The American Journal of Medical Sciences and Pharmaceutical Research
(ISSN – 2689-1026)
Published: August 31, 2021 | **Pages:** 21-25
Doi: https://doi.org/10.37547/TAJMSPR/Volume03Issue08-05

IMPACT FACTOR
2021: 5. 64
OCLC - 1121105510

Journal Website: https://theamericanjournals.com/index.php/TAJMSPR

Changes In The Functional Status Of The Kidneys In Patients With Rheumatoid Arthritis

Juraboeva Gulhayo Bakhtiyor Qizi
Rheumatologist, Fergana Central Multidisciplinary Polyclinic, Fergana, Uzbekistan

ABSTRACT

This article describes functional renal failure and related factors in patients with rheumatoid arthritis, the complications of rheumatoid arthritis outside the joints, and methods for assessing renal function.

KEYWORDS

Rheumatoid arthritis, renal failure, complications of multiple organ damage, functional state of the kidneys, cystatin-C protein, nephropathy.

INTRODUCTION

After gaining independence of the Republic of Uzbekistan, much attention was paid to the development of the healthcare system, new directions were opened for "transforming higher educational institutions, training managers based on advanced foreign experience and specialists working with high-tech equipment, complex diagnostic diseases and high-tech practices" [1]. A huge number of decrees and decrees were adopted, aimed at improving the quality of medical care, and several industry studies were created.In particular, in world medicine, M.Boers, M.Haroon, N.V.Demidova, I.A.Guseva, D.E.Karateev, Akiro Onishi, Osamu Saiki and other scientists are scientific and theoretical sources aimed at functional kidney damage in rheumatoid arthritis. However, in the field of medicine in the country, there are insufficiently developed approaches to early detection of chronic kidney disease and renal pathology in rheumatoid arthritis and risk assessment of its development in rheumatoid arthritis, large-scale epidemiological studies on related risk factors. Therefore, in our medicine today, the assessment of functional renal failure and

The American Journal of Medical Sciences and Pharmaceutical Research
(ISSN – 2689-1026)
Published: August 31, 2021 | **Pages:** 21-25
Doi: https://doi.org/10.37547/TAJMSPR/Volume03Issue08-05

IMPACT FACTOR
2021: 5. 64
OCLC - 1121105510

related factors in patients with rheumatoid arthritis is important for clinical medical practice.

MATERIALS AND METHODS

Rheumatoid arthritis (RA) is a chronic inflammatory disease of the connective tissue of unknown aetiology, accompanied by symmetrical damage to small and large joints, as well as damage to various organs and systems, as well as an autoimmune disease leading to a decrease in patient life expectancy and disability [6].

Rheumatoid arthritis is one of the most common diseases in Uzbekistan, and in recent years there has been an increase in the number of patients of different ages and gender, as well as damage to various organs and systems, such as the heart, kidneys, stomach, intestines and other organs [8,9]. Complications of rheumatoid arthritis, in addition to joints, include the following multiple organ lesions:

- The appearance of rheumatic nodes. At the same time, around the affected joints, mainly on the wrists, painless formations are formed under the skin, the diameter of which varies within 3-5 cm. Such nodes can also be observed on various internal organs;
- Changes in the cardiovascular system: pericarditis (exudate at a late stage of the disease is often asymptomatic in clinical manifestations), changes in the heart muscle and valves (rheumatic nodules, myocarditis, valvulitis, cardiomyopathy), pulmonary hypertension, atherosclerosis and thromboembolism;
- Changes in the respiratory system - pleurisy (exudate is often asymptomatic in clinical manifestations), rheumatoid nodes in the lungs (fibrosis, calcification or infection may develop), fibrosis of the basal lungs, obliterating bronchiolitis;
- Changes in the organ of vision - dry desquamative keratitis or conjunctivitis with secondary Sjogren's syndrome, scleritis and episcleritis;
- Changes in the kidneys. Such changes are considered a complication of a long-term active inflammatory process, which includes interstitial nephritis, glomerulonephritis, pyelonephritis, secondary amyloidosis;
- Vascular changes - vasculitis of small and medium vessels can lead to necrosis of the distal parts of the fingers, skin, internal organs;
- Changes in the nervous system - carpal tunnel syndrome, polyneuropathy (mainly with vasculitis), compression of the roots of the spinal nerves due to dysfunction of the joints of the cervical spine.

Among these complications, renal damage is mainly observed in many patients. Kidney damage not only affects the quality of life of patients but also provokes the development of complications from the cardiovascular system. There are several methods for assessing the functional state of the kidneys in rheumatoid arthritis, which some scientists determine by determining the protein Cystatin-C, urea, creatinine in the patient's blood test, others by the morphological method, that is, by kidney biopsy. In renal failure, Cystatin-C can be diagnosed and better results are obtained. Determination of the concentration of cystatin-C is a modern method of laboratory diagnostics, which makes it possible to detect

The American Journal of Medical Sciences and Pharmaceutical Research
(ISSN – 2689-1026)
Published: August 31, 2021 | **Pages:** 21-25
Doi: https://doi.org/10.37547/TAJMSPR/Volume03Issue08-05

IMPACT FACTOR
2021: 5. 64
OCLC - 1121105510

renal pathology at an early stage. This type of protein is excreted from the body exclusively by the kidneys, therefore it is also the main one in determining the function of the kidneys. Today, the entire world medical community recognizes the analysis for Cystatin-C as an integral indicator of renal function, as well as as the main criterion for determining the rate of filtration of the bladders.

World medicine notes that the determination of the level of Cystatin-C in the blood plasma is important, first of all, when detecting latent or progressive chronic kidney disease. The Cystatin-C test is primarily used to detect kidney damage in diseases such as diabetes, myocardial infarction, stroke, and heart failure. The obtained analyzes help to determine whether the kidneys are involved in this process, which is a very important factor for the prognosis of the disease and further treatment tactics. When determining the functional state of the kidneys, the indicators of Cystatin-C in comparison with other biochemical indicators have higher characteristics. The study of cystatin-C indicators in combination with creatinine indicators allows a more complete assessment of the filtration function of the kidneys. The incidence of kidney damage in rheumatoid arthritis in different patients is different, that is, from 57 to 73% [2].

The study of the functional state of the kidneys in patients, the prevention of an increase in the number of diseases in them plays an important role in reducing disability among patients and improving the quality of life. In addition to blood tests, scientist M.Boers assessed the morphofunctional state of the kidneys by performing kidney biopsies in patients. In his study, he insisted that 19.7% of patients with rheumatoid arthritis have different types of kidney damage [3].

The formation of nephropathy in rheumatoid arthritis has a complex multifactorial character and manifests itself in various clinical and morphological variants. With it, various clinical forms of kidney damage occur amyloidosis, glomerulonephritis, less often rheumatoid granulomatosis and rheumatoid renal vasculitis, as well as iatrogenic forms caused by treatment, namely medicinal tubulointerstitial nephritis, membrane nephropathy, mesangial proliferative glomera. Moreover, in real clinical practice, the nosological diagnosis of kidney disease in rheumatoid arthritis is determined when clinical and laboratory criteria appear, the main of which is proteinuria [4].

Sometimes monitoring of kidney damage can also occur without symptoms of proteinuria [5].

It is noteworthy that rheumatologists do not always pay attention to the early manifestations of functional disorders of the kidneys. With a moderate increase in proteinuria, however, the rate of decline in renal function in rheumatoid arthritis can be very rapid, especially in old age and at the same time as cardiovascular disease. According to some researchers, the development of chronic kidney disease in rheumatoid arthritis may be associated with cardiovascular pathology, while the renal pathology itself is a risk factor for damage to the cardiovascular system [4].

RESULTS AND DISCUSSION

To assess the functional state of the kidneys, M.Boers studied the serum creatinine content, general urine analysis and daily proteinuria in

The American Journal of Medical Sciences and Pharmaceutical Research
(ISSN – 2689-1026)
Published: August 31, 2021 | **Pages:** 21-25
Doi: https://doi.org/10.37547/TAJMSPR/Volume03Issue08-05

IMPACT FACTOR
2021: 5. 64
OCLC - 1121105510

all patients. According to their study, clinicians should refrain from nephrotoxic drugs to protect kidney function in patients with rheumatoid arthritis and take measures such as treating cardiovascular risk factors. Blood creatinine is the end product of the creatine phosphate reaction. Creatinine is produced in the muscles and then released into the blood. Creatinine is involved in the energy metabolism of muscles and other tissues. Creatinine in the body is excreted in the urine through the kidneys, therefore creatinine (its amount in the blood) is one of the important indicators of kidney function. The amount of creatinine in the blood depends on the size of the muscle mass, so the level of creatinine in men is usually higher than in women. Since muscle volume does not change rapidly, blood creatinine levels are fairly stable. The rate of creatinine in the blood:

- For women: 44.0-80.0 μmol / l;
- For men: 74.0-110.0 μmol / l;
- In children under 1 year old: 18-35 μmol / l;
- From 1 to 14 years old: 27-62 μmol / L. [7].

According to the analysis of M. Boers, among 117 patients included in the study to determine the level of creatinine in the blood, 51 people had chronic kidney disease. When comparing the incidence of SBE in different age groups, depending on the onset of rheumatoid arthritis, its prevalence was found in 63% in the group with rheumatoid arthritis over 45 years old and in 37% in the group with rheumatoid arthritis under the age of 45 years. The patients of the second group were nosologically diagnosed (mainly in the case of nephrotic syndrome) puncture nephrobiopsy with indications corresponding to modern diagnostic standards in nephrology, while in the main category of patients, the nosological diagnosis of the kidneys was not confirmed, but there are functional disorders.

In 21 patients with nephrobiopsy, the following types of different morphological variants of kidney damage were identified: the most frequently recorded tubulointerstitial nephritis - 42.8%, rare amyloidosis - 28.5%, various morphological forms of glomerulonephritis - 28.7%.

As a result of the studies, it was studied that the development of chronic renal failure in patients with rheumatoid arthritis is also influenced by concomitant diseases, such as the age of patients, cardiovascular diseases, obesity. In patients with rheumatoid arthritis, the development of chronic renal failure in combination with arterial hypertension was 67%, and in the group with tubulointerstitial nephritis - 78%.

So, according to the data identified by M. Boers, it was found that the risk of developing chronic renal failure in patients with rheumatoid arthritis with chronic kidney disease is directly related to the age of the patients, the duration of the course of the disease with rheumatoid arthritis, the duration of taking non-steroidal anti-inflammatory drugs, and arterial hypertension.

CONCLUSION

In conclusion, it can be said that according to the above studies, it is recommended to avoid nephrotoxic drugs in patients with early detection of renal pathology in the presence of cardiovascular disease. The ability to detect renal pathology at an early stage is the most perfect, modern and safe method for the patient to detect cystatin-C protein, which

makes it convenient to study the functional status of the kidneys. By identifying nephroprotective treatment in the early stages of the disease, it is possible to save the patient from the complications of chronic renal failure and thus prevent disability.

Therefore, this method of examination is important in today's medicine as it is an important factor in conducting effective treatments, ensuring the health of the population, creating a healthy lifestyle.

ACKNOWLEDGEMENT

The authors acknowledge the immense help received from the scholars whose articles are cited and included in references to this manuscript. The authors are also grateful to authors/ editors/publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

Conflict of Interest:

The authors declared that there is no conflict of interest.

REFERENCES

1. Mirziyoev Sh.M. Video conference to discuss measures to improve the effectiveness of health care reform. May 18, 2021. https://president.uz/uz/lists/view/4372.
2. Demidova, N.V., Guseva, I.A., & Karateev, D.E. (2010). Clinical and immunological aspects of early rheumatoid arthritis. Therapeutic archive, 5, 71-77. https://pubmed.ncbi.nlm.nih.gov/20597276/.
3. Boers M., Croonen, A. M., Dijkmans, B. A., Breedveld, F. C., Eulderink, F., Cats, A., & Weening, J. J. (1987). Renal findings in rheumatoid arthritis: clinical aspects of 132 necropsies. Annals of the rheumatic diseases, 46(9), 658-663. https://dx.doi.org/10.1136%2Fard.46.9.658.
4. Toblli, J. E., Bevione, P., Di Gennaro, F., Madalena, L., Cao, G., & Angerosa, M. (2012). Understanding the mechanisms of proteinuria: therapeutic implications. International journal of nephrology, 2012. https://doi.org/10.1155/2012/546039.
5. Hemmelgarn, B. R., Manns, B. J., Lloyd, A., James, M. T., Klarenbach, S., Quinn, R. R., ... & Alberta Kidney Disease Network. (2010). Relation between kidney function, proteinuria, and adverse outcomes. Jama, 303(5), 423-429. https://doi.org/10.1001/jama.2010.39.
6. Wikipedia contributors. (2021b, August 30). Rheumatoid arthritis. Wikipedia. https://en.wikipedia.org/wiki/Rheumatoid_arthritis.
7. Serum creatinine (with the determination of GFR). (2021). helix.ru. https://helix.ru/kb/item/06-021.
8. Muhiddinovna, B. Z. (2020). Functions and forms of chemical experiment. European science review, (1-2). https://doi.org/10.29013/ESR-20-1.2-48-50.
9. Djuraeva, D. D., & Berdiyeva, Z. M. (2016). Cultural heritage as a factor of human development (on the example of Uzbekistan). Ученый XXI века, 23. https://science.i-edu.uz/index.php/archive_jspi/article/download/2004/1428/5109.