MRKH syndrome caused by Intrauterine Placental Transfusion between sex-discordant twins?

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Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Reproductive tract and breast disorders congenital
Study type	Observational invasive

Summary

ID

NL-OMON43018

Source
ToetsingOnline

Brief title
MIPT study

Condition

- Reproductive tract and breast disorders congenital
- Congenital reproductive tract and breast disorders

Synonym
Mayer - Rokitansky - Kuster - Hauser (MRKH) syndrome

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit Medisch Centrum
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: chimerism, MRKH syndrome, twins

Outcome measures

Primary outcome

The presence of chimerism in MRKH patients, determined by Y-chromosome-specific real-time quantitative polymerase chain reaction.

Secondary outcome

In addition we want to test if the chimerism is only confined to blood, by testing (micro)chimerism in non-hematopoietic tissue (buccal smear) in MRKH patients. If the chimerism is present in the blood, but not in this non-hematopoietic tissue, this supports the idea that the chimerism is a result of blood sharing via intrauterine placental connections.

Study description

Background summary

Mayer Rokitansky Küster Hauser (MRKH) syndrome is a congenital disorder, characterized by aplasia of the uterus and the upper two thirds of the vagina. The aetiology of this disease is unknown. The freemartin phenomenon represents a similar phenotype in cattle, in which female calves are lacking the Müllerian duct derivatives.This phenomenon occurs in sex-discordant calf-twins, in which a shared placenta allows blood exchange. It is speculated that placental transfusion of antimullerian hormone (AMH) from male to female calf-fetus is a possible cause. This placental transfusion also results in blood chimerism; the existence of two blood cell lines in one organism derived from two genetically distinct zygotes.
We hypothesize that in humans too, transfusion of AMH intra-uterine from a male co-twin to a female co-twin is responsible for the development of MRKH in the female co-twin. The Müllerian duct in human develops in the sixth week of pregnancy. This means that possible twin-to-twin-transfusion of AMH - resulting in regression of the duct - takes place in an early stage in fetal development. Therefore it can also occur in the case of a spontaneous reduction of one fetus

(vanishing twin). A vanishing twin can leave its traces by microchimerism: in which a second cell line is present with a low concentration in the surviving fetus.

Study objective

The aim of this study is to determine whether male microchimerism is present in patients with MRKH syndrome. This would be a sign of intrauterine cell trafficking - and possible AMH transfer- from male to female co-twin. This placental blood transfusion could be the cause of the origin of the MRKH syndrome.

Study design

Observational case control study.

Study burden and risks

This is a non-therapeutic study. In the course of this study we ask the subjects for one visit to the outpatient clinic or a home visit for blood sampling and a short questionnaire.

Contacts

Public
Vrije Universiteit Medisch Centrum

de Boelelaan 1118
Amsterdam 1081HZ
NL
Scientific
Vrije Universiteit Medisch Centrum

de Boelelaan 1118
Amsterdam 1081HZ
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

Patients:
- Diagnosed with MRKH syndrome
- 18 - 50 years;Control group: (already sampled as control patients in a previous study)
- 18 - 50 jaar

Exclusion criteria

- not willing or able to sign the informed consent
- reported pregnancy (in the control group)

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: Recruitment stopped

Start date (anticipated):	02-03-2017
Enrollment:	96
Type:	Actual

Ethics review

Approved WMO Date:	28-12-2016
Application type:	First submission
Review commission:	METC Amsterdam UMC
Approved WMO Date:	19-10-2018
Application type:	Amendment
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	NL57503.029.16
Other	TC = 5961