Effect of donor Intestinal Microbiota Infusion on Thyroid function in patients with subclinical autoimmune Hypothyroidism.

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As changes in gutmicrobiota composition could play a role in the development of autoimmune diseases including hypothyroidism, we will investigate whether repetitive fecal transplantation from either allogenic (healthy) or autologous (own) fecal…

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Thyroid gland disorders
Study type	Interventional

Summary

ID

NL-OMON23348

Source
Nationaal Trial Register

Brief title
IMITHOT

Condition

- Thyroid gland disorders

Health condition

hypothyrodism

Research involving
Human

Sponsors and support

Primary sponsor: Amsterdam UMC
Source(s) of monetary or material Support: Amsterdam UMC

Intervention

- Other intervention

Explanation

Outcome measures

Primary outcome

The primary effect parameter is the preserving (Thyrogen stimulated) fT4 and fT3 release at 6, 12, and 24 months compared with baseline (0 months). This dynamic thyroid functional endpoint is chosen because Thyrogen acts as an amplifier, which can magnify any underlying abnormality in thyroid hormone secretion by the thyroid gland, making it possible to detect subtle changes in thyroid functioning. Moreover, static thyroid serum markers (e.g., a single, fasted measurement) could be affected by external factors, such as seasonal variation, the timing of blood draw, exercise, diet and lifestyle, and BMI. In a dynamic function test measuring the net incremental increase in the AUC, these factors may have less influence on the results.

Secondary outcome

> Gut microbiota composition by sequencing the V3-V4 region of 16S rRNA genes with the Illumina MiSeq sequencer (overall composition by alpha- and beta-diversity indices, relative abundances of families, phyla, and amplicon sequence variants (ASVs), and principal component analysis of the taxonomic profiling).

> Profiling of immune cell subsets in PBMCs and thyroid tissue, using a single-cell high-dimensional profiling assay of Maxpar Direct Immune Profiling Assay.

> Fasting plasma targeted (microbial-derived) metabolomics will be measured by Metabolon (Durham, NC), using ultra-high-performance liquid chromatography coupled to tandem mass spectrometry (UPLC, as previously described[36][36]). Raw data will be normalized to account for interday differences. The levels of each metabolite will be rescaled to set the median equal to 1 across all samples. Missing values, generally due to the sample measurement falling below the detection limit, will be imputed with the minimum observed value for the respective metabolites.

> Intestinal transit time will be measured by the amount of ingested radiopaque markers (Transit-Pellets) seen on an abdominal X-ray.

> The thyroid-specific patient-reported outcome (ThyPRO) questionnaire will assess the

patient-reported quality of life.

> Total caloric intake, macronutrients (carbohydrates, proteins, fats, and fibers), and micronutrients (selenium and iodine, among others) will be reported by food frequency questionnaires (via mijn.voedingscentrum.nl/nl/eetmeter).

Study description

Background summary

Altered gutmicrobiota composition seems to play a role in the development of autoimmune disease. We therefore aim to investigate whether microbial transplantation from either allogenic (healthy) or autologous (own) fecal donors has beneficial effects on thyroid function in recently diagnosed patients with autoimmune hypothyroidism.

Study objective

As changes in gutmicrobiota composition could play a role in the development of autoimmune diseases including hypothyroidism, we will investigate whether repetitive fecal transplantation from either allogenic (healthy) or autologous (own) fecal donors has beneficial effect on residual thyroid function in recently diagnosed patients with autoimmune hypothyroidism.

Study design

0,6,12 and 24 months

Intervention

fecal transplantation, FMT

Contacts

Public
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Eligibility criteria

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

Inclusion criteria

- diagnosis of autoimmune hypothyroidism - age 18-70 years, BMI 18-30 kg/m2, male/females - antiTPO positive and increased TSH (above 10mE/L) with FT4 within normal reference value.

Exclusion criteria

- presence of other autoimmune disease (eg type 1 diabetes, coeliac, rheumatoid arthritis or inflammatory bowel disease like Crohn/colitis ulcerosa) - antibiotics and PPI use use in the last 3 months - (expected) prolonged compromised immunity (due to recent cytotoxic chemotherapy or HIV infection with a CD4 count < 240).

Study design

Design

Study phase:	N/A
Study type:	Interventional
Intervention model:	Other
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Placebo
Primary purpose:	Prevention

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	18-12-2019
Enrollment:	34
Type:	Actual

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Approved WMO Date:	03-08-2019
Application type:	First submission
Review commission:	MEC Academisch Medisch Centrum (Amsterdam) Kamer G4-214 Postbus 22660 1100 DD Amsterdam 020 566 7389 mecamc@amsterdamumc.nl

Study registrations

Followed up by the following (possibly more current) registration

ID: 48031
Bron: ToetsingOnline
Titel:

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL7931
Other	METC AMC : 2019_045
CCMO	NL69382.018.19
OMON	NL-OMON48031

Study results