most often used to study QOL in patients with gout, we used the common SF-36 and EQ-5D questionnaires due to the ability to use them both in population studies and in patients with any nosological forms, as well as in cases of a combination of several somatic diseases, which is especially important in gout. As in some other studies, in our study, the QOL indicators of gout patients were influenced primarily by the clinical manifestations of the disease itself: CFS and the frequency of arthritis attacks, the presence of subcutaneous tofuses. An independent relationship between QOL and these indicators was observed for all the questionnaires included in the analysis. A number of modern works attempt to identify predictors of worsening QOL in patients with gout. In particular, aimed at determining the effect of clinical manifestations of gout and concomitant diseases on gout outcomes. The authors identified 10 clinical indicators of a prognostically severe disease. It turned out that a decrease in QOL according to FCZ was associated primarily with the clinical manifestations of the disease, among which were the duration of the disease for more than 5 years,the presence of oligo- or polyarthritis, subcutaneous tofuses, and attacks of arthritis over the past year and month. In contrast to our work, the authors have identified a relationship between the level of MC and a decrease in QOL according to the FKZ, as well as However, this dependence was manifested only at serum MC levels above 7 mg/dl. At the same time, the HAQ values and total SF-36 components were not affected by urate-lowering therapy. Unlike our study, the authors did not take into account the presence of specific comorbid diseases. The results of their work showed a relationship between the deterioration of FS according to HAQ and PKZ according to SF-36, and FCZ was not associated with FS according to HAQ. In addition, it should be noted the identification in the cited work of an independent relationship between the presence of obesity and the deterioration of CKD (in our case, when conducting multiple regression analysis, this relationship was lost), the presence of obesity negatively affected the value of the HAQ index. At the same time, we use another index in our analysis QOL (EQ-5D) also showed the presence of a similar independent association. This fact may indicate the need to create unified methods for assessing QOL in gout. According to S.J. Lee et al., the presence of concomitant diseases (diabetes, kidney disease, coronary heart disease and CHF) It was more correlated with a decrease in the physical health index than the indicators reflecting the clinical manifestations of gout. In addition, the authors of the article pay special attention to the fact that, although more than 80% of the observed patients took allopurinol. patients, most of them had attacks of arthritis persisted. In our study, only 1/3 of the patients received allopurinol, which could also affect the results. Attention was drawn to the inverse correlation between the indicators of QOL and the intake of allopurinol. It may be due to the fact that allopurinol was mainly taken by patients with chronic arthritis, and the dose of the drug was far from optimal. Thus, only in 9% of patients, the MC level was below 360 mmol/l. The association of the female sex with the deterioration of PKD may be a reflection of a more severe course of gout in women, which is characterized by the rapid development of chronic arthritis and the formation of subcutaneous tofuses. At the same time, we did not identify the effect of gender on the CKD. J.A. Singh et al. In their study

on racial and gender differences in QOL in patients with gout, they did not identify any such differences.

CONCLUSIONS

Thus, our study demonstrates that gout is a disease that reduces QOL, and this effect "outweighs" the effect of comorbid diseases (such as hypertension, coronary heart disease, CHF). Further research is required to assess the prognostic value of the adverse factors we have identified and the effect of therapy on QOL in gout.

LITERATURE

1. Хамраева, Н. А., Султонов, И. И., & Хасанов, Ф. Ш. У. (2019). Кожные проявления у больных системной красной волчанкой. *Вопросы науки и образования*, (28 (77)), 128-131.
2. Sultonov, I. I., Kh, Z. S., Ruzybakieva, M. R., Kireev, V. V., Aripova, T. U., & Suyarov, A. A. (2021). Pharmacogenetic Aspects of Drug Resistance in Rheumatoid Arthritis. *Annals of the Romanian Society for Cell Biology*, 4147-4150.
3. Тоиров, А. Э., Султонов, И. И., & Тоиров, Э. С. (2020). ЗНАЧЕНИЕ ДИСФУНКЦИИ ПОЧЕК У БОЛЬНЫХ ОСТРЫМ ИНФАРКТОМ МИОКАРДА НА ФОНЕ САХАРНОГО ДИАБЕТА 2-ГО ТИПА. *Вестник науки и образования*, (9-3 (87)), 86-91.
4. Kireev, V. V., & Sultonov, I. I. (2021). Genetic Engineered Preparations-An Innovative Approach in the Treatment of Rheumatoid Arthritis. *Annals of the Romanian Society for Cell Biology*, 4114-4119.
5. Hamraeva, N. A., Sultonov, I. I., & Hasanov, F. S. (2020). Systemic lupus erythematosus treatment strategy. *Journal of Critical Reviews*, *7*(9), 269-270.
6. Иргашева, У. З., Султонов, И. И., & Тоиров, Д. Р. (2013). Признаки дебюта системной красной волчанки. *Академический журнал Западной Сибири*, *9*(1), 15-15.
7. Xasanov, F. S., & Sultonov, I. I. (2023). RHEUMATOID ARTHRITIS TREATED WITH DMARDS AND CARDIOVASCULAR DISEASE RISK. *Oriental Journal of Medicine and Pharmacology*, *3*(02), 45-52.
8. Sultonov, I. I., Xasanov, F. S., Eshmuratov, S., Uralov, R. S., Shukurova, D., & Ziyadullayev, S. X. Predictors of Systemic Lupus Erythematosus: A Case-control Study. *International journal of health sciences*, *6*(S10), 175-182.
9. Ziyadullaev, S. K., Sultonov, I. I., Dushanova, G. A., & Akbarovna, K. S. (2021). The Effectiveness of Pharmacotherapy for Dmards with Ra Depending on the C3435t Polymorphism Of The Mdr1 Gene. *Int. J. of Aquatic Science*, *12*(3), 2908-2916.
10. Sobirov, A., & Sultonov, I. (2024). COMPREHENSIVE ANALYSIS OF CLINICAL NEUROPSYCHOLOGICAL AND NEUROIMAGING ASPECTS OF ALZHEIMER'S DISEASE. *Frontiers of Global Science*, *2*(1), 25-29.
11. Islomovich, S. I. (2024). FEATURES OF THE COURSE OF PREGNANCY IN RHEUMATOID ARTHRITIS. *International journal of medical sciences*, *4*(10), 77-84.
12. Islomovich, S. I. (2024). Gender characteristics of the current rheumatoid arthritis. *International journal of medical sciences*, *4*(10), 3-8.
13. Ilkhom, S. (2023). CAJAM–VOLUME 1. ISSUE 1. 2023. *Central Asian Journal of Advanced Medicine*, *1*(01), 16-19.
14. Sheraliyevich, K. F. (2024). PSYCHOSOMATIC SYMPTOMS IN PATIENTS WITH LIMITED SCLERODERMA. *International journal of medical sciences*, *4*(05), 273-280.
15. Sheraliyevich, K. F. (2024). Compare Patients With Ankylosing Spondylitis and Non-Radiological Axial Spondyloarthritis. *Miasto Przyszłości*, *54*, 619-623.

16. Sheraliyevich, K. F. (2024). PSYCHOMETRIC ASSESSMENT OF THE QUESTIONNAIRE TO STUDY THE ACTIVITY OF SYSTEMIC LUPUS ERYTHEMATOSUS. *International journal of medical sciences*, *4*(05), 266-272.
17. 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.
18. 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.
19. 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.
20. 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.
21. 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.
22. Khabibovna, Y. S., & Alisherovna, K. M. (2024). STRESS TESTING IN PATIENTS WITH CORONARY HEART DISEASE. *Journal of new century innovations*, *45*(3), 28-33.
23. 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.
24. Nizamitdinovich, K. S., Khabibovna, Y. S., Alisherovna, K. M., & Tashtemirovna, E. M. M. (2023). Spinal Injury for Rheumatoid Arthritis. *Miasto Przyszłości*, *40*, 426-432.
25. 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.
26. Tashtemirovna, E. M. M., Khabibovna, Y. S., Alisherovna, K. M., & Erkinovna, K. Z. (2023). Angiopathy in Rheumatoid Arthritis. *Miasto Przyszłości*, *40*, 418-425.
27. 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.
28. 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.
29. Khusainova, M. A. (2023). Comorbidity thyrotoxicosis with coronary heart disease. *Science and Education*, *4*(5), 205-213.
30. Khusainova, M. A., Ergashova, M. M., Eshmamatova, F. B., & Khayitov, S. M. (2023). Features of quality of life indicators in patients with pneumonia. *Science and Education*, *4*(2), 138-144.
31. 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.
32. 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.

33. 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.

34. 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.

35. Alisherovna, M. K., & Xudoyberdiyevich, G. X. (2021). Treatment of Chronic Heart Diseases Insufficiency Depending On the Condition of the Kidneys. *International Journal of Innovations in Engineering Research and Technology*, *8*(05), 64-69.

36. Erkinovna, K. Z., Alisherovna, K. M., & Davranovna, M. K. (2024). ARTERIAL HYPERTENSION AND ARRHYTHMIA. *Spectrum Journal of Innovation, Reforms and Development*, *26*, 72-78.

37. Alisherovna, K. M., Abdurasulovna, H. N., Salhiddinovna, B. M., & Maxammadiyevich, H. S. (2023). HYPOGLYCEMIA AND HEART FAILURE. *World Bulletin of Public Health*, *25*, 29-34.

38. Nizamitdinovich, K. S., & Alisherovna, K. M. (2022). Quality of Life in Patients with Chronic Heart Failure, After Cardiac Resynchronization Therapy. *Texas Journal of Medical Science*, *14*, 168-173.