colesevelam hypoglycemia bile acid binding in rygb : a meal test study

No registrations found.

Ethical review	Positive opinion
Status	Pending
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON28329

Source
NTR

Brief title
COBRA

Health condition

post gastric bypass hyperinsulinemic hypoglycemia

Sponsors and support

Primary sponsor: Medical Center Leeuwarden
Source(s) of monetary or material Support: stichting CON-VOLUME research

Intervention

Outcome measures

Primary outcome

Glucose nadir during the MMT in mmol/L

Secondary outcome

During the MMT :

Number of patients with a hypoglycemic episode (glucose < 3.0 mmol/L)
Glucose Area under the curve between 60 and 180 minutes (glucose AUC60-180min),
Bile acids and derivatives, GLP-1, PPY, FGF-19, and insulin, both as peaks and as AUC0-60 min .
Glucose kinetics (absorption rate, endogenous glucose production) using stable isotope dilution of glucose
Satiety and hunger score, using a Visual Analogue Scale (VAS), 0-10 cm
Dumping complaints using a modified Dumping Severity Score (DSS)

Study description

Background summary

Rationale:
Postprandial hyperinsulinemic hypoglycaemia often occurs after bariatric surgery and is called PBH.
We previously found that 48% of patients after RYGB developed a hypoglycemic event in a mixed meal test (MMT). In these patients bile acid (BA) concentrations were much higher compared to those without hypoglycemia. Furthermore, more patients with hypoglycemia had undergone a cholecystectomy (CCx). The role of postprandial bile acids in PBH has up till now not been elucidated
Objective:
Primary : To investigate the effects of BA binding on the occurrence of hypoglycemia (glucose < 3.0 mmol/L) during a mixed meal test (MMT) in those patients after RYGB and cholecystectomy who develop a hypoglycemic event (glucose < 3.0 mmol/L) during a MMT.
Study design: prospective, non-blinded, pre- and posttreatment.
Study population:
Patients between 20 and 60 years who underwent RYGB surgery 2 years or more before and have a history of CCx
Intervention : only for those who develop a hypoglycemic event during the first MMT: colesevelam tablets 625mg , 6 tablets dissolved in water ingested just before the meal.
Main study parameters/endpoints:
Glucose nadir during the MMT
Number of patients developing hypoglycemia during the MMT
Glucose disposal rate and endogenous glucose production during the MMT measured with stable isotope dilution
Changes in bile acids and subclasses during the MMT
Changes in insulin, GLP-1, PYY, FGF19 during the MMT
Nature and extent of the burden and risks associated with participation, benefit and group relatedness:
Patients have to visit the outpatient clinic 1-2 times in fasting condition.
Via an indwelling catheter blood samples will be drawn 11 times to a total amount of 264 mL
The meal can induce dumping complaints and can induce a low blood sugar, which will be monitored and treated if necessary.

Study objective

Bile acids play a role in stimulating GI-hormone release after RYGB leading to an increased secretion of insulin causing postprandial hypoglycemia (PBH). Bile acid sequestrants could decrease the binding of BA with the TGR-5 receptor on L-cells. This would result in less GLP-1 release causing a lower insulin response to glucose leading to amelioration of postprandial hyperinsulinemic hypoglycemia.

Study design

20 patients will start the first MMT f Those who developed a hypoglycemia (glucose < 3.0 mmol/L) will enter the second part of the study. The MMT will be repeated preceded by colesevelam 3750 mg dissolved in water ingested just before the start of the MMT.

Intervention

colesevelam 625mg tablets, 6 tablets dissolved in water ingested together

Contacts

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Eligibility criteria

Inclusion criteria

RYGB patients, 2 years or more after surgery with a history of cholecystectomy, 20 to 60 years of age, with a stable weight (+/- 5 Kg in last 3 months) and without complaints of PBH

Exclusion criteria

- (history of) diabetes
- hypertriglyceridemia
- Known gastro-intestinal disease or history of gastro-intestinal disease, e.g. celiac disease, inflammatory bowel disease
- Known addiction behaviour
- Suspected compliance problems
- Intolerance to colesevelam
- Renal or hepatic insufficiency
- Medication influencing glucose metabolism
- Medication influencing bile-acid metabolism, e.g. ursodeoxycholic acid
- Critical medication of which absorption can be compromised by colesevelam and can not be ingested at least 4 hours before or later than colesevelam(e.g. levothyroxine, verapamil, fenytoïne, glibenclamide, glimepiride, ciclosporin, olmesartan, ethinylestradiol (oral contraceptives)
- Pregnancy or pregnancy planning

Study design

Design

Study type:	Interventional
Intervention model:	Other
Allocation:	Non controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	15-11-2021
Enrollment:	20
Type:	Anticipated

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Positive opinion

Date:	07-02-2021
Application type:	First submission

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
NTR-new	NL9249
Other	study is registered on www.toetsingonline.nl : RTPO Leeuwarden

Study results