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Inositol Supplementation Use in Rheumatic Diseases

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ABSTRACT

Background: Inositol is a structural component of phosphatidyl-inositol and related phosphates, implicated in glucose metabolism, endothelial function, and reproductive health. Although widely studied in metabolic and reproductive conditions, its role in rheumatic diseases remains largely unexplored.

Methods: A comprehensive search of PubMed, Scielo, and LILACS databases was conducted up to July 2024, without language restrictions, focusing on clinical trials and excluding review articles and in vitro studies.

Results: Only one clinical study was identified, a randomized, double-blind, placebo-controlled crossover trial with 31 asymptomatic hyperuricemic individuals. Inositol hexaphosphate (600 mg twice daily for two weeks) significantly reduced serum uric acid levels compared to placebo, though urinary uric acid/creatinine ratio remained unchanged. Complementary animal studies suggested that inositol may inhibit uric acid metabolism through suppression of purine nucleotide hydrolysis and modulation of postprandial uric acid response.

Conclusion: Preliminary evidence indicates that inositol supplementation may reduce uric acid levels in hyperuricemic subjects. Further research is warranted to confirm these findings and to investigate the potential role of inositol in other rheumatic diseases.

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INTRODUCTION

Inositol is an essential component of structural lipids, namely phosphatidyl-inositol and its various phosphates, including phosphatidyl-inositol phosphate lipids. A large amount of Inositol (about one g/day) is provided by dietary intake that comes from cereals, legumes, oil seeds, and nuts, and a significant part is still produced endogenously (about 4 g/day), mainly in kidneys [1]. Historically, Inositol has been involved in various physiological functions, particularly in glucose metabolism and the reproductive systems of both males and females. More recently, Inositol has been implicated in steroidogenesis, diabetes control, obesity, assisted reproduction, and other clinical situations [2]. There is limited but intriguing preclinical data available on the role of inositols in preventing and treating changes in endothelial cells. Nascimento et al. observed that inositols improved the endothelial function in an animal model [3]. A synthetic derivative of Inositol (dibutyryl inositol) effectively reduced the reactive oxidative species in endothelial cells acutely and preserved nitric oxide signaling dose-dependently [3]. Moreover, Inositol reduces vascular damage progression by modulating the protein kinase C activation, the hexosamine pathway activity, and advanced glycation end-product formation [3]. As rheumatic diseases also affect glucose metabolism, endothelial dysfunction, and inflammation. It would be intriguing to search for articles on the rheumatic field.

An extensive literature search in PubMed, Scielo, and LILACS was performed without any language restriction until July 2024. We excluded review articles and *in vivo* and *in vitro* studies.

We found only one article on inositol supplementation in hyperuricemia subjects [4]. In this randomized, double-blind placebo-controlled crossover design study that included 31 asymptomatic hyperuricemic subjects (uric acid level > 7.0 but <9.0 mg/dL), the author gave 600mg twice a day of inositol-hexaphosphate for 2 weeks or placebo. After the supplementation, they verified that

serum uric acid levels were lower than in the placebo group. However, the urinary uric acid to creatinine ratio did not vary in the two groups [4]. Furthermore, these authors performed an animal model with hyperuricemia. They could demonstrate that Inositol inhibits uric acid metabolism in vitro, which is considered to competitively inhibit the hydrolysis of purine nucleotides by alkaline phosphatase and 5′-nucleotidase and suppressed postprandial SUA in hyperuricemia in this model rat [5].

CONCLUSION

In conclusion, one study on inositol supplementation in patients with asymptomatic hyperuricemia found that Inositol reduced uric acid. More studies to confirm the present data are e[needed, and novel studies in other rheumatic diseases (e.g., myositis) are desired.

REFERENCES

1) Dinicola S., Minini M., Unfer V., Verna R., Cucina A., Bizzarri M. Nutritional and Acquired Deficiencies in Inositol Bioavailability. Correlations with Metabolic Disorders. *Int. J. Mol. Sci.* 2017;18:2187.
2) Dinicola S, Unfer V, Facchinetti F, Soulage CO, Greene ND, Bizzarri M, Laganà AS, Chan SY, Bevilacqua A, Pkhaladze L, Benvenga S, Stringaro A, Barbaro D, Appetecchia M, Aragona C, Bezerra Espinola MS, Cantelmi T, Cavalli P, Chiu TT, Copp AJ, D'Anna R, Dewailly D, Di Lorenzo C, Diamanti-Kandarakis E, Hernández Marín I, Hod M, Kamenov Z, Kandaraki E, Monastra G, Montanino Oliva M, Nestler JE, Nordio M, Ozay AC, Papalou O, Porcaro G, Prapas N, Roseff S, Vazquez-Levin M, Vucenik I, Wdowiak A. Inositols: From Established Knowledge to Novel Approaches. Int J Mol Sci. 2021 Sep 30;22(19):10575.
3) Nascimento NRF, Lessa LMA, Kerntopf MR, et al. Inositols prevent and reverse endothelial dysfunction in diabetic rat and rabbit vasculature metabolically and by scavenging superoxide. *Proc Natl Acad Sci U S A*. 2006;103(1):218-223. 10.1073
4) Ikenaga T, Kakumoto K, Kohda N, Yamamoto T. Effect of Inositol Hexaphosphate (IP_6) on Serum Uric Acid in Hyperuricemic Subjects: a Randomized, Double-Blind, Placebo-Controlled, Crossover Study. Plant Foods Hum Nutr. 2019 Sep;74(3):316-321.
5) Ikenaga T, Noguchi H, Ishiyama T, Ishida H, Kakumoto K, Kohda N, Sugimura H, Yamamoto T. Effect of soymilk fermented with lactic acid bacteria on postprandial serum uric acid level and its active ingredients. Jpn Pharmacol Ther 2019;47:637–645.