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How many people suffer from bowel problems following surgery for colorectal cancer, and what treatments are the best for managing these problems?

Submission date
25/07/2023

Recruitment status
No longer recruiting

Registration date
04/08/2023

Overall study status
Ongoing

Last Edited
28/11/2025

Condition category
Digestive System

[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
Colorectal cancer is the third most common cancer worldwide with 14,000 patients in the UK being diagnosed with rectal cancer per year. Over half of those patients will undergo major resectional surgery. Low anterior resection syndrome (LARS) is a consequence of this surgery and describes a constellation of bowel symptoms including urgency, faecal incontinence, stool clustering and incomplete evacuation. It has a significant adverse impact on quality of life (QoL). LARS symptoms are present in up to 75% of the patients in the first year after surgery and may persist in 25%, remaining in up to half of these patients for more than 10 years. There is poor evidence to support the various treatment options currently in use. As disease-free survival is regarded as the most important factor following curative rectal cancer surgery, QoL and potential ways to improve it may be overlooked. Patients are often not aware or not told that bowel function can change significantly following surgery and radiotherapy and may think any adverse effects will be short-term. It is not known when post-operative bowel dysfunction, which may occur after any colonic resection, can be defined as LARS and how the trajectory of LARS changes over time, especially in patients undergoing radiotherapy. An introductory cohort study aims to explore the natural history of LARS, identify predictors of major LARS and screen patients for recruitment to a randomised controlled trial (RCT) that will measure the effectiveness of the new intervention. The aims of the RCT are to evaluate the clinical and cost-effectiveness of transanal irrigation (TAI) or sacral neuromodulation (SNM) versus optimised conservative management (OCM) for people with major LARS.

Who can participate?
Adult participants aged over 18 years old who have undergone a high or low anterior resection for colorectal cancer in the last 10 years. Participants with major LARS symptoms, defined as a LARS score of 30+, will be eligible to be randomised to the randomised controlled trial element.

What does the study involve?
Participants who enter the cohort will be asked to complete questionnaires about their quality

of life and bowel symptoms every 3 months for 24 months. Clinical study data will be collected at baseline and then at 12 and 24 months from registration from medical notes.

Participants who enter the RCT will be randomised to receive either TAI, SNM or OCM and will then go on to receive their allocated treatment. Patients will attend the hospital at various times depending on the treatment they are receiving and will also be followed up for trial purposes at 3, 6, 9 and 12 months post-randomisation via a combination of clinic or telephone assessments. At 24 months clinical study data will be collected from medical notes.

What are the possible benefits and risks of participating?
It is possible that taking part in this study means you receive treatment that you may not be offered otherwise, such as TAI. It is hoped that receiving any of the treatments will improve LARS symptoms. However, some treatments may work better for different people, or may not work at all. The information gained from this study will help guide the best approach for the treatment of LARS in the future which will benefit other patients with this condition. All participants will be regularly and closely monitored throughout the study.

There is no additional risk of participating if you are allocated to receive OCM. For participants randomised to receive TAI or SNM there is an additional risk due to potential side effects of these treatments.

Where is the study run from?
The Cardiff and Vale Health Board (UK)

When is the study starting and how long is it expected to run for?
July 2021 to March 2027

Who is funding the study?
National Institute for Health Research (NIHR) (UK)

Who is the main contact?
Katie Gordon, K.A.Gordon@leeds.ac.uk (UK)

Contact information

Type(s)
Principal investigator

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Scientific

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Public

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Additional identifiers

Integrated Research Application System (IRAS)
324576

Central Portfolio Management System (CPMS)
57347

Study information

Scientific Title
Pathway of low anterior resection syndrome relief after surgery (POLARiS) trial

Acronym
POLARiS

Study objectives
Sacral nerve modulation and/or transanal irrigation will reduce the severity of low anterior resection syndrome (LARS) symptoms when compared to an optimised conservative treatment

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 14/06/2023, Health and Care Research Wales (Castlebridge 4, 15-19 Cowbridge Road East, Cardiff, CF11 9AB, United Kingdom; None available; Wales.REC4@wales.nhs.uk), ref: 23/WA/0171

Primary study design
Interventional

Study design
Randomized superiority trial within a cohort study

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Low anterior resection syndrome

Interventions
POLARiS is a Phase III randomised superiority trial within a cohort (TWiC), with qualitative sub-study and economic evaluation. The aim of the research is to explore the natural history of low anterior resection syndrome (LARS) over time and to compare sacral neuromodulation (SNM) and transanal irrigation (TAI) against optimised conservative management (OCM) for the treatment of major LARS. There are two primary comparisons for the RCT - i) SNM versus OCM and ii) TAI versus OCM. The outcome of interest is the LARS score. Each comparison requires 350 patients. It is estimated that 600 patients in total will be needed to be recruited to the RCT in order to hit these sample size targets.

Patients who have undergone a high or low anterior resection for rectal or sigmoid cancer within the last 10 years will be identified through cancer databases, note screening, outpatient clinics and in-patients workload at NHS hospital sites. Registration and randomisations will be performed centrally using the CTRU automated 24-hour registration/randomisation system, accessed by sites via the CTRU website. Participants who are eligible for and consent to the RCT will be randomised between two or three treatment options dependent on patient eligibility and availability of treatments at their hospital.

Participants undergoing TAI will attend a one-hour practical education session with a specialist nurse where the device and volume will be decided. Participants randomised to SNM will have a consultation with their local clinician performing the SNM procedure. Participants in the OCM group will have a consultation with a clinical member of the study where appropriate treatments will be instigated.

Participants will be followed up for 24 months and will be reviewed at 3, 6, 9, 12 and 24 months.

Participants will complete questionnaires designed to capture health-related quality of life at baseline and 3 monthly throughout the 24-month follow-up period.

Participants randomised to the RCT are given the opportunity to take part in up to 3 semi-structured interviews to explore the impact of the interventions.

Intervention Type
Procedure/Surgery

Primary outcome(s)
LARS score measured using the LARS score questionnaire at baseline and every 3 months until 24 months post registration/randomisation

Key secondary outcome(s)
RCT and cohort study:
1. Health-related quality of life and physical, psychological and emotional functioning, is measured using the EORTC QLQ C30, EORTC CR29 and the LARS iCAT questionnaire at baseline and at 3, 6, 12 and 24 months after registration/randomisation
2. Incidence of adverse events related to the trial/trial procedures within 24 months of registration/randomisation, categorised using the CTCAE Grading (plus Clavien-Dindo or ClassIntra classification for adverse events relating to surgery) using medical notes

Secondary outcome measures (RCT only)
1. Generic quality of life measured using EQ-5D-5L, at baseline 3, 6, 12 and 24 months after randomisation
2. Treatment compliance will be measured using medical records
3. Cost-effectiveness will be measured using a health resource use questionnaire at baseline, 3, 6, 12 and 24 months after randomisation and medical records

Completion date
31/03/2028

Eligibility

Key inclusion criteria
General inclusion criteria (cohort):
1. Diagnosis of rectal or sigmoid cancer
2. Low or high anterior resection (colorectal resection with anastomosis to the rectum)
3. Functioning anastomosis
4. Primary surgery less than 10 years before recruitment
5. At least 6 months since reversal of stoma or primary surgery if no stoma created
6. Aged ≥18 years old
7. Able to provide written informed consent

RCT inclusion criteria - as above plus:
8. Major LARS symptoms within the last 3 months (defined as a LARS score of ≥30)
9. Clinically appropriate for randomisation as determined by the treating clinician

Participant type(s)

Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
100 Years

Sex
All

Total final enrolment
0

Key exclusion criteria
Cohort exclusion criteria:
1. Receiving ongoing chemotherapy, radiotherapy or immunotherapy treatment for cancer
2. Anterior exenteration

RCT exclusion criteria:
3. Receiving ongoing chemotherapy, radiotherapy or immunotherapy treatment for cancer
4. Metastatic disease
5. Inflammatory bowel disease
6. Pregnancy
7. Use of TAI for LARS within 1 month prior to randomisation
8. Not eligible for SNM and not eligible for TAI
9. Anterior exenteration
10. Anastomotic stricture
11. History of anastomotic leak with evidence of ongoing leak/sinus

Plus treatment-specific exclusions:
Exclusion criteria for SNM:
12. History of spinal cord stimulator (added 28/11/2025)
13. Site unable to offer SNM as a treatment
14. Previous SNM
15. Specific contraindications to implantation
16. Any other contraindications advised by the care team, product manufacturer or distributor
17. Margin positive (R1) resection within 24 months prior to randomisation (added 09/10/2024)

RCT exclusion – TAI specific:
Exclusion criteria for TAI:
18. Unable to perform TAI
19. History of anastomotic leak with evidence of ongoing leak/sinus

20. Previous use of TAI for LARS
21. Site unable to offer TAI as a treatment
22. Any other contraindications advised by the care team, product manufacturer or distributor

Date of first enrolment
01/09/2023

Date of final enrolment
31/03/2026

Locations

Countries of recruitment
United Kingdom

England

Wales

Australia

Study participating centre
Cardiff & Vale University Lhb
Woodland House
Maes-y-coed Road
Cardiff
Wales
CF14 4HH

Study participating centre
St. James's University Hospital
Beckett Street
Leeds
England
LS9 7TF

Study participating centre
Aneurin Bevan University Lhb
Headquarters - St Cadoc's Hospital
Lodge Road
Caerleon
Newport
Wales
NP18 3XQ

Study participating centre
Bolton Royal Hospital
Minerva Road
Farnworth
Bolton
England
BL4 0JR

Study participating centre
Churchill Hospital
Churchill Hospital
Old Road
Headington
Oxford
England
OX3 7LE

Study participating centre
Addenbrookes
Addenbrookes Hospital
Hills Road
Cambridge
England
CB2 0QQ

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

Study participating centre
Queens Medical Centre, Nottingham University Hospital
Derby Road
Nottingham
England
NG7 2UH

Study participating centre
St Marks Hospital
St. Marks Hospital
112 St. Marks Road
Maidenhead
England
SL6 6DU

Study participating centre
University Hospital of North Durham
University Hospital of Durham
Dryburn Hospital
North Road
Durham
England
DH1 5TW

Study participating centre
Wythenshawe Hospital
Southmoor Road
Wythenshawe
Manchester
England
M23 9LT

Study participating centre
Somerset NHS Foundation Trust
Trust Management
Lydeard House
Musgrove Park Hospital
Taunton
England
TA1 5DA

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

Study participating centre
Royal London Hospital and Associated Community Services NHS Trust
The Royal London Hospital
Whitechapel
London
England
E1 1BB

Study participating centre
Southampton General Hospital
Tremona Road
Southampton
England
SO16 6YD

Study participating centre
Leicester Royal Infirmary
Infirmary Square
Leicester
England
LE1 5WW

Study participating centre
James Paget University Hospital
Lowestoft Road
Gorleston
Great Yarmouth
England
NR31 6LA

Study participating centre
Gloucestershire Royal Hospital
Great Western Road
Gloucester
England
GL1 3NN

Study participating centre

Royal Berkshire Hospital
London Road
Reading
England
RG1 5AN

Study participating centre
Sunderland Royal Hospital
Kayll Road
Sunderland
England
SR4 7TP

Study participating centre
Royal Liverpool University Hospital
Prescot Street
Liverpool
England
L7 8XP

Sponsor information

Organisation
Cardiff and Vale University Health Board

ROR
https://ror.org/0489f6q08

Funder(s)

Funder type
Government

Funder Name
National Institute for Health and Care 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

Results and Publications

Individual participant data (IPD) sharing plan
Individual participant data (IPD) sharing plan
De-identified individual participant data datasets generated and/or analysed during the current study will be available upon request from the Clinical Trials Research Unit, University of Leeds (contact CTRU-DataAccess@leeds.ac.uk in the first instance). Data will be made available at the end of the trial, i.e. usually when all primary and secondary endpoints have been met and all key analyses are complete. Data will remain available from then on for as long as CTRU retains the data.

Data Sharing Statement
CTRU makes data available by a 'controlled access' approach. Data will only be released for legitimate secondary research purposes, where the Chief Investigator, Sponsor and CTRU agree that the proposed use has scientific value and will be carried out to a high standard (in terms of scientific rigour and information governance and security) and that there are resources available to satisfy the request. Data will only be released in line with participants' consent, all applicable laws relating to data protection and confidentiality, and any contractual obligations to which the CTRU is subject. No individual participant data will be released before an appropriate agreement is in place setting out the conditions of release. The agreement will govern data retention, usually stipulating that data recipients must delete their copy of the released data at the end of the planned project.

The CTRU encourages a collaborative approach to data sharing and believes it is best practice for researchers who generated datasets to be involved in subsequent uses of those datasets. Recipients of trial data for secondary research will also receive data dictionaries, copies of key trial documents and any other information required to understand and reuse the released datasets.

The conditions of release for aggregate data may differ from those applying to individual participant data. Requests for aggregate data should also be sent to the above email address to discuss and agree on suitable requirements for release.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol article		03/02/2025	04/02/2025	Yes	No
Study website			28/11/2025	No	No