Sarcopenia in patients suffering from rheumatoid arthritis and osteoarthritis, a pilot study.

Published: 21-01-2008
Last updated: 10-05-2024

We aim to define the role of systemic, low grade, chronic inflammation in the development of sarcopenia and therefore study patients with rheumatoid arthritis and patients with osteoarthritis as controls, on cellular and functional level. Until now…

Ethical review	Approved WMO
Status	Pending
Health condition type	Immune disorders NEC
Study type	Observational invasive

Summary

ID

NL-OMON31760

Source
ToetsingOnline

Brief title
Sarcopenia and inflammation.

Condition

- Immune disorders NEC
- Musculoskeletal and connective tissue disorders NEC

Synonym
muscle weakness, sarcopenia

Research involving
Human

Sponsors and support

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

Intervention

Keyword: inflammation, oesteoarthritis, rheumatoid arthritis, sarcopenia

Outcome measures

Primary outcome

1. On a cellular level: differences in satellite cell number, proliferative potential of myoblasts, differential capacity of myoblasts, cellular capacity to react to the exposure to oxidative stress, presence of muscle atrophy.

2. On a systemic level: differences in the systemic inflammatory status, number of lymphocyte subsets.

3. On a functional level: differences in handgrip strength, leg press strength, isometric knee extensor strength.

4. On an imaging level: differences in muscle architecture.

Secondary outcome

No secondary outcome.

Study description

Background summary

Sarcopenia is a universal, age-related loss of muscle mass associated with a loss of strength and function resulting in muscle weakness. It often leads to progressive disability and loss of independence. The development of sarcopenia has also been associated with increased mortality. Despite its clinical importance, the pathophysiology leading to sarcopenia is not well understood. Environmental factors, such as a sedentary life style and malnutrition contribute to sarcopenia; other possible causes of sarcopenia include systemic changes such as a decreased growth hormone production and increased inflammatory cytokine secretion.
One of the hallmarks of rheumatoid arthritis (RA) is chronic inflammation, which leads to the destruction of the cartilage, bone and ligaments causing deformity of the joints. Cytokines, such as TNF-α, IL-1β and IL-6, play a key

role in driving synovial cell activation leading to joint destruction. Synovium and synovial fluid contain more cytokine activity compared to control patients with osteoarthritis (OA), whereas, on systemic level, a reduced release of INF-γ during whole blood stimulation tests is seen in RA patients versus controls. In RA patients with minimally involved knee involvement, weakness of the quadriceps is significantly present, which could underline a possible role of systemic inflammation in the onset and progression of sarcopenia in RA patients.

Study objective

We aim to define the role of systemic, low grade, chronic inflammation in the development of sarcopenia and therefore study patients with rheumatoid arthritis and patients with osteoarthritis as controls, on cellular and functional level. Until now, there has not been a detailed investigation of the physiological, cellular and molecular consequences of RA on sarcopenia in a clinically well defined population.

Study design

Case (rheumatoid arthritis patients) - control (osteoarthritis patients) study.

Study burden and risks

No potential risks are expected. While the patients participating in this study may not directly derive any immediate benefits, the results of the study should improve the understanding of the pathogenesis of sarcopenia.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

rheumatoid arthritis
osteoarthritis
age 45-70 years

Exclusion criteria

no

Study design

Design

Study type: Observational invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-12-2007

Enrollment:	40
Type:	Anticipated

Ethics review

Approved WMO 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	NL20629.058.07