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Short Report

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Complications While Waiting for IBD Surgery—Short Report

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Abstract

Background and Aims: While striving to meet the quality standards for oncological care, hospitals frequently prioritize oncological procedures, resulting in longer waiting times to surgery for benign diseases like inflammatory bowel disease [IBD]. The aim of this Short Report is to highlight the potential consequences of a longer interval to surgery for IBD patients.
Methods: The mean waiting times to elective surgery for IBD patients with active and inactive disease [e.g. pouch surgery after subtotal colectomy] at the Amsterdam UMC, location AMC, between 2013 and 2015 were compared with those for colorectal cancer surgery. Correlations between IBD waiting times and disease complications [e.g. >5% weight loss, abscess formation] and additional health-care consumption [e.g. telephone/outpatient clinic appointment, hospital admission] during these waiting times were assessed.
Results: The mean waiting was 10 weeks [SD 8] for patients with active disease [$n = 173$] and 15 weeks [SD 16] for those with inactive disease [$n = 97$], remarkably higher than that for colorectal cancer patients [5 weeks]. While awaiting surgery, 1 out of 8 patients had to undergo surgery in an acute or semi-acute setting. Additionally, 19% of patients with active disease had disease complications, and 44% needed additional health care. The rates were comparable for patients with inactive disease.
Conclusions: The current waiting time to surgery is not medically justified and creates a burden for health-care resources. This issue should be brought to the attention of policy makers, as it requires a structural solution. It is time to also set a maximally acceptable waiting time to surgery for IBD patients.

Key Words: Surgery; waiting time; complications.

1. Introduction

In 2015, gastroenterologist Dr A. van Bodegraven and colleagues wrote an alarming manifest: 'Oncology first, other care compromised.'[1] He stated that 'because hospitals want to adhere to the newly implemented oncology quality- and volume standards, oncological surgeries are given priority'.[1] These days, oncological treatment should be started within the 6 weeks following diagnosis, and this is enforced by the Dutch Health Care Inspectorate, insurance companies and patient's organisations.[2] Additionally, since the introduction of the national bowel cancer screening program in the Netherlands, the demand for oncological surgical resections has risen worldwide.[3–6] The subsequent longer waiting time for 'benign' diseases is not only inconvenient, but for inflammatory bowel disease [IBD] patients it may lead to severe complications.

Inflammatory bowel disease patients requiring surgery are mainly therapy refractory and have longstanding disease after

failing a series of immunosuppressive drugs, weakening the patient. In addition, as IBD is a progressive inflammatory disease, complications such as strictures and fistulas with or without abscess formation develop in 50% of patients during their disease course.[7,8] When surgery is postponed and the disease progresses, surgery may become more complex, resulting in worse outcomes.[9,10] A stenosis leads to decreased oral intake, followed by weight loss and ultimately a patient being in poor pre-operative condition. A preoperative abscess increases the risk of anastomotic leakage and therefore the chance of a [temporary] stoma postoperatively.[11,12] Additionally, patients with a fistula or inflammatory mass are at increased risk of more extensive surgery, including resection of the otherwise unaffected healthy tissue.

These complicated cases should preferably be operated on in specialized high-volume centres by a laparoscopic approach to improve short- and long-term postoperative outcomes.[13–16] Considering the complexity of IBD management, subspecialized gastroenterologists and surgeons should ideally provide IBD care within multidisciplinary and specialized IBD units, optimizing the integration of medical management and surgery. However, especially in tertiary referral centres, where the most complex cases are treated, increasing waiting times have become problematic.[1]

2. Case Report

We performed a retrospective study analysing the waiting times, complications and additional health-care consumption during these waiting times of all consecutive adult IBD patients who underwent elective surgery at the tertiary Amsterdam UMC IBD centre, location AMC, between January 2013 and December 2015. This time period spans the waiting times before and after the implementation of the national bowel cancer screening program in the Netherlands.[17] In 2014, more than 80% of the target population was invited to participate in the national bowel cancer screening program.[17] Patients with planned acute or urgent [within one week] surgery, day care surgery, surgery for IBD-related [pre]malignancy, or surgery in study settings [appendectomy or ileocaecal resection] were excluded.

In the analyses, patients with active disease were distinguished from patients with inactive disease scheduled for a second-stage surgery [e.g. stoma reversal, completion of proctectomy with pouch procedure].

In this period, 270 patients with Crohn's disease and 144 patients with ulcerative colitis were operated upon. In total, 270 patients were included, of whom 173 were electively operated for active disease and 97 underwent an elective procedure for inactive disease [Table 1]. The number of patients treated for active disease was 68 in 2013, 64 in 2014, and 41 in 2015. For inactive disease, these numbers were 34, 34, and 29 patients, respectively.

The mean waiting time for the whole study period was 10 weeks [SD 8] for patients with active disease and 15 weeks [SD 16] for patients with inactive disease. The mean waiting time increased over the years in both groups. For active disease, the mean waiting time was 8 weeks [SD 6] in 2013, 11 weeks [SD 10] in 2014, and 14 weeks [SD 8] in 2015. For inactive disease, the waiting time was 11 weeks [SD 12] in 2013, 16 weeks [SD 10] in 2014, and 20 weeks [SD 23] in 2015. The mean waiting time for colorectal cancer patients in the Amsterdam UMC, location AMC, remained stable at 5 weeks in the study period. The number of colorectal cancer patients treated in the AMC was 49 patients in 2013, 58 in 2014, and 54 in 2015.

For 1 out of 8 patients, the waiting time proved too long, as they required surgery in an acute or semi-acute setting while waiting for surgery. Additionally, 19% of the patients with active disease had disease complications during the waiting time [i.e. >5% weight loss, fistula or abscess formations requiring radiological intervention, and dehydration or hypokalaemia requiring intravenous supplementation]. One patient required admission to the intensive care unit with abdominal sepsis following a rectal stump perforation as a result of a progressing stenosis. The disease complication rate was 15% for patients on the waiting list with inactive disease [e.g. dehydration following a high-output stoma].

In addition, to analyse whether disease complications were related to a longer waiting time, the mean waiting times of patients with and without disease complications were compared. For these analyses, patients converted to acute or semi-acute surgery were excluded. The mean waiting time of patients with active disease and a disease complication was 13 weeks [SD 7], compared with 10 weeks [SD 8] for patients without any disease complication during the waiting time, $p = 0.173$. In patients on the waiting list for inactive disease, this difference was significantly higher: the mean waiting time of patients with a disease complication was 24 weeks [SD 27], compared with 14 weeks [SD 12] for patients without disease complications, $p = 0.027$ [Figure 1].

Table 1. Patient characteristics

	Active disease [$n = 173$]	Inactive disease [$n = 97$]
Gender [F:M]	102:71	44:53
Age, mean SD	41 [SD 14]	39 [SD 13]
Diagnoses [UC:CD]	44:129	57:40
Disease complications		
Proctitis	0	4
Dehydration [following high output stoma] requiring supplementation	1	6
Stoma prolapse	0	1
Bowel obstruction	6	0
Stricture formation	1	0
Abscess formation requiring radiological drainage	3	1
Fistula formation	4	0
>5% weight loss	16	3[1]
Hypokalaemia requiring supplementation	2	0
Rectal stump stenosis	1[2]	0
Surgery		
[neo]Terminal ileo-caecal resection	62	–
Stricturoplasty	5	–
[reversal] Stoma surgery	21	25
Pouch surgery after subtotal colectomy	–	56
Redo pouch	15	5
Subtotal colectomy	33	–
Proctocolectomy with pouch	7	–
Completion proctocolectomy after subtotal colectomy	17	2
Pouch excision for Crohn's disease	1	–
Mesorectal excision	1	–
Other	11	9

1.One patient required total parenteral nutrition 2. One patient required intensive care unit admission because of sepsis due to rectal stump perforation following progressing stenosis.

The proportion of patients using additional health care during the waiting time was 44% for patients with active disease and 43% for patients with inactive disease. Additional health-care consumption was defined as extra appointments at the out-patient clinic [including telephone consultations], visits to the emergency department, or hospital admission. To assess whether additional health-care consumption was also associated with a longer waiting time, the waiting times of the patients who did and did not use additional health care were compared. After excluding patients converted to acute or semi-acute surgery, for patients with active disease consuming additional health care the mean waiting time was 13 weeks [SD 8], compared with 9 weeks [SD 8] for patients not using additional health care, $p = 0.002$. Equally, for patients with inactive disease using additional heath care the mean waiting time was 23 weeks [SD 21], compared with 11 weeks [SD 7] for patients not consuming additional health care, $p < 0.001$ [Figure 1].

A longer waiting time was also associated with postoperative complications in patients with active disease [Clavien Dindo > I, Figure 1]. The mean waiting time for patients with anastomotic leakage was 17 weeks [SD 10], compared with 10 weeks [SD 8] for patients who did not develop anastomotic leakage after surgery, $p = 0.011$.

In patients electively operated upon within 6 weeks, less pre-operative and postoperative complications were observed compared with patients who had to wait longer.

3. Discussion

Based on these results, we conclude that for a large number of IBD patients the current waiting time is unacceptable. This is not only because of the medically unjustifiable increased complication rate, but also because of the general dissatisfaction, logistic difficulties, and hospital costs associated with the extra interventions and hospital visits.[18] In addition, for the 'non-ill' patients group a mean waiting time of 15 weeks for a stoma reversal should be avoided.[19] The social lives of these, mainly young, patients are often on hold during the waiting time.[20] Moreover, in this era where prehabilitation and pre-operative optimization is promoted,[21,22] complications due to a waiting list are not tolerable.

Due to the current trend towards auditing, quality checks and volume norms, there are many incentives for hospitals to specialize. Nevertheless, the incentive to do so in the direction of oncology care seems greater than for benign disease, reflecting the higher level of support and emotion surrounding colorectal cancer in our society. However, the appropriateness of prioritizing oncology patients at the expense of timely care for IBD patients should be questioned.

Physicians and surgeons have an obligation to provide the most optimal care for every patient. In oncology, quality criteria, like regular multidisciplinary team meetings, centralization of care, and health-care regulatory bodies setting the norm for time to treatment, are well established.[23] For IBD centres, however, quality criteria are heterogeneous and suboptimal.[24]

Following an interview program carried out across 48 Dutch hospitals in 2014, the average waiting time to IBD surgery in peripheral hospitals was 3.5 weeks, compared with 9 weeks in university hospitals.[1] While awaiting guidelines for a maximal acceptable waiting time, the IBD centre of the Amsterdam UMC has made an alliance with a non-academic teaching hospital nearby. Currently, one academic and one peripheral IBD surgeon run a joint outpatient clinic. Patients in good condition requiring standard care [e.g. ileocecal

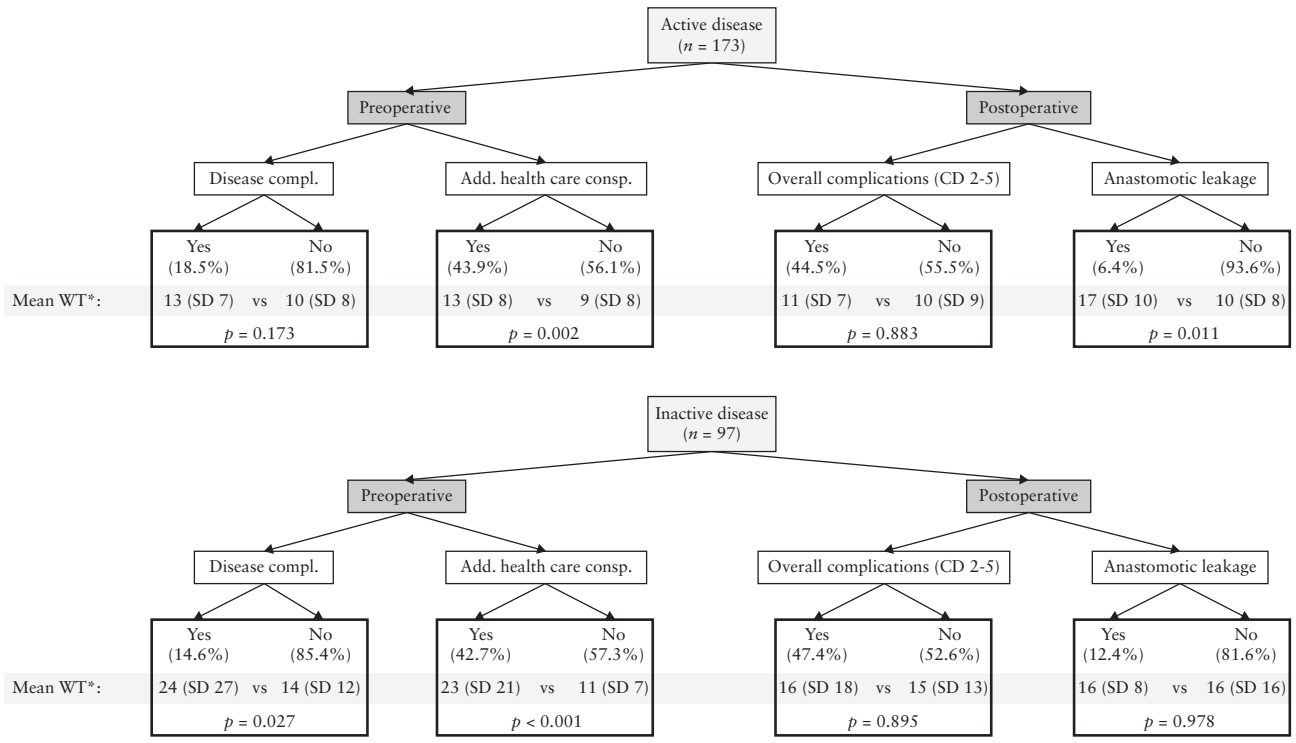

Figure 1. The association of mean waiting time and pre- and postoperative complications and additional health-care consumption. *WT; waiting time in weeks assessed with unpaired *t*-test; patients converted to surgery in a [semi-] acute setting were excluded from these analyses. Disease Comp.: disease complications. Add. health care consp.: additional health-care consumption. Overall complications [CD 2–5]: defined as any postoperative complication within 30 days or in hospital with Clavien–Dindo score ≥2.[25] Anastomotic leakage: was either confirmed by radiological imaging or during surgical exploration.

resection for terminal ileitis] are being operated upon in the allied hospital with a considerably shorter waiting time. However, this local initiative will not be a structural solution for the magnitude of this problem.

Public awareness of the situation of IBD patients must be raised to a similar level to that of oncology patients to fuel the development of norms for maximum waiting times for surgery, while enforcing the volume norms.

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Conflict of Interest

KW and CB have no conflicts of interest. Some collaborators of the IBD study group are advisors for Abbvie, Ablynx, Allergan, Amakem, Amgen, AM Pharma, Arena Pharmaceuticals, AstraZeneca, Avaxia, Biogen, Bristol Meiers Squibb, Boerhinger Ingelheim, Celgene/Receptos, Celltrion, Cosmo, Covidien/Medtronics, Echo Pharmaceuticals, Eli Lilly, Engene, Ferring, DrFALK Pharma, Galapagos, Genentech/Roche, Gilead, Glaxo Smith Kline, Gossamerbio, Hospira/Pfizer, Immunic, Janssen, Johnson and Johnson, Lycera, Medimetrics, Merck & Co., Millenium/Takeda, Mitsubishi Pharma, Merck Sharp Dome, Mundipharma, Nextbiotics, Novonordisk, Otsuka, Pfizer/Hospira, Photopill, Prometheus laboratories/Nestle, Progenity, Protagonist, Robarts Clinical Trials, Salix, Samsung Bioepis, Sandoz, Seres/Nestle, Setpoint, Shire, Teva, Tigenix, Tillotts, Topivert, Versant, and Vifor; and have received speaker fees from Abbvie, Biogen, Ferring, Johnson and Johnson, Merck Sharp Dome, Mundipharma, Norgine, Pfizer, Samsung Bioepis, Shire, Millenium/Takeda, Tillotts, and Vifor.

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Author Contributions

KW and CB performed the analyses and wrote the first draft. All contributors included in the IBD Study Group thoroughly revised the manuscript, were involved in the conception of the study, and have approved the final manuscript.

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