

Bowel problems after treatment of colon cancer



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Bowel problem CRC

- RECTAL CANCER : YES
 - LARS
 - STOMA
- COLON CANCER: ?????

CHALLENGE

CRC treatment bowel function

- Patients often have symptoms due to cancer
- Symptoms common in the general Population
- Symptoms after treatment
 - Symptoms due to cancer: disappear
 - Basic symptoms: similar
 - Treatment related: new

Normative Data for the Low Anterior Resection Syndrome Score (LARS Score)

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Søren Laurberg, MD, PhD, DMSc,* Katrine J. Emmertsen, MD, PhD,*‡ and Palle Bager, MPH, PhD§

Annals of Surgery • Volume 269, Number 6, June 2019

LARS Scores and Items in the Age Group 50 to 79 Years

Among females in the age group 50 to 79 years, 18.8% had a LARS score ≥ 30 , corresponding to “major LARS” ($n = 400$). Among males in this age group, the proportion was 9.6% ($n = 407$). The median (IQR) LARS score was 16 (7–26) and 11 (4–22), for females and males, respectively ($P < 0.001$) (Table 3, Fig. 2).

TABLE 4. LARS Score Items for the Age Group 50–79 Years

| Response (Score Value) | Males, n (%) | Females, n (%) | P* |
|-------------------------------------------------------------------------------------------------|--------------|----------------|--------|
| 1. Do you ever have occasions when you cannot control your flatus (wind)? | | | |
| No, never (0) | 193 (47.1%) | 128 (31.8%) | <0.001 |
| <once per wk (4) | 73 (17.8%) | 117 (29.0%) | |
| >once per wk (7) | 144 (35.1%) | 158 (39.2%) | |
| 2. Do you ever have any accidental leakage of liquid stool? | | | |
| No, never (0) | 344 (84.1%) | 314 (77.9%) | 0.079 |
| <once per wk (3) | 51 (12.5%) | 69 (17.1%) | |
| >once per wk (3) | 14 (3.4%) | 20 (5.0%) | |
| 3. How often do you open your bowels? | | | |
| >7 per d (4) | 3 (0.7%) | 2 (0.5%) | 0.488 |
| 4–7 per d (2) | 21 (5.1%) | 15 (3.7%) | |
| 1–3 per d (0) | 321 (78.3%) | 310 (76.7%) | |
| <once per d (5) | 65 (15.9%) | 77 (19.1%) | |
| 4. Do you ever have to open your bowels again within 1 hour of the last bowel opening? | | | |
| No, never (0) | 272 (66.7%) | 230 (56.9%) | 0.011 |
| <once per wk (9) | 95 (23.3%) | 113 (28.0%) | |
| >once per wk (11) | 41 (10.1%) | 61 (15.1%) | |
| 5. Do you ever have such a strong urge to open your bowels that you have to rush to the toilet? | | | |
| No, never (0) | 206 (50.5%) | 189 (47.0%) | 0.001 |
| <once per wk (11) | 153 (37.5%) | 126 (31.3%) | |
| >once per wk (16) | 49 (12.1%) | 87 (21.6%) | |

BRISTOLE STOOL CHART

BSC: 6-7(loose or watery)

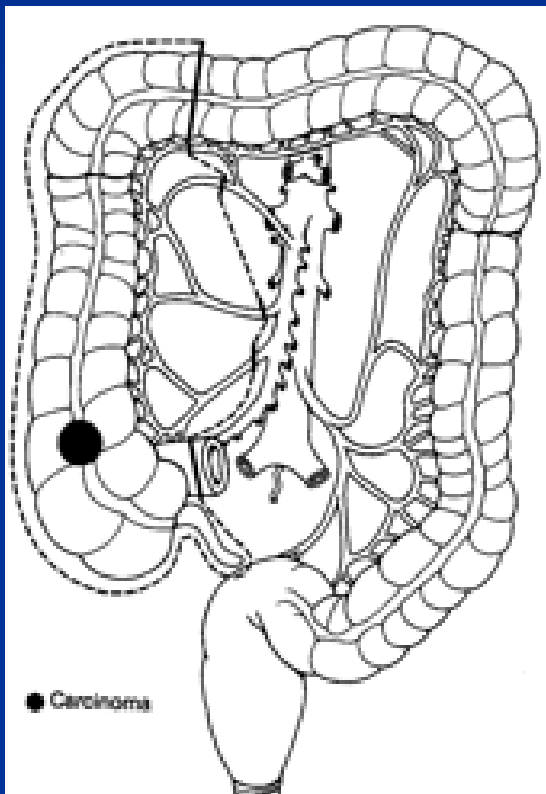
- 6-7% GENERAL POPULATION

Bowel problem: colon cancer??

- National cross-sectional study ($\boxed{\uparrow}$ $\boxed{\uparrow}$ numbers)
- Control group: polypectomy for cancer
- Questionnaires

Colon cancer-bowel seq

Right colon cancer



Long-term bowel dysfunction after right-sided hemicolectomy for cancer. A population-based study.

Authors: Helene Mathilde Larsen, BSc¹, Hossam Elfeki, MD^{1,2}, Katrine Jøssing Emmertsen, MD PhD¹, and Søren Laurberg, MD DMSc¹

All Danish colon cancer survivors treated with right-sided hemicolectomy or polypectomy (2001 – 2015) received a questionnaire regarding bowel function and the EORTC QLQ-C30 quality of life questionnaire.

3540 patients (3306 right-sided hemicolectomy and 234 polypectomy) responded - response rate 60.3%.

Bristol stool chart, number (%)

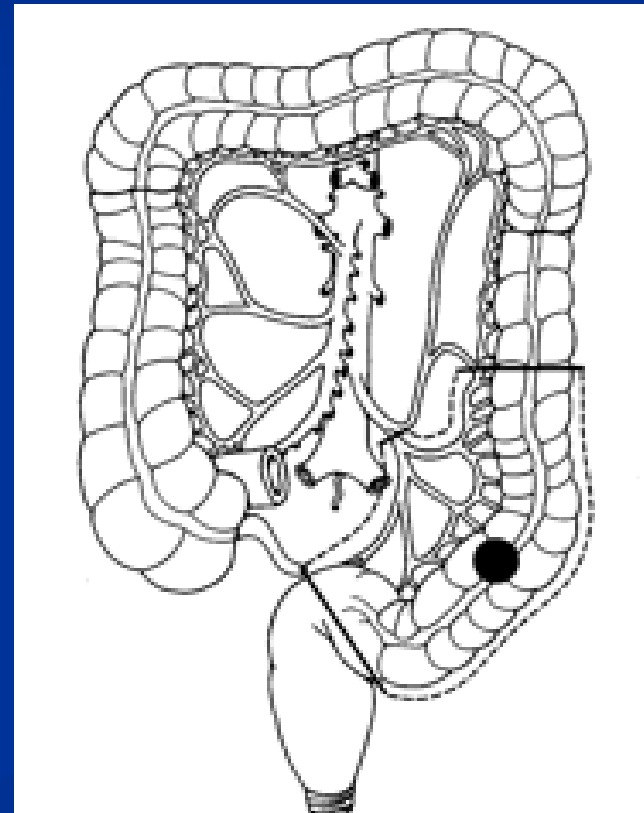
| | Type 1 | Type 2 | Type 3 | Type 4 | Type 5 | Type 6 | Type 7 | Type 1-5 | Type 6-7 | Total |
|---------------------------|----------|------------|------------|-------------|------------|------------|----------|-------------|------------|------------------|
| Right-sided hemicolectomy | 65 (2.1) | 411 (13.1) | 506 (16.1) | 1294 (41.2) | 377 (12.0) | 392 (12.5) | 94 (3.0) | 2653 (84.5) | 486 (15.5) | 3139 (100.0) |
| Polypectomy | 5 (2.2) | 35 (15.6) | 52 (23.1) | 99 (44.0) | 19 (8.4) | 14 (6.2) | 1 (0.4) | 210 (93.3) | 15 (6.7) | 225 (100.0) |
| Sigmoidectomy+ | | | | | | | | 2821 (95.6) | 130 (4.4) | <i>P</i> = 0.001 |

+Elfeki et al.(15).

Right-sided hemicolectomy: increased risk of long-term bowel dysfunction, which impair quality of life

Colon cancer-bowel seq

Sigmoid cancer



Bowel dysfunction after sigmoid resection for cancer and its impact on quality of life

H. Elfeki^{1,3} , H. M. Larsen¹, K. J. Emmertsen^{1,2} , P. Christensen¹, M. Youssef³, W. Khafagy³, W. Omar³ and S. Laurberg¹

BJS 2019; 106: 142–151

- A total of **3295** patients (3061 sigmoid resection, 234 polypectomy) responded to the questionnaire (response rate 63.8%)
- Conclusion: Sigmoid resection for cancer is associated with an increased risk of long-term bowel dysfunction; **obstructed defaecation** is prevalent and associated with substantial impairment of QoL.

- 5 symptoms with the greatest differences :
- nocturnal defaecation (32·1 *versus* 12·6 per cent),
- use of aids during defaecation (24·2 *versus* 12·2 per cent),
- fragmentation at least weekly (21·5 *versus* 16·0 per cent),
- daily bloating (20·4 *versus* 13·5 per cent)
- sense of outlet obstruction at least weekly (14·9 *versus* 8·2 per cent)

Table 3 Patterns of bowel dysfunction and impact on quality of life after sigmoid resection *versus* polypectomy

| | Sigmoid resection (n = 3061) | Polypectomy (n = 234) | P† | Odds ratio* | Adjusted odds ratio*‡ |
|------------------------------------------|---------------------------------|--------------------------|---------|-------------------|-----------------------|
| Obstructed defaecation symptoms | 546 of 3043 (17.9) | 17 of 232 (7.3) | < 0.001 | 2.76 (1.67, 4.57) | 2.57 (1.54, 4.26) |
| BSS score | n = 2951 | n = 225 | | | |
| 1–2 | 619 (21.0) | 40 (17.8) | 0.254 | 1.19 (0.83, 1.70) | |
| 3–5 | 2202 (74.6) | 170 (75.6) | 0.765 | 1.00 (reference) | |
| 6–7 | 130 (4.4) | 15 (6.7) | 0.117 | 0.66 (0.38, 1.16) | |
| Wexner incontinence score > 9 | 173 of 3002 (5.8) | 7 of 230 (3.0) | 0.099 | 1.94 (0.99, 4.19) | 1.75 (0.81, 3.81) |
| Major LARS | 680 of 2993 (22.7) | 35 of 226 (15.5) | 0.011 | 1.61 (1.11, 2.33) | 1.60 (1.09, 2.34) |
| Any change in lifestyle for incontinence | 687 of 3038 (22.6) | 27 of 232 (11.6) | < 0.001 | 2.21 (1.47, 3.34) | 2.09 (1.38, 3.17) |
| Quality of life | n = 3014 | n = 228 | 0.008 | | |
| Not impaired (no or little impact) | 2515 (83.4) | 205 (89.9) | | 1.00 (reference) | |
| Impaired (some or major impact) | 499 (16.6) | 23 (10.1) | | 1.77 (1.14, 2.75) | 1.76 (1.13, 2.79) |

Values in parentheses are percentages unless indicated otherwise; *values in parentheses are 95 per cent confidence intervals. BSS, Bristol stool scale; LARS, low anterior resection syndrome. † χ^2 test. ‡Adjusted for sex, age and time since treatment.

Table 4 Logistic regression analysis of obstructed defaecation symptoms grouped by number of symptoms

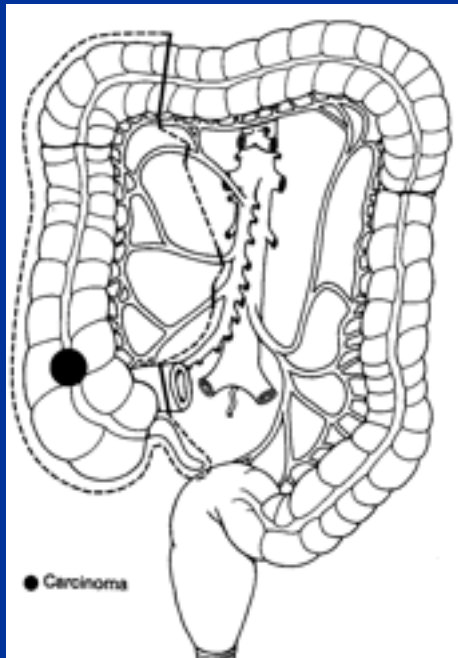
| No. of symptoms | Sigmoid resection (n = 3043) | Polypectomy (n = 232) | Crude odds ratio | P |
|-----------------|------------------------------|-----------------------|-------------------|---------|
| All 6 | 174 (5.7) | 6 (2.6) | 2.28 (1.00, 5.21) | 0.044 |
| ≥ 5 | 546 (17.9) | 17 (7.3) | 2.76 (1.67, 4.57) | < 0.001 |
| ≥ 4 | 1050 (34.5) | 49 (21.1) | 1.96 (1.42, 2.72) | < 0.001 |
| ≥ 3 | 1584 (52.1) | 87 (37.5) | 1.81 (1.37, 2.38) | < 0.001 |
| ≥ 2 | 2182 (71.7) | 148 (63.8) | 1.43 (1.01, 1.90) | 0.014 |

Values in parentheses are 95 per cent confidence intervals.

TYPE AND %

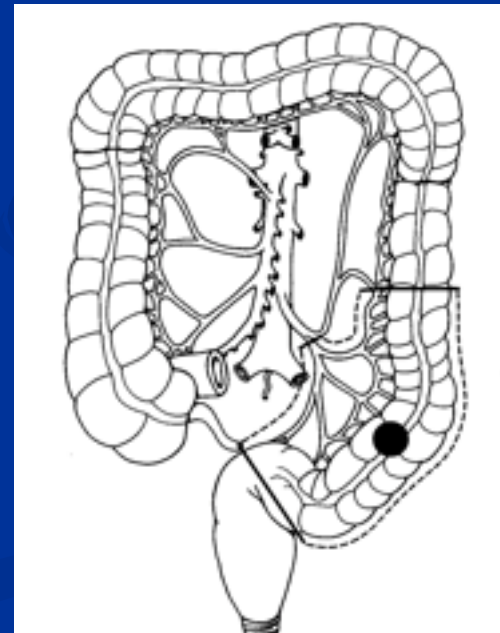
Right hemicolectomy

- About 1: 10 develop diarrhea



Sigmoid resection

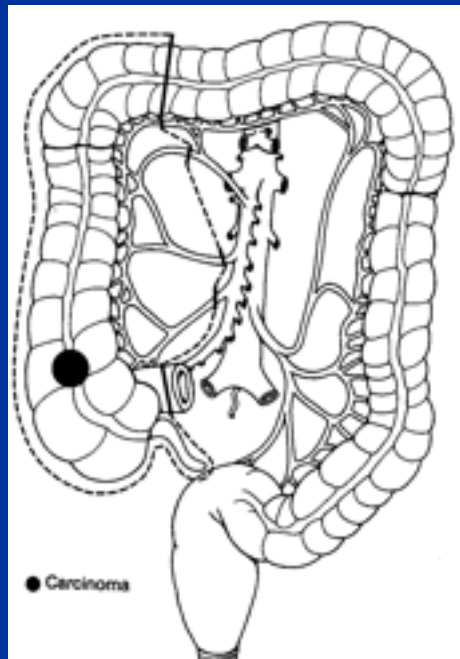
- At least 1:10 develop ODS



WHY

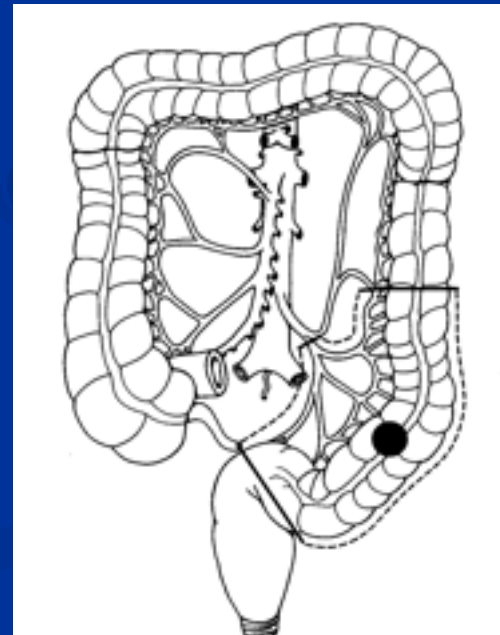
Right hemicolectomy

- Bile malabsorption
- Bacterial overgrowth



Sigmoid resection

- Loss rectosigm break
- denervation



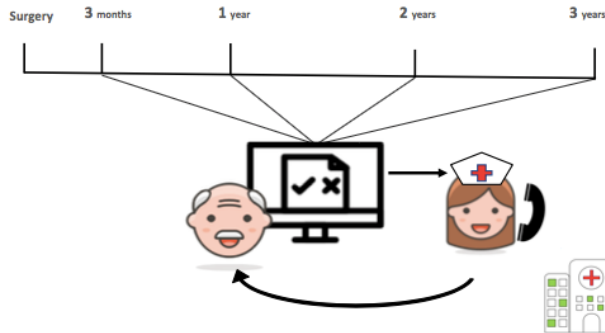
Prospective studies designed
based on our experience

Late Sequelae after Colon Cancer

Annette Bosen Bräuner¹, Katrine Jøssing Emmertsen², Michael Bødker Lauritzen³, Ole Thorlacius-Ussing³, Uffe Schou Løve¹, Peter Christensen⁴, Søren Laurberg⁴, Klaus Krogh⁵, Asbjørn Drewes⁶, Therese Juul⁴

1. Department of Surgery, Regional Hospital Viborg 2. Department of Surgery, Regional Hospital Randers 3. Department of Surgery, Aalborg University Hospital 4. Department of Surgery, Aarhus University Hospital 5. Department of Hepatology and Gastroenterology, Aarhus University Hospital 6. Department of Gastroenterology, Aalborg University Hospital

Design



The patient completes survey → The nurse evaluates the response → The nurse calls the patient if the patient wishes to be contacted → The nurse and the patient discuss treatment options → The nurse refers to the relevant department if the patient wants treatment

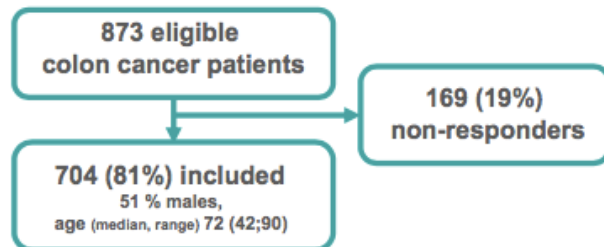
Tools included in the survey





| Domain | Scores / "ad hoc" single items | Items |
|--------------------|--------------------------------------------------------------------------------------------------------------|-------|
| Bowel function | Low Anterior Resection Syndrome Score | 10 |
| | Wexner Incontinence Score | |
| | St Mark's Incontinence Score | |
| | Bristol Stool Chart | |
| | Patient Assessment of Constipation Symptoms | 12 |
| | "Do you take any medicine for constipation?" | 1 |
| | "Do you take any fibre supplement?" | 1 |
| | "Do you have bowel movements during the night?" | 1 |
| | Colostomy impact score | 7 |
| | "How would you evaluate your bowel function over the past 4 weeks?" | 1 |
| Diet | "Overall, how much does your bowel function affect your quality of life?" | 1 |
| | 6 ad hoc questions regarding diet | 6 |
| | Memorial Sloan Kettering Cancer Center Bowel Function Index (dietary scale) | 4 |
| Quality of life | European Quality of Life – 5 Dimensions | 5 |
| Missing items | "Overall how would you evaluate your quality of life over the past 4 weeks?" | 1 |
| | "Do you have any late sequelae from your bowel cancer treatment that are NOT covered in this questionnaire?" | 1 |
| Need for treatment | "Do you wish to be contacted to discuss possibilities for treatment of any late sequelae?" | 1 |

Results

All inclusions, completed surveys and referrals (16/4 2018-15/8 2019)



 Systematic screening for late sequelae after colon cancer using ePROMs is an effective method to identify patients in need for further treatment

 9% were referred to treatment for severe late sequelae

BUT:
can we do anything???



yes

Practice guidance on the management of acute and chronic gastrointestinal problems arising as a result of treatment for cancer

H Jervoise N Andreyev,¹ Susan E Davidson,² Catherine Gillespie,³ William H Allum,^{1,4} Edwin Swarbrick⁵

Gut 2012;**61**:179–192. doi:10.1136/gutjnl-2011-300563

Key facts

- ▶ There has been a threefold increase in the numbers of survivors of cancer in the last 30 years
- ▶ Chronic gastrointestinal side effects are a common cause of morbidity and reduced quality of life
- ▶ Side effects of treatment are frequently missed or overlooked because the current priority of cancer follow-up is to perform surveillance for recurrent cancer
- ▶ Individual GPs are unlikely to have many patients with complex problems after cancer therapy and so will require guidance if these patients are to be optimally managed
- ▶ Symptoms can often be alleviated or cured.

Clinical evaluation and treatment of chronic bowel symptoms following cancer in the colon and pelvic organs

Helene Mathilde Larsen, Mette Borre, Peter Christensen, Asbjørn Mohr Drewes, Søren Laurberg, Klaus Krogh & Janne Fassov

ACTA ONCOLOGICA
2019, VOL. 58, NO. 5, 776–781

60 patients : cancer in the right colon :31, sigmoid colon 1, rectum 14, anal canal 4, cervix uteri 5, corpus uteri 2, ovary2, and prostate 1.

frequent bowel movements (65%), loose stools (87%), urgency (57%), and incontinence (50%).

A specific cause was found in 48 (80%) and 21 (35%) had more than one cause

Most patients will benefit from expert clinical evaluation and targeted treatment.

Table 3. Results of diagnostic tests.

| | Breath test | | SeHCAT retention | | |
|-----------------------------|-------------|----------|------------------|--------|---------------|
| | Positive | Negative | <10% | 10–15% | Normal (>15%) |
| All cancers, <i>n</i> =60 | 32 | 15 | 29 | 6 | 8 |
| Right colon, <i>n</i> =31 | 20 | 6 | 14 | 4 | 3 |
| Sigmoid colon, <i>n</i> = 1 | – | – | 1 | – | – |
| Rectum, <i>n</i> =14 | 7 | 4 | 6 | – | 5 |
| Anal canal, <i>n</i> =4 | 1 | 2 | 3 | 1 | – |
| Cervix uteri, <i>n</i> =5 | 2 | 1 | 3 | – | – |
| Corpus uteri, <i>n</i> =2 | 1 | 1 | 1 | 1 | – |
| Ovary, <i>n</i> =2 | 1 | – | 1 | – | – |
| Prostate, <i>n</i> =1 | – | 1 | – | – | – |

Data are presented as numbers. SeHCAT: Selenium-75 homocholic acid taurine.

Table 4. Treatment modalities used in our clinic.

| Treatment modalities | <i>n</i> (%) |
|-----------------------------------|--------------|
| Antibiotics | |
| Ciprofloxacin | 28 (47) |
| Rifaximin | 13 (22) |
| Other ^a | 7 (12) |
| Bile acid sequestrants | |
| Cholestyramine | 31 (52) |
| Colesevelam | 19 (32) |
| Both | 14 (23) |
| Loperamide | 21 (35) |
| Laxative | 9 (15) |
| Dietary intervention ^b | 20 (33) |
| Stoma | 2 (3) |

^aAmoxicillin (*n* = 4), metronidazole (*n* = 3).

^bFat and/or fiber reducing regimen.

Update to day treatment bowel symptoms

- 64 cases right hemicolectomy
- 42 evaluated and treated
 - 35 major effect
 - 7 some effect
 - 0 no effect

PRESENT STRATEGY

crc

- All patients are followed by proms
 - Bowel,bladder, sex, pain
 - Response rate $>80\%$
- Offered standardised treatment
 - Colon and bowel: 10%
- Trials-and evaluation
 - Colon cancer and bowel : rewarding