

INPLASY PROTOCOL

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Corresponding author:
Panagiota Kalatzi

gkalatzi@yahoo.com

Author Affiliation:
University of Athens,
Department of Medicine

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None known.

Protocol for a Systematic Review and Meta- Analysis on the impact of aerobic exercise on physiological and psychological parameters of HIV-infected patients

Kalatzi, P¹; Dinas, C.P²; Chryssanthopoulos, C³; Nanas, S⁴; Philippou, A⁵.

Review question / Objective: What effect does supervised continuous aerobic exercise of moderate intensity has on physiological and psychological parameters of HIV- positive patients?

Condition being studied: HIV – positive patients experience more psychosomatic limitations than healthy populations and therapeutic interventions need to be implemented to enhance their physical and mental health. Exercise seems to provide health benefits to HIV- positive patients. In order to implement physical exercise in health-medical treatment plans for HIV-infected patients, it is necessary to clearly define the parameters related to its customized prescription.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 July 2020 and was last updated on 10 July 2020 (registration number INPLASY202070035).

INTRODUCTION

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therapeutic interventions need to be implemented to enhance their physical and mental health. Exercise seems to provide health benefits to HIV- positive patients. In order to implement physical exercise in health-medical treatment plans for HIV-infected patients, it is necessary to clearly define the parameters related to its customized prescription.

METHODS

Participant or population: HIV-positive patients.

Intervention: Continuous supervised aerobic exercise of moderate intensity, with a frequency of 3 times per week or more, and duration equal or more than 4 weeks.

Comparator: Usual care (no-exercise or other intervention).

Study designs to be included: Randomized controlled trials (RCTs).

Eligibility criteria: Only (a) randomized controlled trials (RCTs), which compare aerobic exercise with non-exercise, or other intervention in the control arm, (b) studies with HIV- positive patients at all stages of the infection, with or without comorbidities, at the age of 18 or older, and (c) the application of a supervised continuous aerobic exercise of moderate intensity with a frequency of 3 times per week or more, and duration equal or more than 4 weeks, were considered eligible for inclusion.

Information sources: PubMed, Physiotherapy Evidence Database (PEDro) and Cochrane Library databases have been searched. Reference lists of the eligible for inclusion articles have been also searched in order to find studies that were not identified through the electronic search. Not accessible study texts, were requested by the corresponding author via email.

Main outcome(s): Cardiorespiratory [i.e. VO₂max and 6-Minute Walk Test (6-MWT)] and pulmonary [i.e. forced vital capacity (FVC), forced expiratory volume in 1 second

(FEV₁)] parameters of physical function, as well as immunological (CD4 count cells/mm³) and hemodynamic [diastolic blood pressure (DBP) and systolic blood pressure (SBP)] variables, will be assessed. Additionally, the psychological state (estimated through psychometric scales) of the participants in the primary studies, will be also assessed.

Quality assessment / Risk of bias analysis: The risk of bias was assessed using the Cochrane Collaboration's tool for assessing the risk of bias. The following risk of bias components were assessed: (1) selection bias (random sequence generation and allocation sequence concealment), (2) performance bias (blinding of participants and personnel), (3) detection bias (blinding of outcome assessors), (4) attrition bias (incomplete outcome data), and (5) selective reporting bias.

Strategy of data synthesis: Quantitative analysis will be applied to synthesize primary study results, using continuous, inverse variance, random-effects model with RevMan 5.3 software. Means and standard deviations will be used to test mean differences between exercise and control conditions. The 95% confidence interval (CI) and heterogeneity between studies using the I² statistic will be evaluated. We will consider a statistically significant result for heterogeneity when $p < 0.10$. Significance level will be set at $p < 0.05$.

Subgroup analysis: Subgroup analysis will be conducted between exercise and control conditions for a) CD4 count cells, b) Maximal Oxygen Uptake (VO₂max) and c) Beck's depression inventory score. The study effect sizes will be synthesized to account for heterogeneity due to differences in study populations, interventions, study duration, and other factors.

Sensibility analysis: Sensibility analysis will be resolved according to the emerging issues that will be identified during the review process.

Country(ies) involved: Greece.

Keywords: HIV/AIDS, exercise, aerobic, systematic review.

Contributions of each author:

Author 1 - Panagiota Kalatzi.

Author 2 - Petros C. Dinas.

Author 3 - Costas Chryssanthopoulos.

Author 4 - Serafim Nanas.

Author 5 - Anastassios Philippou.