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A study to evaluate the safety, processing by the body and response of the body to tenecteplase in adults with acute ischemic stroke

Submission date
12/05/2022

Recruitment status
No longer recruiting

Registration date
16/05/2022

Overall study status
Completed

Last Edited
31/10/2025

Condition category
Circulatory System

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

Plain English summary of protocol

Background and study aims
Acute ischemic stroke (AIS) occurs when the blood supply to certain parts of the brain is cut off or reduced due to the formation of a clot in a blood vessel of the brain. This causes a lack of oxygen (ischemia) and nutrients in the brain cells eventually leading to brain cell degradation. The human body produces a protein called tissue plasminogen activator (t-PA) which helps in breaking down these clots (thrombolysis). Treatments with t-PA help in restoring the blood flow and prevent tissue damage to brain cells. Tenecteplase is a modified form of human t-PA that helps to restore the blood flow, thereby improving health outcomes in participants suffering from AIS. The aim of this study is to determine the way the body absorbs (takes in) and breaks down the drug tenecteplase. This study also looks to see how proteins in blood change after tenecteplase is administered. The study also collects information to determine how safe it is to give tenecteplase to people having an acute ischemic stroke. Tenecteplase is an experimental drug, which means health authorities have not approved tenecteplase for the treatment of AIS.

Who can participate?
Patients aged 18 years and above with a confirmed diagnosis of AIS

What does the study involve?
Participants will need to be a part of this study for about 30 days. This study will have three parts:
1. A screening visit, where certain tests would be done along with the evaluation of the participant's medical history and ongoing medications to determine if the participant is eligible to take part in the study.
2. The treatment period: eligible participants will be enrolled, and a small amount of blood will be withdrawn after which participants will be given a single dose of the study drug intravenously (through a needle in the arm that is attached to a tube that is connected to a bag full of saline). Participants will be visited by the study team after 20 minutes and then after 2, 6, and 24 hours of drug administration to collect blood samples for analysis.

3. A follow-up period during which participants will have check-up visits with the study team on the day of their discharge from the hospital or Day 5, whichever is earlier, and 30 days after the study drug administration. The participant will have to visit the clinic or will be contacted telephonically for the follow-up procedures.

What are the possible benefits and risks of participating?
Participants will not receive any direct medical benefit. The health of participants may or may not improve, but the information gained from this study may help other people who have a similar medical condition in the future.
Participants may have side effects from the drug (tenecteplase) or procedures used in this study. These can be mild to severe, and they can vary from person to person. The potential side effects associated with tenecteplase and other procedures are listed below:
Risks associated with tenecteplase:
Very common side effects include bleeding that a participant might experience due to the drug or the procedure of drug administration.
Common side effects include blocking of blood vessels by blood clots (thromboembolism), blocking of arteries due to cholesterol buildup (cholesterol embolism) and an irregular heartbeat (arrhythmia).
Less common side effects include an allergic reaction (hypersensitivity), inability of the heart to pump enough blood (cardiogenic shock), heart blockage (atrioventricular block), fluid in the lungs (pulmonary oedema), heart failure, heart stopping (cardiac arrest), reduced blood flow to the heart (recurrent myocardial ischemia), a complication after a heart attack (myocardial reinfarction), tear in the heart (myocardial rupture), constriction of the heart by fluid buildup around the heart (cardiac tamponade), swelling of the tissue around the heart (pericarditis), fluid buildup in the pericardial cavity around the heart (pericardial effusion), backflow of blood in the heart due to the heart's mitral valve failing to close (mitral regurgitation), electrical activity in the heart but no pulse (electromechanical dissociation), Nausea and/or vomiting, and low blood pressure (hypotension)
Risks associated with the study procedures:
Magnetic resonance imaging (MRI) scanning: During MRI scanning, participants might experience anxiety or fear of being in small places (claustrophobia). The contrast agent used while performing an MRI scan might cause pain, bruising, or infection at the injection site, nausea, headache, hives, temporary low blood pressure, chest pain, back pain, fever, weakness, and seizures.
Computed tomographic (CT) scan: The long term harmful effects of radiation exposure from multiple X-rays over a period of time is unknown. The contrast agent used during CT scans may cause a decrease in kidney function (acute kidney injury)
There may be a risk in exposing an unborn child to the study drug, and all risks are not known at this time. Women and men must take precautions to avoid exposing an unborn child to the study drug. Participants who are pregnant, become pregnant or are currently breastfeeding cannot take part in this study.

Where is the study run from?
Roche (USA)

When is the study starting and how long is it expected to run for?
December 2021 to March 2023

Who is funding the study?
Roche (USA)

Who is the main contact?
global-roche-genentech-trials@gene.com

Contact information

Type(s)
Public

Contact name
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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
GC43996

Study information

Scientific Title
A Phase I, open-label, multi-center, pharmacokinetic, pharmacodynamic and safety study of tenecteplase in adult patients with acute ischemic stroke

Study objectives
The aim of this study is to characterize the pharmacokinetics, pharmacodynamics, and safety of tenecteplase when administered to adult participants with acute ischemic stroke (AIS) within the first 4.5 hours of symptom onset.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 31/12/2021, WCG IRB (1019 39th Ave., SE Suite 120 Puyallup, WA 98374, USA; +1 (0) 855 818 2289; clientservices@wcgirb.com), ref: 20216917

Study design
Phase I open-label multi-centre single-arm interventional study

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Acute ischemic stroke (AIS)

Interventions
Participants will receive a single dose of tenecteplase (RO5490263), 0.25 mg/kg, as an intravenous (IV) bolus injection, on Day 1.

Intervention Type
Drug

Phase
Phase I

Drug/device/biological/vaccine name(s)
Tenecteplase

Primary outcome(s)
1. Plasma concentration of tenecteplase measured from blood samples taken prior to tenecteplase administration and then at 20, 120, 360 minutes, and 24 hours after a single IV bolus administration of tenecteplase
2. Pharmacokinetic parameters derived from the plasma concentration-time profile measured from blood samples taken prior to tenecteplase administration and then at 20, 120, 360 minutes, and 24 hours after a single IV bolus administration of tenecteplase

Key secondary outcome(s))
1. Biomarker concentration measured from blood samples taken prior to tenecteplase administration and then at 20, 120, 360 minutes, and 24 hours after a single IV bolus administration of tenecteplase
2. Percentage of participants with adverse events (AEs) and severity of AEs determined according to National Cancer Institute-Common Terminology Criteria for Adverse Events Version 5.0 (NCI CTCAE V5.0) from screening up to the end of the study (approximately 9 months)

Completion date
27/03/2025

Eligibility

Key inclusion criteria
1. Age ≥18 years at the time of signing the Informed Consent Form
2. Clinical diagnosis of AIS based on signs and symptoms consistent with the diagnosis of an acute anterior circulation ischemic stroke, the persistence of neurologic deficit(s), and findings

on computed tomographic (CT) scan or magnetic resonance imaging (MRI) with gradient echo sequences (GRE) sequence of the brain supportive of an AIS diagnosis
3. Time from symptom onset to study drug administration is <4.5 hours

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
1. Pregnancy or breastfeeding, or intention of becoming pregnant during the study or within 30 days after tenecteplase administration
2. Active internal bleeding; evidence of intracranial haemorrhage on neuroimaging at screening
3. Gastrointestinal haemorrhage within 21 days of screening
4. Known hereditary or acquired haemorrhagic diathesis or coagulation factor deficiency
5. Use of one of the novel oral anticoagulants, such as direct thrombin inhibitors or direct factor Xa inhibitors, within the last 48 hours (e.g., dabigatran, rivaroxaban, apixaban, edoxaban)
6. Treatment with a thrombolytic within the last 3 months prior to dosing
7. Intracranial neoplasm (except small meningioma), arteriovenous malformation, or aneurysm
8. History of malignancy, including solid tumour and haematological malignancies, except basal cell carcinoma, in situ squamous cell carcinoma of the skin, and in situ carcinoma of the cervix that has been previously completely excised with documented, clear margins
9. Severe, uncontrolled hypertension (systolic blood pressure >180 mmHg or diastolic blood pressure >110 mmHg)
10. Clot retrieval attempted using a neurothrombectomy device prior to dosing
11. History of acute ischemic stroke in the last 90 days
12. History of haemorrhagic stroke
13. Intracranial or intraspinal surgery or trauma within 2 months

Date of first enrolment
07/09/2022

Date of final enrolment
27/02/2025

Locations

Countries of recruitment
United States of America

Study participating centre
University of Tennessee Medical Center
United States of America
37920

Study participating centre
Ascension St. John
United States of America
74104

Sponsor information

Organisation
Roche (United States)

ROR
https://ror.org/011qkaj49

Funder(s)

Funder type
Industry

Funder Name
F. Hoffmann-La Roche

Alternative Name(s)
Hoffman-La Roche, F. Hoffmann-La Roche Ltd.

Funding Body Type
Private sector organisation

Funding Body Subtype
For-profit companies (industry)

Location
Switzerland

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are not expected to be made available due to participant-level data not being a regulatory requirement.

IPD sharing plan summary

Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes