ISRCTN10591726 https://doi.org/10.1186/ISRCTN10591726

Anchored muscle cells for incontinence

Submission date
12/11/2024

Recruitment status
Recruiting

Registration date
22/09/2025

Overall study status
Ongoing

Last Edited
03/10/2025

Condition category
Digestive System

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

Plain English summary of protocol

Background and study aims
Faecal incontinence (FI) is a public health problem with a big impact on people's quality of life. Women who have given birth form a significant proportion of this patient group, as tears to the perineum during childbirth can lead to faecal incontinence. This study will test the safety of a cell-based therapy in women with post-obstetric faecal incontinence.

Who can participate?
Female patients aged 18 years and over with chronic faecal incontinence and a history of obstetric anal sphincter injury.

What does the study involve?
Surgeons will take a muscle biopsy from the patient's chest. This biopsy will be processed to grow muscle cells, which are combined with small porous carrier particles called microcarriers. The combination cell-microcarrier product will be injected into the patient's external anal sphincter, leading to muscle regeneration.
All the patients will receive the same treatment and all the patients and their doctors are aware of the treatment. The researchers will assess the number of FI episodes, safety and other patient-reported outcomes. Data collected during the patient's initial visits will be compared with data collected 12 months after treatment to assess how effective treatment is.
Patients will take part in 11 visits.

What are the possible benefits and risks of participating?
The treatment used is an experimental product so it has not yet been authorised/marketed for use by the general public. As this study is a 'first-in-human' usage, there is no data to show its safety.
The researchers have reviewed all previous studies of ASMDC (cells without microcarriers). In these studies, which involved a total of 615 patients (in 14 studies), the risks of treatment with cells alone were small. The risks were almost entirely related to the biopsy and injection procedures:
Pain or skin irritation: approx. 1 in 10 (10%)
Minor bruising: approx. 1 in 20 (5%)
Superficial infection: <1 in 20 (<5%)
Muscle weakness at biopsy site: <1 in 100 (<1%)
Bleeding requiring surgical intervention: 1 reported in 615

Complications of routine anaesthesia: No occurrences. Typical risk is <1 in 1000.
Since PLGA microcarriers are a newer treatment, we don't have studies like this on their safety in treating faecal incontinence. The study team has also done tests in laboratories to check the risks of treatment, and the results have been acceptable. There are also several commercially available products which have been approved for clinical use which use microcarriers in products that are injected into the body.
Muscle biopsy: It is inevitable that some pain will be experienced during the procedure due to the injection of the local anaesthetic and possibly the biopsy itself. There may also be some pain after the procedure. Potential risks include bruising, haematoma (a clot of blood), infection, delayed wound healing and a small amount of scarring. Participants may be provided with simple analgesics as needed.
Product injection: Potential side effects include bleeding, infection, inflammatory response or irritation, pain or discomfort, worsening incontinence, diarrhoea, constipation, blockage of the intestine or faecal retention. There is also a small risk of allergic response to the contents of the product (cells or components of the final formulation), and infection. This is expected to be minimal because the product is made from the participant's own cells.
Because this study involves an experimental treatment, not all risks and outcomes can be predicted. There may be some risks that the study doctors are not currently aware of. It is possible that some of these unknown risks could be permanent, serious, or life-threatening.
Participant safety will be monitored throughout the trial. Oversight committees (and where appropriate, regulators) will be kept informed of trial safety. Stopping rules will trigger study stop if accruing data indicates a safety concern.
Patients will be provided with a safety card containing contact details of the study team, which they can use to ask questions about the study, or if they are experiencing pain or discomfort and want advice.
There is a chance of product delivery failure. This could happen for a number of reasons, including but not limited to delays to the courier, problems with temperature control, or issues when making the product, which could mean the trial treatment isn't safe to use. Should the risk occur, where time and resources allow, participants will be offered a second round of muscle biopsy and treatment.
Participants may find trial involvement or questionnaire/ diary completion burdensome. Clinical trial involvement could affect participants' insurance cover.
This research study may have unknown risks for a pregnancy, and nursing infants. People who are breastfeeding/ pregnant/ planning to become pregnant cannot participate in the study. Pregnancy testing will be performed, and the use of effective contraception methods will be required for people of child-bearing potential. Should patients become pregnant during the trial, they will be withdrawn from the trial or monitored (according to whether the treatment has yet been administered).
Administered drugs: A small chance of reaction or allergy to antibiotics and other drugs used.
Endoanal ultrasound, anorectal manometry, sigmoidoscopy: Small chance of soreness or minor bleeding afterwards and a negligible (<1/10,000) possibility of perforation or damage of the intestinal wall.
Blood testing: Risk of bleeding, discomfort, light-headedness, pain, bruising, and rarely, an infection at the puncture site.

Where is the study run from?
University College London (UK)

When is the study starting and how long is it expected to run for?
September 2025 to August 2027

Who is funding the study?
Horizon 2020

Who is the main contact?
Dr Rumana Jalil-Rahman, cctu.amelie@ucl.ac.uk

Contact information

Type(s)
Scientific

Contact name
Ms Rumana Jalil-Rahman

Contact details
Gower Street
London
United Kingdom
WC1E 6BT
+44 (0)207 907 4685
cctu.amelie@ucl.ac.uk

Type(s)
Principal Investigator

Contact name
Dr Charles Knowles

Contact details
327 Mile End Road
London
United Kingdom
E1 4NS
-
c.h.knowles@qmul.ac.uk

Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number
1007874

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
CTU/2018/324, CPMS 58948

Study information

Scientific Title
AMELIE: European, multicentre, single-arm (Phase I) trial of autologous skeletal muscle-derived cell microcarrier combination for the treatment of faecal incontinence in women with obstetric anal sphincter injury

Acronym
AMELIE

Study objectives
Co-primary objectives of the trial are:
1. To determine the safety of the autologous skeletal muscle-derived cell (ASMDC)-PLGA microcarrier treatment within the 6 months post-treatment.
2. To determine whether treatment with ASMDC-PLGA microcarriers leads to a clinically relevant reduction in how often patients experience episodes of faecal incontinence.

The two secondary objectives of the trial are:
1. To determine treatment impact on quality of life.
2. To determine the cost-benefit profile of the treatment.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 05/02/2025, South Central - Berkshire B Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; +44 (0)207 104 8276; berkshireb.rec@hra.nhs.uk), ref: 24/SC/0387

Study design
Single-arm trial first in human

Primary study design
Interventional

Secondary study design
Non randomised study

Study setting(s)
Hospital

Study type(s)
Safety

Participant information sheet
Not available in web format, please use the contact details to request a participant information sheet

Health condition(s) or problem(s) studied
Faecal incontinence (FI) in women with obstetric anal sphincter injury

Interventions
Advanced therapy medicinal product – cell-based
ASMDC-PLGA microcarriers [Poly(DL-lactide-co-glycolide) (PLGA) microcarriers combined with autologous skeletal muscle cells (ASMDC), derived from the skeletal muscle biopsy

All participants will undergo surgery to obtain a muscle biopsy from the pectoralis major muscle. Following successful product preparation, all will receive a one-off injection of autologous skeletal muscle derived cell (ASMDC) PLGA microcarrier combination treatment into the external anal sphincter. After injection, the patient will be followed up with safety checks, which will continue for 12 months after treatment.

Intervention Type
Biological/Vaccine

Pharmaceutical study type(s)
Not Applicable

Phase
Phase I

Drug/device/biological/vaccine name(s)
ASMDC-PLGA microcarriers [Poly(DL-lactide-co-glycolide) (PLGA) microcarriers combined with autologous skeletal muscle cells (ASMDC), derived from the skeletal muscle biopsy

Primary outcome measure
1. The incidence of ATIMP-related or ATIMP administration procedure-related adverse events associated with the use of ASMDC-PLGA microcarriers within 12 months post-treatment (safety endpoint of primary hypothesis and outcome is reported at 12 months)
2. Estimate of a minimum clinically relevant reduction in the frequency of total FI episodes measured using participant bowel diaries at 12 months compared to baseline levels

Secondary outcome measures
1. Quality of life assessed using patient questionnaires: Resource Use Measure, EQ-5D-5L, mean cost of healthcare resource use per patient
2. Additional clinical efficacy outcomes will be assessed using patient questionnaires: St Mark's Incontinence Score; Likert scale of patient's global impression of treatment success; Short-Form Bowel Symptom Importance Questionnaire (SF-BSIQ); Measure Yourself Medical Outcome Profile

All secondary outcome measures are evaluated at baseline (visit 3), and 3 and 6 months after treatment (visit 9 and 10). Where patients take part in extended follow-up, data collection will take place at visits 11 and 12 (12 and 18 months after treatment).

Exceptions:
Likert scale not evaluated at visit 3
EQ-5D-5L collected at visit 6 (day of treatment).
Resource Use Measure not collected at visit 9 (3 months)

Overall study start date
07/11/2024

Completion date

31/08/2027

Eligibility

Key inclusion criteria
1. Female patients aged ≥18 years
2. Chronic faecal incontinence
3. History of obstetric external anal sphincter injury
4. Non-surgical treatments for faecal incontinence have been attempted to applicable national standards
5. Minimum severity: 8 faecal incontinence or urgency episodes in 4-week screening period, with a minimum of 4 episodes of faecal incontinence

Participant type(s)
Patient

Age group
Adult

Lower age limit
18 Years

Sex
Female

Target number of participants
12

Key exclusion criteria
1. Patients within 1 year of acute sphincter injury
2. Patients who have undergone previous anal reconstructive surgery
3. Other gastro-intestinal diseases (see protocol for details)
4. Pregnancy or intent to become pregnant during trial
5. Morbid obesity (BMI ≥35 kg/m2)
6. Certain comorbidities (recent history of cancer, systemic neuromuscular and connective tissue diseases, transmissible viral infection)
7. Patient currently using sacral neuromodulation (SNM) or has failed SNM implant for faecal incontinence; failed test stimulation phase is permitted
8. Patient has positive virology or parasitology results (Hepatitis B, C & E, HIV 1 & 2, syphilis, human T-lymphotropic virus I or II, Epstein-Barr virus, Cytomegalovirus, Toxoplasma gondii, Trypanosoma cruzi, West Nile Virus or malaria) confirmed, where appropriate, using local testing policies. Note T. cruzi, malaria and West Nile Virus tests only required if relevant participant history criteria met.

Date of first enrolment
01/09/2025

Date of final enrolment
31/12/2025

Locations

Countries of recruitment
United Kingdom

Study participating centre
-
United Kingdom
-

Sponsor information

Organisation
University College London

Sponsor details
Gower Street
London
England
United Kingdom
WC1E 6BT
+44 (0)2027 907 4685
cctu.amelie@ucl.ac.uk

Sponsor type
University/education

Website
http://www.ucl.ac.uk/

ROR
https://ror.org/02jx3x895

Funder(s)

Funder type
Government

Funder Name
Horizon 2020

Alternative Name(s)

EU Framework Programme for Research and Innovation, Horizon 2020 - Research and Innovation Framework Programme, European Union Framework Programme for Research and Innovation

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location

Results and Publications

Publication and dissemination plan
1. Peer-reviewed scientific journals
2. Internal report
3. Conference presentation
4. Publication on website
5. Submission to regulatory authorities

Work will be published in peer-reviewed journals under Gold Open Access principles. A copy of the published manuscript will be deposited in the UCL Discovery public repository (6 months after publication date).

Data collected from the project will be placed in a secure database allowing the Consortium partners access to analyse when needed. Data deemed confidential will not be released into the public domain until publication has been accepted and an embargo period passed (as detailed in the Consortium Agreement). Data and publications will be released to the public by consortium members once the embargo period has passed.
Requests for access to trial data by external parties will be considered, and approved in writing where appropriate, after formal application to the Trial Management Group (TMG) and CCTU. Considerations for approving access are documented in the TMG Terms of Reference.
Anonymised data will be made available for sharing within 24 months of trial end date, in line with funder requirements.
Details of data sharing and publication plans are provided in the patient information sheet.

Intention to publish date
28/02/2028

Individual participant data (IPD) sharing plan
The data that support the findings of this study are not openly available and anonymised data could be requested and would require approval in writing where appropriate, after formal application to the TMG and CCTU.

IPD sharing plan summary
Available on request