World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-43, February 2025
ISSN: 2749-3644

RHEUMATOID ARTHRITIS (RA) AND ITS IMPACT ON KIDNEYS

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Article history:

Received: January 20th 2025
Accepted: February 14th 2025

Abstract:

Rheumatoid arthritis (RA) is one of the most common autoimmune diseases globally, significantly affecting patients' quality of life. This chronic inflammatory condition primarily affects the joints but can also impact internal organs, including the kidneys. The aim of this article is to analyze the impact of rheumatoid arthritis on kidney function, explore the mechanisms of disease development, diagnostic methods, complications, and treatment strategies. The article discusses the effect of RA on the kidneys, including complications such as amyloidosis, and the side effects of medications used to control inflammation that can affect kidney function. The importance of early diagnosis and timely treatment, as well as the need for regular monitoring of kidney health, is emphasized. Diagnostic methods such as microalbuminuria and treatment approaches aimed at preserving kidney function are also reviewed. In conclusion, effective management of RA requires a comprehensive approach, involving medication, rehabilitation, and psychological support for patients.

Keywords: rheumatoid arthritis, kidney failure, amyloidosis, microalbuminuria, diagnosis, treatment, inflammation, autoimmune disease.

INTRODUCTION: Rheumatoid arthritis (RA) is one of the most common autoimmune diseases affecting people worldwide [1]. This disease is characterized by chronic inflammation that primarily affects peripheral joints but can also involve various internal organs, making diagnosis and treatment more complex. RA leads to joint erosion and destruction, which may result in physical limitations for the patient [2].

The primary aim of this article is to provide a comprehensive analysis of rheumatoid arthritis (RA) and its impact on the kidneys, examining the mechanisms of disease progression, diagnostic methods, complications, and treatment approaches. The article highlights the effect of RA on renal function and emphasizes the importance of considering this effect in disease management and treatment.

Materials and Methods: In conducting this research and writing this article, we utilized various scientific literature and electronic sources, including scientific articles, books, journals, reviews, and official documents. Data was gathered from databases such as PubMed, Web of Science, Google Scholar, as well as from periodicals in the field of neuroimmunology. To ensure the accuracy and reliability of the presented information, we used up-to-date and verified data.

DISCUSSION: According to statistics, rheumatoid arthritis affects approximately 1% of the population, with women suffering three times more than men. This underscores the importance of early diagnosis and timely treatment. Significant progress has been made in the treatment of RA today, with the development of new drugs and biological agents that help control symptoms and slow disease progression. However, despite having effective methods, many patients continue to experience long periods of exacerbation, which can negatively impact their quality of life [3, 4].

Clinical studies show that RA can cause not only physical but also psychological issues [5]. Patients often experience depression and anxiety, further exacerbating their condition. Additionally, the disease can hinder employment opportunities and participation in social life, leading to social disability [6].

Therefore, alongside medical treatment, it is crucial to pay attention to providing psychological support to patients. Quality care can significantly improve overall health, but this requires a comprehensive approach, including educating patients about their condition, assistance from healthcare professionals, and support from loved ones. Early intervention, regular check-ups, and individually tailored treatment strategies can significantly alter the prognosis of the disease and improve the quality of life for patients with rheumatoid arthritis.

Clinical Presentation of Rheumatoid Arthritis:

Rheumatoid arthritis is an autoimmune disease that develops when the body's immune system attacks its own tissues [7]. One of the main symptoms of the disease is the development of chronic inflammation in the joints, especially the small joints. Initially, the

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patient experiences swelling, pain, and redness in the affected area. Over time, this process can lead to irreversible changes in the structure of the joints, significantly reducing the patient's quality of life [8-10].

As the disease progresses, the patient's activity decreases. Movement becomes more difficult, pain intensifies, and joints deform. This, in turn, leads to the loss of excessive labor capacity. Patients often encounter difficulties performing daily activities [11]. Their work ability declines, which can lead to economic problems. However, rheumatoid arthritis does not only affect the joints.

The disease can also affect other organs, such as the heart, lungs, and kidneys. This condition negatively impacts the patient's overall health. Moreover, mental health conditions such as depression and anxiety are common among patients with rheumatoid arthritis. They often feel isolated and may withdraw from social life due to the limitations caused by the disease [12].

Therefore, early detection and treatment of rheumatoid arthritis are crucial. Modern medicine offers a variety of drugs that help slow the progression of the disease. Immunosuppressive drugs, biological agents, and anti-inflammatory medications help reduce the symptoms and improve the patient's quality of life. As a result, patients can continue living a more active and fulfilling life.

Rehabilitation programs, physical exercises, and adopting a healthy lifestyle are also important. These not only help preserve joint function but also improve the patient's overall health. Support groups and psychological help can also be beneficial for patients with rheumatoid arthritis. Sharing their experiences can help them feel less isolated. Thus, rheumatoid arthritis is a complex and multifaceted disease, where physical, mental, and social aspects are equally important.

Rheumatoid Arthritis and Kidney Damage

Rheumatoid arthritis (RA) is a chronic inflammatory disease that negatively impacts various systems of the body, including the kidneys [13]. The kidneys play a crucial role in filtering blood and maintaining homeostasis. However, in RA, they can become damaged, which significantly worsens the patient's overall condition and prognosis [14, 15].

Research shows that kidney changes in rheumatoid arthritis can vary from 36% to 73%, depending on the diagnostic methods used. These changes often manifest as amyloidosis, a secondary condition resulting from the accumulation of abnormal proteins. Moreover, the side effects of drugs used to control inflammation and pain may also lead to kidney dysfunction [16].

It is important to note that even if kidney changes are not immediately apparent, they may worsen over time. This could lead to more severe kidney dysfunction, such as chronic kidney failure. Regular monitoring of kidney status in patients with RA is crucial [17]. Early detection of these changes and taking preventive measures to stop their progression can be highly beneficial.

Modern treatment approaches for rheumatoid arthritis involve the use of immunosuppressants and biological agents. These medications help control inflammation and slow disease progression. However, their use requires careful monitoring by specialists to minimize the risk of toxic effects on the kidneys [18-21].

Thus, early diagnosis and proper treatment are key factors in managing the health of patients with rheumatoid arthritis and preventing kidney damage.

Microalbuminuria (MAU) stands out as one of the early signs of kidney dysfunction [22]. This condition is mainly associated with an increase in the level of microalbumin in the blood. Diabetic nephropathy, a kidney disease related to diabetes, is the most well-studied form of microalbuminuria. However, the issue of microalbuminuria in relation to rheumatoid arthritis (RA) is less explored. This problem can arise not only in patients with RA but also when other chronic diseases are present [23].

Microalbuminuria is one of the early signs of kidney damage. It often leads to significant changes in the patient's health and the progression of other diseases. Early detection and treatment are crucial for preventing kidney sclerosis and chronic kidney failure. This, in turn, helps improve the overall quality of life and preserve health [24].

There are several laboratory tests available to detect MAU. Through these tests, patients can measure their microalbumin levels. If the results are high, continuous monitoring and treatment are necessary. Typically, the treatment process includes lifestyle changes, dietary improvements, and the use of medications [25].

The detection and treatment of microalbuminuria are also vital for the overall health of patients. Early identification of this condition helps prevent serious problems that may arise in the future. Therefore, doctors should pay special attention to the process of detecting and treating MAU, ensuring patients are informed and encouraged to take care of their health.

Rheumatoid Arthritis and Its Severity

Rheumatoid arthritis (RA) severity depends on several factors, and identifying these factors is crucial for managing the disease effectively. The way the disease

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progresses in the joints, the degree of inflammation, and the impact on organs outside the joints, such as the heart, kidney, and lungs, are key factors that determine the severity of the disease [26, 27].

In 2005, the United States developed a panel of indicators to assess the severity of rheumatoid arthritis, which helps determine the disease's intensity [28]. These indicators are based on 28 essential criteria. Among these criteria, markers indicating the level of inflammation in the joints, such as swelling, pain, and range of motion, are significant. Additionally, biomarkers in blood tests, such as C-reactive protein and erythrocyte sedimentation rate, are used to assess inflammation [29].

The severity of the disease can show signs not only in the joints but also in other body systems. Changes in the heart and kidney systems, such as heart attacks or kidney failure, can increase the severity of rheumatoid arthritis. Therefore, patients need to be continuously monitored [30].

Early detection and treatment of rheumatoid arthritis help slow disease progression [31]. Modern therapeutic methods, such as biological agents and metabolic drugs, are widely used to manage the disease. Tailoring treatment to each patient's individual condition, proper diagnosis, and treatment strategies can reduce the severity of the disease.

As a result, the severity of rheumatoid arthritis depends on multiple factors, and identifying these factors plays a crucial role in the treatment process. Effective communication between patients and doctors, developing necessary strategies to manage the disease, and applying them in practice help improve patients' quality of life.

Rheumatoid Arthritis and Workability

The treatment strategy for rheumatoid arthritis is very important, as the disease's progression can significantly reduce the patient's quality of life. Modern treatments, medications, and rehabilitation programs aim to improve the overall health of patients. However, an individual approach is necessary for each patient, as the disease's symptoms and long-term effects vary for each person [32].

Psychological support plays a crucial role in combating illness. Patients often experience stress, depression, and anxiety. Therefore, psychologists and social workers play a key role in assisting patients and improving their mental well-being [33]. Addressing social problems and creating primary support networks within the community can help patients avoid disability.

Additionally, the social and economic consequences of the disease are serious. Reduced workability, job losses, and increasing healthcare costs pose a threat to society. Countries need to take these issues into account when developing national policies, as continuous rehabilitation and social programs can create new hope and opportunities for patients.

CONCLUSION

Rheumatoid arthritis (RA) can affect the kidneys in various ways. Autoimmune processes can lead to inflammation of the kidney blood vessels and damage to tissues, which decreases their function. These conditions typically worsen the patient's overall well-being and impact other organs. Therefore, it is important for RA patients to regularly monitor their kidney function.

Early diagnosis and high-quality treatment approaches are essential for preventing kidney damage. Patients must undergo regular laboratory tests and have ongoing discussions with their doctors. This helps slow or halt the progression of RA and ensures patients enjoy a high quality of life.

For treatment to be more effective, it is necessary to consider individual needs and clinical conditions. This systemic approach is vital for determining the severity of the disease and optimizing treatment methods. Supporting and educating patients to reduce social disability plays a critical role in improving overall health.

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Volume-43, February 2025
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