

Exercise versus fixed-dose combination therapy for cardiovascular risk factors control and atherosclerotic disease prevention: A network meta-analysis protocol

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Introduction Despite the consistent evidence of the benefits of physical activity on preventing atherosclerotic cardiovascular diseases (ASCVD) and some cardiovascular risk factors, such as hypertension and dyslipidaemia, the prescription of drugs remains the most widely used approach to prevent ASCVD in clinical settings. The purpose of this study protocol is to provide a meta-synthesis methodology for comparing the effect of fixed-dose combination therapy and physical exercise on controlling cardiovascular risk factors and preventing ASCVD.

Methods and analysis This protocol follows the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols and the recommendations of the Cochrane Collaboration Handbook. We plan to conduct a computerised search in Medline, Web of Science, Embase, Cochrane Database of Systematic Reviews and SPORTDiscus from inception to May 2020 for studies testing the effectiveness of physical exercise or fixed-dose combination drug therapy in preventing ASCVD, all-cause and cardiovascular mortality and controlling some cardiovascular risk factors (hypertension and dyslipidaemia). Since performing network meta-analyses (NMA) is a statistical approach that allows direct and indirect comparisons of interventions, where sufficient studies are included, we plan to perform the following NMA comparing the effect of fixed-dose combination therapy and physical exercise interventions on (1) improving lipid profile, (2) reducing blood pressure, (3) preventing cardiovascular events and all-cause and cardiovascular mortality and (4) improving compliance with the therapeutic strategy

and reducing adverse events. Ethics and dissemination Ethical approval will not be needed because data included in the NMA will be extracted from published trials that meet accepted ethical standards. The results will be published in academic peer-reviewed journals, and the evidence gathered by this project could be included in the preventive cardiovascular disease guidelines. © Author(s) (or their employer(s)) 2020. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

clinical pharmacology

ischaemic heart disease

stroke medicine

acetylsalicylic acid

hydroxymethylglutaryl coenzyme A reductase inhibitor

aerobic exercise

Article

blood pressure

cardiovascular disease

cardiovascular mortality

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clinical effectiveness

Cochrane Library

cohort analysis

combination drug therapy

coronary artery atherosclerosis

data extraction

disease control

dyslipidemia

effect size

Embase

exercise

human

hypertension

ischemic heart disease

lipid fingerprinting

Medline

meta analysis

network meta-analysis

patient compliance

pilates

Preferred Reporting Items for Systematic Reviews and Meta-Analyses

prescription

primary prevention

prospective study

publication bias

randomized controlled trial (topic)

risk assessment

risk reduction

secondary prevention

stretching exercise

systematic review

Tai Chi

Web of Science

yoga