

RESEARCH ARTICLE

A randomized, triple-blind, placebo-controlled clinical trial, evaluating the sesamin supplement effects on proteolytic enzymes, inflammatory markers, and clinical indices in women with rheumatoid arthritis

Bizhan Helli¹ | Majid Mohammad Shahi² | Karim Mowla³ | Mohammad Taha Jalali² | Hossein Khadem Haghighian^{4,5} 

¹Department of Nutritional Sciences, Faculty of Paramedical, Ahvaz Jundishapur Medical Sciences University, Ahvaz, Iran

²Department of Nutrition, Hyperlipidemia Research Center, Ahvaz Jundishapur Medical Sciences University, Ahvaz, Iran

³Department of Rheumatology, School of Medicine, Ahvaz Jundishapur Medical Sciences University, Ahvaz, Iran

⁴Department of Nutrition, Faculty of Health, Qazvin University of Medical Sciences, Qazvin, Iran

⁵Metabolic Diseases Research Center, Qazvin University of Medical Sciences, Qazvin, Iran

Correspondence

Hossein Khadem Haghighian, Department of Nutrition, Faculty of Health Qazvin University of Medical Sciences, Qazvin, Iran.
Email: khademnut@yahoo.com

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Inflammation is one of the main characteristics of rheumatoid arthritis. Based on the antiinflammatory properties of sesame, this study was conducted to evaluate the sesamin supplement effects on serum levels of some proteolytic enzymes, inflammatory biomarkers, and clinical indices in women with rheumatoid arthritis. In this randomized, triple-blind, placebo-controlled clinical trial, 44 patients were randomly divided in intervention and control groups. Patients received 200-mg/day sesamin supplement or placebo in the intervention and control group for 6 weeks. Serum levels of proteolytic enzymes (hyaluronidase, aggrecanase, and matrix metalloproteinases-3) and inflammatory biomarkers (hs-CRP, IL-1 β , IL-6, TNF- α , and cyclooxygenase-2) were measured with enzyme-linked immunosorbent assay method at the beginning and end of the study. After intervention, serum levels of hyaluronidase and matrix metalloproteinases-3 decreased significantly in sesamin group. Also, serum levels of hs-CRP, TNF- α , and cyclooxygenase-2 in intervention group were significantly decreased in intervention group compared with placebo group. Sesamin supplementation also caused a significant reduction in the number of tender joints and severity of pain in these patients. According to the results, it seems that the sesamin by reducing inflammatory mediators can relieve clinical symptoms and pathological changes that caused by inflammatory impairment in patients with rheumatoid arthritis.

KEYWORDS

inflammatory factors, proteolytic enzymes, rheumatoid arthritis, sesamin

1 | INTRODUCTION

One of the known autoimmune diseases is rheumatoid arthritis (RA), and one of the main characteristics of this disease is chronic

inflammation (Catrina, Joshua, Klareskog, & Malmström, 2016). This disease causes complaints such as swelling, tenderness, and progressive destruction in joints. It influences nearly 1% of the world's population, and prevalence of RA is three times more common in women

Bizhan Helli and Majid Mohammad Shahi contributed equally to this manuscript.

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