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PATH2: Platelet rich plasma in Achilles tendon healing

Submission date	Recruitment status	[X] Prospectively registered
08/01/2015	No longer recruiting	[X] Protocol
Registration date	**Overall study status**	[X] Statistical analysis plan
12/01/2015	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
11/06/2025	Musculoskeletal Diseases	

Plain English summary of protocol

Background and study aims
Achilles tendon rupture (ATR) is when a person tears the tendon (the Achilles tendon) connecting the calf muscle and heal bone. It is the most common tendon injury and lead to months of incapacity. With an average work absence of 63-108 days there are significant costs to society and to the NHS. Platelet rich plasma (PRP) may improve recovery and return to normal activities earlier, and reduce the NHS and societal impact. This study investigates how good PRP is at treating ATR using disease-specific and patient important outcomes.

Who can participate?
Patients aged 18 and over who are suitable for non-surgical treatment of the Achilles tendon rupture (ATR)

What does the study involve?
Participants are randomly allocated into one of two groups. Those in group 1 are given a PRP injection. Those in group 2 are given an injection containing a placebo. Participants complete a pain diary and have four study assessments at 4,7,13 and 24 weeks, carried out by a member of the research team blind to allocation. Assessments take place over the telephone or during a hospital outpatient visit. The 24 week hospital visit includes an exercise test of ankle function. All assessments include collection of patient-reported responses to preset questions.The results may be applicable to the many other tendon and ligaments injuries.

What are the possible benefits and risks of participating?
Patients may benefit by taking part in the research as may be allocated to receive platelet rich plasma (PRP) into the Achilles tendon gap. This may increase healing. The intervention offered is an injection of the participants own platelet rich plasma and there are no known risk over receiving any injection

Where is the study run from?
John Radcliffe Hospital (UK)

When is the study starting and how long is it expected to run for?
April 2015 to November 2020

Who is funding the study?
1. NIHR/MRC Efficacy and Mechanism Evaluation Programme (UK)
2. Kadoorie Centre Trauma Research Charitable Fund (UK)

Who is the main contact?
Oxford Trauma and Emergency Care research group, oxfordtrauma@ndorms.ox.ac.uk

Study website
https://path2.octru.ox.ac.uk/

Contact information

Type(s)
Scientific

Contact name
Dr Oxford Trauma and Emergency Care research group

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number
146684

ClinicalTrials.gov number
NCT02302664

Secondary identifying numbers
17850, IRAS 146684

Study information

Scientific Title
A pragmatic multicentre, blinded, randomised placebo-controlled trial comparing Platelet Rich Plasma injection (PRP) to placebo (imitation) injection in adults with Achilles tendon rupture. Two sub-studies are embedded within the main study to contribute to the understanding of the PRP mechanism in tendon healing.

Acronym
PATH2

Study objectives
Does the strong PRP effect identified in basic science studies and pilot studies translate to improved tendon recovery in patients with Achilles tendon rupture when compared with control?

Ethics approval required
Old ethics approval format

Ethics approval(s)
NRES Committee South Central - Oxford A, 11/11/2014, ref: 14/SC/1333

Study design
Randomized; Interventional

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 use the contact details to request a patient information sheet

Health condition(s) or problem(s) studied
Topic: Injuries and emergencies, Musculoskeletal disorders; Subtopic: Injuries and Emergencies (all Subtopics), Musculoskeletal (all Subtopics); Disease: Injuries and Emergencies, Musculoskeletal

Interventions
1. Imitation injection (placebo): needle insertion into tendon rupture gap
2. Platelet Rich Plasma injection: Platelet Rich Plasma injected into Achilles tendon rupture gap

Intervention Type
Procedure/Surgery

Primary outcome measure
Current primary outcome measure as of 24/09/2019:
Muscle-tendon function, measured objectively with the limb symmetry index (LSI) in maximal work during the heel-rise endurance test (HRET) at 24 weeks post-treatment

Previous primary outcome measure:
Heel-raise Endurance Test; Timepoint(s): 24 weeks post treatment

Secondary outcome measures
Current secondary outcome measures as of 24/09/2019:
1. Number of heel rise repetitions and maximum heel rise height (cm) during the Heel-rise Endurance Test at 24 weeks
2. Achilles Tendon Rupture Score at 4, 7, 13 and 24 weeks and 24 months
3. Patient Specific Function Scale at 4, 7, 13 and 24 weeks and 24 months
4. Health-related quality of life assessed using the SF-12 (Acute version) at 4, 7, 13 and 24 weeks and 24 months
5. Pain diary assessed using a Visual Analogue Score daily during the first 2 weeks following treatment

Previous secondary outcome measures:
1. Achilles Tendon Rupture Score; Timepoint(s): 4, 7, 13 and 24 weeks and 24 months
2. Patient Specific Function Scale; Timepoint(s): 4, 7, 13 and 24 weeks and 24 months
3. SF-12 (Acute version); Timepoint(s): 4, 7, 13 and 24 weeks and 24 months
4. Visual Analogue Score; Timepoint(s): First 2 weeks following treatment, daily
5. Pain diary: Timepoint(s): 0-2 weeks self completion at home by patient

Overall study start date
01/04/2015

Completion date
21/11/2019

Eligibility

Key inclusion criteria
All patients with acute Achilles tendon rupture attending outpatient trauma/orthopaedic clinic within 7 days of sustaining the injury will be eligible for inclusion in the trial. Patient is willing and able to give informed consent for participation in the study
1. Aged 18 years and over
2. Diagnosed with acute Achilles tendon rupture
3. Presenting within and receiving study treatment within 12 days post injury
4. Patients in whom the decision has been made for nonoperative treatment
5. Able (in the Investigators opinion) and willing to comply with all study requirements
6. Able to attend a PATH2 study hospital site for the 24 week follow-up
7. Patient must be Ambulatory prior to injury without the use of walking aids or assistance of another person (added 16/03/2017)

Participant type(s)
Patient

Age group
Adult

Lower age limit
18 Years

Sex
Both

Target number of participants
Planned Sample Size: 230; UK Sample Size: 230; Description: 20% loss to follow up incorporated in Sample size

Total final enrolment
230

Key exclusion criteria
The patient may not enter the study if ANY of the following apply:
1. Previous major tendon or ankle injury or deformity to either lower leg
2. History of diabetes mellitus
3. Known platelet abnormality or haematological disorder
4. Current use of systemic cortisone or an anticoagulant
5. Evidence of lower limb gangrene/ulcers or peripheral vascular disease
6. History of hepatic or renal impairment or dialysis
7. Female patients who are pregnant or breast feeding
8. Is currently receiving or has received radiation or chemotherapy within the last 3 months
9. Has inadequate venous access for drawing blood
10. Any other significant disease or disorder which, in the opinion of the investigator, may either put the participants at risk because of participation in the study, or may influence the result of the study, or the patients ability to participate in the study
11. Achilles tendon injuries at the insertion to the calcaneum or at the musculotendinous junction (added 16/030/2017)

Date of first enrolment
20/07/2015

Date of final enrolment
18/09/2017

Locations

Countries of recruitment
England

United Kingdom

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

Sponsor information

Organisation
University of Oxford

Sponsor details
Clinical Trials and Research Governance
Manor House
John Radcliffe Hospital
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England
United Kingdom
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Sponsor type
University/education

ROR
https://ror.org/052gg0110

Funder(s)

Funder type
Government

Funder Name
National Institute for Health Research

Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Funder Name
Kadoorie Centre Trauma Research Charitable Fund

Results and Publications

Publication and dissemination plan
Current publication and dissemination plan as of 16/06/2022:

MRC/NIHR EME report – December 2019
Published in peer review journal – November 2019

A summary of the trial outcome was disseminated to trial participants on relevant websites, and by email, where an email address was provided. In addition to the NIHR monograph report, the results were published in peer-reviewed medical literature, and were presented at relevant national and international conferences. The work may also contribute to any refresh of NICE guidance.

Results of an extended 2-year follow-up will be published by December 2022.

Previous publication and dissemination plan from 11/12/2020 to 16/06/2022:

MRC/NIHR EME report – December 2019
Published in peer review journal – November 2019

A summary of the trial outcome was disseminated to trial participants on relevant websites, and by email, where an email address was provided. In addition to the NIHR monograph report, the results were published in peer-reviewed medical literature, and were presented at relevant national and international conferences. The work may also contribute to any refresh of NICE guidance.

Results of an extended 2-year follow-up will be published by June 2021

Original publication and dissemination plan:

Internal MRC/NIHR EME report – June 2021
Publish in peer review journal – April 2021

A summary of the trial outcome will be disseminated to trial participants on relevant websites, and by email, where an email address is provided. In addition to the NIHR monograph report, the results will be published in peer-reviewed medical literature, and may be presented at relevant national and international conferences. The work may also contribute to any refresh of NICE guidance.

Intention to publish date
30/06/2021

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are not expected to be made available

IPD sharing plan summary

Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol article	protocol	16/11/2017		Yes	No
Statistical Analysis Plan	statistical analysis plan	29/08/2018		No	No
Results article	results	20/11/2019	09/12/2020	Yes	No
Results article	funder report	01/11/2020	11/12/2020	Yes	No
Results article	results of substudy analysis	26/11/2020	11/12/2020	Yes	No
Plain English results		14/06/2022	14/06/2022	No	Yes
Results article		20/11/2019	14/06/2022	Yes	No
HRA research summary			28/06/2023	No	No
Results article	2-year follow-up	01/11/2022	11/06/2025	Yes	No