

**Oxidative stress mediated therapy in patients with rheumatoid arthritis: A systematic review and meta-analysis**

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**ADMINISTRATIVE INFORMATION****Support** - No support.**Review Stage at time of this submission** - Completed but not published.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202390064**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 September 2023 and was last updated on 20 September 2023.**INTRODUCTION**

**Review question / Objective** Aim of this meta-analysis is to present all available literature to obtain updated data about potential use of antioxidants in treatment of RA and its ability to reduce disease progression and cardiovascular risk.

**Condition being studied** Rheumatoid arthritis is a chronic autoimmune disease characterized by progressive, symmetrical joint inflammation that can result in cartilage destruction, bone erosion and disability. In addition to autoimmune tissue destruction, oxidative stress plays an important role in the pathogenesis of RA.

**METHODS**

**Participant or population** Participants are RA patients and studies were reviewed based on the criteria of being a clinical trial that investigated the

antioxidant treatment in patients with RA. Intervention group was any group treated with the antioxidative stress therapy with no limitation to forms, doses or preparations, while the control group was standard group with conventional therapy or placebo (nonantioxidative stress thereapies).

**Intervention** Intervention group was any group treated with the antioxidative stress therapy with no limitation to forms, doses or preparations.

**Comparator** The control group was standard group with conventional therapy or placebo (nonanti-oxidative stress thereapies).

**Study designs to be included** Clinical trials.

**Eligibility criteria** There is no additional inclusion or exclusion criteria.

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**Information sources** Databases were searched included PubMed, Embase, Medline Complete, Web of Sciences and Cochrane Collaboration, Wanfang, China National Knowledge Infrastructure and VIP databases.

**Main outcome(s)** Databases were searched with the retrieval time up to March 2023. The main outcomes were clinical efficiency of antioxidant therapy (C-reactive protein, DAS28 score, HAQ, Number of tender joints etc.) and oxidative stress indicators (Cata-lase, superoxide dismutase or Total antioxidant capacity).

**Quality assessment / Risk of bias analysis** After selecting the literature according to the inclusion criteria and data extraction, for all studies was assessed Risk Bias to evaluate the quality of the included references. The content of the risk assessment of bias included the following criteria: random al-location method, allocation plan hiding, blind method, completeness of result data and selectivity of reporting of results, as well as other biases.

**Strategy of data synthesis** In this study was used Review Manager 5.4 software for statistical analysis. Standardized mean and mean difference with 95% confidence interval was used. The random effect model was used. The publication bias was detected using Cochrane Review manager. P higher that 0.1 was considered to have no publication bias.

**Subgroup analysis** There is no subgroup analysis.

**Sensitivity analysis** There is no sensitivity analysis.

**Country(ies) involved** Serbia.

**Keywords** antioxidants; rheumatoid arthritis; meta-analysis; clinical efficiency; oxidative stress markers; inflammatory markers.

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