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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

Registration date
22/10/2014

Overall study status
Completed

Last Edited
21/09/2021

Condition category
Nervous System Diseases

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[X] Results
[ ] 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 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
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Contact information

Type(s)
Scientific

Contact name
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Additional identifiers

EudraCT/CTIS number
2012-004700-35

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
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 suscepitibility.

Ethics approval required
Old ethics approval format

Ethics approval(s)
18/12/2012, ref: 12/NW/0780

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

Primary study design
Interventional

Secondary study design
Non randomised controlled trial

Study setting(s)
Other

Study type(s)
Treatment

Participant information sheet
Not available in web format, please use the contact details below to request a patient information sheet

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 measure
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

Secondary outcome measures
Not provided at time of registration

Overall study start date
24/07/2013

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

Age group
Adult

Lower age limit
18 Years

Sex
Male

Target number of participants
Planned Sample Size: 8; UK Sample Size: 8

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
England

United Kingdom

Study participating centre
Wolfson Centre for Personalised Medicine
Liverpool
United Kingdom
L69 3GL

Sponsor information

Organisation
Royal Liverpool and Broadgreen University NHS Trust (UK)

Sponsor details
Prescot Street
Liverpool
England
United Kingdom
L7 8XP

Sponsor type
Hospital/treatment centre

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, MRC

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Publication and dissemination plan
Not provided at time of registration

2016 results in thesis https://core.ac.uk/download/pdf/80777101.pdf (added 19/02/2020)

Intention to publish date

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