A double-blind, randomised, placebo-controlled study to evaluate the pharmacokinetics, safety and pharmacodynamics of ascending single and fixed repeat intravenous doses of DMT in healthy subjects

Published: 03-08-2022
Last updated: 10-01-2025

This study has been transitioned to CTIS with ID 2024-518020-68-00 check the CTIS register for the current data. Primary:Part A: To assess the safety and tolerability of single ascending doses of DMT in healthy subjects, when given by IV infusion....

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Central nervous system vascular disorders
Study type	Interventional

Summary

ID

NL-OMON51817

Source
ToetsingOnline

Brief title
DMT in healthy subjects

Condition

- Central nervous system vascular disorders

Synonym
Stroke

Research involving

Human

Sponsors and support

Primary sponsor: Algernon Pharmaceuticals
Source(s) of monetary or material Support: Pharmaceutical industry

Intervention

Keyword: DMT, Intravenous, Stroke

Outcome measures

Primary outcome

Safety and tolerability: Vital signs (heart rate, blood pressure, respiratory rate and temperature), 12-lead electrocardiograms (ECGs), physical examination, laboratory safety tests (haematology, clinical chemistry, coagulation, and urinalysis), local tolerability at infusion site, Columbia-Suicide Severity Rating Scale (C SSRS), occurrence of psychotic symptoms (BPRS), occurrence of central 5-HT toxicity (Hunters criteria + CPK)and adverse events (AEs).

Secondary outcome

PK: Cmax, tmax, AUClast, AUC0-t, AUCinf, %AUCextrap, t*, CL, Vss, Vz, MRTinf, and *z of DMT.

Study description

Background summary

Each year, 16.9 million people worldwide suffer a first stroke, and there are 5.9 million stroke related deaths (based on 2010 data). Accordingly, stroke is the second or third most common cause of death and one of the main causes of acquired adult disability. About 80% of stroke survivors have motor impairments of the upper limb that gravely affect their ability to perform activities of daily living (ADL) and to participate socially.

The severity of upper limb paresis has been identified as an independent determinant of the outcome of basic ADL after a stroke. Constraint-induced movement therapy (CIMT), or modified versions of CIMT (mCIMT), are currently considered the most effective treatment regimens in physical therapy to improve the outcome of the upper paretic limb.

Neurophysiologic mechanisms believed to underline the treatment benefits of CIMT include overcoming learned non-use, and neuroplasticity. Structural brain changes and increases in grey matter and motor areas have been observed in patients undergoing CIMT after stroke.

N,N-dimethyltryptamine (DMT) is a naturally occurring methylated indolealkylamine possessing potent psychotropic en neuroplastic properties. It is being developed as a supplement to constraint-induced movement therapy (CIMT) for the treatment of upper-limb dysfunction in patients who have experienced stroke.

Study objective

This study has been transitioned to CTIS with ID 2024-518020-68-00 check the CTIS register for the current data.

Primary:
Part A: To assess the safety and tolerability of single ascending doses of DMT in healthy subjects, when given by IV infusion.
Part B: To assess the safety and tolerability of fixed repeated doses of DMT in healthy subjects, when given three times weekly over two weeks by IV infusion.

Secondary
Part A: To assess the pharmacokinetics (PK) of single ascending doses of DMT in healthy subjects, when given by IV infusion.
Part B: To assess the PK of fixed repeated doses of DMT in healthy subjects, when given at three times weekly over two weeks by IV infusion.

Exploratory
Part A: To assess the pharmacodynamics (PD) of ascending single doses of DMT in healthy subjects, when given by IV infusion.
Part B: To assess the PD of fixed repeated doses of DMT in healthy subjects, when given three times weekly over two weeks by IV infusion.

Study design

This is a phase 1, double-blind, randomised, placebo-controlled trial done in two parts.
Part A will assess the safety, tolerability, PK and PD of ascending single IV doses of DMT.

Part B will assess the safety, tolerability, PK and PD of fixed 6 times repeated IV doses of DMT.

Intervention

Part A
Single dose DMT or placebo infusion (bolus followed by 6-h infusion)

Part B
Three dosages DMT or placebo per week for two weeks (bolus followed by 6-h infusion)

Study burden and risks

The principal mitigations for potential risks of the study drug are:
- The selection of dose levels that were previously shown to be safe and tolerable in subjects.
- Thorough preparation of the study subjects regarding the trial.
- Selection of subjects that have no prior history of psychiatric illness or family history of psychiatric illness, as this will reduce the chances of subjects developing psychiatric complaints due to the study drug significantly.
- Prespecified safety monitoring procedures.
- The trial facility, where close monitoring can be performed and rapid institution of appropriate care can be given.

Potential risks can be monitored clinically and/or with laboratory tests and have been considered when determining the stopping rules for this clinical trial.In addition to the potential risks associated with study drug administration, there is minimal risk associated with trial procedures includinginsertion of a canula for withdrawing blood (limited to < 500 mL) and non-invasive procedures including vital sign assessments,electrocardiograms (ECGs) and PD assessments. Overall, the benefit-risk profile is considered appropriate for this trial

Contacts

Public
Algernon Pharmaceuticals

West Broadway 400-601
Vancouver, V5Z 4C2
CA
Scientific
Algernon Pharmaceuticals

West Broadway 400-601
Vancouver, V5Z 4C2
CA

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)

Inclusion criteria

Normotensive male or female volunteers, deemed healthy on the basis of a clinical history, physical examination, ECG, vital signs, and laboratory tests of blood and urine; agree to follow the contraception requirements of the trial; able to give fully informed written consent.

Exclusion criteria

Positive tests for hepatitis B & C, HIV; severe adverse reaction to any drug; history of adverse (psychological) reaction to DMT or other serotonergic psychedelic drugs; drug or alcohol abuse; use of over-the-counter medication (with the exception of common analgesics, eg paracetamol [acetaminophen] or ibuprofen) or receipt of coronavirus disease 2019 (COVID 19) vaccination during the 7 days before the first dose of trial medication, or use of prescribed medication during the 14 days before first dose of trial medication, or monoamine oxidase inhibitors (MAOI) during the 30 days before the first dose of trial medication; participation in other clinical trials of unlicensed medicines, or loss of more than 400 mL blood, within the previous 90 days; vital signs outside the acceptable range; positive urine drug test; clinically relevant abnormal findings at the screening assessment; acute or chronic illness; significant suicide risk identified from the C SSRS, previous suicidal behaviour/ideation, or clinical assessment; clinically relevant abnormal medical history or concurrent medical condition (including psychotic or seizure disorders); close (first and second degree) relative with schizophrenia spectrum or other psychotic, bipolar or related disorder; persistent

psychological effects following the previous use of psychedelics; possibility that volunteer will not cooperate; pre-menopausal women who are pregnant or lactating, or are sexually active and not using a reliable method of contraception.

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Placebo
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	15-11-2022
Enrollment:	60
Type:	Actual

Medical products/devices used

Product type:	Medicine
Brand name:	DMT
Generic name:	NA

Ethics review

Approved WMO

Date:	03-08-2022
Application type:	First submission
Review commission:	BEBO: Stichting Beoordeling Ethiek Bio-Medisch Onderzoek (Assen)

Approved WMO Date:	06-09-2022
Application type:	First submission
Review commission:	BEBO: Stichting Beoordeling Ethiek Bio-Medisch Onderzoek (Assen)

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
EU-CTR	CTIS2024-518020-68-00
EudraCT	EUCTR2022-002411-30-NL
CCMO	NL81883.056.22