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Review Article – Meta-analysis

Colchicine treatment in adult patients with knee osteoarthritis: Systematic review of the literature☆

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ABSTRACT

Background: Colchicine is often used in patients with osteoarthritis in which calcium pyrophosphate crystal deposition disease is suspected. Colchicine has also been used by many rheumatologists in clinical practice, and in some trials, on patients with primary osteoarthritis (apparently unrelated to calcium pyrophosphate). However, its role in the treatment of primary osteoarthritis is not clear, and international guidelines have not established recommendations.
Objective: To evaluate the efficacy and safety of colchicine for the treatment of adult patients with primary knee osteoarthritis as well as the form associated with calcium pyrophosphate.
Methods: A structured literature search was conducted using the PubMed, Embase, Cochrane Controlled Trials Register, and LILACS databases. Randomized controlled trials were included in which colchicine was used as intervention in patients with primary or pyrophosphate calcium-associated knee osteoarthritis.
Results: The study included 5 randomized controlled trials, all of which showed a common trend in all estimated points of the joint, favoring the use of colchicine for improvement in pain and functionality. Although the effect was not statistically significant in individual studies, there was a greater tendency of gastrointestinal adverse effects with the use of colchicine. None of the studies assessed quality of life.
Conclusions: Colchicine appears to be an effective and safe alternative for treatment of adult patients with knee osteoarthritis, either primary or associated with the deposit of

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calcium pyrophosphate crystals. Its use reduces pain and improves functionality, but it can cause gastrointestinal symptoms in some patients.

Revisión sistemática de la literatura sobre el tratamiento con colchicina en pacientes adultos con osteoartritis de rodilla

Palabras clave:
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RESUMEN

Contexto: En la práctica clínica de muchos reumatólogos y en algunos ensayos clínicos se ha usado colchicina en pacientes con osteoartritis primaria. A pesar de ello, su papel en el tratamiento de la misma no está claro y las guías no establecen recomendaciones al respecto.

Objetivos: Evaluar la eficacia y la seguridad del tratamiento con colchicina en pacientes adultos con osteoartritis de rodilla, tanto primaria como asociada al depósito de cristales de pirofosfato cálcico.

Métodos: Se llevó a cabo una búsqueda estructurada de la literatura utilizando las bases de datos Pubmed, Embase, Cochrane Controlled Trials Register y LILACS. Se incluyeron ensayos clínicos controlados, aleatorizados, en donde se haya usado colchicina como intervención en pacientes adultos con osteoartritis de rodilla, primaria o relacionada con pirofosfato de calcio.

Resultados: Se incluyeron 5 ensayos clínicos controlados. Se observó una tendencia común en todos los estimados puntuales de los artículos a favorecer el uso de la colchicina para la mejoría del dolor y de la funcionalidad. Se observó una mayor tendencia de efectos adversos gastrointestinales con el uso de la colchicina, sin embargo, el efecto no fue estadísticamente significativo en los estudios individuales. Ninguno de los estudios evaluó calidad de vida.

Conclusiones: La colchicina parece ser una alternativa eficaz y segura para el tratamiento de pacientes adultos con osteoartritis de rodilla, tanto primaria como asociada al depósito de cristales de pirofosfato de calcio. Su uso reduce el dolor y mejora la funcionalidad, aunque puede producir síntomas gastrointestinales en algunos pacientes.

Introduction

Osteoarthritis is a highly prevalent chronic disease which is associated with severe pain and functional disability.[1] From the medical point of view, it is a frustrating condition for which multiple pharmacological and non-pharmacological interventions have been attempted. The usual practice is to use analgesics as a single drug or in combination, especially non-steroidal anti-inflammatory drugs, acetaminophen at high doses and weak opioids, all of which pose risks of potentially serious adverse effects, especially in the elderly.[2,3]

Osteoarthritis is the most common form of joint pathology. The term osteoarthritis, possibly rather than representing a disease can be the final common route of a great variety of conditions with different etiologies, but with similar morphological expression and clinical outcomes. Although the classifications of osteoarthritis into primary and secondary could be useful in primary care and research, such distinctions are artificial and ignore the most common scenario of overlapping etiologies in the same patient.[4]

Although the synovial inflammation within the joints affected by osteoarthritis is often less intense than in the traditional inflammatory arthritis (rheumatoid arthritis, gout, etc.), activation of inflammatory responses also occurs in joints with osteoarthritis, both in synoviocytes and chondrocytes. The abnormal cartilage may contain a great variety of calcium crystals, especially calcium pyrophosphate, which stimulate multiple intracellular mechanisms of inflammation. The presence of crystals can be demonstrated in up to 70% of the specimens of synovial fluid of patients with osteoarthritis.[5]

An interesting phenomenon frequently observed in the degenerated joint tissues is the deposition of inorganic crystals. Pseudogout due to pyrophosphate is strongly associated with the cartilage degeneration seen in osteoarthritis, and it can be detected in radiographs or through the study of the synovial fluid. In general, the cause and the consequence of the presence of chondrocalcinosis in osteoarthritis remain ambiguous, since it is difficult to establish what happened first: the cellular and matrix degradation or the formation of the crystals. It is most likely that they promote each other and that the metabolic disorder leads to cell damage and vice versa.[6,7] Osteoarthritis and aging are strongly associated with calcium pyrophosphate arthropathy.[7,8] The strong interrelationship existing between the crystals of pyrophosphate