

Pharmacokinetic investigation into the formation of carbamazepine metabolites and carbamazepine-protein conjugates in healthy volunteers

Submission date 22/10/2014	Recruitment status No longer recruiting	☐ Prospectively registered
		☐ Protocol
Registration date 22/10/2014	Overall study status Completed	☐ Statistical analysis plan
		☒ Results
Last Edited 21/09/2021	Condition category Nervous System Diseases	☐ Individual participant data

Plain English summary of protocol

Background and study aims

Carbamazepine is a drug used to treat epileptic seizures and nerve pain. The aim of this study is to test if this drug or its components can bind to proteins within the body and can create allergic reactions for people who are genetically prone to such reactions. We aim to find out the levels of the drug carbamazepine and its components following a single dose of carbamazepine.

Who can participate?

Healthy men aged between 18 and 55 years.

What does the study involve?

Participants will be asked to attend the clinical research unit at the Royal Liverpool Hospital. They will be screened for suitability to take part in the study. If suitable they will be asked to return for another visit where they will be prescribed a single dose of carbamazepine. Before taking this dose they will be asked to provide a blood sample and then blood samples will be taken at regular intervals up to 72 hours after taking the drug. Urine samples will also be taken during the 72 hours.

What are the possible benefits and risks of participating?

There will be no direct benefits to participants. The risks of participating include pain and bruising associated with blood sampling. We will minimise this risk as only healthcare professionals trained in taking blood samples will be allowed to perform these procedures.

Where is the study run from?

The Royal Liverpool University Hospital (UK).

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

August 2013 to December 2013.

Who is funding the study?
Medical Research Council (MRC) (UK).

Who is the main contact?
Dr Vincent Yip
vyip@liv.ac.uk

Contact information

Type(s)
Scientific

Contact name
Dr Vincent Yip

Contact details
Wolfson Centre for Personalised Medicine
Department of Pharmacology
Block A:
Waterhouse Buildings
15 Brownlow Street
Liverpool
United Kingdom
L69 3GL
+44 151 794 5543
vyip@liv.ac.uk

Additional identifiers

Clinical Trials Information System (CTIS)
2012-004700-35

Protocol serial number
13845

Study information

Scientific Title
Pharmacokinetic investigation into the formation of carbamazepine metabolites and carbamazepine-protein conjugates in healthy volunteers: a non-randomised study

Acronym
PICME

Study objectives
Carbamazepine or carbamazepine metabolites are reactive and can bind intracellular proteins that stimulate hypersensitivity reactions in patients with genetic susceptibility.

Ethics approval required

Old ethics approval format

Ethics approval(s)

18/12/2012, ref: 12/NW/0780

Primary study design

Interventional

Study design

Non-randomised; Interventional; Design type: Not specified, Treatment

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Topic: Genetics; Subtopic: Genetics Research and Congenital Disorders (all subtopics); Disease: Genetics Research and Congenital Disorders

Interventions

Healthy volunteers will be given a single 400 mg dose of carbamazepine
Follow Up Length: 1 month(s); Study Entry: Registration only

Intervention Type

Other

Phase

Not Applicable

Primary outcome(s)

Pharmacokinetic analyses; Timepoint(s): pre-dose, 15 min, 30 min, 1 hour, 2 hours, 4 hours, 6 hours, 8 hours, 12 hours, 24 hours, 48 hours, 72 hours; Methods: High performance liquid chromatography and tandem mass spectrometry

Key secondary outcome(s)

Not provided at time of registration

Completion date

30/12/2013

Eligibility

Key inclusion criteria

1. Subject is willing and able to give written informed consent
2. Healthy male subjects between 18 and 55 years of age inclusive
3. Subjects body weight is between 50 and 100 kg
4. Subjects body mass index is between 18 and 32 kg/m²

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 Years

Sex

Male

Total final enrolment

8

Key exclusion criteria

1. Subject is not willing to take part or unable to give written informed consent
2. Subject has clinically significant abnormal medical history or physical exam
3. Subject has history of febrile illness within 4 weeks prior to admission
4. Subject has clinically significant abnormal laboratory test at screening including HBV/HCV/HIV
5. Subject has taken any interacting prescription or non-prescription drug, or dietary supplements within 2 weeks prior to study admission. Herbal supplements must be discontinued at least 4 weeks prior to admission to the clinical research facility
6. Subject possesses either the HLA-B*1502 or HLA-A* 3101 genotype
7. Subject has a clinically significant ECG abnormality prolonged corrected QT >450 ms, 2nd or 3rd degree atrioventricular conduction block
8. Subject has known hypersensitivity to carbamazepine or structurally related drugs (e.g. tricyclic antidepressants) or any other component of the formulation
9. Subject with history of bone marrow depression
10. Subject with history of hepatic porphyrias (e.g. intermittent porphyria, variegate porphyria, porphyria cutanea tarda)
11. Subject has taken part on another research study within 90 days of commencement
12. Subject has any condition which in the opinion of the investigator will interfere with the study

Date of first enrolment

24/07/2013

Date of final enrolment

30/12/2013

Locations**Countries of recruitment**

United Kingdom

England

Study participating centre

Wolfson Centre for Personalised Medicine
Liverpool
United Kingdom
L69 3GL

Sponsor information

Organisation

Royal Liverpool and Broadgreen University NHS Trust (UK)

ROR

<https://ror.org/009sa0g06>

Funder(s)

Funder type

Research council

Funder Name

Medical Research Council (MRC) (UK)

Alternative Name(s)

Medical Research Council (United Kingdom), UK Medical Research Council, Medical Research Committee and Advisory Council, MRC

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		01/06/2021	21/09/2021	Yes	No
HRA research summary			28/06/2023	No	No