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ClUDo: The Clinical Utility of Capsaicin Dose Response Curves to Discriminate Cough Hyper-responsiveness

Submission date
14/08/2013

Recruitment status
No longer recruiting

Registration date
23/01/2014

Overall study status
Completed

Last Edited
06/02/2023

Condition category
Respiratory

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Cough is a protective reflex which is used to clear the upper airways of irritating material or mucus (phlegm) and yet it is the most common complaint for which people seek medical advice. Most coughs are caused by an infection, such as a cold, which usually settles within 8 weeks. However, some people develop persistent coughing which can last from 8 weeks to several years. This persistent cough is known as chronic cough.
Chronic cough is a common and troublesome problem and is associated with poor quality of life. Current cough medicines often fail to help people with chronic cough and up to 40% of chronic cough cases have an unknown cause. We are doing this research to help us understand why some people develop chronic cough and how their cough compares with healthy individuals.

Who can participate?
In this study we aim to recruit 96 healthy volunteers and 96 patients with chronic cough, male and female aged over 18 years.

What does the study involve?
The study involves two short visits to the North West Lung Centre at the University Hospital of South Manchester NHS Foundation Trust, Wythenshawe. Participants will be asked if they are willing to return to the hospital for an optional third visit until a total of 10 chronic cough and 10 healthy volunteers have agreed to do so. Visit 1 will last about 1 hour. A researcher will ask participants questions about their medical history, lifestyle and details of any medications they may be taking. Their height and weight will be measured and recorded. Chronic cough patients will be asked to complete a short questionnaire about their cough and how it affects their daily life and activities. During this visit participants will be asked to perform a simple lung function test called spirometry. Lastly, they will be fitted with a cough monitor which will record the number of times they cough over a period of 24 hours during the day and night.
Visit 2 will last for about 1 hour and will take place at least 24 hours after visit 1 but within 2 weeks. During this visit the cough monitor will be returned. Participants will then be asked to perform a cough challenge, which is a test designed to make you cough. A researcher will perform some breathing tests before the start of the test to ensure it is safe for participants to

undergo the challenge. The cough monitor will be re-attached for the duration of the test to capture coughing. Participants will be asked to take a breath of a weak solution called capsaicin (chilli pepper extract) through a nebulizer machine. The process will be repeated several times with gradually increasing strengths of capsaicin. At the end of the challenge, the breathing tests will be repeated to ensure participants have not experienced chest tightening. Visit 3 is an optional visit that will take place up to 2 weeks after visit 2. Participants will be asked to perform breathing tests, be fitted with a cough monitor (just for the duration of the cough challenge), undergo a cough challenge, perform breathing tests again and complete a short questionnaire.

What are the possible benefits and risks of participating?
There will be no direct benefit for participants in this study. However, we hope that the results of this study will help us to understand the mechanisms of chronic cough and improve treatments in the future. We do not expect any significant risks associated with taking part in this study. Capsaicin (chilli pepper extract) inhalation is a well-established safe technique and no associated serious adverse events have been reported. Main side effects are an irritation or burning sensation at the back of the throat.

Where is the study run from?
This is a single-centre study taking place at the University Hospital of South Manchester NHS Foundation Trust, Wythenshawe. The chronic cough patients will be randomly recruited from our specialist cough clinic at Wythenshawe Hospital. Healthy volunteers are currently being recruited from the local area.

When is the study starting and how long is it expected to run for?
The recruitment started in August 2013 and is expected to be complete by August 2014.

Who is funding the study?
The University of Manchester, UK.

Who is the main contact?
Miss Kimberley Holt, Research Assistant
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Contact information

Type(s)
Scientific

Contact name
Dr Jacky Smith

Contact details
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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
13/CLU/001

Study information

Scientific Title
The Clinical Utility of Capsaicin Dose Response Curves to Discriminate Cough Hyper-responsiveness

Acronym
ClUDo

Study objectives
Maximal cough responses (Emax) established from dose-response cough challenges will clearly discriminate between healthy volunteers and chronic cough patients as well as highlight differences in male and female responses. Using statistical modelling can develop a simplified test for use as a clinical diagnostic tool.

Ethics approval required
Old ethics approval format

Ethics approval(s)
NRES Committee North West - Preston, 02/07/2013, ref:13/NW-0400

Study design
Single centre cross-sectional repeatability study

Primary study design
Observational

Secondary study design
Cross sectional study

Study setting(s)
Hospital

Study type(s)
Screening

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
Chronic cough

Interventions
96 chronic cough patients and 96 healthy volunteers are recruited to this study.

In attempt to establish normal reference ranges, the healthy volunteers will be evenly recruited by age group.

The chronic cough patients will be randomly recruited from our specialist cough clinic. They will not be intentionally matched by age or gender to the healthy controls in order to achieve a representative chronic cough cohort, a large proportion of which are typically female and middle-aged.

Once recruited, all participants will attend the department on two occasions to undergo 24 hour ambulatory cough monitoring (Visit 1) and a dose-response capsaicin cough challenge (Visit 2).

Visit 1: will last approximately 1 hour. A researcher will then ask participants questions about their medical history, lifestyle and details of any medications they may be taking. Their height and weight will be measured and recorded. Chronic cough patients will be asked to complete a short questionnaire about their cough and how it affects their daily life and activities. During this visit participants will be asked to perform a simple lung function test called spirometry. Lastly, they will be fitted with a cough monitor which will record the number of times they cough over a period of 24 hours during the day and night.

Visit 2: will last for approximately 1 hour and will take place at least 24 hours after visit 1 but within 2 weeks. During this visit the cough monitor will be returned. Participants will then be asked to perform a cough challenge, which is a test designed to make you cough. A researcher will perform some breathing tests before the start of the test to ensure it is safe for participants to undergo the challenge. The cough monitor will be re-attached for the duration of the test to capture coughing. Participants will be asked to take a breath of a weak solution called capsaicin (chilli pepper extract) through a nebulizer machine. The process will be repeated several times with gradually increasing strengths of capsaicin. At the end of the challenge, the breathing tests will be repeated to ensure participants have not experienced chest tightening.

A subgroup of 10 chronic cough patients and 10 healthy volunteers will be asked to attend for a third visit where the cough challenge will be repeated.

Each participant will be in the study between two days and four weeks.

Intervention Type
Other

Phase
Not Applicable

Primary outcome measure
Emax (maximum number of coughs provoked) and ED50 (capsaicin dose provoking half the Emax) will be measured to discriminate between male and female chronic cough patients and healthy controls to test the usefulness of the procedure as a clinical test. Measured at baseline only.

Secondary outcome measures
Emax, ED50, cough severity visual analogue scales (VAS) and objective cough frequency will also be used to assess differences in male and female healthy volunteers and chronic cough patients. Measured at baseline only.

Overall study start date
04/08/2013

Completion date
04/08/2014

Eligibility

Key inclusion criteria
Healthy volunteers:
1. Male and female aged over 18 years
2. Normal spirometry
3. No current or past history of chronic cough or respiratory disease
4. No current chronic pain, irritable bowel syndrome, psychiatric illness or chronic headaches

Chronic cough patients:
1. Male and female aged over 18 years
2. Diagnosis of chronic cough (defined as cough lasting more than 8 weeks)
3. Normal spirometry
4. Normal chest x-ray

Participant type(s)
Healthy volunteer

Age group
Adult

Lower age limit
18 Years

Sex
Both

Target number of participants
Up to 200

Key exclusion criteria
1. Current smoker or ex-smoker with >20 pack year history, and >6 months abstinence
2. Upper respiratory tract infection within last 4 weeks
3. Use of angiotensin-converting-enzyme (ACE) inhibitors
4. Use of any centrally acting medications which may alter the cough reflex*
5. History of drug or alcohol abuse

6. Pregnancy or breastfeeding
7. Concomitant conditions which may alter cough reflex sensitivity e.g. diabetes mellitus, Parkinsons disease, cerebrovascular disease.

Date of first enrolment
04/08/2013

Date of final enrolment
04/08/2014

Locations

Countries of recruitment
England

United Kingdom

Study participating centre
University Hospital of South Manchester NHS Foundation Trust
Southmoor Road
Wythenshaw
Manchester
United Kingdom
M23 9LT

Sponsor information

Organisation
University Hospital of South Manchester NHS Foundation Trust (UK)

Sponsor details
R&D Directorate
Ground Floor, Education & Research Centre
Southmoor Road
Manchester
England
United Kingdom
M23 9LT

Sponsor type
Hospital/treatment centre

Website
http://www.uhsm.nhs.uk

ROR
https://ror.org/00he80998

Funder(s)

Funder type
University/education

Funder Name
University of Manchester (UK) - Internal funding as part of an MPhil qualification

Results and Publications

Publication and dissemination plan
Not provided at time of registration

Intention to publish date

Individual participant data (IPD) sharing plan
Not provided at time of registration

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	results	01/03/2017		Yes	No
Results article		31/01/2023	06/02/2023	Yes	No