Discovery of Atherothrombosis Candidate Genes by Microarray of Platelets and Monocytes, Microarray on blood cells in Coronary Artery Disease

Published: 11-08-2006
Last updated: 20-05-2024

In this study we will test the study hypothesis whether there is differential gene expression between patients with a history of premature MI and healthy controls when testing RNA obtained from highly purified platelets and monocytes.

Ethical review	Approved WMO
Status	Pending
Health condition type	Coronary artery disorders
Study type	Observational invasive

Summary

ID

NL-OMON30059

Source
ToetsingOnline

Brief title
Microarray on bloodcells in CAD

Condition

- Coronary artery disorders
- Arteriosclerosis, stenosis, vascular insufficiency and necrosis

Synonym
Coronary Artery Disease, Myocardial Infarction

Research involving
Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum
Source(s) of monetary or material Support: Europese Unie

Intervention

Keyword: cardiovascular disease, genetics, monocytes, platelets

Outcome measures

Primary outcome

The discovery of genetic markers in platelet- and monocyte- genes, key players

in atherosclerotic disease and atherothrombosis, may allow stratification of

CAD risk and the tailoring of preventative and therapeutic treatment.

Secondary outcome

not applicable

Study description

Background summary

The risk of cardiovascular disease is determined by the interplay between an individual*s genetic background, lifestyle and environment. Twin studies have demonstrated a substantial genetic component for cardiovascular disease with a concordance of 20% and several risk genes have already been discovered. However, genetic markers to predict the risk of atherothrombosis are currently not available. The discovery of such markers will allow stratification of risk and the tailoring of preventive and therapeutic treatment.
The Bloodomics project (www.bloodomics.org) focuses on the genetics and cell biology of platelets and monocytes, since it is hypothesized that the magnitude of response of these blood cells to vascular injury is critical in determining whether thrombus formation will lead to arterial blood vessel occlusion and thus MI ensues.

Study objective

In this study we will test the study hypothesis whether there is differential gene expression between patients with a history of premature MI and healthy

controls when testing RNA obtained from highly purified platelets and monocytes.

Study design

After obtaining written informed consent 150 ml of blood will be taken by venepuncture. Platelets and monocytes will be purified by highly standardised and validated techniques. RNA will be extracted from the platelets and monocytes. The RNA will then be used for gene expression profiling using several possible array platforms (e.g. Affymetrix, Illumina, *in-house* generated spotted arrays) and for other quantitative and semi-quantitative techniques (e.g. real-time RT-PCR by Taqman). RNA may also be used to generate cDNA for sequencing.

Comparing results from cases and controls will identify genes that are differentially expressed. Some or all of the genes that are identified as being differentially expressed may be validated using quantitative real-time PCR.

Study burden and risks

The risk for the participants is minimal and only releted to venapuncture

Contacts

Public
Academisch Medisch Centrum

Meibergdreef 9
1105 AZ Amsterdam
Nederland
Scientific
Academisch Medisch Centrum

Meibergdreef 9
1105 AZ Amsterdam
Nederland

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

*Caucasoid
*Between 18 and 35 years of age for male patients and 18 and 45 years for female ones.
*History of confirmed MI according to WHO criteria
*Positive family history for premature CAD in a first degree relative.
*Informed Consent

Exclusion criteria

Current clinical CAD,
Current infection,

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	08-01-2006
Enrollment:	50
Type:	Anticipated

Ethics review

Approved WMO
Application type: First submission
Review commission: METC Amsterdam UMC

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL12984.018.06