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A pre-pregnancy study examining the effects of an intensive lifestyle package supported with Liraglutide treatment, a medication equivalent to a natural hormone produced in the stomach, in obese women with previous history of pregnancy diabetes

Submission date
21/12/2016

Recruitment status
No longer recruiting

Registration date
22/12/2016

Overall study status
Completed

Last Edited
30/05/2017

Condition category
Nutritional, Metabolic, Endocrine

[X] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[_] Record updated in last year

Plain English summary of protocol

Background and study aims
Up to 15% of pregnant women develop a temporary type of diabetes during pregnancy called gestational diabetes mellitus (GDM). In GDM, women develop high blood sugar levels as the body is unable to produce enough insulin (a hormone that helps convert sugar into stored energy). GDM is associated with increased risks for mother and baby including increased risk of later life diabetes for the mother and increased risk of childhood obesity for the baby. If a woman overweight or obese or has previously had GDM, then their risk of developing it is higher. Treatments during pregnancy to reduce the risk of GDM to date have been unsuccessful, and so it is important to look at the months before pregnancy as a time to intervene and reduce the chance of developing GDM in a subsequent pregnancy. Optimising mother's health prior to a pregnancy holds considerable potential to improve mother and baby's health in pregnancy. This study is looking at one such intervention in women at risk of GDM before pregnancy. The aim of this study is to find out whether this programme, which includes intensive lifestyle changes and treatment with a medication called Liraglutide, is feasible and acceptable to women.

Who can participate?
Women who are obese (without being diabetic) and/or have previously had GDM.

What does the study involve?
Participants are randomly allocated to one of two groups. Those in the first group take part in the GDM prevention intervention. This involves taking part in an intensive lifestyle change programme involving a healthy diet and physical activity, as well as receiving daily injections of liraglutide (a drug which mimics the action of a protein called GLP-1 which triggers the release of insulin). Those in the second group receive intensive lifestyle advice also. Participants in both

groups come to a clinic service in a monthly basis over a 6-month period, where various measurements and blood collection are carried out.

What are the possible benefits and risks of participating?
Participants may benefit from potentially improved the blood sugar levels and a reduction of the incidence of diabetes in subsequent pregnancies, as well as improved control of blood glucose in participants with type 2 diabetes mellitus and a reduction body weight. Liraglutide is generally tolerated well, however the most frequently reported adverse effects of Liraglutide are gastrointestinal (gut), more than 5% of patients will present with nausea, diarrhoea, vomiting, constipation, abdominal pain, and dyspepsia (indigestion). Serious side effects are rare during Liraglutide treatment.

Where is the study run from?
National Maternity Hospital (Ireland)

When is the study starting and how long is it expected to run for?
September 2016 to December 2020

Who is funding the study?
University College Dublin (Ireland)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
EC 26.2016

Study information

Scientific Title
An open-label randomized trial of an intensive lifestyle package supported with Liraglutide treatment in obese, non-pregnant women with previous history of Gestational Diabetes Mellitus

Study objectives
Pre-pregnancy treatment with an intensive lifestyle intervention supported by daily Liraglutide injections in obese non-pregnant women with previous gestational diabetes is feasible and acceptable.

Ethics approval required
Old ethics approval format

Ethics approval(s)
National Maternity Hospital Ethics Committee, 14/11/2016, ref: EC 26.2016

Study design
Single-centre open label randomised controlled trial

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Hospital

Study type(s)
Prevention

Participant information sheet
Not available in web format, please use the contact details below to request a patient information sheet

Health condition(s) or problem(s) studied
1. Gestational diabetes
2. Glucose intolerance
3. Obesity

Interventions
Eligible participants are randomised to one of two groups in a ratio of 1:1 for usual care versus intervention using computer-generated allocation.

Intervention arm: The study intervention involves a treatment package of an intensive lifestyle approach (including diet and physical activity advice) supported by a daily treatment of Liraglutide for a period of 6 months. The control group will have usual care.
At baseline and at 6 months an OGTT will be carried out and bloods analysed for metabolic parameters such as HOMA-IR, hsCRP, lipids and HbA1c.
A 3-day food diary and a lifestyle questionnaire will be given to participants, at baseline and at 6 months, to assess behaviour change, readiness and analyse nutritional quality of the diet.
At 6 months the intervention arm will complete an acceptability questionnaire to assess patient views of the intervention and a diary card to assess compliance with study medication.
At the end of the treatment/intervention period of 6 months the participant will have finished the study trial. Participants will be contacted if conception is achieved, to follow up in their potential development of gestational diabetes or impaired glucose tolerance.

Control arm as of 02/05/2017:
Control arm: Participants will receive intensive lifestyle alone. Participants will be followed up after 6 months.

Original control arm:
Control arm: Participants receive usual care, including general lifestyle advice. Participants will be followed up after 6 months.

Intervention Type
Mixed

Primary outcome measure
1. Proportion of eligible women who would agree to participate in the study. This will be calculated by the % of women who agree to study participation out of all those eligible women who were approached for study participation.
2. Acceptability of women of taking daily Liraglutide injections. This will be assessed by an acceptability questionnaire completed after 6 months of study participation
3. Proportion of women that complied with the study protocol and completed the study intervention. This will be assessed by adherence to study drug using a drug compliance diary, attendance at study visits, satisfactory collection of study endpoints

Secondary outcome measures
1. Fasting glucose levels are measured in fasting plasma samples at baseline and 6 months
2. Effect on glucose homeostasis after treatment, as measured by OGTT, HbA1c, HOMA-ir at baseline and 6 months
3. Effect on inflammatory markers, including C- reactive protein, as measured by blood samples at baseline and 6 months
4. Weight loss as assessed by weighing participants at baseline and 6 months
5. Gestational diabetes mellitus incidence and/or impaired glucose tolerance in a subsequent pregnancy as measured by a positive result in a future pregnancy for gestational diabetes using standard diagnostic criteria

Overall study start date
01/09/2016

Completion date
31/12/2020

Eligibility

Key inclusion criteria
1. Severe obesity BMI≥ 35 kg/m2 without Type 2 Diabetes Mellitus and with previous gestational diabetes (with or without insulin)
2. Participants must be able and willing to give written informed consent and to comply with the requirements of this study protocol
3. Participant must be a female, aged 18 years or above at baseline
4. Planning a pregnancy within the next one to two years
5. Negative pregnancy test
6. Contraception during the study period

Removed 02/05/2017:
Post pregnancy Type 2 Diabetes Mellitus with BMI≥ 30 kg/m2 and HbA1C >42 mmol/mol

Participant type(s)
Patient

Age group
Adult

Lower age limit
18 Years

Sex
Female

Target number of participants
50 participants in total.

Key exclusion criteria
1. Allergy/sensitivity to study medication
2. Female subjects who are pregnant or breast-feeding or considering becoming pregnant during the study period
3. Medical disorder requiring medication other than stable hypertension, hypothyroidism, polycystic ovarian syndrome
5. Ongoing abuse of alcohol or narcotics
6. Family or personal history of multiple endocrine neoplasia type 2 (MEN2) or familial medullary thyroid carcinoma (FMTC)
7. Personal history of non-familial medullary thyroid carcinoma
8. History of acute or chronic pancreatitis
9. Obesity induced by drug treatment
10. Use of approved weight lowering pharmacotherapy
11. Previous surgical treatment of obesity
12. History of major depressive disorder or suicide attempt
13. Uncontrolled hypertension
14. Subjects unable to provide written informed consent

Added 30/05/2017:
15. Type 2 diabetes mellitus

Date of first enrolment
01/04/2017

Date of final enrolment
31/01/2020

Locations

Countries of recruitment
Ireland

Study participating centre
National Maternity Hospital
Holles St, Grand Canal Dock
Dublin
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Sponsor information

Organisation
Clinical Research Centre - University College Dublin

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Sponsor type
University/education

Website
http://www.ucd.ie/medicine/ourresearch/researchenvironment/ucdclinicalresearchcentre/

ROR
https://ror.org/05m7pjf47

Funder(s)

Funder type
University/education

Funder Name
University College Dublin

Alternative Name(s)
UCD

Funding Body Type
Private sector organisation

Funding Body Subtype
Universities (academic only)

Location
Ireland

Results and Publications

Publication and dissemination plan
Planned publication in a high-impact peer reviewed journal after study completion.

Intention to publish date
31/12/2021

Individual participant data (IPD) sharing plan
The current data sharing plans for the current study are unknown and will be made available at a later date

IPD sharing plan summary
Data sharing statement to be made available at a later date