LETTER TO EDITOR

Glutamine supplementation for rheumatic diseases: A systematic review

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Glutamine supplementation has been used to treat inflammatory bowel diseases and to support intestinal barrier functions.[1,2] In addition, glutamine plays a crucial role in maintaining the integrity of the intestinal mucosa, thus, improving its defensive capacity.[2] Furthermore, it has been shown to reduce inflammation and disease activity in experimental models of Crohn's disease and human trials.[1] Based on those facts, it is reasonable to speculate that glutamine may have a role in rheumatic diseases since most are related to a prominent systemic inflammatory component. Intriguingly, the gut-joint axis can connect glutamine consumption to impact joint health.[3] Indeed, some rheumatic conditions might present clinical and pathological intestinal manifestations, including enteric inflammation.[3–5]

Following PRISMA guidelines, an extensive literature search in Pubmed, Scielo, and LILACS was performed without any language restriction from 1965 to August 2023. We looked for clinical trials and animal studies using glutamine in rheumatic diseases. After a review of titles and abstracts, only one article was selected for this review.

In this article, the authors evaluated the role of glutamine supplementation in patients with cachexia associated with rheumatoid arthritis in a randomized controlled clinical trial.[6] Forty cachectic RA patients supplemented their diet with either glutamine (14 g/day) associated with arginine (14 g/day) and β-hydroxy-β-methylbutyrate (3 g/day) or nitrogen (7.19 g/day) and calorie (180 g/day) balanced mixture of alanine, glutamic acid, glycine, and serine (placebo) for 12 weeks. The authors did not observe a benefit of glutamine in comparison to the control diet. Both amino acid mixtures significantly increased (mainly a chronological effect) fat-free mass, total body protein, arms and legs lean mass, and some measures of physical function. However, 39% of subjects in the glutamine group and 33% of subjects in the placebo group reported increased habitual physical activity over the intervention period; the difference was non-significant. Regarding disease activity, no differences were observed in the two groups concerning: Rheuamtoid arthritis disease activity index (RADAI), quality of life (HAQ), erythrocyte sedimentation rate, fatigue, and objective measurements of force ($p > .05$).[6]

The present study's strengths are: 1. the inclusion of all studies on glutamine in RD; 2. the use of international criteria for rheumatic diseases; 3. an extensive literature search was performed. The limitations include only one study, which does not fulfill systematic analysis criteria. Future studies using glutamine in rheumatic conditions are desired, mainly in situations in which the gastrointestinal tract is affected, such as entero-arthropathies and spondyloarthritis.[3–5,7]

In conclusion, only one study evaluated the role of glutamine in rheumatic disease, where cachexia in rheumatoid arthritis was assessed. No significant differences were found in comparison to the control group.

Conflicts of Interest Disclosure

The authors declare they have no conflicts of interest.

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