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A shorter duration of antibiotic treatment versus a longer duration of antibiotic treatment for patients with a flare-up of their chronic lung condition requiring intravenous antibiotics

Submission date
02/09/2023

Recruitment status
No longer recruiting

Registration date
16/11/2023

Overall study status
Ongoing

Last Edited
28/08/2025

Condition category
Respiratory

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

Plain English summary of protocol

Background and study aims
Bronchiectasis affects around 300,000 people in the UK, according to British Lung Foundation research. Hospital admissions due to bronchiectasis cost the NHS around £40 M per year. International guidelines recommend that patients receive intravenous antibiotics for 14 days if they are particularly unwell, have an infection with resistant organisms, or if oral antibiotics are ineffective. The duration is based on expert advice but there have not been any randomised placebo controlled trials telling us what length of course is best. Treating for too long may keep people in hospital too long or increase their risk of antibiotic side effects, treating for too short a period may increase the risk of another infection soon after completion of antibiotics.
A study in Edinburgh of 90 patients showed that patients and clinicians would enter a trial of shorter courses of intravenous antibiotic treatment. Patients receiving 7 days of intravenous antibiotics took longer to next flare up compared to those getting current recommendation of 14 days, challenging the current thinking that “more is better”. A multi-centre trial is now needed to confirm this and change the national and international guidelines recommending 14 days of treatment. This study could add to the goal of reducing inappropriate antibiotic use and reduce the chance of developing antibiotic resistance.
The Research question being addressed by this study proposal is: for bronchiectasis-related pulmonary exacerbations, is 7- or 14-days’ duration of intravenous antibiotic treatment better in delaying the next exacerbation?

Who can participate?
We will select 400 patients with bronchiectasis throughout the UK who need intravenous antibiotic treatment.

What does the study involve?
Half of the participants, at random, will receive 7 days of open labelled intravenous antibiotics and the other half will receive 14 days of open labelled intravenous antibiotics. Both groups will receive standard care in addition and be followed up for one year.

What are the possible benefits and risks of participating?
One of the reasons for running this study is to establish any benefits for patients receiving a shorter course of antibiotics and participation in this study may help to improve bronchiectasis health care in the future. We have shown in a smaller study that patients who received a shorter duration of antibiotics took longer until their next flare-up of their bronchiectasis. Reduction of antibiotics leads to less hospital acquired infections and healthcare resource use.
We anticipate that if you are assigned to the 7-day treatment arm it may delay the time to next needing an antibiotic for a flare-up. Your treatment will be less burdensome as you will receive only 7 days as opposed to 14 days of treatment. Receiving a shorter duration of antibiotic treatment than the standard course may reduce the risk of developing antibiotic resistance and experiencing fewer or shorter-lived side effects.
The benefits to you taking part in this study if you are allocated to the 14 day treatment arm are the same as if you received standard care.
There are no additional potential medical risks associated with the study.
All participants will be asked to complete study questionnaires which is a potential burden on the particpant's time. To minimise this burden, we will give patients the option of completing these electronically or on paper.
The monthly telephone calls are also a potential burden on the patient's time. We will make every effort to minimise inconvenience; for example, we will offer calls at a time of their choosing and we will also make it clear that they can cancel and reschedule calls at short notice. Some patients may feel reassured by extra follow up visits and increased number of clinical reviews.
Provision of sputum and posting sample to the clinical research team may pose a burden to the participants. We will minimise this burden by providing appropriate packaging and instructions in advance, and answering any questions the patient may have.

Where is the study run from?
University of Edinburgh and NHS Lothian (UK)

When is the study starting and how long is it expected to run for?
August 2023 to January 2027

Who is funding the study?
National Institute for Health and Care Research (NIHR) (UK).

Who is the main contact?
Professor Adam Hill, adam.hill@nhs.scot

Contact information

Type(s)
Scientific, Principal investigator

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

Integrated Research Application System (IRAS)
1007537

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
AC23072, IRAS 1007537, CPMS 58813

Study information

Scientific Title
Seven versus fourteen days antibiotics for patients with bronchiectasis requiring intravenous antibiotics - SBIVA study

Acronym
SBIVA Study

Study objectives
Primary objective:
To compare which duration of intravenous antibiotic treatment is superior for a bronchiectasis exacerbation, 7 days or 14 days. Superior is defined by a longer time elapsed until the next verified bronchiectasis exacerbation requiring antibiotic treatment (up to 1 year).

Secondary objectives:
To determine whether treatment with 7 days of intravenous antibiotics is superior to treatment with 14 days of intravenous antibiotics in terms of:
1. Heath-related quality of life at day 14

2. Clinical response at day 14, defined as a 4 or more-unit improvement in either the St. George's Respiratory Questionnaire or the CAT questionnaire, and/or by change in sputum colour from baseline:
2.1. Purulent to muco-purulent, mucoid, or no sputum, or
2.2. Muco-purulent to mucoid or no sputum
3. Adverse events up to day 60
4. Drug-resistant pathogens at day 14 and at time of next exacerbation needing antibiotic therapy
5. Health economic benefits
6. Adherence with allocated intravenous antibiotic intervention

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 15/11/2023, Scotland A Research Ethics Committee (2nd Floor Waverley Gate, 2-4 Waterloo Place, Edinburgh, EH1 3EG, United Kingdom; +44 7814609032; sesres@nhslothian.scot.nhs.uk), ref: 23/SS/0101

Study design
Interventional randomized parallel group controlled trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Bronchiectasis

Interventions
Study treatment: Half the study population, at random, will receive 7 days of open labelled intravenous antibiotics and the other half will receive 14 days of open labelled intravenous antibiotics.

We have chosen to use a broad-spectrum antibiotic (meropenem 2g intravenously three times daily) as it covers both gram-positive and gram-negative bacteria, including Pseudomonas aeruginosa (the most frequent pathogen identified in those that need intravenous antibiotics), as well as anaerobes. In addition, it is the antibiotic of choice for participants with a penicillin allergy. Eligibility does not rest on having a meropenem sensitive organism from current or previous sputum microbiology results.

The aim is to use meropenem for both arms of the study, however the use of a protocol approved alternative anti-pseudomonal antibiotic (at Investigator discretion) will be permitted. For example due to local antibiotic use policy, if there are supply issues, or patient allergies etc. The protocol approved alternatives are piperacillin-tazobactam, ceftazidime, ciprofloxacin, aztreonam, gentamicin and colistimethate sodium.

The intravenous antibiotics will be delivered as per local institutional standard of care and will be determined by the clinical care team (either out-patient, home or as an in-patient). We will align to local practice for alternative doses and regimens.

Follow up: Participants will be asked to complete a diary during their study treatment to document adherence to their allocation, and participants in both arms will be reviewed 14 days after starting their IV antibiotic (may be carried out remotely). Participants will receive monthly follow up telephone calls from their research team for 1 year after starting trial treatment to collect exacerbation information, adverse events (up to day 60), and quality of life and health economic assessment.

Randomisation procedure: After written informed consent has been obtained and eligibility confirmed, a member of the research team will perform the randomisation using a web-based randomisation service managed by the Edinburgh Clinical Trials Unit (ECTU). Participants will be randomised on a 1:1 basis to receive intravenous antibiotics for either 7 days or 14 days. The randomisation system will stratify for bronchiectasis severity and also for planned location of treatment, either in hospital as an inpatient or self-administering intravenous antibiotics at home.

Intervention Type
Drug

Phase
Phase IV

Drug/device/biological/vaccine name(s)
Meropenem [meropenem trihydrate], Tazocin [Piperacillin, Tazobactam] , Ceftazidime [ceftazidime], Cipofloxacin [ciprofloxacin], Azactam [Aztreonam], Gentamicin [Gentamicin], Colomycin [colistimethate sodium]

Primary outcome(s)
Time elapsed between starting intravenous antibiotic therapy, until needing another antibiotic course for a protocol-defined exacerbation of bronchiectasis (up to 1 year post randomisation). The following internationally agreed consensus definition of a bronchiectasis exacerbation for clinical trials will be used:
Deterioration in three or more of the following key symptoms for at least 48 h:
1. Cough
2. Sputum volume and/or consistency
3. Sputum purulence
4. Breathlessness and/or exercise tolerance
5. Fatigue and/or malaise
6. Haemoptysis
7. A clinician determines antibiotic treatment is required (either oral or intravenous)

Exacerbations will be confirmed within 7 days by a clinical member of the research team contacting the participant and reviewing their symptoms. The team member verifying the exacerbation may be an appropriately qualified doctor, nurse or allied health care professional who has been delegated this task by the PI on the site delegation log. Participants will be asked to contact their local research team as soon as possible at the onset of an exacerbation, or on a Monday if an exacerbation starts on a weekend. Participants will be given a study card to remind them of this along with contact details for their local research team. They will also be reminded

at each monthly follow-up call. If the verifying person deems the exacerbation does not meet the agreed criteria, the participant will continue in the study until they feel they have another exacerbation. At this point they will then be checked again as described above. This will continue until the participant meets the primary outcome measure (up to one year). All further exacerbations will be recorded but not verified. These conversations will be documented in the patient medical records and exacerbation data entered into the eCRF.

Key secondary outcome(s))
The following secondary outcomes will be assessed comparing 7 versus 14 days intravenous antibiotics:
1. St. George's Respiratory Questionnaire score at baseline and day 14
2. Bronchiectasis Health Questionnaire at baseline and day 14
3. CAT Questionnaire at baseline and day 14
4. Sputum colour at baseline, day 14 and at next exacerbation
5. Adverse events recorded at day 14, month 1 and day 60
6. Sputum pathogen and drug resistance patterns following treatment from samples collected at baseline, day 14 and at the time of next verified exacerbation (up to 1 year post randomisation)
7. Health Economic analysis measured using EQ-5D-5L and Health Care Resource Use questionnaires at baseline, day 14 and at each monthly telephone follow-up (up to 1 year post randomisation) and Cost per Quality Adjusted Life Year (QALY) from a UK National Health Service and Personal Social Services perspective, as simulated via decision analytic modelling over 1, 3, and 5-year time horizons
8. Adherence with allocated intravenous antibiotic intervention having greater than or equal to four sevenths of days of treatment, assessed by diary card and routine prescribing data at day 14 visit

Completion date
31/01/2027

Eligibility

Key inclusion criteria
1. Adults (age 16 or over)
2. Provision of informed consent (from participant or when lacking capacity due to bronchiectasis severity, by their legal representative)
3. A clinical diagnosis of bronchiectasis made by a respiratory specialist supported by CT scan or equivalent clinical confirmation of bronchiectasis
4. Exacerbation where intravenous antibiotics are deemed clinically appropriate
5. Ability to adhere to the study assessments/protocol in the opinion of the Investigator

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit

16 years

Sex
All

Key exclusion criteria
1. Patients who are asymptomatic at start of IV antibiotics
2. Known Homozygous Cystic fibrosis
3. Known active tuberculosis
4. Breast feeding, pregnancy, or plan to become pregnant within study
5. End of life care with anticipated life span less than 6 months
6. Current enrolment in a CTIMP where co-enrolment has not been approved
7. Previous recruitment to the SBIVA trial
8. Allergy to Meropenem and protocol permitted alternatives
9. Where trial enrolment is not in the best interest of the patient in the opinion of the Investigator

Date of first enrolment
31/07/2023

Date of final enrolment
31/07/2023

Locations

Countries of recruitment
United Kingdom

Scotland

Study participating centre
Royal Infirmary of Edinburgh
51 Little France Crescent
Old Dalkeith Road
Edinburgh
United Kingdom
EH16 4SA

Sponsor information

Organisation
University of Edinburgh

ROR
https://ror.org/01nrxwf90

Organisation
NHS Lothian

ROR
https://ror.org/03q82t418

Funder(s)

Funder type
Government

Funder Name
Health Technology Assessment Programme

Alternative Name(s)
NIHR Health Technology Assessment Programme, Health Technology Assessment (HTA), HTA

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and analysed during the current study will be available upon request made in writing via email to ECTUdatashare@ed.ac.uk in the first instance and will be reviewed in accordance with ECTU_SOP_OP_15 Data Access Request and Application Management.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	version 2.0	23/11/2023	28/08/2025	No	Yes
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes

Protocol file	version 2	23/11/2023	28/08/2025	No	No
Study website	Study website	11/11/2025	11/11/2025	No	Yes