

Pelvic Floor Rehabilitation to Improve Functional Outcome After a Low Anterior Resection: A Systematic Review. Visser WS, to Riele WW, Boerma D, van Ramshorst B, and van Westreenen. Ann Coloproctol. 2014; 30(3): 109-114.

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Introduction

Low anterior resection (LAR) is a specific surgical approach that involves resection of a low rectal tumor and reconstruction of the rectum. Up to 90% of these patients will experience negative bowel changes post-op including FI, stool frequency, and difficulty emptying, collectively labeled anterior resection syndrome.

Aim/Primary Aim:

Evaluate the effectiveness of pelvic floor rehabilitation (PFR) in improving functional outcome after sphincter-preserving surgery for rectal cancer.

Study Design/Methods:

Systematic review conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PRISMA). Methodological Quality assessed by Methodological Index for Non-randomized Studies (MINORS) scale. Meta-analysis directed towards identification of differences in incontinence scores between exercised and nonexercised subjects.

Search strategy: Electronic databases searched from 1970 to December 2013 using keywords and reference lists from key articles reviewed by hand.

Study selection: Inclusion criteria as follows:

Type of studies: Reviews, cohort studies, case-controlled studies and RCT in English, German or French.

Types of participants: Subjects who had undergone sphincter-preserving surgery for rectal cancer.

Type of intervention: Pelvic floor training and/or biofeedback training for functional disorder symptoms.

Data extracted: Year of submission, country, inclusion period, number of patients, inclusion criteria, proportion of patients treated with radiotherapy, level of anastomosis from dentate line, clinical eval of FI, stool frequency, description of PFR, results of functional outcome, rectal manometry, and QoL.

Types of outcomes:

Statistics: Data analysis as per PRISMA and methodological quality assessed by MINORS scale. Meta-analysis directed towards identification of differences in incontinence scores between exercised and nonexercised patients. Heterogeneity tested using I² test

Results

Study characteristics: Five studies met inclusion criteria, published between 2005-2012. Mean ages of the participants from 55 to 67, and a total of 321 participants included, with 286 undergoing PFMT. Mean level of anastomosis below 5 cm from dentate in all but one study except Allgayer study which was greater. 3 of the studies included patient with FI or ARS after a LAR and coloanal anastomosis, the other 2 not specific for FI after LAR. At least 191/321 (60%) had undergone pre-operative radiotherapy.

Intervention: Table 2 outlines the clinical characteristics of the studies. Three studies compared exercise versus no exercise and 2 of the studies compared before versus after rehab. 2 studies with rectal balloon training, 3 with biofeedback. All studies included PFMT intervention, 3 of the studies added biofeedback and 2 added balloon training. Duration of treatment ranged between 10 weeks to 21 months

Risk of Bias and Level of Evidence: MINORS scale between 11-17

Outcomes:

Questionnaires: FI symptoms: Wexner incontinence scale (WIS) used primarily, but one utilized Cleveland incontinence score (MCIS), and one used Functional assessment of cancer therapy-colorctal questionnaire (FACT-C). Scores for FI significantly improved in all but LaForest study. Kim et al-greater improvement in WIS when biofeedback added.

QoL: Quality of life only assessed in one study which used FIQL and Short Form 36. Improved vitality and mental functioning on the SF-36, and pelvic floor rehab patients with reduced depression and better self-perception on FIQL.

Stool frequency: Stool frequency significantly decreased after PFR in Kim and LaForest studies. Table 3.

Anorectal Manometry: Only one of three studies noted significantly improved anorectal max squeezing pressure and rectal capacity. See Table 4.

Discussion

Overall significant symptoms of FI and stool frequency were reduced and QoL improved in PFR groups, but only one study identified objective increase in manometric parameter post-treatment. However, only 5 studies included, and the data extracted limited quality. Pooling of data not possible due to heterogeneity of exercise protocols used and different FI scoring systems. The different scoring systems prevented the ability to analyze with meta-analysis.

All five studies had different exercise protocols and durations of training thus unable to offer specific conclusions from this review regarding treatment design. Also the studies lacked information such as for women prior OB history, pre-operative radiotherapy, etc, to assist with identifying if there is a subset of patients that benefit most.

This systematic review supports PFR to improve symptoms after LAR, but further research needed to clarify if this is warranted for all patient's post-op, or if there are subgroups most likely to benefit.

Strengths & Weaknesses

Strengths

Clearly defined population to investigate. Systematic review provided clear Tables to summarize.

Weaknesses

Studies focused on FI and frequency symptoms, but did not investigate clustering and urgency symptoms.

No report if pelvic floor contraction verified.

No insight into pelvic floor strength or function pre- versus post- training or pre-operatively.

Clinical Application/Discussion Questions

What are the most common symptoms you see in this population?

What type of pelvic floor dysfunction do you see most in this population?

Does this patient population respond the same as non-cancer patients?

What are unique challenges in this population?

Which symptom is the most difficult to improve? FI? Frequency? Urgency?

Do you think there is a place for pre-operative pelvic floor assessment and training?

What would your typical PT program look like for this group?

For those of you who treat this population, do you think the benefits of avoiding a permanent colostomy outweigh the QoL changes without a colostomy?

Articles of interest

Postoperative bowel function after Anal sphincter-preserving rectal cancer surgery: Risk factors, diagnostic modalities, and management. Pales C, et al, Ann Coloproctol . 2019; 35(4): 160-166.

Factors influencing changing bowel habit in patients undergoing sphincter-saving surgery for rectal cancer. Jeong H and Park J. Int Wound J. 2019;16(suppl 1) : 71-75.

Defining low anterior resection syndrome: a systematic review of the literature. Keane C, et al. Colorectal Dis. 2017;19(8): 713-722.

Validation of the English translation of the low anterior resection syndrome score. Juul T, et al. Colorectal Dis. 2015; 17: 908-916.