

Exercise-induced cardiac troponin release and vascular diseases

Clinical relevance

According to the WHO cardiovascular diseases are the leading cause of death worldwide. The presence of intracellular cardiac troponin subunits T and I (cTnT and cTnI) in the blood is a sensitive and specific indicator for myocardial injury. Current guidelines of the European Society of Cardiology and the American College of Cardiology attribute a central role for elevated troponin levels in the diagnosis of acute myocardial infarction.

Background

Interestingly, elevated circulating cTnT/cTnI concentrations have also been reported after prolonged high-intensity exercise, with a significant portion of the athletes demonstrating cardiac troponin levels exceeding the cut-off level that is used for the diagnosis of myocardial infarction.

The clinical 'value' of these exercise-induced cardiac troponin elevations is currently unknown. We also don't know whether the increase in cardiac troponin levels following exercise is a physiological response, or reflects cardiac damage. However, recent studies suggested that elevated levels of resting troponin levels are an important predictor for the development of cardiovascular diseases and all-cause mortality. Potentially, peak post-exercise cardiac troponin levels are superior to the predictive value of baseline levels, and athletes with high exercise-induced troponin levels might be at risk for cardiovascular diseases and mortality.

Goals

The aim of this internship is to determine the predictive capacity of (exercise-induced) cardiac troponin levels in participants of the Nijmeegse Vierdaagse. Therefore you will contact subjects of the Vierdaagse Onderzoek, that have been participated between 2008 – 2012. Accordingly you relate the baseline and exercise-induced cardiac troponin levels to the incidence of cardiovascular diseases and mortality.

Methods

During your internship you will recruit patients / subjects, collect your own dataset, and perform your own data analysis.

We offer:

The possibility to perform and present high quality clinically oriented research in a professional, multicultural and highly motivating working environment in a well-equipped department, under the supervision of Dr. Thijs Eijsvogels and Dr. Dick Thijssen.

We are looking for:

A highly motivated student of the studies medicine or biomedical sciences with a pro-active attitude!

Contact:

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