Macrophage infiltration and adipocytokine expression in subcutaneous and visceral fat tissue in patients with Cushing's syndrome.

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To describe the differences in macrophage infiltration and mRNA expression of adipocytokines in subcutaneous, omental and perirenal fat tissue in Cushing's syndrome compared to healthy controls.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Hypothalamus and pituitary gland disorders
Study type	Observational non invasive

Summary

ID

NL-OMON37047

Source
ToetsingOnline

Brief title
Metabolic changes in Cushing's syndrome fat tissue.

Condition

- Hypothalamus and pituitary gland disorders
- Metabolism disorders NEC
- Vascular disorders NEC

Synonym
Cushing's syndrome, hypercortisolism

Research involving
Human

Sponsors and support

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

Intervention

Keyword: Adipocytokine, Cushing, Fat, Macrophage

Outcome measures

Primary outcome

- a) amount of macrophage infiltration in fat tissue

- b) mRNA expression of adipokines

- c) mRNA expression of proinflammatory cytokines

cytokines and adipokines that can be measured in blood of patients suffering

from Cushing's syndrome and controls.

Secondary outcome

none

Study description

Background summary

Cushing's syndrome consists of many symptoms caused by prolonged increased exposure to glucocorticoids. Cushing's syndrome is iatrogenic mostly, caused by prescribed glucocortidoids. However the endogenous form is rare with an incidence of 2-3/1.000.000 new cases a year. Endogenous hypercortisolism is caused by increased ACTH secretion by the pituitary or an ectopic source or by autonomous cortisol hypersecretion by the adrenals. The most common cause (70%) is an ACTH producing pituitary tumor (Cushing's disease).

Fat tissue is nowadays considered to be an important endocrine organ, because of its ability to secrete metabolically active proteins calles adipokines (i.e. leptin, aciponectin and resistin) and proinflammatory cytokines. The consistency of fat tissue changes in obesity; the volume of the adipocyte increases, macrophages infiltrate the fat tissue, the balance between pro- and

antiinflammatory adipokines changes and the secretion of cytokines increases. This causes chronic inflammation which most likely plays an important role in the etiology of glucose intollerance, hypertension, dyslipedemia and endothelial dysfunction. This complex is also known as the "metabolic syndrome".

In Cushing's syndrome all features of metabolic syndrome are present. The mortality risk in Cushing's syndrome is increased and is mostly determined by increased incidence of cardiovascular complications. It is plausible that in Cushing's syndrome the same changes in fat tissue happen as in obese patients. Possibly the chronic state of inflammation is caused or increased by increased cortisol levels. To our knowledge this has never been studied in fat tissue of patients with Cushing's syndrome.

Study objective

To describe the differences in macrophage infiltration and mRNA expression of adipocytokines in subcutaneous, omental and perirenal fat tissue in Cushing's syndrome compared to healthy controls.

Study design

Cross-sectional study design

Study burden and risks

Given the very minimal amount of fat that we want to harvest, we expect no additional burden and risk for the patient.

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

- patients with active Cushing's syndrome during adrenalectomy, confirmed by increased 24h urine cortisol excretions and a positive dexamethasone supression test.
- over 18 years old.
- informed consent

Exclusion criteria

none

Study design

Design

Study type:	Observational non 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):	01-02-2013
Enrollment:	20
Type:	Actual

Ethics review

Approved WMO

Date:	23-11-2012
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

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	NL41940.091.12