ISRCTN17683568 https://doi.org/10.1186/ISRCTN17683568

A trial of common mucoactives used to help airway clearance in patients with respiratory failure requiring mechanical ventilation

Submission date
11/11/2021

Recruitment status
No longer recruiting

Registration date
25/11/2021

Overall study status
Ongoing

Last Edited
02/07/2025

Condition category
Respiratory

[X] 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

When patients are critically ill, one of the main complications is called acute respiratory failure. This is when a patient's illness causes their lungs to fail to work (lung failure). Patients need to be admitted to the Intensive Care Unit (ICU) and often need to have a breathing machine, or ventilator, to help them breathe and ensure that enough oxygen gets into their blood.

However, one problem that can occur as a result of being on a ventilator is difficulty clearing secretions (mucus, or sputum) from the lungs. Not being able to clear secretions from the lungs can make breathing harder, and this may result in developing a lung infection (called ventilator-associated pneumonia).

To reduce the problem of thick secretions, the air coming from the ventilator can have moisture added to it (humidification). Other treatments can include using a suction tube to remove secretions via the breathing tube. Physiotherapists may also use techniques to help clear secretions.

In some cases, medications called 'mucoactives' may be prescribed for patients. Mucoactives are medications that work to help clear secretions from the airways. Two examples of mucoactives are carbocisteine and hypertonic saline. Carbocisteine can help by changing the thickness and stickiness of secretions, which may help clear mucus from the lungs. It is given to patients in the ICU whilst they are on a breathing machine in either liquid form or as a powder dissolved in water, through the patient's feeding tube. Hypertonic saline is salty water that is delivered into the airways via a device called a nebuliser, which turns the salty water into a mist. The mist may stimulate coughing to help clear thick secretions from the lungs.

Carbocisteine and hypertonic saline are commonly given to patients with long-term respiratory conditions such as bronchiectasis or cystic fibrosis, as they have been shown to be helpful. The researchers carried out a survey of UK ICUs and found that about a third of patients on a breathing machine (ventilator) with lung failure were receiving a mucoactive, and carbocisteine and hypertonic saline were the most commonly used. However, it is not known for certain if these medications work in patients admitted to the ICU with lung failure.

The aim of this study is to investigate whether using one, or both, of these mucoactives (carbocisteine and hypertonic saline) really helps patients when they have difficulty clearing secretions, and if as a result, this means patients spend less time on the breathing machine

(ventilator). The researchers will also determine whether these mucoactives can improve other important outcomes for patients during their ICU stay, such as being taken off the breathing machine (ventilator) and having the breathing tube removed (extubation), the need to have the breathing tube put back in (reintubation), and how long patients stayed in the ICU and in hospital. The researchers will record whether patients experience any side effects from the use of these mucoactives.

Who can participate?
Critically ill patients (aged 16 years and over) admitted to the ICU with acute respiratory failure and requiring invasive mechanical ventilation, with secretions that are difficult to clear with usual airway clearance management (as assessed by the treating clinical team).

What does the study involve?
Participants will be put into one of four different groups by chance. The treatments for each group are as follows:
Group 1: Carbocisteine (750 mg, three times daily) plus usual airway clearance management (described below)
Group 2: Hypertonic saline (4 ml, four times daily) plus usual airway clearance management
Group 3: Carbocisteine (750 mg, three times daily) and hypertonic saline (4 ml, four times daily) plus usual airway clearance management
Group 4: Usual airway clearance management (including suctioning, heated humidification, respiratory physiotherapy, with or without isotonic saline), and no mucoactive medication.

If a patient is allocated to receive a mucoactive, they will be given this daily for the duration of their stay in intensive care up to a maximum of 28 days (or up to 29 or 30 days if they start breathing without assistance on Day 27 or Day 28 respectively).
The researchers will ask patients to complete a brief questionnaire about their quality of life at discharge from the ICU and after 2 and 6 months. They will ask patients to fill out a questionnaire at 6 months about their healthcare use to find out if there are any differences between the study treatment groups. They will also take samples of airway secretions and blood from patients to determine the ways in which these mucoactives might work, in order to improve lung failure treatments for patients in the future.

What are the possible benefits and risks of participating?
Taking part in this study may contribute to improved treatment of patients with lung failure in the future. Possible disadvantages of taking part are completing the questionnaires at 2 and 6 months after leaving the hospital. However, these questionnaires are sent to patients in the post or by email to make it more convenient for them to complete. While a patient is in the ICU, they may experience some side effects from receiving one or either of the mucoactives. While in the ICU, the doctors will closely monitor a patient’s response to the medication, including any side effects. If any side effects occur, the doctors will decide whether it is appropriate to continue the medication.

Where is the study run from?
Northern Ireland Clinical Trials Unit (UK)

When is the study starting and how long is it expected to run for?
May 2021 to October 2025

Who is funding the study?
The National Institute for Health Research Health Technology Assessment Programme (NIHR HTA) (UK)

Who is the main contact?
Dr Bronwen Connolly
MARCH@nictu.hscni.net

Study website
http://www.nictu.hscni.net/

Contact information

Type(s)
Scientific

Contact name
Dr Bronwen Connolly

ORCID ID
https://orcid.org/0000-0002-5676-5497

Contact details
School of Medicine, Dentistry and Biomedical Sciences
Queen's University Belfast
97 Lisburn Road
Belfast
United Kingdom
BT9 7BL
+44 (0)28 9097 2215
b.connolly@qub.ac.uk

Type(s)
Public

Contact name
Dr Naomi Dickson

Contact details
Northern Ireland Clinical Trials Unit (NICTU)
7 Lennoxvale
Belfast
United Kingdom
BT9 5BY
+44 (0)28 961 51447
MARCH@nictu.hscni.net

Additional identifiers

EudraCT/CTIS number
2021-003763-94

IRAS number

293630

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
20131DMcA-AS, IRAS 293630, HTA - NIHR130454, CPMS 51165

Study information

Scientific Title
A 2x2 factorial, randomised, controlled, open-label, Phase III, pragmatic, clinical and cost-effectiveness trial with an internal pilot, to determine whether mucoactives (carbocisteine and hypertonic saline) in critically ill patients with acute respiratory failure reduce the duration of mechanical ventilation

Acronym
MARCH

Study objectives
Patients with acute respiratory failure (ARF) who are treated with mucoactives will have a shorter duration of mechanical ventilation compared to patients receiving usual airway clearance management alone.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 15/10/2021, Yorkshire & The Humber - Leeds East Research Ethics Committee (NHSBT Newcastle Blood Donor Centre, Holland Drive, Newcastle upon Tyne, NE2 4NQ, UK; +44 (0)207 104 8105, +44 (0)207 104 8103, +44 (0)207 104 8018; leedseast.rec@hra.nhs.uk), REC ref: 21/YH/0234

Study design
2x2 factorial randomized controlled open-label Phase III pragmatic multi-centre clinical- and cost-effectiveness trial with an internal pilot of two medicinal products (i.e. a Clinical Trial of Investigational Medicinal Products)

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Hospital

Study type(s)
Treatment

Participant information sheet
Not available in web format, please contact MARCH@nictu.hscni.net to request a participant information sheet.

Health condition(s) or problem(s) studied
Acute respiratory failure

Interventions
Current interventions as of 13/11/2023:

Participants will be randomised using an automated web-based or telephone system via randomly permuted blocks in a 1:1:1:1 ratio. There will be stratification by recruitment centre.

Intervention 1: Carbocisteine - 750 mg three times daily, for up to 28 days, delivered systemically, plus usual airway clearance management. (Where unassisted breathing commences on Day 27 or Day 28, carbocisteine will be administered up to Day 29 and Day 30 respectively).

Intervention 2: Hypertonic saline - 4 ml of 6 or 7% concentration, delivered via nebulisation, four times daily, for up to 28 days, plus usual airway clearance management. (Where unassisted breathing commences on Day 27 or Day 28, hypertonic saline will be administered up to Day 29 and Day 30 respectively).

Intervention 3: Carbocisteine and hypertonic saline (as described in 1. and 2.), plus usual airway clearance management.

Comparator: Usual airway clearance management including suctioning, heated humidification (either active heated humidification devices, or passive heat and moisture exchangers), and respiratory physiotherapy; use of isotonic saline may also be used depending on clinician preference.

———

Previous interventions:

Participants will be randomised using an automated web-based or telephone system via randomly permuted blocks in a 1:1:1:1 ratio. There will be stratification by recruitment centre.

Intervention 1: Carbocisteine - 750 mg three times daily, for up to 28 days, delivered systemically, plus usual airway clearance management. (Where extubation occurs on Day 27 or Day 28, carbocisteine will be administered up to Day 29 and Day 30 respectively).

Intervention 2: Hypertonic saline - 4 ml of 6 or 7% concentration, delivered via nebulisation, four times daily, for up to 28 days, plus usual airway clearance management. (Where extubation occurs on Day 27 or Day 28, hypertonic saline will be administered up to Day 29 and Day 30 respectively).

Intervention 3: Carbocisteine and hypertonic saline (as described in 1. and 2.), plus usual airway clearance management.

Comparator: Usual airway clearance management including suctioning, heated humidification (either active heated humidification devices, or passive heat and moisture exchangers), and respiratory physiotherapy; use of isotonic saline may also be used depending on clinician preference.

Intervention Type
Drug

Phase
Phase III

Drug/device/biological/vaccine name(s)
Carbocisteine, hypertonic saline

Primary outcome measure
Duration of mechanical ventilation (in hours), defined (measured) as time from randomisation until first successful unassisted breathing (defined as maintaining unassisted breathing at 48 hours) or death (data obtained from medical notes). This outcome is one of the 'COVenT' core outcomes for trials of interventions intended to modify the duration of mechanical ventilation.
To clarify:
1. Unassisted breathing is defined as no inspiratory support or extracorporeal lung support
2. Success is defined as maintaining unassisted breathing at 48 hours
3. Duration includes time receiving extracorporeal lung support, invasive mechanical ventilation and non-invasive ventilation delivering volume or pressure support ventilation
4. Duration excludes time receiving high-flow oxygen therapy and continuous positive airway pressure
5. Patients with a tracheostomy in situ may still achieve successful unassisted breathing
6. Follow-up is to 60 days from randomisation

Secondary outcome measures
Timepoint: In hospital
1. Extubation - Time (in hours) from randomisation to first successful extubation (success defined as remaining free from endotracheal or tracheostomy tubes at 48 hours); Censored at 60 days; Data obtained from medical notes
2. Re-intubation - Event of reintubation of endotracheal tube after a planned extubation (censored at hospital discharge); excludes temporary reinsertion of endotracheal tube for procedures only; Censored at 60 days; Data obtained from medical notes
3. Respiratory physiotherapy input - Occurrence and frequency of airway clearance sessions; Censored at ICU discharge, death, or Day 28 whichever occurs first (where extubation occurs on Day 27 or Day 28, respiratory physiotherapy input will be recorded up to Day 29 and Day 30 respectively); Data obtained from medical notes
4. Antibiotic usage – Overall dose of individual agents; Censored at ICU discharge, death, or Day 28 whichever occurs first (where extubation occurs on Day 27 or Day 28, antibiotic usage will be recorded up to Day 29 and Day 30 respectively); Data obtained from medical notes
5. Duration of ICU and hospital stay - Time (in days and hours) from randomisation until the patient first leaves the relevant facility or dies; Censored at 6 months; Data obtained from medical notes
6. All-cause mortality - Confirmation and cause of death; Data obtained from medical notes
7. Safety - Censored at ICU discharge, death, or Day 28 whichever occurs first (where extubation occurs on Day 27 or Day 28, safety outcomes will be recorded up to Day 29 and Day 30

respectively); Data obtained from medical notes; to include the following outcomes:
7.1. Clinically important upper gastrointestinal (GI) bleeding due to peptic ulceration confirmed on upper GI endoscopy
7.2. Bronchoconstriction requiring nebulised bronchodilators
7.3. Ventilator or circuit dysfunction with respiratory deterioration
7.4. Hypoxaemia during nebulisation
7.5. Hospital resource use - Number of days at Level of Care 0/1/2/3; Censored at 6 months; Obtained via data linkage with ICNARC (Intensive Care National Audit & Research Centre) and SICSAG (Scottish Intensive Care Society Audit Group)

Timepoint: Time of consent to continue
Health-related quality of life measured using calculation of quality-adjusted life years (QALYs) via the EQ-5D-5L questionnaire

Timepoint: 60 days
1. Health-related quality of life measured using calculation of quality-adjusted life years (QALYs) via the EQ-5D-5L questionnaire
2. All-cause mortality - Confirmation and cause of death; Data obtained from medical notes

Timepoint: 6 months
1. Health-related quality of life measured using calculation of quality-adjusted life years (QALYs) via the EQ-5D-5L questionnaire
2. All-cause mortality - Confirmation and cause of death; Data obtained from medical notes
3. Health service use since hospital discharge measured via a study-specific Health Service Use questionnaire which will collect information on the following categories:
3.1. Hospital care: Number of inpatient or day-case hospital admissions; length of stay; the number of hospital outpatient appointments
3.2. Emergency care: Number of visits to Emergency Departments; the number of admissions to hospital after a visit to the Emergency Department
3.3. Care at a GP surgery, health clinic, or other community setting: the number of appointments; type of professional seen
3.4. Health care at home: the number of health care professional visits at home; type of health care professional seen at home
3.5. Medication: Name/class of medication. Oxygen use will also be recorded

The secondary outcomes of extubation, re-intubation, duration of ICU and hospital stay, all-cause mortality, and health-related quality of life represent the remaining outcomes in the COVenT core outcome set.

Overall study start date
01/05/2021

Completion date
31/10/2025

Eligibility

Key inclusion criteria
1. Aged ≥16 years
2. An acute and potentially reversible cause of ARF as determined by the treating physician
3. Receiving invasive mechanical ventilation via endotracheal tube or tracheostomy

4. Anticipated to remain on invasive mechanical ventilation for at least 48 hours
5. Presence of secretions that are difficult to clear with usual airway clearance management (as assessed by the treating clinical team)

Participant type(s)
Patient

Age group
Mixed

Lower age limit
16 Years

Sex
Both

Target number of participants
1956

Total final enrolment
1956

Key exclusion criteria
Current exclusion criteria as of 13/11/2023:

1. Pre-existing chronic respiratory condition receiving routine use of any mucoactive
2. Mucoactive treatment started more than 24 hours prior to trial enrolment
3. Known adverse reaction to either study mucoactive
4. Treatment withdrawal expected within 24 hours
5. Known pregnancy
6. Previous enrolment in the MARCH trial
7. Declined consent
8. The treating physician believes that participation in the trial would not be in the best interests of the patient

---

Previous exclusion criteria:

1. Pre-existing chronic respiratory condition receiving routine use of any mucoactive
2. Mucoactive treatment started more than 24 hours prior to trial enrolment
3. Known adverse reaction to either study mucoactive
4. Treatment withdrawal expected within 24 hours
5. Known pregnancy
6. Previous enrolment in the MARCH trial
7. Declined consent
8. Prisoners
9. The treating physician believes that participation in the trial would not be in the best interests of the patient

Date of first enrolment

17/02/2022

Date of final enrolment
30/04/2025

Locations

Countries of recruitment
England

Northern Ireland

Scotland

United Kingdom

Wales

Study participating centre
Royal Liverpool University Hospital
Liverpool University Hospital NHS Foundation Trust
Liverpool
United Kingdom
L7 8XP

Study participating centre
Altnagelvin Area Hospital
Glenshane Road
Londonderry
United Kingdom
BT47 6SB

Study participating centre
Antrim Area Hospital
45 Bush Rd
Antrim
United Kingdom
BT41 2RL

Study participating centre
Barnsley District General Hospital
Pogmoor Road
Barnsley

United Kingdom
S75 2EP

Study participating centre
Queen Elizabeth Hospital
University Hospitals Birmingham NHS Foundation Trust
Birmingham
United Kingdom
B15 2GW

Study participating centre
Bristol Royal Infirmary
Marlborough Street
Bristol
United Kingdom
BS2 8HW

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

Study participating centre
Freeman Hospital
Newcastle upon Tyne Hospitals NHS Foundation Trust
Newcastle upon Tyne
United Kingdom
NE7 7DN

Study participating centre
The Royal Victoria Infirmary
Queen Victoria Road
Newcastle upon Tyne
United Kingdom
TS1 4LP

Study participating centre
Glasgow Royal Infirmary
84 Castle Street
Glasgow
United Kingdom
G4 0SF

Study participating centre
Gloucester Royal Hospital
Great Western Road
Gloucester
United Kingdom
GL1 3NN

Study participating centre
Guy's Hospital
Guy's and St Thomas' NHS Foundation Trust
London
United Kingdom
SE1 9RT

Study participating centre
St Thomas' Hospital
Guy's and St Thomas' NHS Foundation Trust
London
United Kingdom
SE1 7EH

Study participating centre
Hull Royal Infirmary
Hull University Teaching Hospitals NHS Trust
Hull
United Kingdom
HU3 2JZ

Study participating centre
James Cook University Hospital
South Tees Hospitals NHS Foundation Trust

Middlesbrough
United Kingdom
TS4 3BW

Study participating centre
King's College Hospital
King's College Hospital NHS Foundation Trust
London
United Kingdom
SE5 9RS

Study participating centre
Leicester Royal Infirmary
University Hospitals of Leicester NHS Trust
Leicester
United Kingdom
LE1 5WW

Study participating centre
Medway Maritime Hospital
Medway NHS Foundation Trust
Gillingham
United Kingdom
ME7 5NY

Study participating centre
Morriston Hospital NHS Trust
Heol Maes Eglwys
Morriston
Swansea
United Kingdom
SA6 6NL

Study participating centre
Musgrove Park Hospital
Somerset NHS Foundation Trust
Taunton
United Kingdom
TA1 5DA

Study participating centre
Queen's Medical Centre
Nottingham University Hospital NHS Trust
Nottingham
United Kingdom
NG7 2UH

Study participating centre
Pinderfields Hospital
The Mid Yorkshire Hospitals NHS Trust
Wakefield
United Kingdom
WF1 4DG

Study participating centre
Poole Hospital
University Hospitals Dorset NHS Foundation Trust
Poole
United Kingdom
BH15 2JB

Study participating centre
Queen Elizabeth Hospital
Lewisham and Greenwich NHS Trust
London
United Kingdom
SE13 6LH

Study participating centre
University Hospital Lewisham
Lewisham and Greenwich NHS Trust
London
United Kingdom
SE13 6LH

Study participating centre
Rotherham District General Hospital
The Rotherham NHS Foundation Trust

Rotherham
United Kingdom
S60 2UD

Study participating centre
Royal Berkshire Hospital
Royal Berkshire NHS Foundation Trust
Reading
United Kingdom
RG1 5AN

Study participating centre
Royal Bournemouth Hospital
Castle Lane East
Bournemouth
United Kingdom
BH7 7DW

Study participating centre
Royal Cornwall Hospital
Royal Cornwall Hospitals NHS Trust
Truro
United Kingdom
TR1 3LJ

Study participating centre
Aintree Hospital
Liverpool University Hospital NHS Foundation Trust
Liverpool
United Kingdom
L9 7AL

Study participating centre
The Royal Oldham Hospital
Rochdale Road
Oldham
United Kingdom
OL1 2JH

Study participating centre
Royal Stoke University Hospital
University Hospitals of North Midlands NHS Trust
Stoke-on-Trent
United Kingdom
ST4 6QG

Study participating centre
Royal United Hospital Bath
Royal United Hospitals Bath NHS Foundation Trust
Bath
United Kingdom
BA1 3NG

Study participating centre
Royal Victoria Hospital
Belfast Health and Social Care Trust
Belfast
United Kingdom
BT12 6BA

Study participating centre
Salford Royal Hospital
Salford Royal NHS Foundation Trust
Manchester
United Kingdom
M6 8HD

Study participating centre
Birmingham City Hospital
Sandwell and West Birmingham Hospitals NHS Trust
Birmingham
United Kingdom
B18 7QH

Study participating centre
Southmead Hospital
North Bristol NHS Trust
Bristol
United Kingdom
BS10 5NB

Study participating centre
Sunderland Royal Hospital
South Tyneside and Sunderland NHS Foundation Trust
Sunderland
United Kingdom
SR4 7TP

Study participating centre
Watford General Hospital
West Hertfordshire Hospitals NHS Trust
Watford
United Kingdom
WD18 0HB

Study participating centre
Manchester Royal Infirmary
Manchester University Hospitals NHS Foundation Trust
Manchester
United Kingdom
M13 9WL

Study participating centre
York Hospital
York and Scarborough Teaching Hospitals NHS Foundation Trust
York
United Kingdom
YO31 8HE

Study participating centre
Royal Hampshire County Hospital
Romsey Road
Winchester
United Kingdom
SO22 5DG

Study participating centre
Ipswich Hospital
Heath Road

Ipswich
United Kingdom
IP4 5PD

Study participating centre
Royal Preston Hospital
Lancashire Teaching Hospitals NHS Foundation Trust
Preston
United Kingdom
PR2 9HT

Study participating centre
Golden Jubilee National Hospital
National Waiting Time Centre Board
Clydebank
United Kingdom
G81 4DY

Study participating centre
University Hospital Coventry
University Hospitals Coventry and Warwickshire NHS Trust
Coventry
United Kingdom
CV2 2DX

Study participating centre
The Grange University Hospital
Caerleon Road
Cwmbran
United Kingdom
NP44 8YN

Study participating centre
Queen Alexandra Hospital
Portsmouth Hospitals NHS Trust
Portsmouth
United Kingdom
PO6 3LY

Study participating centre
Wythenshawe Hospital
Manchester University NHS Foundation Trust
Manchester
United Kingdom
M23 9LT

Study participating centre
North Manchester General Hospital
Manchester University NHS Foundation Trust
Manchester
United Kingdom
M8 5RB

Study participating centre
Belfast City Hospital
Belfast Health and Social Care Trust
Belfast
United Kingdom
BT9 7AB

Study participating centre
Sandwell General Hospital
Sandwell and West Birmingham Hospitals NHS Trust
West Bromwich
United Kingdom
B71 4HJ

Study participating centre
Addenbrookes Hospital
Hills Road
Cambridge
United Kingdom
CB2 0QQ

Study participating centre
Heartlands Hospital
Bordesley Green East
Bordesley Green

Birmingham
United Kingdom
B9 5ST

Study participating centre
Chesterfield Royal Hospital
Chesterfield Road
Calow
Chesterfield
United Kingdom
S44 5BL

Study participating centre
John Radcliffe Hospital
Headley Way
Headington
Oxford
United Kingdom
OX3 9DU

Study participating centre
Victoria Hospital
Hayfield Road
Kirkcaldy
United Kingdom
KY2 5AH

Study participating centre
Royal Devon and Exeter Hospital
Royal Devon & Exeter Hospital
Barrack Road
Exeter
United Kingdom
EX2 5DW

Study participating centre
Lincoln County Hospital
Greetwell Road
Lincoln
United Kingdom
LN2 5QY

Study participating centre
Queen Elizabeth University Hospital
1345 Govan Road
Glasgow
United Kingdom
G51 4TF

Study participating centre
Derriford Hospital
Derriford Road
Plymouth
United Kingdom
PL6 8DH

Study participating centre
William Harvey Hospital
Kennington Road
Willesborough
Ashford
United Kingdom
TN24 0LZ

Study participating centre
Yeovil District Hospital
Higher Kingston
Yeovil
United Kingdom
BA21 4AT

Study participating centre
University Hospital Monklands
Monkscourt Ave
Airdrie
United Kingdom
ML6 0JS

Study participating centre

West Suffolk Hospital
Hardwick Lane
Bury St. Edmunds
United Kingdom
IP33 2QZ

Study participating centre
Northern General Hospital
Northern General Hospital NHS Trust
C Floor, Huntsmnan Building
Herries Road
Sheffield
United Kingdom
S5 7AU

Study participating centre
Royal Hallamshire Hospital
Glossop Road
Sheffield
United Kingdom
S10 2JF

Study participating centre
Wrexham Maelor Hospital
Croesnewydd Road
Wrexham Technology Park
Wrexham
United Kingdom
LL13 7TD

Study participating centre
Glan Clwd Hospital
Ysbyty Glan Clwydd
Bodelwyddan
Rhyl
United Kingdom
LL18 5UJ

Study participating centre
Aberdeen Royal Infirmary
Foresterhill Road

Aberdeen
United Kingdom
AB25 2ZN

Study participating centre
Bedford Hospital
Kempston Road
Bedford
United Kingdom
MK42 9DJ

Study participating centre
University College London Hospital
250 Euston Road
London
United Kingdom
NW1 2PG

Study participating centre
Torbay Hospital
Newton Road
Torquay
United Kingdom
TQ2 7AA

Study participating centre
Royal Free Hospital
Royal Free Hospital
Pond Street
London
United Kingdom
NW3 2QG

Study participating centre
Warrington Hospital
Lovely Lane
Warrington
United Kingdom
WA5 1QG

Study participating centre
Northern Devon District Hospital
Raleigh Park
Barnstaple
United Kingdom
EX31 4JB

Sponsor information

Organisation
Belfast Health and Social Care Trust

Sponsor details
Research Office
2nd Floor King Edward Building
Royal Victoria Hospital
Grosvenor Road
Belfast
Northern Ireland
United Kingdom
BT12 6BA
+44 (0)28 961 56057
Alison.Murphy@belfasttrust.hscni.net

Sponsor type
Hospital/treatment centre

Website
http://www.belfasttrust.hscni.net/

ROR
https://ror.org/02tdmfk69

Funder(s)

Funder type
Government

Funder Name
Health Technology Assessment Programme

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

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Publication and dissemination plan
The researchers will publish the trial protocol and statistical analysis plan to ensure transparency in their methodology. The study findings will be presented at national and international meetings with abstracts online. Presentation at these meetings will ensure that results and any implications are rapidly disseminated to the wider UK intensive care community.

In accordance with the open-access policies proposed by the NIHR the researchers plan to publish the clinical findings of the trial as well as a separate paper describing the cost-effectiveness in the NHS setting in high quality peer-reviewed open access (e.g. including via PubMed Central) journals. A final report will also be published in the NIHR HTA journal.

Due to limited resources, it will not be possible to provide each patient with a personal copy of the results of the trial. However, upon request, patients involved in the trial will be provided with a lay summary of the principal study findings.

The most significant results will be communicated to the wider public through media releases. An ongoing update of the trial will also be provided on the CTU website.

Following the publication of the primary and secondary outcomes there may be scope to conduct additional analyses on the data collected. In such instances formal requests for data will need to be made in writing to the Chief Investigator or Co-Chief Investigator via the Clinical Trials Unit, who will discuss this with the Sponsor. The study will comply with the good practice principles for sharing individual participant data from publicly funded clinical trials and data sharing will be undertaken in accordance with the required regulatory requirements. In the event of publications arising from such analyses, those responsible will need to provide the Chief Investigator or Co-Chief Investigator with a copy of any intended manuscript for approval prior to submission.

Intention to publish date
30/11/2026

Individual participant data (IPD) sharing plan
The datasets generated and/or analysed during the current study will be available upon request following the publication of the primary and secondary outcomes. Formal requests for data should be made in writing to Prof. Danny McAuley (Chief Investigator) or Dr Bronwen Connolly (Co-Chief Investigator) via the Trial Manager, Caroline Wilson (MARCH@nictu.hscni.net). Requests will be reviewed on a case by case basis in collaboration with the Sponsor.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
HRA research summary			28/06/2023	No	No
Protocol article		10/04/2025	17/06/2025	Yes	No