

SHORT COMMUNICATION

PREVALENCE AND CONTROL OF THE HYPERTENSION IN PATIENTS SUFFERING FROM RHEUMATOID ARTHRITIS

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Hypertension or high blood pressure (BP) is a long-term ailment in which blood pressure in the arteries raises persistently. Blood pressure can be determined using two methods, systolic pressure which is the uppermost pressure and diastolic pressure which is the lowermost blood pressure in the arterial system. It is estimated that worldwide around 1.13 billion persons are suffering from hypertension. In addition, the World Health Organization (WHO) has reported that 13% of all deaths in the world are caused by hypertension. Furthermore, they set a target to reduce its frequency by 25% from the year 2010 to 2025.^{1,2}

Rheumatoid arthritis (RA) is a systemic autoimmune disease that leads to inflammation of the joints and pain. Approximately 1% of the global population is diagnosed with this disease. Rheumatoid arthritis can be associated with multiple comorbidities that can reduce a patient's quality of life (QoL), upturn the economic burden of the disease, and may increase the rate of mortality. Cardiovascular comorbidities are quite common in patients with rheumatoid arthritis. Cardiovascular comorbidity is estimated to be about 1.5 times more frequent in patients with rheumatoid arthritis than in healthy people. Many studies have suggested that of all cardiovascular disorders, hypertension is the most important and changeable risk factor in subjects suffering from rheumatoid arthritis. Based on a pool of 115,867 insurance claims, about 76% of rheumatoid arthritis patients in America were diagnosed with hypertension. These results are similar to studies conducted in Europe and Canada that have shown a higher incidence of hypertension in patients with rheumatoid arthritis compared to the normal group. It is unknown why patients with rheumatoid arthritis pose such a high risk for hypertension. Reduced physical activity, obesity, systemic inflammation, and medications used to treat rheumatoid arthritis can increase the risk of high blood pressure.³ Around 0.55% of the urban population in northern Pakistan suffers from rheumatoid arthritis, while the incidence rate is close to 0.14% in southern Pakistan.⁴

There are many reasons why people with rheumatoid arthritis have high blood pressure. Chronic inflammation in rheumatoid arthritis results in

increased rigidity of arteries leading to increase systolic blood pressure. The first presumed link between low-grade systemic inflammation and hypertension has been identified in previous studies conducted on the general population. In rheumatoid arthritis, elevated levels of C-reactive protein (CRP) increase the likelihood of developing high blood pressure. Several mechanisms may be implicated in the development of hypertension with a high concentration of C-reactive protein. For example, nitric oxide synthesis may be reduced because of the increased concentration of the C-reactive protein that will cause vasoconstriction, platelet activation and thrombosis. Additionally, increased expression of the type 1 angiotensin receptor and stimulation of the plasminogen activator inhibitor-1 (PAI-1) may contribute to the progression of hypertension. Occasionally, restriction on exercise due to the fear of worsening disease condition is recommended (unwarranted) by healthcare professionals, and it could be a reason for the inactive and sedentary lifestyle of patients with rheumatoid arthritis. In turn, physical idleness can lead to obesity, which may be linked independently to high blood pressure in rheumatoid arthritis. Obesity and familial history of hypertension are significant predictors of premature death. A study has also demonstrated that an increase in sodium (Na) intake and a decrease in potassium (K) intake can play a significant role in the pathogenesis of rheumatoid arthritis and high blood pressure. The urinary Na/K quotient may be useful as an important parameter of hypertension in patients suffering from rheumatoid arthritis and in normal subjects. Optimal cardiovascular risk management continues to be a major challenge. In this regard, increased awareness and management are needed to reduce the high risk of cardiovascular disorders in patients with rheumatoid arthritis. To date, only a few studies have investigated the potential relationship between high blood pressure and these factors in patients with rheumatoid arthritis. A lifestyle shift (i.e. exercise, smoking cessation, eating a balanced diet, reducing the use of ethanol and salt) is needed in patients suffering from rheumatoid arthritis to manage their high blood pressure and improve their quality of life (QoL). To treat rheumatoid arthritis, many medications are routinely prescribed, including cyclooxygenase, non-steroidal

anti-inflammatory drugs (NSAIDs), steroids, and disease-modifying anti-rheumatic drugs (DMARDs). The use of these drugs in rheumatoid arthritis should always be considered in conjunction with comorbid hypertension. Clinicians should closely monitor such patients for prior diagnosis and, where appropriate, aggressive management of hypertension. Systems for diagnosis, proper treatment, and continuous surveillance of these patients need to be in place in primary and secondary healthcare setups. Furthermore, specially designed clinical trials are required to determine the finest approaches to treat hypertension in patients of rheumatoid arthritis.⁵⁻⁸

REFERENCES

1. Baharvand-Ahmadi B, Bahmani M, Tajeddini P, Rafieian-Kopaei M, Naghdi N. An ethnobotanical study of medicinal plants administered for the treatment of hypertension. *J Ren Inj Prev.* 2016;5(3):123.
2. Ashiq K, Ashiq S, Shehzadi N. Hyperuricemia and its association with hypertension: risk factors and management. *Pak Heart J.* 2022;55(2):200-1.
3. Hadwen B, Stranges S, Barra L. Risk factors for hypertension in rheumatoid arthritis patients—A systematic review. *Autoimmun Rev.* 2021;20(4):102786.
4. Ehsan A, Mushtaq S, Salim B, Samreen S, Gul H, Nasim A. Translation and validation of Modified Health Assessment Questionnaire score in local language Urdu in patients with rheumatoid arthritis presenting in a tertiary care center of Pakistan. *J Pak Med Assoc.* 2022;72(4):674-8.
5. Panoulas VF, Douglas KM, Milionis HJ, Stavropoulos-Kalinglou A, Nightingale P, Kita MD, et al. Prevalence and associations of hypertension and its control in patients with rheumatoid arthritis. *Rheumatol.* 2007;46(9):1477-82.
6. Panoulas VF, Metsios GS, Pace A, John H, Treharne G, Banks M, et al. Hypertension in rheumatoid arthritis. *Rheumatol.* 2008;47(9):1286-98.
7. Minamino H, Katsushima M, Hashimoto M, Fujita Y, Yoshida T, Ikeda K, et al. Urinary sodium-to-potassium ratio associates with hypertension and current disease activity in patients with rheumatoid arthritis: a cross-sectional study. *Arthritis Res Ther.* 2021;23(1):1-10.
8. Ashiq K, Ashiq S. COVID-19 pandemic and management of hypertension. *Pak Heart J.* 2021;54(3):275-6.

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