Nutritional Interventions In The Management Of Rheumatoid Arthritis: A Review Of The Literature

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Background/Purpose

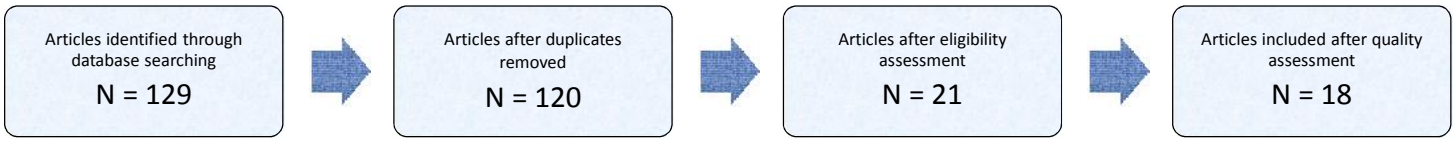
Rheumatoid arthritis (RA) is a chronic, inflammatory, autoimmune disease that may affect many aspects of patients' life. Patients with RA seem to be interested in alternative and complementary treatments such as managing their eating habits, which may help them to gain a sense of control over their disease. However, the role of nutrition in the management of RA remains unclear.

The aim of this study was to review and to describe current studies of nutritional interventions used in the management of RA to provide a patient information leaflet with evidence-based dietary advice.

Methods

A systematic search was conducted using the medical databases MEDLINE (via PubMed) and EMBASE as well as backward citation tracking. Searches were limited to articles in English, published from January 2003 to January 2014. The articles were individually screened by two authors (SM and JS) based on their full content. To be eligible for inclusion, a study had to fulfil the following criteria: (a) to be a human randomized controlled trial, (b) to be a peer-reviewed full paper, (c) to include patients with RA according to predefined criteria and (d) to investigate the effects of dietary/oral interventions focusing on essential nutrients or diet therapies. Thereafter, the methodological quality of the articles was independently assessed using Critical Appraisal Skills Programme checklists.

Results



Elimination diet

(Elkan AC, et al. 2008; Iwashige K, et al. 2004)

- Evidence was found for a reduction in inflammatory activity by adjusting to a gluten free, vegan or a calorie restriction diet. However, these diets were difficult to comply with and maintain long-term.

Mediterranean diet

(Sköldstam L, et al. 2003)

- Patients with RA adjusting to a Mediterranean diet, showed over 12 weeks a decrease in DAS28, in HAQ and in two dimensions of the SF-36 Health Survey: an increase in "vitality" and a decrease in "compared with one year earlier".

omega-3 and/or omega-6 fatty acids

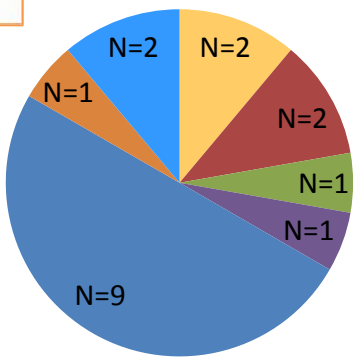
(Park Y, et al. 2013; Das Gupta AB, et al. 2009; Galarraga B, et al. 2008; Adam O, et al. 2003; Sundrarjun T et al. 2004; Berbert AA, et al. 2005; Dawczynski C, et al. 2009; Remans PH, et al. 2004; Aryaeian N, et al. 2009)

- Four trials indicated that dietary supplementation with omega-3 fatty acids (>3g/day) improved disease activity in patients with RA in terms of pain intensity, grip strength, duration of morning stiffness and physical functioning. However, another 4 trials did not show superior clinical benefit of daily omega-3 fatty acids supplementation with moderate or high doses as compared to placebo.
- Two trials found that a diet low in omega-6 fatty acids decreased CRP levels or the numbers of tender and swollen joints. In contrast, another trial found that omega-6 fatty acids supplementation resulted in a reduction of DAS28, pain and morning stiffness.

Vitamin B6

(Chiang EPI, et al. 2005; Huang SC, et al. 2010)

- 50mg vitamin B6 supplementation for 30 days did not suppress pro-inflammatory cytokine production. However, a larger dose of vitamin B6 supplementation during a longer period (100mg/day for 12 weeks) suppressed pro-inflammatory cytokines in patients with RA.



N= number of studies

Probiotics

(de los Angeles Pineda M, et al. 2011; Mandel DR, et al. 2010)

- Probiotics were reported in two studies not to have any clinical benefit in patients with RA.

Glucosamine

(Nakamura H, et al. 2007)

- Although glucosamine treatment had no antirheumatic effect evaluated by conventional measures, it seemed to have some symptomatic effects on RA from patients' self-evaluations and physicians' global evaluations.

Antioxidants

(Bae SC, et al. 2009)

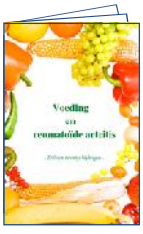
- Dietary supplementation of antioxidants (quercetin+vitamin C or α-lipoic acid) for 4 weeks did not change the blood biomarkers of inflammation and disease severity of RA patients under conventional medical treatments.

Conclusions

- Supplementation of omega-3 fatty acids and Mediterranean and elimination diet therapies appeared to have a positive effect in patients with RA.
- However, most nutritional interventions can not be effectively and safely recommended for the management of RA due to the limited number of trials, the inconsistencies between trials and the limitation of applicability in patients' daily life.

→ The current evidence suggests that some supplements and suitable diet therapies may warrant further investigation. Until more conclusive data are available, dietary advice for patients with RA is to maintain a healthy, well-balanced diet.

Patient information leaflet



Contents
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- What is RA?
- RA and nutrition: the evidence
- How can I eat healthy and maintain a healthy weight?
- Facts and fables
- Information sources

→ *Soon available on www.reumanet.be*

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