Predictive biomarkers and the role of the microbiome determining response to antiinflammatory treatment in Inflammatory Bowel Disease (Crohn's disease and ulcerative colitis)

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Ethical review	Approved WMO
Status	Recruiting
Health condition type	Gastrointestinal inflammatory conditions
Study type	Observational invasive

Summary

ID

NL-OMON50413

Source
ToetsingOnline

Brief title
Predictive biomarkers and the role of microbiome on treatment for IBD

Condition

- Gastrointestinal inflammatory conditions

Synonym
Crohn's disease, inflammatory Bowel Disease, ulcerative colitis

Research involving
Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum
Source(s) of monetary or material Support: self-funded and philantropic organizations

Intervention

Keyword: Crohn's disease, Inflammatory Bowel Disease, Predictive biomarkers, ulcerative colitis

Outcome measures

Primary outcome

Determination of concentrations of cytokines and chemokines, presence of

inflammatory cell subtypes and identification of mucosal microbiome in biopsies

taken from patients with active IBD before/during/after the start of new

anti-inflammatory treatment.

Secondary outcome

Determination of patients:

- Genotype (including whole genome methylome and transcriptome)

- Luminal microbiome

- Serum cytokines and chemokines

is associated with mucosal immunotype and microbiome in relationship to

treatment response

Study description

Background summary

Inflammatory bowel disease (IBD) is a term used to include several diseases, most commonly Crohn*s disease (CD) and ulcerative colitis (UC), which are chronic idiopathic diseases affecting the gastrointestinal tract. Given the relapsing and unrelenting course of both conditions, a majority of patients

will experience disease progression and complications that ultimately lead to significant symptoms affecting quality of life and increased disability, morbidity and mortality as compared with the general population.
New treatments are needed and currently available treatments need further investigation. So far, most scientific research has focused at potential biomarkers in the genome and in the serum of patients with active disease, however no strong predictors have been identified for any of the therapies. Therefore, different biobank approaches are necessary in order to be able to identify more sensitive markers predicting response.

Study objective

In this project we will investigate biomarkers, cell types and microbiome in biopsies collected from patients with IBD before treatment is started with established therapeutic agents as well as during treatment. The interaction of the microbiome will primarily be determined at the level of the mucosa-adherent microbiome. In parallel, blood (DNA, RNA), serum and faeces will be stored to identify how well the genotype (and related gene expression), serum biomarker profile and faecal (luminal) microbiome and metabolome reflect the situation in the mucosa.
After collection of the data, a system biology approach will be applied for analysis. In the end, the goal is to identify patterns in the intestinal pathophysiology (inflammatory cell types and mucosal microbiome) in patients who response and fail to respond to different treatments. Finally, correlation of the mucosal findings to measurements in serum, DNA and *luminal bacteria* may allow the establishment of more easily applicable models for response to treatments.

Study design

This is a study based on a systems biology approach. Individual IBD patients with active disease will be studied before a new anti-inflammatory treatment is started and during this treatment based on the standardized follow-up in routine care. In parallel to the collection of patients* phenotypic data and detailed information on response to various treatments, mucosal biopsies will be collected and analysed for cytokines and chemokines, cell types and mucosa-associated microbiome. Moreover, blood, serum and faeces will be stored for analysis of the genotype, gene expression, the serum cytokine/chemokine profile and the *luminal* faecal microbiome/metabolome. This observational study is a multi-center study in the Academic Medical Center and OLVG oost in Amsterdam for the coming 10 years. Therefore we want to enroll 2240 patients.

Study burden and risks

The potential risks are minimal in this study and are part of the routine care. Peripheral blood is sampled with a negligible risk and low burden.

Endoscopy biopsies taken during sigmoido /colonoscopy include a minimal risk (+/- 1:10000)

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

Crohn's disease
ulcerative colitis
Inflammatory Bowel disease

Exclusion criteria

< 18 year
ongoing malignancy

Study design

Design

Study type: Observational invasive

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

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	03-11-2015
Enrollment:	2240
Type:	Actual

Ethics review

Approved WMO Date:	30-10-2015
Application type:	First submission
Review commission:	METC Amsterdam UMC
Approved WMO Date:	24-06-2019
Application type:	Amendment
Review commission:	METC Amsterdam UMC
Approved WMO Date:	12-11-2019
Application type:	Amendment
Review commission:	METC Amsterdam UMC
Approved WMO Date:	24-02-2020

Application type:	Amendment
Review commission:	METC Amsterdam UMC
Approved WMO Date:	17-03-2020
Application type:	Amendment
Review commission:	METC Amsterdam UMC
Approved WMO Date:	17-08-2020
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	NL53989.018.15