

A randomised controlled trial of single antibiotic cement versus dual antibiotic cement in patients receiving a partial hip joint replacement after fracture

Submission date 16/07/2018	Recruitment status No longer recruiting	☒ Prospectively registered ☒ Protocol
Registration date 17/07/2018	Overall study status Completed	☐ Statistical analysis plan ☒ Results
Last Edited 26/06/2023	Condition category Surgery	☐ Individual participant data

Plain English summary of protocol

Background and study aims

This study is comparing two types of treatments in patients who have suffered a hip fracture and need to have a partial hip replacement (also called a hemiarthroplasty). The hemiarthroplasty implant is inserted into the thigh bone and replaces the 'ball' part of the 'ball-and-socket' hip joint. 'Bone cement' is used to hold the implant in place. This study aims to compare two different antibiotic bone cement mixtures used to hold the implant in place. The results of this trial should show whether there is any difference in the rate of deep infection in patients when one of the two bone cement mixtures is used to hold their hemiarthroplasty implant in place. The information gained will help patients and their doctors make more informed decisions about the best way to reduce the risk of deep infection in this type of surgery.

Who can participate?

Patients 60 years of age or older who have been admitted to a participating hospital with a hip fracture that the surgeon feels should be treated with a hip hemiarthroplasty

What does the study involve?

Participants are randomly allocated to receive one of two types of bone cement. The first type has a lower dose of a single type of antibiotic, and the second type has a higher dose of that same antibiotic, as well as a second type of antibiotic. Participants complete a questionnaire about their recovery by telephone at 120 days after their surgery.

What are the possible benefits and risks of participating?

There is no specific advantage to patients from taking part in the study. However, the results of this study will help to decide which treatment is best for patients with this type of injury. Any operation for a broken hip carries some risks. The risks of surgery with an implant include: bleeding requiring blood transfusion, infection, further fracture, dislocation, leg length discrepancy, blood clots, damage to nerves and blood vessels in the surgical area, and the risks

associated with the anaesthetic. These risks are the same as for patients who are not part of this study. There are also uncommon risks associated with both types of cement. In a small number of cases, patients having a cemented replacement can have a reaction to the bone cement. If this were to occur, the anaesthetist and surgeon would continue treatment as per normal practice. This risk is the same for both types of bone cement.

Where is the study run from?

The study is sponsored by the Northumbria Healthcare NHS Foundation Trust and is managed by Oxford Trauma, a clinical trials research group which is a part of the Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences (NDORMS) at the University of Oxford. There will be 20+ hospitals from across the United Kingdom participating in the study.

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

December 2017 to December 2021

Who is funding the study?

Heraeus Medical GmbH

Who is the main contact?

Stephanie Wallis

white8-copal@ndorms.ox.ac.uk

Contact information

Type(s)

Scientific

Contact name

Ms Stephanie Wallis

Contact details

Northumbria Healthcare NHS Foundation Trust

Woodhorn Lane

Ashington

United Kingdom

NE63 9JJ

+44 (0)1865 223111

White8-copal@ndorms.ox.ac.uk

Type(s)

Scientific

Contact name

Prof Mike Reed

Contact details

Northumbria Healthcare NHS Foundation Trust

Woodhorn Lane

Ashington

United Kingdom

NE63 9JJ

Additional identifiers

Protocol serial number

38386

Study information

Scientific Title

WHiTE 8 COPAL: a randomised controlled trial of low dose single antibiotic loaded cement versus high dose dual antibiotic loaded cement in patients receiving a hip hemiarthroplasty after fracture

Acronym

WHiTE 8 COPAL

Study objectives

This trial aims to establish if a high dose, dual antibiotic regime has fewer infections compared to low dose single antibiotic cement.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Wales REC 5, 03/05/2018, ref: 18/WA/0154

Primary study design

Interventional

Study design

Randomised; Interventional; Design type: Treatment, Surgery

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Hip fracture

Interventions

Participants will undergo surgery at the next available opportunity on a planned trauma list. Participants will be blinded to the treatment allocation. The operating surgeon will not be blinded to the allocation. Where possible clinical outcomes will be assessed by blinded assessors. Patients will be kept blinded until the completion of the trial when the blind may be broken.

Group 1: Cemented hemiarthroplasty with low dose single antibiotic cement
Replacement of the femoral head and neck with choice of femoral head and stem. Cement used will be Heraeus Palacos R+G cement (Hanau, Germany) – contains gentamicin 0.5 grams per 40 gram mix of cement.

Group 2: Cemented hemiarthroplasty with high dose dual antibiotic cement

Replacement of the femoral head and neck with choice of femoral head and stem. Cement used will be Heraeus Copal G+C cement (Hanau, Germany) – contains gentamicin 1 g and clindamycin 1 g per 40 gram mix of cement.

Following fixation all patients will undergo a routine rehabilitation prior to discharge from hospital. Research staff will complete the infection-related questions at baseline, and at 4 months (120 days) post-surgery. In addition the following data will be collected:

1. Demographic and baseline characteristics (e.g. age, gender, pre-fracture mobility)
2. Routine 'operation notes' and 'discharge summaries' that include details of patient's diagnosis and treatment, perioperative complications, and discharge details
3. Medical record review for diagnosis of infection
4. Details of admission, assessment and treatment
5. Details of antibiotics use and microbiological reports for reported infections
6. Contact details, including of carers when appropriate
7. Complications and SAEs during the study period

Following their 4-month questionnaire, patients will have completed their participation in the trial and will continue to be treated as per normal standard of care.

Intervention Type

Procedure/Surgery

Primary outcome(s)

Deep Infection of surgical wound; the trialists will use the Centre for Disease Control and Prevention definition of a “deep surgical site infection”, that is a wound infection involving the tissues deep to the skin that occurs within 90 days of injury. Medical records for all patients will be reviewed by appropriately trained staff for indicators of infection at the time of the patient's discharge from the research site. In addition, at 120 days post-surgery, the patients will self-report (via telephone interview, electronic media or postal questionnaire) on signs of infections. When potential signs of infection have been found, either at discharge or 120 days, the site will be asked to provide, if available, copies of: any re-operation records for surgery related to the index hip fracture, details of antibiotics prescribed, microbiology reports if samples of the suspected infected tissues around the hip were sent for analysis and imaging reports for any deep imaging that occurred in relation to suspected infection. These data will be collated by the central trial team in Oxford.

Key secondary outcome(s)

1. Mortality recorded at discharge from the research site as well as in the 120-day follow-up. Sites or consultees may also report mortality at any point in the time between discharge and 120 days.
2. Health-related quality of life measured by EuroQol EQ-5D-5L at baseline and at 120 days post-surgery
3. All complications and surgical interventions related to the index wound will be recorded. These are reported by sites as they become aware of events, as well as by patients, carers or consultees at 4 months (120 days)
4. Antibiotic prescription information will be obtained from the patient, consultee or carer at the 4 months (120 days) follow-up. Should the patient be entered into the trial under nominated consultee agreement and this information not be available from a carer, the trial team may contact the patient's GP for this information
5. Resistance patterns of infections; all infections identified in the primary endpoint will be

assessed for antibiotic resistance profiles by the local microbiology team

6. Resource use; cost data will be obtained from national databases or will be estimated in consultation with the hospital finance department. The cost consequences following discharge, including NHS costs and patients' out-of-pocket expenses will be recorded via a short questionnaire, which will be administered at 4 months (120 days) post-surgery. This will be either by patient or consultee

7. Mobility; the ability to walk indoors and outdoors is rated very highly by patients. It has been included in a recommended 'core outcome set' for trials assessing interventions in hip fractures, hence it will be recorded using the CRF. It will be captured at baseline and at 4 months (120 days).

8. Residential status; also captured on CRF. The residential status is also part of the core outcome set for hip fractures and NHFD dataset. It will be captured at baseline and at 4 months (120 days)

Completion date

31/12/2021

Eligibility

Key inclusion criteria

1. Aged 60 years or older
2. Intracapsular hip fracture, which in the opinion of the treating surgeon requires acute surgical treatment with a cemented hip hemiarthroplasty

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Senior

Sex

All

Total final enrolment

4936

Key exclusion criteria

Patients will be excluded if they are allergic to gentamicin or clindamycin

Date of first enrolment

01/08/2018

Date of final enrolment

31/08/2021

Locations

Countries of recruitment

United Kingdom

England

Wales

United States of America

Study participating centre

John Radcliffe Hospital

Oxford

United Kingdom

OX3 9DU

Study participating centre

Leicester Royal Infirmary

Musculoskeletal Research Office

Ground Floor, Victoria Building

Leicester

United Kingdom

LE1 5WW

Study participating centre

Norfolk & Norwich University Hospital

Orthopaedic Research

East Block Level 2

Colney Lane

Norwich

United Kingdom

NR4 7UY

Study participating centre

Poole Hospital

Research Dept

Cornelia House

Longfleet Road

Poole

United Kingdom

BH15 2JB

Study participating centre
Queen Alexandra Hospital
ED Research Team
Lancaster House
Portsmouth
United Kingdom
PO6 3LY

Study participating centre
Queen Elizabeth Hospital
NIHR SRMRC
4th Floor
North Block
Institute of Translational Medicine
Hertiage Building
Birmingham
United Kingdom
B15 2TH

Study participating centre
Royal Berkshire Hospital
Research and Development
Level 2 | North Block
London Road
Reading
United Kingdom
RG1 5AN

Study participating centre
Princess Royal Hospital
Research & Development
Sussex House
1 Abbey Road
Brighton
United Kingdom
BN12 1ES

Study participating centre
Royal Victoria Infirmary
Peacock Hall
Level 2, Room 12

Newcastle Upon Tyne
United Kingdom
NE1 4LP

Study participating centre

Southmead Hospital

Trauma & Orthopaedic Research Team
Department of Orthopaedics
Office 6, Gate 18, Level 1
Brunel Building
Bristol
United Kingdom
BS10 5NB

Study participating centre

University Hospital Coventry

Trauma & Orthopaedic Research Team
Research & Development
Room ACF40002
4th Floor, West Wing
UHCW, Clifford Bridge Road
Walsgrave
Coventry
United Kingdom
CV2 2DX

Study participating centre

Queens Medical Centre

T & O Research Manager
Trauma & Orthopaedic Audit Office
C Floor, West Block, QMC (WC1285)
Nottingham University Hospitals
Nottingham
United Kingdom
NG7 2UH

Study participating centre

University Hospital Wales

Trauma & Orthopaedics Directorate
Cardiff & Vale University Health Board
Cardiff & Vale Orthopaedic Centre (CAVOC)
University Hospital Llandough
Penlan Road

Penarth
Cardiff
United Kingdom
CF64 2XX

Study participating centre
University Hospital Aintree
John Moorehead
Orthopaedic Research Room
Fracture Clinic
Lower Lane
Liverpool
United Kingdom
L9 7AL

Study participating centre
Salford Royal Hospital
Stott Lane
Salford
United Kingdom
M6 8HD

Study participating centre
Morrison Hospital
Heol Maes Eglwys
Morrison
United Kingdom
SA6 6NL

Study participating centre
Wythenshawe Hospital
University Hospital of South Manchester
Southmoor Road
Wythenshawe
United States of America
M23 9LT

Study participating centre
Blackpool Victoria Hospital
Clinical Research Centre
2nd Flor, Area 5

Whinney Heys Road
Blackpool
United Kingdom
FY3 8NR

Study participating centre

Ipswich Hospital

The East Suffolk North Essex NHS Foundation Trust
Heath Road
Ipswich
United Kingdom
IP4 5PD

Study participating centre

James Cook University Hospital

Academic Centre
Marton Road
Middlesbrough
United Kingdom
TS4 3BW

Study participating centre

Sandwell General Hospital

Sandwell & West Birmingham Hospitals NHS Trust
Sandwell Medical Research Unit
Opposite Diabetes Centre
Lyndon
West Bromwich
United Kingdom
B71 4HJ

Study participating centre

Royal Cornwall Hospital

Medical & Surgical Research Team
B16 Knowledge Spa
Royal Cornwall Hospitals NHS Trust
Truro
United Kingdom
TR1 3HD

Study participating centre

Northumbria Specialist Emergency Care Hospital
Wansbeck General Hospital
Woodhorn Lane
Ashington
United Kingdom
NE63 9JJ

Study participating centre
Kings College Hospital
Orthopaedic Department
2nd Floor, Hambleton Wing
Denmark Hill
London
United Kingdom
SE5 9RS

Study participating centre
Horton General Hospital
Oxford Road
Banbury
United Kingdom
OX16 9AL

Sponsor information

Organisation
Northumbria Healthcare NHS Foundation Trust

ROR
<https://ror.org/01gfeyd95>

Funder(s)

Funder type
Industry

Funder Name
Heraeus Medical GmbH

Results and Publications

Individual participant data (IPD) sharing plan

All data generated or analysed during this study will be included in the subsequent results publication

IPD sharing plan summary

Published as a supplement to the results publication

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		21/06/2023	26/06/2023	Yes	No
Protocol article		01/02/2021	14/04/2021	Yes	No
HRA research summary			28/06/2023	No	No
Study website	Study website	11/11/2025	11/11/2025	No	Yes