Biomarkers for fatigue in patients with Myasthenia Gravis

Published: 05-07-2021
Last updated: 08-04-2024

the main objective is to investigate if there are potential biomarkers for cognitive fatigue in MG. With this biomarker we aim to gain insight in the pathophysiology of fatigue. A biomarker could potentially be helpful in diagnostics, treatment and...

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Other condition
Study type	Observational invasive

Summary

ID

NL-OMON55325

Source
ToetsingOnline

Brief title
Biomarkers for fatigue in Myasthenia Gravis

Condition

- Other condition
- Neuromuscular disorders

Synonym
Myasthenia Gravis; Myasthenia Gravis

Health condition

cognitieve vermoeidheid

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: Biomarkers, Central fatigue, Cognitive fatigue, Myasthenia Gravis

Outcome measures

Primary outcome

The main study parameter is a serum biomarker which correlates with levels of fatigue. We expect this biomarkers to be (partly) influenced by disease severity and treatment. Therefore this study has the option to include a longitudinal design (part II) with data and samples over the course of 6-12 months (2 visits). During this part II of the study fluctuations in fatigue will be related to fluctuations in the previously identified biomarkers.

Secondary outcome

We will collect information on depression scores, age, sex, BMI, medication and degree of physical activity as these factors are associated with fatigue and are likely to influence results.

Study description

Background summary

Myasthenia Gravis (MG) is a chronic autoimmune disease affecting the neuromuscular junction. Although a hallmark of MG is muscle fatigability due to dysfunction of the neuromuscular junction (peripheral fatigue), a large number of MG patients also report symptoms of central/ cognitive fatigue, defined as an experienced lack of energy, physically and/or mentally. In October 2019 we performed a cross-sectional survey study (P15.287) among 420 Dutch MG patients showing a clinically relevant fatigue rate of 62% on the Checklist Individual

Strength-Fatigue subscale (CIS-f). Its pathophysiology is likely multifactorial in nature but there are some unanswered questions.

Study objective

the main objective is to investigate if there are potential biomarkers for cognitive fatigue in MG. With this biomarker we aim to gain insight in the pathophysiology of fatigue. A biomarker could potentially be helpful in diagnostics, treatment and longitudinal follow-up of fatigue.
We hypothesize that the elevated serum biomarker has its origin in the affected muscles.

Study design

Exploratory study (phase 1) with the option for a longitudinal design (phase 2). We have chosen a longitudinal design to investigate the effect of change in central fatigue scores on the potential biomarkers. However, we will only carry out phase II if the first part of the study yields biomarkers that can be used in a longitudinal follow-up study. Therefore, after the final inclusion in part I of the study, the results will be analysed. If there are biomarkers which have a significant association with fatigue, we will continue the study and perform part 2. If there are no biomarkers associated with fatigue, the study will end after part 1.

Study burden and risks

Patients are informed that they will not likely profit directly from participation in this study. The insights that can be obtained through this study can be used as a step towards a diagnostic tool for fatigue in MG.
The study will consist out of 1 visit of approximately 2-3 hours.

Risks
• The risk of venous blood withdrawal is that the puncture can be painful and/or a hematoma at the puncture site can arise, causing minor discomfort. The amount of blood to be withdrawn is small, approximately 225-385cc and is not expected to give any problems.
• Performing a QMG will take 10 minutes and consists of an assessment of muscle fatigability. There are no risks involved, except for a minor risk of discomfort when patients with difficulties swallowing are asked to drink half a cup of water. This risk will be minimized by leaving out this item when known difficulties with swallowing are present, as is common clinical practice.
• A muscle biopsy is performed under local anaesthesia. It does not require the patient to stay in the hospital after the procedure and does not impair normal daily activities afterwards. The complication risk is low and limited to a small possibility of development of a hematoma, which generally does not need treatment or hospital admission. Separate informed consent forms for muscle

biopsies must be signed before muscle biopsies can be performed.

Contacts

Public
Leids Universitair Medisch Centrum

Albinusdreef 2
Leiden 2333ZA
NL
Scientific
Leids Universitair Medisch Centrum

Albinusdreef 2
Leiden 2333ZA
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

myasthenia gravis with anti-acetyl choline receptor antibodies

Exclusion criteria

- A medical history of other active auto-immune disorders for which the patient currently receives a medical treatment, such as thyroid disease or rheumatoid arthritis.

- A recent medical history of neoplasms.
- Substance abuse.

Study design

Design

Study type: Observational invasive

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

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	19-05-2022
Enrollment:	115
Type:	Actual

Ethics review

Approved WMO

Date:	05-07-2021
Application type:	First submission
Review commission:	METC Leiden-Den Haag-Delft (Leiden) metc-ldd@lumc.nl

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	NL72266.058.20