Pharmacogenomics of anthracycline-induced cardiotoxicity in children with cancer

Published: 14-04-2009
Last updated: 06-05-2024

ObjectiveThe overall goal of this project is to identify the specific genomic markers associated with severe anthracycline-induced cardiotoxicity to be able to identify high-risk patients. The specific objective of this proposal To validate and...

Ethical review	Approved WMO
Status	Pending
Health condition type	Heart failures
Study type	Observational invasive

Summary

ID

NL-OMON33355

Source
ToetsingOnline

Brief title
Pharmacogenomics and anthracycline cardiotoxicity

Condition

- Heart failures

Synonym
heart damage cardiotoxicity

Research involving
Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum
Source(s) of monetary or material Support: Genome Canada

Intervention

Keyword: Anthracyclines, Cancer, Children, Pharmacogenetics

Outcome measures

Primary outcome

gene variants responsible for anthracycline-induced

Secondary outcome

nvt

Study description

Background summary

Anthracyclines, such as doxorubicin, are commonly being used to treat adult and childhood leukemia and various solid tumors, and are highly effective. Up to 60% of all childhood cancer patients receive anthracyclines. Even though some patients can tolerate high doses of anthracyclines, up to 16% of patients treated will suffer severe cardiotoxicity, some even at low doses, and will develop restrictive or dilated cardiomyopathy, eventually leading to death or requirement of heart transplantation or life-long treatment for chronic cardiac failure, and 33-41% will be moderately affected.3 These devastating effects can occur immediately after drug use, but also many years after chemotherapy completion. Genetic factors are most likely to be a major contributor to this adverse drug reactions.

Study objective

Objective
The overall goal of this project is to identify the specific genomic markers associated with severe anthracycline-induced cardiotoxicity to be able to identify high-risk patients.

The specific objective of this proposal
To validate and replicate gene variants associated with increased risk of anthracycline-induced cardiotoxicity that have been found in the GATC study in survivors of cancer who have been treated in the Emma Children*s Hospital/ Academic Medical Center (EKZ/AMC).

Study design

Case control study
A saliva sample will be obtained and patient DNA will be extracted. DNA will be genotyped using a high-throughput genotyping assay.Genes with SNPs found to be highly linked with the ADR might be further investigated by sequencing samples for SNPs not genotyped initially, including SNPs and mutations in promoter regions, splice sites, and other regulatory sites.

Study burden and risks

Only a saliva sample will be obtained. If there are unexpected problems with the analyses a blood sample will be obtained. So the risks are minimal. Furthermore the analyses will be performed anonymous.

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

Diagnosis of childhood cancer and treatment with anthracyclines
Decreased heart function and normal heart function
Age: at least 18 years old

Exclusion criteria

Age: below 18 years

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)

Primary purpose: Other

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-03-2009
Enrollment:	80
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	NL26852.018.09