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Review article

Have complementary therapies demonstrated effectiveness in rheumatoid arthritis?

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ABSTRACT

In recent decades the treatment of rheumatoid arthritis (RA) has improved thanks to the use of highly effective drugs. However, patients usually require long term therapy, which is not free of side effects. Therefore RA patients often demand complementary medicine, they seek additional sources of relief and/or less side effects. In fact 30–60% of rheumatic patients use some form of complementary medicine. Therefore, from conventional medicine, if we want to optimally treat our patients facilitating communication with them we must know the most commonly used complementary medicines. The aim of this review is to assess, based on published scientific research, what complementary therapies commonly used by patients with RA are effective and safe.

¿Han demostrado eficacia las terapias complementarias en la artritis reumatoide?

Palabras clave:
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RESUMEN

En las últimas décadas el tratamiento de la Artritis Reumatoide (AR) ha mejorado mucho gracias a la utilización de fármacos altamente eficaces. Sin embargo, los enfermos suelen requerir tratamiento farmacológico de por vida, no exento de efectos adversos. Por esta razón los pacientes con AR a menudo acuden a la medicina complementaria, buscan fuentes adicionales de alivio y/o menores efectos secundarios. Un 30–60% de los pacientes reumáticos utilizan algún tipo de medicina complementaria. Por lo tanto, desde la medicina convencional, si queremos optimizar el tratamiento de nuestros pacientes y facilitar la comunicación con ellos debemos conocer las medicinas complementarias más utilizadas. El objetivo de esta revisión es valorar, en base a la investigación científica publicada, qué tratamientos complementarios habitualmente utilizados por los pacientes con AR son efectivos y seguros.

Introduction

Recent advances have improved drug treatment of rheumatoid arthritis (RA). Despite this fact, most RA patients need lifelong pharmacological therapy. An increasing number of RA patients are resorting to various complementary and alternative medicine (CAM) approaches for relief of symptoms and general well-being.

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CAM is the term for medical products and practices that are not part of standard care and are not generally taught in conventional medical schools. Alternative medicine is used instead of conventional medicine, whereas complementary medicine is used together with it. CAM has been mainly used to treat back pain or other back problems, neck pain, joint pain or stiffness and anxiety or depression in RA patients.[1] For this reason, rheumatologists should be aware of CAM when treating RA patients.

The American College of Rheumatology (ACR) recognizes the interest in CAM approaches in the Position Statement Document. "The ACR supports rigorous scientific evaluation of all modalities that improve the treatment or rheumatic diseases. The ACR understands that certain characteristics of some CAMs and some conventional medical interventions make it difficult or impossible to conduct standard randomized controlled trials. For these modalities, innovative methods of evaluation are needed, as are measures and standards for the generation and interpretation of evidence. The ACR supports the integration of those modalities proven to be safe and effective by scientifically rigorous clinical trials published in the biomedical peer review literature. In the absence of such rigorous clinical trials, the ACR recommends advising patients that potential harm can occur from unproven or alternative therapies and thus advises caution in the use of unproven treatments. The ACR believes healthcare providers should be informed about the more common CAM modalities, based upon appropriate scientific evaluation as described above, and should be able to discuss them knowledgeably with patients".[2]

This article provides an overview of the current body of knowledge about the role of CAM in the treatment of RA.

Methods

In order to explore available evidence about CAM used in RA patients, we performed a systematic search including Medline and Cochrane library databases. Medline search was performed including the following appropriate combination of MeSH (Medical Subject Heading) terms including: "complementary therapies", "diet", "dietary supplements", "phytotherapy", "medicinal plants", "exercise", "mind-body therapies", "acupuncture", "homeopathy", "hydrotherapy" AND "rheumatoid arthritis". The references cited in the obtained papers were also examined to identify additional studies not indexed by MEDLINE.

Nutrition

Nutritional intervention

Nutritional intervention has been used in patients with chronic inflammatory diseases. Specifically, nutritional intervention used in RA patients included: supervised fasting (200–300 kcal/day) during 7–10 days, Mediterranean diet (small amount of meat, fish, more fruits and vegetables and olive oil), vegetarian diet, vegan diet, elemental diet (liquid diets that contain nutrients that are broken down to make digestion easier) and elimination diet (foods that are thought to be the cause of symptoms are eliminated, and then added one at a time to find which ones cause symptoms).

There is evidence that fasting produces a decrease in pain and inflammation in RA patients.[3] However, the inflammation reappears when the patient starts his/her normal diet.[4] It has been shown that fasting followed by a vegetarian diet may help patients with RA. The effect of fasting followed by a year of a vegetarian diet was assessed in a randomized, single-blind controlled trial.[5] The diet group showed a significant improvement in the number of tender joints, Ritchie's articular index, number of swollen joints, pain score, duration of morning stiffness, grip strength, erythrocyte sedimentation rate, C-reactive protein, white blood cell count, and a health assessment questionnaire score (HAQ). These benefits in the diet group were still present after one year[5] and this improvement can be sustained through an additional follow-up two-year diet period.[6]

A Mediterranean diet has been proved to reduce blood pressure; improve glucose metabolism, the lipid profile, and lipoprotein particle characteristics and decrease inflammation and oxidative stress.[7] In RA patients, a Mediterranean diet decreases pain, morning stiffness, the number of swollen joints and also improves HAQ, Disease Activity Score 28 (DAS28) and disease patient perception.[7] Three systematic reviews stated that a Mediterranean diet decreased pain in RA patients.[8–10] Moreover, the Mediterranean diet has been recommended for cardiovascular diseases and osteoporosis (frequent RA comorbidities).

A Cochrane review[8] assessed the effectiveness and safety of dietary interventions in the treatment of RA. The authors concluded that fasting, followed by 13 months on a vegetarian diet, may reduce pain. The effects of vegan and elimination diets are uncertain due to inadequate data reporting. Trials that studied elemental diets reported no significant differences in pain, function or stiffness.

Nutritional supplements

Fish oil

Fish oil is rich in Ω-3 polyunsaturated fatty acids (PUFAs), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which have been associated with reduced expression of TNF-α and interleukin-1β.[11,12] These properties are similar to synthetic drugs used in RA patients such as nonsteroidal anti-inflammatory drugs (NSAIDs) and TNF blockers. Furthermore, EPA and DHA can be metabolized in E-series and D-series of resolvins that reduce inflammation.[13] The American Heart Association recommends consuming fish oil to reduce the occurrence of cardiovascular disease events in patients with coronary artery disease.[14] RA patients present high cardiovascular morbid-mortality rate and fish oil consumption could represent an additional benefit in this population. A meta-analysis suggested that including omega-3 PUFAs at dosages >2.7 g/day in the diet for >3 months reduces NSAID consumption in RA patients.[15] A systematic review including 23 randomized controlled trials testing marine Ω-3 PUFAs has been performed in patients with RA. This review has showed a modest benefit on joint swelling and pain, duration of morning stiffness, global assessment of pain and disease activity, and a reduction in the use of NSAIDs.[16]

Proudman et al. studied in a randomized, double-blind controlled trial the effects of fish oil consumption in early RA, employing a 'treat-to-target' protocol in combination with disease-modifying anti-rheumatic drugs (DMARDs). Fish oil intake was associated with a higher rate of ACR remissions, and a reduction in DMARDs dosage.[17]

Although not necessarily clinically significant, when prescribing Ω-3 PUFAs, rheumatologist should be aware that high dose Ω-3 PUFAs are not recommended in patients who may be susceptible to increased bleeding (e.g., patients taking warfarin), because they may increase coagulation times.[18]

Virgin olive oil

Virgin olive oil contains numerous compounds that exert potent anti-inflammatory and antioxidant actions.[19] The main active components of olive oil include oleic acid, linolenic acid, alpha-linoleic acid and phenolic constituents.[20,21] Oleic acid is metabolized to eicosatrienoic acid (omega-9 fatty acid) with similar anti-inflammatory properties than fish oil omega-3 fatty acids.[21]

Berbert et al. evaluated whether supplementation with olive oil could improve clinical and laboratory parameters of disease activity