Title: Scoping Review Protocol: Interventions for Bowel Dysfunction After Rectal Cancer Treatment

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Introduction

The management of rectal cancer has evolved with the advances of neoadjuvant therapy. These advances have allowed patients that achieve clinical complete response after total neoadjuvant therapy to be managed nonoperatively using the "watch-and-wait" (WW) strategy.[1] Using this strategy, patients with no evidence of residual tumor on digital rectal exam, endoscopy, and pelvic MRI are closely monitored rather than undergoing low anterior resection (LAR).[1] Oncologic outcomes and overall survival, are largely comparable between WW and surgical resection.[1-3] WW carries a higher rates of local regrowth, though most cases can be effectively salvaged.[1,2] The WW strategy aims to preserve organ function and avoid surgical morbidity while maintaining oncologic safety.

Although LAR is a type of sphincter-preserving surgery, it carries a substantial risk of postoperative bowel dysfunction.[4] The constellation of these symptoms is known as low anterior resection syndrome (LARS) which includes unpredictable bowel function, issues with emptying, frequent and painful bowel movements, urgency, incontinence, and soiling.[5] It is estimated that LARS can affect up to 90% of patients after sphincter-preserving surgery and can cause significant impairment in physical, social, and emotional function.[6] Many patients feel unprepared for the extent of these symptoms, highlighting the need for long-term support, proactive follow-up, and multidisciplinary management to help patients adapt and improve their quality of life.[7]

Given this burden, WW offers a theoretical functional advantage by avoiding surgical disruption of the rectum and anal sphincter complex. However, evidence supporting this assumption remains inconsistent and fragmented. Understanding and comparing these outcomes is essential for patient-centered decision making, allowing clinicians and patients to balance oncologic safety with functional preservation and individual preferences.

This scoping review aims to map and describe the current interventions for bowel dysfunction following watch-and-wait versus low anterior resection for rectal cancer.

Methods

Protocol: This scoping review protocol was formulated based on the PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation.[8]

Eligibility Criteria:

Inclusion criteria:

- Study must include adult (>18-year-old) patients with rectal cancer managed with WW (organ preserving) or sphincter-preserving surgery (i.e., LAR).
- Study must assess bowel function and describe management/treatment of bowel dysfunction (post-operative LARS).
- Study must be in English
- Studies were limited by publication date between January 2020 to October 2025.

Exclusion criteria:

- Studies limited to metastatic disease, palliative management, and oncologic outcomes.
- Studies that do not describe the management/treatment of bowel dysfunction (LARS).
- Conference abstracts, case reports or case series with less than 5 patients, and commentaries.
- Meta-analyses or systematic reviews, however, included studies may be included if meeting inclusion criteria.

Information Sources:

To identify potentially relevant documents, the following databases were searched from January 2020 to October 2025: Ovid MEDLINE, Embase (Elsevier), and Web of Science (Clarivate). The search strategies were drafted by an experienced librarian, Annie B Wescott, and further refined through team discussion. The final search results were exported to EndNote, and duplicates were removed.

Search Strategy:

Our search combines database-specific controlled vocabulary and natural language terms. The search was initially constructed for use in Ovid MEDLINE (search table included below). The search will be translated for each database, and search strings will be reported in our final manuscript. Currently, we do not have plans to review grey literature for this topic.

1	*exp Rectal Neoplasms/*	*58069*
2	*((rectal or rectum) adj2 (cancer* or tumor* or tumour* or adenocarcinoma*)).ti,ab.*	*39611*
3	*1 or 2*	*71182*
4	*exp Defecation/*	*8016*
5	*exp Low Anterior Resection Syndrome/*	*108*
6	*exp "Watchful Waiting"/*	*5984*
7	*4 or 5 or 6*	*14099*
8	*exp "Patient Reported Outcome Measures"/*	*20011*
9	*exp "Surveys and Questionnaires"/*	*1342671*
10	*8 or 9*	*1342671*
11	*7 and 10*	*1421*
12	*(COREFO or MSK-BFI or POLARS or FIQL or ICIQ-B or Vaizey or Wexner).ti,ab.*	*1529*
13	*((biofeedback-therapy or pelvic-floor-muscle-training or pelvic-floor-rehabilitation or percutaneous-tibial-nerve-stimulation or resection* or sacral-nerve-stimulation or trans-anal-irrigation or transanal-irrigation or watch-and-wait or watchful-waiting or LARS or bowel-function or colorectal-function* or anal-function* or rectal-function* or intestine-function* or intestinal-function* or anorectal-function* or bowel-dysfunction* or colorectal-dysfunction* or anal-dysfunction* or rectal-dysfunction* or intestine-dysfunction* or intestinal-dysfunction* or anorectal-dysfunction*) adj3 (score* or instrument* or tool or tools or evaluate or evaluates or evaluation or questionnaire* or scale* or subscale* or assessment*)).ti,ab.*	*5035*
14	*11 or 12 or 13*	*7633*
15	*3 and 14*	*935*
16	*limit 15 to yr="2015 -Current"*	*689*

Selection of Sources of Evidence:
At least two reviewers will work sequentially to evaluate titles, abstracts, and full text of all publications identified by our searches for relevant publications that meet our inclusion criteria. We will use Rayyan, an online screening platform, to screen studies. We will resolve disagreement on study selection by consensus and discussion with each other and other pre-determined reviewers. A PRISMA flow diagram will be employed to show steps in the inclusion process, as well as rationale for the exclusion of any articles.

Data Charting Process:
A data-charting form will be developed jointly by two reviewers to determine which variables to extract. Data extraction from each article will be performed independently by two authors, results will be discussed, with the created form for data extraction changed iteratively as needed.

Data Items:

Data of interest will capture study characteristics (author, year, country, study design, sample size), treatment group (WW, LAR, or both), timing of bowel function assessment, follow-up duration, bowel function assessment instrument(s), bowel function outcomes, reported management/interventions strategies for bowel dysfunction.

Synthesis of Results:
We plan to summarize the findings in several tables.

- Table 1 will outline key study characteristics
- Table 2 will detail the bowel dysfunction interventions
- Table 3 will summarize intervention outcomes

References

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