Figure. Development of prediction model for maximum MTX dose without hepatotoxicity

ROC analysis for total MTXPG concentration discriminating patients with and without hepatotoxicity

Genetic and Clinical model to speculate MTXPG levels

$$\text{MTXPG concentration} = 96 + 7.7 \cdot \text{MTX}(\text{mg}) - 1.7 \cdot \text{BMI} - 28 \cdot \text{RBC} + 120 \cdot \text{creatinine} + 19.3 \cdot \text{GGH}(\text{C/T})$$

$$\text{MTX dose (mg)} = \{100 (\text{MTXPG}) - 96 + 1.7 \cdot \text{BMI} + 28 \cdot \text{RBC} - 120 \cdot \text{creatinine} - 19.3 \cdot \text{GGH}(\text{C/T})\} / 7.7$$

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FRI0130

A SYSTEMATIC REVIEW OF NATURAL SUPPLEMENTS IN THE TREATMENT OF RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) is a chronic autoimmune condition affecting almost 1% of the general population (1). Pharmacological management has been the mainstay of treatment for RA and includes DMARDs and biologics. Despite these therapies, anywhere from 28-90% of patients with RA use complementary and alternative medicine (2). These non-pharmacological therapies range from dietary interventions to supplements to nonprescription therapies.

Objectives: To determine the efficacy of non-pharmacological, orally-ingested interventions on clinically-relevant endpoints in patients with rheumatoid arthritis.

Methods: We systematically reviewed EMBASE and MEDLINE electronic databases from inception until Feb 23, 2019 for relevant articles. Only randomized controlled trials (RCTs) which assessed oral, non-pharmacological interventions (e.g. diets, vitamins, oils, herbal remedies, fatty acids, supplements, etc.) in adult patients with RA, that presented clinically-relevant outcomes (defined as pain, fatigue, disability, joint counts, and/or disease indices) were included.

Clinical outcome data was extracted by two independent authors as difference from baseline measurement. Therapies with at least 3 RCTs which presented data on the same clinical outcome were meta-analyzed using a pooled random effects model using RevMan 5.

Results: A total of 4423 unique articles were independently assessed by two authors, of which 72 articles met our inclusion criteria. Thirteen different interventions were studied more than once, and six interventions had clinical outcomes reported in at least 3 trials. However, only vitamin D and fatty acids met criteria for meta-analysis.

Pooled random effects models suggested vitamin D supplementation improved HAQ scores from baseline (mean difference = -0.10, 95% confidence interval (CI) = -0.17 to -0.02; p=0.01) but had no effect on DAS28 scores (Table 1).

Table 1. Mean differences from baseline of various clinical outcomes in RA patients taking vitamin D or fatty acid supplementation compared to control group.

Clinical Outcome	Total Patients	Mean Difference (95% CI)	P-value
Vitamin D			
HAQ	573	-0.10 (-0.17 to -0.02)	0.01
DAS28	174	-0.30 (-0.71 to 0.11)	0.15
Fatty Acids			
TJC	661	-2.05 (-2.83 to -1.27)	0.04
SJC	582	-0.35 (-0.96 to 0.26)	0.26
RAI	234	-1.82 (-4.69 to 1.05)	0.21
Pain	756	-0.61 (-1.02 to -0.20)	0.004
Patient Global	484	-0.26 (-0.59 to 0.07)	0.12
Physician Global	382	-1.08 (-1.98 to -0.18)	0.02
HAQ	277	-0.13 (-0.18 to -0.09)	<0.001
DAS28	543	-0.19 (-0.36 to -0.01)	0.03

Fatty acid supplementation improved total joint counts, pain, physician global assessment scores, HAQ, and DAS28 from baseline (Table 1). There were significantly more patients who achieved ACR20 criteria (Relative Risk Ratio = 2.73, 95% CI 1.62-4.58; p<0.001) (Figure 1).

<https://account-congress.eular.org/Modules/Abstract/Submission/summary.aspx>

Figure 1. Forest plot of studies in which RA patients taking fatty acids achieved ACR20 criteria. <https://account-congress.eular.org/Modules/Abstract/Submission/summary.aspx>

Conclusion: From our meta-analysis, vitamin D and fatty acids supplementation showed statistically significant improvement in some clinical outcomes in patients with RA; however, the degree of improvement is unlikely to be clinically significant. Overall, many trials were of low quality and had high risks of bias including inadequate reporting of data. Further clinical trials that are well-designed and fully powered are still needed to confirm the efficacy of many supplements and diets in RA.

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FRI0131

SUSTAINABILITY OF RESPONSE BETWEEN UPADACITINIB AND ADALIMUMAB AMONG PATIENTS WITH RHEUMATOID ARTHRITIS AND PRIOR INADEQUATE RESPONSE TO METHOTREXATE

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Background: The primary treatment goal for patients (pts) with rheumatoid arthritis (RA) is a state of sustained clinical remission (REM) or low disease activity (LDA).^{1,2}

Objectives: To assess the long-term sustainability of response to upadacitinib (UPA), a JAK inhibitor, and adalimumab (ADA), both with background methotrexate (MTX), among pts with RA and prior inadequate response to MTX.