PK of intra-vaginal insulin

No registrations found.

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

Summary

ID

NL-OMON27259

Source
Nationaal Trial Register

Brief title
CHDR2113

Health condition

Diabetes mellitus type 1

Sponsors and support

Primary sponsor: LiGalli BV
Source(s) of monetary or material Support: Sponsor

Intervention

Outcome measures

Primary outcome

PK parameters by non-compartmental analysis the plasmaconcentration-time data:
•AUCinf, AUClast, Cmax, tmax, t1/2, tlag, CL/F, Vz/F
•Dose-normalized PK parameters: AUCinf, AUClast, Cmax

Secondary outcome

•Treatment-emergent (serious) adverse events ((S)AEs) throughout the study at every study

visit
•Hypo- or hyperglycaemic events by continuous blood glucose monitoring.
•Concomitant medication throughout the study at every study visit
•Vital signs (Pulse Rate (bpm), Systolic blood pressure (mmHg), Diastolic blood pressure (mmHg)) as per assessment schedule
•Physical examination including inspeculum examination per assessment schedule

Study description

Background summary

Insulin has been on the market for over a century as an exogenous source of insulin in patients with T1DM. It can be administered subcutaneously by many dosing systems, including continuous with pumps which are currently on the market. For this study, a single dose of Fiasp insulin (dose depending on 75% of patient's personal inulin need, with a total dose ranging from 4 to 15 IE) will be administered subcutaneously during the first occasion. During the second occasion, the same insulin dose will be given through intra-vaginal administration using the MedRing.

Intravaginal insulin may pose benefits over subcutaneous insulin administration. Firstly, data from a recent study with intravaginal insulin administration in dogs show a rapid vaginal insulin absorption. Rapid absorption is imperative to treatment of hyperglycemia and to follow the rapid glucose absorption after a meal. Secondly, a long-term intravaginal insulin delivery system could make subcutaneous administration unnecessary. The patient therefore no longer shows any outward signs of devices necessitating their glucose control.

A recent study with intravaginal administration of the small molecule oxybutynin using the MedRing has shown good absorption following a single dose intravaginally. In this his proof-of concept feasibility study, intravaginal administration of insulin using the MedRing is proposed. This enables investigation of intravaginal absorption of a protein compound from a different class with other biophysical and chemical characteristics then the earlier tested oxybutynin.

Study objective

Primary:
To explore the pharmacokinetics of insulin aspart after pulsed intra-vaginal delivery using the MedRing and after subcutaneous injection in women with T1DM.

Secondary:
To assess the safety and short-term tolerability of insulin aspart after pulsed intra-vaginal delivery using the MedRing and after subcutaneous injection in women with T1DM.

Study design

-35 Days (Screening) till EOS

Intervention

Single-dose Fiasp insulin intravaginally

Contacts

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Eligibility criteria

Inclusion criteria

1.Willing to give written informed consent and willing and able to comply with the study protocol.
2.Female subjects with diabetes mellitus type 1 of childbearing potential (women of childbearing potential, WOCBP) aged between 18 and 45 years (inclusive).
3.Subject is on insulin therapy under multiple daily injection (MDI) or continuous subcutaneous insulin infusion (CSII).
4.Subject ison continuous glucose monitoring (CGM) with a CGM device or a flash monitoring device(e.g. Abbott Freestyle Libre)more than 24 hours in situ.
5.Subject is in good general health (apart from T1DM), according to the investigator’s judgement based on vital signs, medical history, physical examination, and laboratory tests performed.
6.Body mass index between 18-32 kg•m2(inclusive) and with a minimum body weight of 50 kg at screening.
7.Ability to communicate well with the investigator in the Dutch language and willing to comply with the study restrictions.
8.Usingcontraceptives of second generation containing ethinylestradiol and progesterone derivate. This includes a hormone-containing IUD (e.g. Mirena), second generation oral contraceptive pill, hormonal contraception using parenteral medroxyprogesteron or

subcutaneous etonogestrel.

Exclusion criteria

1.(A history of) any clinically significant medical condition or abnormality, as judged by the investigator, in physical examination, laboratory test results (including chemistry panel with hepatic and renal panels, complete blood count, and urine dipstick) or electrocardiography (ECG) at screening. In the case of uncertain or questionable results, tests performed during screening may be repeated to confirm eligibility or judged by the investigator to be clinically irrelevant for healthy subjects.
2.Patients on (hybrid) closed loop systems, i.e. Medtronic 670G/780 pump.
3.Patients with unstable glucose regulation in opinion of the investigators, for example frequent hypo-or hyperglycaemia or with hypoglycaemia unawareness.
4.Being a virgin.
5.History of sexual abuse/violence.
6.First day of last withdrawal bleeding <10 days before secondstudy day.
7.Plan to discontinue oral contraceptive during study period.
8.Positive pregnancy test at screening or at baseline prior to IMP administration and/or lactating.
9.Having given birth vaginally or by caesarean section 6 months prior to screening.
10.Having had sexual intercourse or objects inserted vaginally that could potentially lacerate or damage the vaginal wall 24 hours prior to dosing.
11.Positive screening test for Hepatitis B/C and/or Human Immunodeficiency Virus (HIV) test at screening.
12.Positive screening PCR test for Chlamydia trachomatis or gonorrhoea at screening.
13.Medicalhistory of intra-and/or transvaginal operations that in the opinion of the investigator may interfere with placement or stability of the MedRing or absorption of the IMP. Exceptions may include endometrial curettage for e.g. miscarriage or abortion or LIS-excision of the cervix for CIN if performed > 3 months prior to screening.
14.High risk for sexual transmitted diseases (STD): a.3 or more different sexual contacts in last 6 months, and/or b.is a sex worker or visits them and/or c.has a partner with an STD risk as described (a. and/or b.), and/or d.partner is a male who has sex with male.
15.Any confirmed significant allergic reactions (urticaria or anaphylaxis) against insulin , or multiple drug allergies (non-active hay fever is acceptable).
16.Participation in any marketed or investigational drug or device study within 3 months or 5 half-lives (whichever is longer) prior to first dosing.
17.Use of prescription medication or any other substance that in the opinion of the investigators may influence the outcome of the study (e.g. systemic steroids) within 21 days prior to study drug administrations, or less than five half-lives (whichever is longer, and during the course of the study). Paracetamol is not allowed on study days, Exceptionisthe incidental use of ibuprofen (up to 1 g/day) whichisallowed within two days of clinical assessments.
18.Use of alcohol during the 24 hours prior to screeningand/or an unwillingness to abstain from alcohol consumption during the stay at the clinical unit, and for at least 24 hours prior to each study visit.

19.Positive urine drug screen or alcohol test at screening and/or at study days.
20.Loss or donation of bloodover 500 mL within four months prior to screening.
21.Any other condition that in the opinion of the investigator would complicate or compromise the study or the well-being of the subject.

Study design

Design

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

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	15-09-2021
Enrollment:	8
Type:	Anticipated

IPD sharing statement

Plan to share IPD: Yes

Plan description
N.A.

Ethics review

Positive opinion

Date:	27-09-2021
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 51108
Bron: ToetsingOnline
Titel:

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

No registrations found.

In other registers

Register	ID
NTR-new	NL9753
CCMO	NL77895.058.21
OMON	NL-OMON51108

Study results

Summary results
N.A.