

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

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<b>Registration date</b> 17/07/2018	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 26/06/2023	<b>Condition category</b> Surgery	<input type="checkbox"/> 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

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## Contact information

### Type(s)

Scientific

### Contact name

Ms Stephanie Wallis

### Contact details

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# 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

## Study design

Randomised; Interventional; Design type: Treatment, Surgery

## Primary study design

Interventional

## 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  
Heritage 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?
<a href="#">Results article</a>		21/06/2023	26/06/2023	Yes	No
<a href="#">Protocol article</a>		01/02/2021	14/04/2021	Yes	No
<a href="#">HRA research summary</a>			28/06/2023	No	No
<a href="#">Study website</a>	Study website	11/11/2025	11/11/2025	No	Yes