

IMPROVING THE QUALITY OF LIFE OF PATIENTS
WITH RHEUMATOID ARTHRITIS WITH THE HELP OF PHYSICAL ACTIVITY

ПОКРАЩЕННЯ ЯКОСТІ ЖИТТЯ ХВОРИХ НА РЕВМАТОЇДНИЙ АРТРИТ
ЗА ДОПОМОГОЮ ФІЗИЧНОЇ АКТИВНОСТІ

Nogas A. O.

¹ *Institute of Healthcare of the National University of Water and Environmental Engineering,
Rivne, Ukraine*

DOI <https://doi.org/10.32782/2522-1795.2022.13.6>

Анотація

У статті висвітлені основні ланки етіології та патогенезу ревматоїдного артриту, описані ступені активності ревматоїдного процесу та критерії визначення функціональної здатності хворого на ревматоїдний артрит. Виявлено, що малорухливий спосіб життя, низький рівень фізичної підготовленості – два чинники, характерні багатьом хворим, котрі страждають на ревматоїдний артрит. Відмічено, що важкість стану хворого ревматоїдним артритом супроводжується больовим синдромом, погіршенням фізичних функцій, зниженням показників фізичного здоров'я, значно впливаючи на якість їх життя. У статті узагальнені і представлені сучасні погляди і тенденції щодо проведення фізичної терапії хворих на ревматоїдний артрит. Розглянуто основні підходи до призначення засобів лікувальної фізичної культури в системі фізичної терапії хворих на ревматоїдний артрит на стаціонарному етапі лікування. Ґрунтовно описано застосування фізичних вправ при ревматоїдному артриті наступних видів: статичних, пасивних, активних з допомогою, активних з опором. Встановлено, що фізична терапія є невід'ємною складовою успішного лікування ревматоїдного артриту. Зокрема систематичні заняття фізичними вправами поліпшують загальне самопочуття, зменшують біль, підвищують рухливість, сприяють збереженню функціональної активності суглобів, позитивно впливають на роботу серця і загальний кровообіг, а отже і покращують якість життя пацієнтів. Відмічено, що дозована, індивідуально підібрана, рухова активність позитивно впливає на перебіг захворювання на ревматоїдний артрит і якість життя хворих, унаслідок нормалізації в першу чергу психологічного та психоемоційного стану хворих. Водночас, акцентовано увагу на те, що на даний час немає чітких методичних розробок щодо реабілітаційного обстеження та підбору адекватних засобів і методів, які дадуть змогу стандартизувати обсяг призначуваних реабілітаційних заходів при складанні довгострокових індивідуальних програм відновлення здоров'я та якості життя хворих на ревматоїдний артрит в умовах стаціонару. Доведена необхідність в розробці й теоретичному обґрунтуванні концепції фізичної реабілітації хворих на ревматоїдний артрит в умовах стаціонарного лікування для покращення якості їх життя.

Ключові слова: ревматоїдний артрит, якість життя, лікувальна фізична культура, фізичні вправи.

Abstract

The article highlights the main links of the etiology and pathogenesis of rheumatoid arthritis. It describes the degree of activity of the rheumatoid process and the criteria for determining the functional capacity of a patient with rheumatoid arthritis. It was found that there are two factors characteristic of many patients suffering from rheumatoid arthritis: a sedentary lifestyle and a low level of physical fitness. The author points out that the severity of the condition of a patient with rheumatoid arthritis is accompanied by a pain syndrome, a deterioration of physical function, and a decrease in indicators of physical health, significantly affecting their quality of life. The article summarizes and provides contemporary views and trends regarding physical therapy of patients with rheumatoid arthritis. The paper deals with the main approaches to the appointment of physical therapy in the system of physical therapy of patients with rheumatoid arthritis at the inpatient stage of treatment. It is specified the use of physical exercises in rheumatoid arthritis of the following types of exercises: static, passive, active with assistance, active with resistance. It has been established that physical therapy is an integral component of successful treatment of rheumatoid arthritis. In particular, systematic physical exercises improve general well-being, reduce pain, increase mobility, contribute to the preservation of functional activity of joints, have a positive effect on the work of the

heart and general blood circulation, and therefore, improve the quality of life of patients. It was noted that dosed individually selected motor activity has a positive effect on the course of rheumatoid arthritis and the quality of life of patients. This happens as a result of the normalization, first of all, of the psychological and psychoemotional state of the patients. At the same time, attention is focused on the fact that currently there are no clear methodical developments regarding the rehabilitation examination and the selection of adequate means and methods. They are means and methods that will make it possible to standardize the amount of prescribed rehabilitation measures when drawing up long-term individual programs for restoring the health and quality of life of patients with rheumatoid arthritis in the conditions of inpatient treatment. It was proved the need for the development and theoretical justification of the concept of physical therapy of patients with rheumatoid arthritis in conditions of inpatient treatment to improve their quality of life.

Key words: rheumatoid arthritis, quality of life, therapeutic physical culture, physical exercises.

Introduction. Rheumatoid arthritis (RA) is one of the most common inflammatory diseases of the joints, the prevalence of which is 0.5 – 7% of the adult population, that increases annually. In Ukraine, there are about 123 thousand patients with rheumatoid arthritis, among whom about 57 thousand are people of working age who are under dispensary supervision. The relevance of rheumatoid arthritis is driven by its progressive course and the severity of musculoskeletal lesions [2, 7].

Disability can occur at an early stage of the disease and becomes a lifelong problem in 27% of patients with rheumatoid arthritis within the first three years after the disease's onset. This leads to significant disability, a decrease in the quality of life, and large economic costs [6].

Violations of motor activity and, accordingly, the mobility of patients with rheumatoid arthritis are among the main factors that limit healthy functioning and reduce the quality of their life. Arthritis makes many patients change their usual way of life and worry about their future, including the cost of hospital care, etc. [3].

The etiology of rheumatoid arthritis remains understudied to this day and hence treatment is challenging. The disease causes temporary and permanent disability and the likelihood of the primary disablement process, and thus, patients cannot live a full life [2, 9].

According to modern ideas, in addition to drug therapy, physical therapy, in particular therapeutic physical culture, is crucial for the recovery of the health of patients with rheumatoid arthritis. Restoration of movement function and prevention of its disorders in the affected joint and the surrounding tissues, usually pathologically altered (in muscles, tendons, etc.), are impossible without physical exercises [8, 12].

Although there are now many different means and methods of treating rheumatoid arthritis, the problem remains poorly addressed, and physical therapy in rehabilitation treatment is ignored, i.e., in an inpatient facility. Scientists have proved that rheumatoid arthritis degrades patients' quality of life, especially physical health indicators [4, 10].

The above emphasises the need to find new approaches to solve the problem concerned. Moreover, there is an urgent need for scientific substantiation and implementation of the concept of physical therapy for patients with rheumatoid arthritis to increase the effectiveness of the recovery process and improve their quality of life in the initial stages of the disease.

The purpose of the study is to substantiate the need for therapeutic physical culture during physical therapy of patients with rheumatoid arthritis to improve their quality of life.

Research results. Rheumatoid arthritis is a chronic systemic disease of the autoimmune connective tissue, which mainly affects small joints – arthritis develops, causing permanent joint deformation and disruption of their function.

There are three degrees of rheumatoid progression: I degree – minimal, II degree – medium, and III degree – high.

The patient's functional capacity is determined by the following criteria:

I degree – occupational capacity is preserved;
II degree – reduced occupational capacity;

The third degree is the lost ability to self-care [5, 7].

Physical therapy is an integral part of the successful treatment of rheumatoid arthritis. Treatment of such patients requires an interdisciplinary approach since patients have to deal with a

bunch of problems – from their participation in work life to psychosocial issues [3, 11].

Scientists have proved that a sedentary lifestyle and a low level of physical fitness are two factors characteristic of many patients suffering from rheumatoid arthritis. It was established that due to poor motor activity in the human body, natural neuro-reflex connections supported by heavy physical labor are disturbed, which leads to a disorder of the regulation of systems, metabolic disorders, and the progress of degenerative diseases [1, 4].

The severity of the state of a patient with rheumatoid arthritis is caused by progressive polyarthritis, including pain syndrome and deterioration of physical functions, significantly affecting patients' quality of life.

Researchers contend that carefully selected physical exercises and other means of physical therapy contribute to the suspension of further progression of the disease, restoration of the functions of the affected joints, and improvement of the physical and mental condition and life quality of patients [3, 5].

One of the most important components of restorative treatment of patients with rheumatoid arthritis is physical therapy.

Physical therapy for patients with rheumatoid arthritis is administered at all stages of the disease after jugulating the acute process. The primary means of physical therapy are physical exercises, which can be used in the form of three methods: individual, group, and independent.

Mandatory conditions for physical exercises:

- regularity, consistency, and graduation of classes;
- classes should be regular and systematic;
- exercises are performed smoothly, without jerks and sudden movements;
- zero muscle-strengthening exercises in the gymnastic complex;
- a gradual increase in activity through the number of repetitions and speed;
- prevention of an intense pace to avoid fatigue and overwork.

The amount of physical activity during therapeutic exercises depends on many different factors, but they should always correspond to the

patient's physical capabilities, age, health, and pathological process [1, 8].

Physical therapy provides for three main tasks:

1. prevention of joint deformities;
2. maintaining muscle strength;
3. improving the amplitude of movements in the joints.

The initial position for patients with rheumatoid arthritis can be lying, sitting, lying on their side, and lying on their stomach.

Contraindications to physical therapy in patients with rheumatoid arthritis are as follows:

- high (III degree) activity of the process with a pronounced pain syndrome and large exudative phenomena in the joints.
- severe lesions of internal organs with the sufficiency of their functions (pleurisy, pneumonia, nephritis, vasculitis, etc.)
- infections, fever, acute and subacute diseases of internal organs, heart failure of II-III classes, etc. 11 (9%)

Most authors recommend using physical exercises that increase the amplitude of movements and muscle strength, as well as aerobic exercises, taking into account the patient's personal capabilities and providing adequate rest. The feasibility of performing physical exercises that improve muscle strength is because muscle weakness is observed in about 80% of patients with rheumatoid arthritis. Another reason may also be poor motor activity. In the case of complete immobilization, for example, when prescribing bed rest in the first week of the patient's hospital stay, the level of muscle strength may decrease with an intensity of about 3% per day [4, 10].

The literature thoroughly describes the application of physical exercises in rheumatoid arthritis of the following types: static, passive, assisted active, and active with resistance [1].

Static exercises are applicable in the acute stage of arthritis when the patient lies in bed, and their purpose is to prevent the development of inactive muscle atrophy. They are most often relevant to strengthen the sciatic muscles and extensors of the knee. The exercises should be performed 6-12 times a day.

Passive exercises are prescribed in the acute stage of the disease, and their purpose is to preserve the range of motions in the affected joint. They are performed with the help of a physical therapy instructor or the patient's relatives. Passive exercises should be performed until the maximum amplitude of movement in all axes of the joint motion is reached – several times a day.

Active assisted exercises are necessary in cases where the patient cannot perform them himself. They are a transition to performing active exercises without assistance.

Active exercises without additional assistance are prescribed when the amplitude of joint movements and muscle strength is sufficient. Active resistance exercises are prescribed when the amplitude of movements has improved [8].

Conducting physical therapy for patients with rheumatoid arthritis is recommended after taking analgesics and muscle relaxants, which reduce morning stiffness and pain.

Physical exercises are usually performed without objects and with objects: sticks, jump ropes, pins, balls, and cones. In addition, benches and wall bars are used.

Recommended exercises for wrists and fingers

Small joints in connective tissue damage gradually deform and lose motor ability. Performing the following exercises for rheumatoid arthritis allows one to maintain wrist mobility:

- at rest, you need to keep your fingers straight;
- when writing, use a special cone-shaped handle;
- perform exercises with a rubber ring (expander);
- slowly carry out rotational and flexion-extension movements;
- finger tapping and moving along the roller (gymnastic stick);
- alternately twist the straightened palms with the back and back side;
- press the palms to the table, raise and lower the fingers;
- gradually bend the palms into fists, starting with the phalanges;

- touch the thumb with the other fingers in turn [7, 11].

Many scientists note that physical exercises in rheumatoid arthritis improve overall well-being, reduce pain, increase mobility, contribute to the preservation of functional activity of the joints, positively affect cardiac function and systemic circulation, and therefore improve patients' quality of life [6, 10].

According to research findings, dosed and individually selected motor activity has a positive effect on the course of rheumatoid arthritis and the quality of life of patients due to, first of all, the normalization of the psychological and psycho-emotional state of patients [3].

Thus, physical therapy in a comprehensive rehabilitation process produces positive dynamics in treating patients with rheumatoid arthritis and improves the rehabilitation prognosis of patients and their quality of life.

Conclusions.

Disorders of motor activity and, accordingly, the mobility of patients with rheumatoid arthritis are among the main factors that limit normal human life and blight it.

The means of therapeutic physical culture, which are widely used in medical practice, remain one of the most important in conducting physical therapy for patients with rheumatoid arthritis.

At the same time, there are no well-formulated methodological developments on rehabilitation examination and selection of adequate means and methods that will allow standardizing the amount of prescribed rehabilitation measures in drawing up long-term individual programs for restoring the health and quality of life of patients with rheumatoid arthritis amidst the hospital environment.

Prospects for further research involve the scientific substantiation and implementation of the concept of physical therapy for patients with rheumatoid arthritis to restore their physical condition and quality of life during their hospital stay.

Bibliography:

1. Дорошенко Т.В., Ярцева С.В., Линниченко Е.Р. Лікувальна фізкультура в комплексній терапії хворих на ревматоїдний артрит. Український медичний альманах. 2008, том 11. 6 (додаток). 28–29.
2. Коваленко В.М., Шуба М.М., Шолохова Л.Б. Ревматоїдний артрит. Діагностика та лікування. За ред. В.М. Коваленко. К.: Моріон, 2001. 272.
3. Коритко З.І., Поник Р.М., Купрінченко О.В. Вплив засобів фізичної реабілітації на якість життя хворих при ревматоїдному артриті. Експериментальна та клінічна фізіологія і біохімія. 2019, 4(88): 45-52.
4. Кошукова Г.М. Патогенетичне обґрунтування застосування лікувальних фізичних чинників у хворих на ревматоїдний артрит: автореф. дис. докт. мед. наук: 14.01.33. Ялта, 2010. 42.
5. Мятяга Е.Н., Мятяга Д.С., Гончарук Н.В. Лечебная физическая культура при ревматоидном артрите на стационарном этапе. Слобожанський науково-спортивний вісник. 2012. 2. 128–131.
6. Нейко Є.М., Яцишин Р.І., Штефюк О.В. Ревматоїдний артрит: сучасний погляд на проблему. Український ревматологічний журнал. 2009. 2 (36). 35–39.
7. Ногас А.О. Ревматоїдний артрит – сучасний стан проблеми. Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві: зб. наук. пр. Східноєвропейського нац. ун-ту ім. Лесі Українки. Луцьк, 2013. 1 (21). 298–302.
8. Ногас А.О., Карпінський А.Ю. Рухова активність у фізичній реабілітації хворих на ревматоїдний артрит. Молодіжний науковий вісник Східноєвропейського національного університету імені Лесі Українки. Фізичне виховання і спорт. Луцьк: Східноєвроп. нац. ун-т ім. Лесі Українки, 2017. 1 (37). 130-135.
9. Ногас А.О., Карпінський А.Ю. Застосування лікувального масажу в комплексній фізичній терапії хворих на ревматоїдний артрит. Вісник Прикарпатського університету. Фізична культура. Івано-Франківськ, 2017. 27. 209-214.
10. Полулях М.В., Герасименко С.І., Рой І.В., Заморський Т.В., Лазарев І.А., Черняк В.П. Програма фізичної реабілітації хворих на ревматоїдний артрит при ендопротезуванні колінного суглоба. Ортопе-

References

1. Doroshenko T.V., Yartseva S.V., Lynnychenko E.R. (2008). Likuvalna fizkultura v kompleksnii terapii khvorykh na revmatoidnyi artryt. [Physical therapy in complex therapy of patients with rheumatoid arthritis]. Ukrainskyi medychnyi almanakh. Tom 11. 6 (dodatok). 28–29. [in Ukrainian].
2. Kovalenko V.M., Shuba M.M., Sholokhova L.B. (2001). Revmatoidnyi artryt. Diahnostyka ta likuvannia. [Rheumatoid arthritis. Diagnosis and treatment]. K.: Morion. 272. [in Ukrainian].
3. Korytko Z.I., Ponyk R.M., Kuprinenko O.V. (2019). Vplyv zasobiv fizychnoi reabilitatsii na yakist zhyttia khvorykh pry revmatoidnomu artryti. [The effect of physical rehabilitation on the quality of life of patients with rheumatoid arthritis]. Eksperymentalna ta klinichna fiziolohiia i biokhimiia. 4(88): 45-52. [in Ukrainian].
4. Koshukova H.M. (2010). Patohenetychne obgruntuvannia zastosuvannia likuvalnykh fizychnykh chynnykiv u khvorykh na revmatoidnyi artryt: avtoref. dys. dokt. med. nauk: 14.01.33. [Pathogenetic justification of the use of therapeutic physical factors in patients with rheumatoid arthritis: autoref. thesis dr. honey. Sciences: 14.01.33.]. Yalta. 42. [in Ukrainian].
5. Miatyha E.N., Miatyha D.S., Honcharuk N.V. (2012). Lechebnaia fizycheskaia kultura pry revmatoydnom artryte na statsyonarnom etape. [Therapeutic physical culture in rheumatoid arthritis at the stationary stage]. Slobozhanskyi naukovo-sportyvnyi visnyk. 2. 128–131. [in Ukrainian].
6. Neiko Ye.M., Yatsyshyn R.I., Shtefiuk O.V. (2009). Revmatoidnyi artryt: suchasnyi pohliad na problemu. [Rheumatoid arthritis: a modern view of the problem]. Ukrainskyi revmatolohichniy zhurnal. 2 (36). 35–39. [in Ukrainian].
7. Nogas A.O. (2013). Revmatoidnyi artryt – suchasnyi stan problemy. [Rheumatoid arthritis is a modern state of the problem]. Fizychnе vykhovannia, sport i kultura zdorovia u suchasnomu suspilstvi: zb. nauk. pr. Skhidnoievropeiskoho nats. un-tu im. Lesi Ukrainky. Lutsk. 1 (21). 298–302. [in Ukrainian].
8. Nogas A.O., Karpinskyi A.Iu. (2017). Rukhova aktyvnist u fizychnii reabilitatsii khvorykh na revmatoidnyi artryt. [Movement activist in physical rehabilitation of patients with rheumatoid arthritis]. Molodizhnyi naukovyi visnyk Skhidnoievropeiskoho natsionalnoho

дія, травматологія, протезування. 2007. 3. 106–110.

11. Grygus I., Nogas A. Recourses use modern aspects of physical rehabilitation of patients with rheumatoid arthritis. Nowoczesne aspekty rehabilitacji pacjentów z reumatoidalnym zapaleniem stawów. Badania naukowe w rehabilitacji. Redaktor: Teresa Pop. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego, 2014. 80-87.

12. Nogas A., Grygus I., Prymachok L. Application physiotherapy in rehabilitation rheumatoid arthritis. Journal of Education, Health and Sport. 2016; 6(11):184–194.

universytetu imeni Lesi Ukrainky. Fizychno vykhovannia i sport. Lutsk: Skhidnoievrop. nats. un-t im. Lesi Ukrainky. 1 (37). 130-135. [in Ukrainian].

9. Nogas A.O., Karpinskyi A.Iu. Zastosuvannia likuvalnoho masazhu v kompleksnii fizychnii terapii khvorykh na revmatoidnyi artryt. [Application of therapeutic massage in complex physical therapy of patients with rheumatoid arthritis]. Visnyk Prykarpatskoho universytetu. Fizychna kultura. Ivano-Frankivsk, 2017. 27. 209-214. [in Ukrainian].

10. Poluliakh M.V., Herasymenko S.I., Roi I.V., Zamorskyi T.V., Lazarev I.A., Cherniak V.P. (2007). Prohrama fizychnoi reabilitatsii khvorykh na revmatoidnyi artryt pry endoprotezuvanni kolynnoho suhloba. [Program of physical rehabilitation of patients with rheumatoid arthritis with knee arthroplasty]. Ortopediia, travmatolohiia, protezuvannia. 3. 106–110. [in Ukrainian].

11. Grygus I., Nogas A. (2014). Recourses use modern aspects of physical rehabilitation of patients with rheumatoid arthritis. Nowoczesne aspekty rehabilitacji pacjentów z reumatoidalnym zapaleniem stawów. Badania naukowe w rehabilitacji. Redaktor: Teresa Pop. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego. 80-87. [in Ukrainian].

12. Nogas A., Grygus I., Prymachok L. Application physiotherapy in rehabilitation rheumatoid arthritis. Journal of Education, Health and Sport. 2016; 6(11):184–194. [in Ukrainian].