

GRYBOŚ, Kacper, LEWANDOWSKI, Mikołaj, KWIATKOWSKA, Zofia, KURKIEWICZ, Wojciech, WOŹNIAK, Oskar, MIKULSKA, Jowita, WĄSIK, Joanna, SEPIOŁO, Weronika and KIELBRATOWSKA, Julia. Additional Treatment Methods for Rheumatoid Arthritis Symptoms. Literature review. Quality in Sport. 2025;41:60286. eISSN 2450-3118.

<https://doi.org/10.12775/QS.2025.41.60286>

<https://apcz.umk.pl/QS/article/view/60286>

The journal has been awarded 20 points in the parametric evaluation by the Ministry of Higher Education and Science of Poland. This is according to the Annex to the announcement of the Minister of Higher Education and Science dated 05.01.2024, No. 32553. The journal has a Unique Identifier: 201398. Scientific disciplines assigned: Economics and Finance (Field of Social Sciences); Management and Quality Sciences (Field of Social Sciences).

Punkty Ministerialne z 2019 - aktualny rok 20 punktów. Załącznik do komunikatu Ministra Szkolnictwa Wyższego i Nauki z dnia 05.01.2024 Lp. 32553. Posiada Unikatowy Identyfikator Czasopisma: 201398. Przypisane dyscypliny naukowe: Ekonomia i finanse (Dziedzina nauk społecznych); Nauki o zarządzaniu i jakości (Dziedzina nauk społecznych). © The Authors 2025.

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The authors declare that there is no conflict of interest regarding the publication of this paper.

Received: 13.04.2025. Revised: 30.04.2025. Accepted: 12.05.2025. Published: 12.05.2025.

Additional Treatment Methods for Rheumatoid Arthritis Symptoms. Literature review

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Abstract

Rheumatoid arthritis (RA) is a chronic inflammatory disease that significantly impacts patients' mobility and quality of life. While pharmacotherapy remains the primary approach to symptom management, increasing attention is being given to non-pharmacological treatment methods. This literature review explores alternative therapeutic interventions for RA, including anti-inflammatory diets, physical exercise, education, curcumin supplementation, psychotherapy, stem cell therapy, cannabinoids, cryotherapy, yoga, meditation, and mindfulness. These methods target different aspects of RA pathology, such as inflammation modulation, pain reduction, and psychological well-being. Studies suggest that dietary modifications, particularly the Mediterranean diet, may help reduce inflammation and improve joint function. Regular physical activity has demonstrated benefits in maintaining joint mobility and reducing pain perception. Psychological interventions, including cognitive-behavioral therapy, enhance patients' coping mechanisms, reducing stress-related inflammation and depressive symptoms. Additionally, emerging treatments like stem cell therapy and cannabinoids offer promising but still experimental alternatives. While these interventions cannot replace pharmacotherapy, they can serve as valuable adjuncts, potentially improving clinical outcomes and reducing reliance on long-term medication. Further research is needed to establish standardized guidelines for integrating these approaches into RA

management strategies. This review highlights the necessity of a comprehensive, multidisciplinary approach to RA treatment that includes both conventional and alternative therapies.

Keywords: Rheumatoid arthritis, Chronic disease, Mediterranean Diet, Tumeric, Curcumin, Physical Exercise

Introduction

Rheumatoid arthritis (RA) is a chronic inflammatory disease that affects the joints and surrounding tissues, leading to significant pain and mobility limitations in patients [1]. Traditional treatments for RA primarily focus on pharmacotherapy, aimed at alleviating symptoms and controlling the inflammatory process. However, due to growing interest in non-pharmacological methods and the need for a comprehensive approach to symptoms management, alternative forms of treatment are gaining importance.

Non-pharmacological methods, such as diet modifications, physical activity, education, psychotherapy, cryotherapy, yoga and meditation offer diverse approaches to pain management and improving the quality of life for patients with RA [2]. These methods work by stimulating the body's natural mechanisms, which can lead to pain reduction, improved mobility, and overall well-being. It is important to note that these therapies can complement pharmacological treatments, potentially leading to better clinical outcomes and minimizing the side effects associated with long-term medication use [3].

Given the chronic nature of RA and its impact on the psychological and emotional aspects of patients' lives, alternative treatment methods are especially relevant. In recent years,

numerous clinical studies and systematic reviews have documented the positive effects of non-pharmacological interventions, providing a basis for their broader inclusion in RA treatment standards. This article presents selected alternative symptoms management methods for RA, their mechanisms of action, and available scientific evidence supporting their effectiveness. The aim is to highlight the potential of integrating non-pharmacological approaches in the comprehensive management of this condition.

Methods

Anti-inflammatory Diet

An anti-inflammatory diet, rich in antioxidants and omega-3 fatty acids, can support RA treatment by reducing inflammation. Consuming foods such as fish, nuts, fruits, and vegetables positively affects joint health. Avoiding highly processed foods and those rich in trans fats is also significant, as they may exacerbate disease symptoms. An appropriate diet not only alleviates symptoms but also improves the overall health of the patient. Studies have demonstrated the beneficial effects of an anti-inflammatory diet on pain in RA patients [4].

Mediterranean Diet

The Mediterranean diet, based on fresh vegetables, fruits, fish, and olive oil, has been shown to have a beneficial effect on joint health in RA patients [1,5]. The high content of antioxidants and omega-3 fatty acids in this diet may support the reduction of inflammation and improve overall health. Regular consumption of Mediterranean diet products also contributes to better weight control, which is important in reducing joint strain. It has been demonstrated that the Mediterranean diet positively influences overall joint function and contributes to a decrease in DAS28 scores [6]. An additional advantage of the Mediterranean diet is its positive effect on reducing cardiovascular risk, which is elevated in RA patients. The Mediterranean diet appears to have a greater impact on pain than vegan or vegetarian diets. However, since gluten sensitivity is more common in RA patients and the Mediterranean diet contains significant amounts of whole grains, caution is needed when using this diet [4].

Physical Exercise

Regular physical activity plays a key role in reducing pain and improving joint function in RA patients. Exercises such as aerobic training or resistance training can help increase range of motion, strengthen muscles around the joints, reduce pain, and delay disability onset [5,7]. Furthermore, physical activity can reduce morning stiffness, one of the main symptoms of RA. It is important that exercises are tailored to the individual's capabilities to avoid excessive strain that could lead to injury and worsen pain. Physical exercise promotes muscle mass gain, which reduces the effort required for physical activities, thus improving patient well-being and providing a sense of better disease control [8,9]. Additionally, exercises enhance antioxidant processes, contributing to the reduction of oxidative stress and inflammatory processes, and have a positive effect on inflammatory markers such as CRP, TNF, and IL-6 [10,11]. Regular exercise also positively impacts mental well-being by reducing symptoms of depression and anxiety. An important aspect of physical activity is its positive effect on the cardiovascular system and reducing the cardiovascular risk, which is elevated in RA patients. For these reasons, physical activity should be recommended to every RA patient, as it has been repeatedly proven that any physical activity is better than none [5].

Education

Patient education about RA and coping methods is a crucial component of effective treatment. Raising awareness about the nature of the disease, available treatment methods, and the impact of lifestyle on disease progression enables patients to better manage their condition, improve well-being, and enhance their health status [12]. Educational programs should also include stress management techniques, which can influence pain perception. Knowledge about the disease can increase patient engagement in the treatment process and improve their motivation to follow medical recommendations [13]. Supporting patients in education helps develop more effective health management strategies and create long-term therapeutic plans adjusted to the patient's abilities. It has been shown that educational programs can help patients manage their emotions and implement lifestyle changes, leading to a reduction in fatigue associated with RA [8]. It is also essential that the information provided to the patient is tailored to their knowledge and educational level.

Turmeric and Curcumin

Turmeric, particularly its active compound curcumin, exhibits strong anti-inflammatory properties, making it an interesting addition to the diet of RA patients. Research suggests that curcumin can inhibit the production and activity of pro-inflammatory factors and modulate the immune response, which may delay the onset of disease flare-ups [14]. Through its antioxidant activity, curcumin inhibits chondrocyte apoptosis, protecting articular cartilage and supporting tissue regeneration. Its use in supplements or as a spice in meals can help reduce pain and stiffness in joints and improve joint function [15]. Studies have shown that patients using curcumin have lower DAS28, CRP, and RF values [14,15]. Combining turmeric with methotrexate reduces symptom severity and bone destruction. Despite promising research results, further studies are needed to assess its long-term effects on RA patients.

Mental Health and Psychotherapy

Mental health is crucial for RA patients, as chronic pain and limitations in daily functioning can lead to depressive and anxious states [16]. Depression is observed in RA patients up to twice as often as in the general population, which is why depression screening should be performed routinely. Additionally, RA patients with depression present elevated levels of IL-1, IL-6, CRP, and TNF-alpha [17]. Psychological support, group therapy, and relaxation techniques such as meditation can significantly improve the quality of life of patients. Education on the impact of mental health on the RA treatment process should be an integral part of patient care. Psychotherapy can play an important role in treating RA patients, enabling them to develop effective coping strategies for chronic pain and stressful situations, which leads to improved well-being and overall psychophysical health [18,19]. Cognitive-behavioral therapy (CBT) can help change negative thought patterns and manage the disease, leading to an improved quality of life [18]. Studies have also shown that CBT allows patients to better control their emotions, which reduces feelings of helplessness and fatigue associated with RA [8]. Therapy can also increase patients' resilience to stress, which is important in the context of chronic disease.

Stem Cells

Stem cell therapy is becoming a promising area in RA treatment, particularly in the context of regenerating damaged tissues. Studies indicate that stem cells can stimulate joint tissue repair, reduce inflammation, and modulate the immune response by affecting various immune cells,

such as macrophages, NK cells, B and T lymphocytes [20]. Research has shown that using stem cell therapy in combination with disease-modifying antirheumatic drugs (DMARDs) results in lower VAS and DAS28 scores compared to using DMARDs alone [21]. The potential benefits of stem cells in RA could revolutionize the approach to treating this chronic disease and become a new therapeutic option for patients with treatment-resistant forms. However, further studies are necessary to determine the optimal application methods and long-term therapeutic effects.

Cannabinoids

Cannabinoids, such as THC and CBD, are increasingly being studied for their potential therapeutic properties in treating pain associated with RA. Research indicates that cannabinoids may have anti-inflammatory and analgesic effects, which could help alleviate disease symptoms [22]. The anti-inflammatory action of cannabinoids is associated with inhibiting the production of pro-inflammatory cytokines and nitric oxide, as well as inhibiting fibroblast proliferation in the synovial membrane [23]. However, it is important to emphasize the need for further research to determine the optimal dosages and methods of cannabinoid use. The use of these substances in RA therapy could open new possibilities for managing chronic pain.

Cryotherapy

Cryotherapy, involving the use of low temperatures to reduce pain and inflammation, is applied in RA treatment. Cold therapy works by causing vasoconstriction, which reduces blood flow in the inflamed area, thereby decreasing swelling and pain. Cryotherapy can be used in the form of compresses or more advanced methods, such as whole-body cryotherapy, which allow whole-body exposure to cold. Studies have shown that whole-body cryotherapy in RA patients lowers TNF-alpha levels and pro-inflammatory cytokines, reduces pain and morning stiffness, and improves overall joint function [24, 25]. Regular cryotherapy sessions can reduce pain, improve joint mobility, and decrease stiffness, positively affecting the function of RA patients [26].

Yoga

Yoga, through physical exercises and breathing techniques, contributes to pain reduction, improved range of motion, and decreased joint stiffness [27,28]. Regular yoga practice can also promote better mental health in patients by reducing symptoms of depression and anxiety, which are common among individuals with rheumatoid arthritis [29]. This, in the context of chronic pain, can lead to an improvement in well-being and quality of life. A positive effect of yoga has been demonstrated on disease activity indicators such as DAS28, as well as a reduction in CRP levels and pro-inflammatory cytokines [30,31].

Meditation and Mindfulness

Meditation, particularly mindfulness techniques, has a beneficial effect on stress reduction and pain perception. Additionally, the use of mindfulness techniques shortens the duration of morning stiffness and reduces joint tenderness [27]. These practices help manage emotions and have a positive impact on symptoms of depression and anxiety [32]. Meditation and mindfulness techniques also contribute to a decrease in inflammatory markers, although to a lesser extent than yoga.

Discussion

A diverse and multifaceted therapeutic approach is crucial in pain management for rheumatoid arthritis (RA). Non-pharmacological methods, such as physical exercise, occupational therapy, education, and dietary changes, should always be implemented as complements to pharmacotherapy. They can assist standard treatment in alleviating pain and improving quality of life, and their use is safe with minimal risk of adverse effects.

Non-pharmacological interventions may also have a positive impact on patients' mental health, which is often threatened by chronic pain. Education about RA and coping skills improves patient motivation for active participation in treatment. Non-pharmacological methods should form the foundation of RA treatment, and their integration with pharmacotherapy can lead to a more effective and comprehensive approach to patient health.

Conclusion

Rheumatoid arthritis treatment is based on both pharmacological and non-pharmacological methods. Although pharmacotherapy plays a central role in controlling the inflammatory process and reducing pain, the incorporation of alternative therapies is essential for improving overall well-being and the quality of life of RA patients. Non-pharmacological approaches, such as physical exercise, cognitive-behavioral therapy, diet, yoga, meditation and stem cell therapy, provide patients with complementary tools to manage their condition effectively. When combined with pharmacological treatment, they contribute to better clinical outcomes, reduce the negative effects of the disease, and increase patient satisfaction with their treatment regimen. Further research is needed to explore the full potential of these alternative therapies and establish their place in clinical practice.

Disclosure

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Receiving funding: no specific funding.

All authors have read and agreed with the published version of the manuscript.

Funding Statement

This research received no external funding.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

Not applicable.

Acknowledgments

Not applicable.

Conflict of interest Statement

The authors deny any conflict of interest.

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