Effect of long-term exercise on haemostasis and inflammation in patients with stable coronary artery disease

J Kristiansen[1-3], EL Grove[1], SD Kristensen[1], M Mohr[4], J Rasmussen[3] AM Hvas[2]

[1]Department of Cardiology, Aarhus University Hospital, Denmark
[2]Department of Clinical Biochemistry, Aarhus University Hospital, Denmark
[3]National Hospital of the Faroe Islands, Faroe Islands
[4]Faculty of Health Sciences, University of the Faroe Islands, Faroe Islands

Background

- Cardiovascular disease is the leading cause of death worldwide.
- Exercise training has a central role in the rehabilitation of patients with coronary artery disease (CAD).
- Exercise training reduces the risk of cardiovascular death and hospital admissions, and improves quality of life.
- Haemostasis and inflammatory activity in the arterial wall are unfavourably altered in patients with CAD compared with healthy controls.
- The mechanisms explaining the beneficial effects of long-term exercise training in patients with CAD are sparsely investigated.

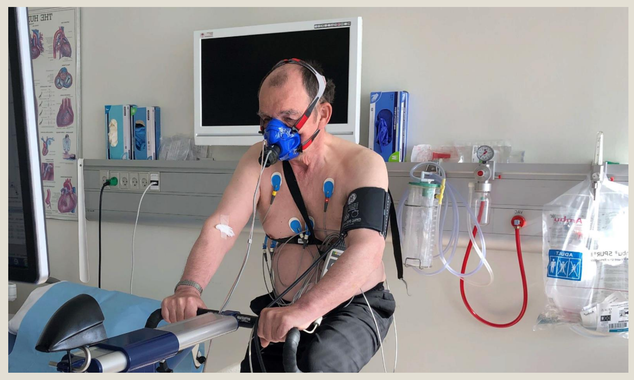
Methods

- A prospective randomised controlled trial.
- 169 CAD patients.
- Short-term test: Blood samples before, immediately after, and two hours after exercise stress test.
- Long-term test: Blood samples before, midway, and three months after randomisation.
- We will evaluate:
  - Primary haemostasis
  - Secondary haemostasis
  - Fibrinolysis
  - Inflammatory markers.

Exercise protocol

169 CAD patients and 26 individuals without CAD performed a short-term exercise test.

84 CAD patients are randomised to long-term exercise training.



85 CAD patients are randomised to standard care.

169 CAD patients are performing the exercise stress test after the randomisation period.

Objectives

Investigate if the beneficial effect of exercise training is partly explained by beneficial effects on haemostasis and inflammation in CAD patients.

Outcomes

We will evaluate platelet turnover and aggregation, coagulation, fibrinolysis, and inflammatory markers before and after short- and long-term exercise, and the two randomised groups will be compared.

Perspectives

When mechanisms explaining the beneficial effects of exercise training have been further elucidated, the priority of exercise training may increase and eventually optimize the quality of life and prognosis in patients with CAD.

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