The impact of Inulin supplementation on body mass index, weight, and waist circumferences in patients with rheumatoid arthritis: A randomized clinical trial

Marzieh Kafeshani[1], Ali Tabatabaeyan [1], Mansour Salesi[2], Awat Feizi[3]

1. Department of Clinical Nutrition, School of Nutrition and Food Science, Nutrition and Food Security Research Center, Isfahan University of Medical Sciences, Isfahan, Iran
2. Department of Rheumatology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran
3. Epidemiology and Biostatistics Department, Health School, Isfahan University of Medical Sciences, Isfahan, Iran

Abstract

Background and Aim : Rheumatoid arthritis (RA) is a multifactorial autoimmune disease. Obesity especially central obesity can exacerbate the symptoms of RA leading to greater inflammation, increased pain, and decreased physical function. Recent studies indicate that an imbalance in the gut microbiome may contribute to the development and progression of rheumatoid arthritis, particularly in individuals with obesity, by influencing inflammation and metabolic processes. This study aimed to investigate the effect of inulin supplementation on body mass index(BMI), weight, and waist circumferences (WC) in RA patients.

Methods : In a randomized clinical trial, 60 patients aged 18 and older with rheumatoid arthritis (RA) were randomly allocated to receive 10 grams of inulin or maltodextrin daily for 8 weeks. BMI, weight, and WC were evaluated at both the start and end of the study. Dietary intake was assessed through analysis of food records provided by participants at the beginning, middle, and end study. Physical activity was measured using the short form of the International Physical Activity Questionnaire. Data were analyzed utilizing SPSS 22 software

Results : The Body Mass Index, weight, and waist circumference did not significantly change at the end of the study in the group receiving inulin and maltodextrin. However, after the intervention, there was a significant difference in the Body Mass Index (27.2 inulin vs. 28.77 placebo, $P > 0.001$), weight (69.87 inulin vs. 69.92 placebo, $P > 0.001$), and waist circumference (91.78 inulin vs. 93.76 placebo, $P > 0.001$) between two groups after adjustment for baseline values and carbohydrate, total fiber, Iron, Calcium, Magnesium, and Selenium

Conclusion : The results of this study indicate that inulin intake has beneficial effects on general and visceral obesity in patients with rheumatoid arthritis

Keywords : Rheumatoid arthritis; inulin; body mass index; waist circumferences; weight