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A clinical study to compare the performance of a novel solid dose injection of octreotide with a reference product

Submission date
02/10/2017

Recruitment status
No longer recruiting

Registration date
12/10/2017

Overall study status
Completed

Last Edited
12/10/2017

Condition category
Nutritional, Metabolic, Endocrine

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

Plain English summary of protocol

Background and study aims
The aim of this study is to assess a single treatment dose delivered by a needle-free solid dose injection system (SDI) being developed by the sponsor, to determine whether it gives similar results to an already marketed version of the drug delivered by injection under the skin (subcutaneous).

Who can participate?
Healthy male volunteers aged 24–45

What does the study involve?
After giving consent participants undergo screening procedures 28 days before checking into the study unit. At screening participants are given a demonstration of the test device by using a non-firing dummy device to demonstrate that they are comfortable with the sensation and experience of using the device. Those who clearly demonstrate that they are comfortable with it and pass screening requirements are invited to return for treatment period 1. Each participant stays in the study unit on the day before treatment period 1 (day -1) until the end of treatment period 2 on day 3 (3 nights). In treatment period one the participants receive a single dose of the treatment using the test SDI device. In treatment period two the participants receive a single dose of the marketed treatment by subcutaneous injection. All participants receive both treatments in a random order with a 12-hour break in between periods. Several assessments are carried out for safety and to compare drug levels in the bloodstream. Participants are asked a number of questions regarding both methods of delivering the drug after both periods. 12 hours after receiving the second dose in period 2 participants can leave the unit and they return for an assessment 2 - 7 days later.

What are the possible benefits and risks of participating?
There are no intended clinical benefits to taking part, other than receiving a thorough medical examination. There is a risk that subjects may experience side effects from the drug octreotide although the risks are minimised by the low dose given in this study and the break between doses. All reported side effects have been demonstrated to be reversible upon withdrawal of

the medication. With any drug, adverse effects could occur which have not previously been seen. The drug/procedures being tested may cause some side effects. If serious side effects occur, participants receive immediate treatment and medical care as required. Some of the procedures may cause discomfort. Blood pressure, pulse and temperature are recorded, which may cause a feeling of tightness as the pressure of the cuff increases, and may cause some irritation at the sites where pad, sensors or equipment are attached. During the electrocardiogram small sticky patches are stuck to the chest, wrist and ankles, which may require small patches of hair to be shaved in these areas, and the sticky pads may cause minor irritation and be uncomfortable to remove. Blood samples are taken using a needle, which may cause some discomfort or bruising and there is a very small risk of infection. Some people may feel light headed after blood samples are taken which may result in fainting. During one treatment period medication is injected just under the skin, which may cause discomfort. The site where the needle is inserted can become bruised and similar to blood samples there is a small risk of infection. It is hoped that the new SDI device will cause little to no pain.

Where is the study run from?
Biokinetic Europe Ltd (UK)

When is the study starting and how long is it expected to run for?
May 2016 to May 2017

Who is funding the study?
Glide Pharmaceutical Technologies Ltd (UK)

Who is the main contact?
Christopher Macgregor
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
OCT/002

Study information

Scientific Title
A clinical study to assess the bioavailability, tolerability, pharmacokinetics and safety of a solid dose injection of octreotide compared with a reference product

Study objectives
Octreotide delivered subcutaneously by the Glide Solid Dose Injection system gives comparable pharmacokinetics to the marketed product delivered by injection under the skin.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Health and Social Care Research Ethics Committee A (HSC REC A), 29/02/2016, ref: 16/NI/0032

Study design
Interventional open-label randomised single-centre two-way crossover single-dose trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Acromegaly

Interventions
Eligible subjects will be invited to attend the study unit to undergo screening procedures 28 days before checking into the study unit, which includes:
1. Giving informed consent to participate in the study
2. Review of inclusion/exclusion criteria and eligibility
3. Recording of information: demography, skin classification, medical history, medication history
4. Physical examination
5. Height/weight, BMI
6. Assessment of the ear, nose/throat and cardiovascular system, pulmonary system, skin, abdomen and nervous system.
7. Urine sample for drugs of abuse test
8. 12-lead ECG
9. Blood and urine samples for safety testing
10. Subjects will be shown the Glide device and have it's action demonstrated. Using a non-firing dummy device, they will then demonstrate tolerance by actuating into the thigh

After checking into the study unit on Day -1 subjects will undergo the following:
1. Check adherence to study restrictions
2. Record any medications taken since the screening visit
3. Check and adverse events since the screening visit
4. Physical examination including urine sample for drugs of abuse and alcohol breath test

Before the study drug is administered the following assessments will be performed:
1. General health check
2. Measurement of weight
3. Vital signs
4. 12-lead ECG
5. Recording of any medications since the previous assessment
6. Recording of any adverse events since the previous assessment

Subjects will be randomised to receive either:
Treatment A: 0.1 mg of Octreotide administered via the Glide SDI device being tested, into the thigh
Treatment B: 0.1 mg of Octreotide administered via subcutaneous injection into the thigh
Dosing was randomised using a randomisation code, which was provided to the site, to determine device (SDI or s.c. injection). The randomisation list was generated by Eurofins Optimed using SAS statistical software (version 9.3). According to inclusion/exclusion criteria, a chronological randomisation number – composed of four digits (from 1001 to 1020) – was given to eligible subjects. The same randomisation numbers plus 100 would be assigned to replacement subjects.

After completing treatment period 1, the following will be performed:
1. Vital signs - numerous measurements
2. 12-lead ECG
3. Blood samples for the analysis of the study drug
4. Blood and urine samples for safety testing
Subjects will be asked a number of questions regarding administration of the drug to assess tolerability and a photograph will be taken of the injection site.

There will be a 12-hour 'washout' period after receiving treatment 1 and before receiving treatment 2. Treatment Period 2 will follow the same pattern as treatment period 1, but subjects will receive the alternative treatment to the one they received in treatment period 1. All subjects will check out of the study unit 12 hours after treatment 2.

A post-study medical will be carried out between 2 and 7 days after leaving the study unit. At this visit the following assessments will be carried out:
1. Physical examination including weight, vital signs, assessment of ear, nose and throat, cardiovascular system, pulmonary system, skin, abdomen and nervous system
2. Urine sample for drugs of abuse test
3. 12-lead ECG
4. Blood and urine samples for safety testing
5. Recording of any adverse events since leaving the unit
6. Recording of any medications taken since leaving the unit
Subjects will again be asked to give feedback on the devices by answering questions on both devices.

Intervention Type
Drug

Phase
Not Applicable

Drug/device/biological/vaccine name(s)

Octreotide

Primary outcome(s)
Pharmacokinetic endpoint:
Ratio of geometric means (test product and reference product) and their 90% confidence intervals (CIs) for plasma AUC0–t, and Cmax of octreotide, calculated based on blood samples taken at 0, 15, 20, 30, 45, 60 and 90 minutes, and 2, 4, 6, 8, 10, 12 hours post dosing

Key secondary outcome(s))
Safety endpoints:
1. Treatment emergent AEs, recorded if reported from time of signed consent to completion of the last study-related procedure
2. Vital signs, recorded pre-dose, 60 minutes, 2 hours, 12 hours post dose in each treatment period
3. Physical examination (including ear, nose, throat, cardiovascular system, pulmonary system, skin, abdomen, neurological system and body weight), recorded on day 1, day 3 and post study
4. Twelve-lead ECG, recorded pre-dose, 12 hours post dose in each treatment period
5. Safety laboratory evaluations (clinical chemistry, haematology and urinalysis)

Pharmacokinetic parameters of test and reference products:
1. Median difference in tmax of octreotide and its 90% CI
2. AUC0–∞
3. t1/2/Kel
These will be assessed or measured at 0, 15, 20, 30, 45, 60 and 90 minutes, and 2, 4, 6, 8, 10, 12 hours post dosing

Subject tolerance assessment of drug delivery system:
1. Tolerability: question subject and visually examine injection sites
2. Pain: subjects indicate injection-site pain by use of a 100mm visual analogue scale, with no pain on the left and worst possible pain on the right border

Exploratory endpoint(s):
Subject feedback on the drug delivery systems, using questionnaire at the end of the treatment period

Completion date
23/05/2017

Eligibility

Key inclusion criteria
1. Healthy, male subjects
2. Aged 24–45 years
3. A body mass index (defined as body mass in kilograms divided by the square of body height in metres) of 18.5–30 kg/m2
4. Willing to give written consent after reading the study information and informed consent form (ICF), and discussing the trial with the investigator or an appropriate member of the study staff
5. Judged by the investigator to be capable of understanding and complying with the requirements of the trial
6. The subject’s primary care physician has confirmed that within the 12 months before first

dosing there is nothing in their medical history that would preclude their enrolment into a clinical study
7. Able to tolerate a dummy actuation from the Glide SDI device
8. Willing to give written consent to have data entered into The Over Volunteering Prevention System
9. Subjects must have type I–III grade skin according to the Fitzpatrick prototyping scale to allow for standardisation of photographs taken during the study

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
Male

Key exclusion criteria
1. Use herbal supplements for 14 days prior to dosing and be unwilling to stop these for the duration of the study
2. Have a known hypersensitivity to any of the ingredients or excipients of the study treatment
3. Have been exposed to another investigational drug within 90 days prior to start of the treatment period 1
4. Have a history of major surgical procedure within 12 weeks prior to the start of the treatment period 1 or have an
expectation of a major surgical procedure during the study
5. Have a known history of gallstones
6. Have a prior or ongoing medical condition (e.g., concomitant illness, psychiatric condition, behavioural disorder, alcoholism, drug abuse), medical history, physical examination findings, ECG findings, or laboratory abnormality that, in the Investigator's opinion, could adversely affect the safety of the subject, makes it unlikely that the course of treatment or follow-up would be completed, or could impair the assessment of study results
7. History of clinically significant allergies that, in the opinion of the Investigator would contraindicate their participation
8. History of, or a reason to believe that a subject has a history of, drug or alcohol abuse within the previous 5 years and at the investigator’s discretion
9. Positive test for alcohol or drugs of abuse, including amphetamine, barbiturates, benzodiazepines, cannabis, cocaine, methadone, methamphetamine, opiates (unless this can be explained by the subject’s regular prescribed therapy), phencyclidine and tricyclic antidepressants at Screening or on Day -1 (unless this can be explained by the subject’s medication)
10. The use of any over-the-counter medicine in the week prior to drug administration, with the exception of paracetamol (acetaminophen)
11. Subjects must be none smokers or an ex-smoker for at least 9 months prior to screening
12. The subject’s General Practitioner objects to them entering the trial

13. Positive results of HBsAg, hepatitis C antibody, or human immunodeficiency virus (HIV) tests
14. Unlikely to co-operate with the requirements of the study
15. Tattoos at the site of injection
16. Eczema or any significant skin condition that, in the opinion of the investigator, would make it difficult to analyse photographs

Date of first enrolment
19/04/2016

Date of final enrolment
10/05/2016

Locations

Countries of recruitment
United Kingdom

Northern Ireland

Study participating centre
Biokinetic Europe Ltd
14 Great Victoria Street
Belfast
United Kingdom
BT2 7BA

Sponsor information

Organisation
Glide Pharmaceutical Technologies Ltd

Funder(s)

Funder type
Industry

Funder Name
Glide Pharmaceutical Technologies Ltd (self-funded)

Results and Publications

Individual participant data (IPD) sharing plan

The participant level data is commercially sensitive, and therefore will not be made available. Data will be held by the sponsor as part of the Trial Master File (TMF).

IPD sharing plan summary

Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
HRA research summary			28/06/2023	No	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes