Evaluation of the role of trained innate immunity in the development of rheumatoid arthritis

Published: 23-07-2014
Last updated: 21-04-2024

To determine whether nonspecific triggering of monocytes is associated with different epigenetic programming and expression of pro-inflammatory cytokines in clinically suspect arthralgia and in RA.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Autoimmune disorders
Study type	Observational invasive

Summary

ID

NL-OMON40866

Source
ToetsingOnline

Brief title
Evaluation trained immunity in the development of RA

Condition

- Autoimmune disorders
- Joint disorders

Synonym
artralgia, reumatoid artritis

Research involving
Human

Sponsors and support

Primary sponsor: Leids Universitair Medisch Centrum
Source(s) of monetary or material Support: vidi beurs

Intervention

Keyword: development, monocytes, rheumatoid arthritis, trained immunity

Outcome measures

Primary outcome

In case prolonged increased responsiveness of monocytes is one of the hits in

the multiple hit process of RA we anticipate that:

- There are differences in monocytes of RA patients and healthy controls.

- It is an early phenomenon, so it is already present in patients with

clinically suspect arthralgia with subclinical inflammation on the MRI.

These hypotheses will be tested in this study.

Secondary outcome

NA

Study description

Background summary

The development of rheumatoid arthritis (RA) is a multiple hit process and patients with clinically suspect arthralgia and subclinical inflammation at the MRI are at risk for RA development (this is studied in P. 11.210). Since the development of RA is a multiple hit process, the challenge is to identify the hits that are relevant for RA development.
The development of RA related auto-antibodies may be one of the hits; this reflects a process that provides long term memory on the level of the adaptive immune response. Other factors are presumably relevant as 40% of the RA-patients are autoantibody negative.
Very recently it has been shown that the innate immune response is able to display adaptive features as well. It has been shown that nonspecific triggering of monocytes results in different epigenetic programming and increased expression of pro-inflammatory that persists for at least three months. This memory effect, which is called trained immunity, has been shown relevant for increased responses to secondary infections. Our hypothesis is that it also plays a role in the development of RA. In case prolonged increased

responsiveness of monocytes is one of the hits in the multiple hit process of RA we anticipate that:
- There are differences in monocytes of RA patients and healthy controls
- It is an early phenomenon, so it is already present in patients with clinically suspect arthralgia with subclinical inflammation on the MRI

Study objective

To determine whether nonspecific triggering of monocytes is associated with different epigenetic programming and expression of pro-inflammatory cytokines in clinically suspect arthralgia and in RA.

Study design

This explorative study has a cross-sectional design and evaluates monocytes derived from PBMCs of 20 healthy persons, 20 patients with clinically suspect arthralgia and subclinical inflammation on the MRI and 20 RA patients. The clinically suspect arthralgia (CSA) patients are included in the study *identifying rheumatoid arthritis in a preclinical phase*(P11.210).
Since in general both RA and CSA patients are middle aged and have a female:male ratio of 2:1, the healthy controls will be matched for age and gender to the patient groups.

Study burden and risks

NA

Contacts

Public
Leids Universitair Medisch Centrum

Albinusdreef 2
Leiden 2333 ZA
NL
Scientific
Leids Universitair Medisch Centrum

Albinusdreef 2
Leiden 2333 ZA
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

patients with clinically suspect arthralgia and inflammation on the MRI
patients diagnosed with RA
healthy volunteers
aged >=18 years
all subjects have to give their written informed consent.

Exclusion criteria

not fulfilling inclusioncriteria

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):	03-11-2014
Enrollment:	60
Type:	Actual

Ethics review

Approved WMO

Date:	23-07-2014
Application type:	First submission
Review commission:	METC Leids Universitair Medisch Centrum (Leiden)

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	NL49496.058.14