

# ADVANCES IN IBD

Current Developments in the Treatment of Inflammatory Bowel Disease

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## Prehabilitation for Inflammatory Bowel Disease Surgery



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### G&H What is the rationale for prehabilitation for inflammatory bowel disease surgery?

**JA** Prehabilitation is good for almost any type of surgery, not just inflammatory bowel disease (IBD) surgery. I believe prehabilitation should be offered to all patients and should be the standard of care in surgery. One of the problems in medicine is holding back from doing things until there is very good quality research (ie, evidence from randomized controlled trials). That can delay the implementation of sensible things for which there is much indirect evidence or direct evidence in parallel settings. For example, colorectal cancer surgery is major resectional abdominal surgery. It is not much different from IBD surgery. There is good evidence for prehabilitation in that setting, so why would it not also be done in IBD? Prehabilitation does no harm. Now, there may be some slight costs involved with prehabilitation, but they are offset by better outcomes. Therefore, I think we should ask why we would not use prehabilitation rather than why would we use it.

### G&H Should any IBD medications be adjusted or even discontinued preoperatively?

**JA** If corticosteroids can be avoided, they should be regardless of whether patients will be needing surgery. Corticosteroids should be used only once or twice. If patients are going back to corticosteroids repeatedly or long term, that is a signal of a problem, regardless of whether surgery is coming up. Providers should try to minimize corticosteroids at all costs preoperatively. Sometimes they cannot be avoided, like in acute severe colitis when patients have been receiving intravenous corticosteroids in the hospital and are facing colectomy. In my opinion, the way to min-

imize corticosteroids preoperatively is to minimize them in IBD management overall because sometimes providers do not know when surgery is going to come up and other times patients may need non-IBD surgery such as a joint replacement, tooth removal, or appendectomy. Corticosteroids are problematic for all types of surgery because they make sepsis and poor wound healing more likely.

As for other IBD-specific therapies, there is no need to stop them preoperatively. There has been a lot of discussion that there might be other risks, but that does not appear to translate into practice. The risks with IBD surgery tend to center more around corticosteroid use or opiate use as well as on patients who are unwell with acute disease who are undernourished, in a catabolic state, and/or are smoking. The biggest risks are not their IBD medications. If patients are well and their IBD medications are working, they would only be stopped if a drug holiday was being planned.

### G&H How should the nutritional status of IBD patients be screened and optimized before surgery?

**JA** Surgery is always a good time to think about nutrition, although it should be thought about all the time. Waiting until surgery before thinking about nutrition potentially means leaving patients undernourished for no good reason. The message should be proactive IBD care. Whenever seeing patients, providers should be thinking about their nutritional state.

There are several simple screening tools that can be used in the hospital system. One is the Malnutrition Universal Screening Tool, or MUST, which can be self-administered by a patient or by a nurse on admission.

This is a great way of identifying patients who are at risk and who need dietitian intervention. The Inflammatory Bowel Disease Nutrition Self-Screening Tool, or IBD-NST, is an IBD-specific nutritional screening tool that

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can be self-administered by patients. Providers can send it to patients electronically, or patients can fill it out on a paper form in the clinic. Routine screening is important because the best time to address nutritional issues is as close to when they arise as possible.

If a patient is undergoing elective IBD surgery, 6 to 8 weeks out is a good time for nutritional laboratory workup. Particular things to check are hemoglobin and iron storage status. Patients will lose a little blood perioperatively, and many will already be iron deficient, even if they are not anemic. Iron is very important in terms of oxygen-carrying capacity and postoperative wound healing. Vitamin C is also important. Measuring it is a bit tricky, though, so patients should be screened by a dietitian as to whether they have adequate vitamin C intake in their diet. If they do not, a vitamin C tablet is probably a good idea, although there is no good evidence supporting its use. It is a water-soluble vitamin. If given orally, there is not any risk of harm, and it may have some benefit. A lot of people avoid citrus, tomatoes, capsicums, and other good sources of vitamin C, particularly if they have been experiencing obstructive symptoms and have been reducing fiber. Vitamin C might be inadequate in those patients.

Other simple things to check include skinfold thickness and muscle bulk and strength in the upper arms. Providers can also check hand grip strength, which is a good measure of sarcopenia, a condition characterized by reduced muscle mass and strength. My colleagues and I published about sarcopenia being more common than originally thought in ambulatory IBD care.

#### **G&H** What preoperative screening should be performed for physical fitness?

**JA** There is no doubt that physical fitness and exercise improve operative outcomes across the board. This has

been looked at specifically in a number of areas, particularly in cardiac surgery, joint replacement surgery, and respiratory surgery, and there is no reason to think it would be any different for IBD-specific surgery. Our hospital has run a digital prehabilitation program for many elective surgeries for the past several years. My colleagues and I implemented an elective surgery prehabilitation program wherein we invited patients to fill out an online health assessment digitally delivered by one of the patient engagement apps commonly available. We found that 80% of patients were happy to complete their own health assessment questionnaire. A lot of patients identified that they were less physically active than they thought was ideal, and there were also many patients referred for various forms of surgery who had frailty. Certainly, it is easy to advise patients of simple exercise programs and initiatives that they can implement at home. Digital screening tools can also be used to identify patients who need to be brought to the clinic to meet an exercise physiologist or physiotherapist. These tools can also find patients who are fine and do not need help.

#### **G&H** What mental health assessment and interventions should be offered before IBD patients undergo surgery?

**JA** In our IBD service, providers have developed a habit over the past decade of inviting new-to-service patients and patients with new diagnoses to proactively complete mental health and quality-of-life surveys. We then offer psychological assessment and intervention for everyone who screens positive using our panel. We use the Kessler Psychological Distress Scale, or K10; Depression, Anxiety, and Stress Scale, or DASS-21; and the EuroQol 5-Dimensions, or EQ-5D. In a study, we found that approximately 25% of the patients in routine ambulatory IBD care needed and accepted psychological care. Mental health issues should be addressed proactively before a patient needs surgery, as with the other components of prehabilitation. However, if the need for surgery comes up before issues have been detected, this is another great point at which to discuss with patients whether they have specific concerns or previous diagnoses of mental health issues, as well as to use screening tools to assess how patients are. Not everyone will need specific mental health intervention preoperatively. Some patients look forward to surgery because they have confidence that it will fix their problem. Feelings toward surgery may be a little different for patients who have undergone previous surgery with a good result, as opposed to patients who have never undergone surgery and are having it with very little time to prepare mentally or are having it in a threatening environment such as new diagnosis with acute severe colitis

or new diagnosis with an inflammatory obstructing mass with Crohn's disease. Those patients should all be seen by a psychologist, ideally someone who has IBD experience, to contextualize what is happening. I know that not every service has an IBD psychologist, but research published from our group and others has shown that this is an essential part of the quality care team.

### **G&H** Why should smoking be stopped before surgery?

**JA** Smoking should be stopped in IBD patients for numerous well-known public health reasons. Smoking makes patients more likely to have pneumonia and perioperative lung problems. It makes wound healing worse. It also makes patients more likely to have an anastomotic leak. Looking at bowel surgery in general, smoking makes Crohn's disease twice as likely to recur and twice as likely to require another operation. Although smoking tends to reduce ulcerative colitis flare rates, it has

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so many other negative effects. Ciliary clearance of the lungs is very important, and it has been well documented in physiology studies that patients need to stop smoking for 6 weeks to return to normal ciliary clearance. Telling patients that they need to stop smoking for 6 weeks may be the best lever to use. After stopping for 6 weeks, many will continue not to smoke. There are now many nicotine replacement products to assist with quitting and many online programs as well as hypnotherapy techniques that patients can avail themselves of to improve their chances of successful smoking cessation.

### **G&H** Who should be involved in an IBD patient's prehabilitation program?

**JA** I think everyone should be involved, including the patient. I have already referred to digital screening tools, and those are great to use. If the screening process

allows patients to complete their own health assessment questionnaire, it can automatically deliver a summary to them identifying areas where they could use prehabilitation. For example, it might say that the patient's weight needs work or their mental health or maybe their pain management. That questionnaire and summary can link to digital resources and can also be printed. The patient can take the summary to their own primary care doctor, or they can bring it back to the IBD service or to whoever is performing the surgery. This is a very powerful way of engaging the patient in the evidence-based areas for intervention. The care team at minimum should consist of the surgeon, nurse, IBD medical specialist, dietitian, and psychologist, and there may also be a need for input from physiotherapy, exercise physiology, or other specialties.

### **G&H** What are the challenges of establishing a prehabilitation program?

**JA** As with anything, one of the challenges lies in setting the program up. Everyone can agree that a prehabilitation program is a good idea, but it is usually difficult to free up the time of people who have sufficient seniority and agency within the unit, and so are allowed to make changes and intervene. Then it is going to be important to ensure that the program gets embedded. That means it needs to have a senior champion. It also needs some sort of program manager to ensure it gets built into business as usual. A lot of the time, the medical field is good at an acute intervention, but not at implementation science and building things into routine care. That is where a lot of things fail. They just fall apart because the clinical champion leaves, or they are not novel anymore.

### **G&H** How can a center finance such a program?

**JA** That depends on the funding model at the center. In our center, when we put in the surgical prehabilitation program, I had some external research funding to document that it was feasible, acceptable, and would enact changes. Over 3 years, my colleagues and I collected data on costs. Our results so far, which are under review for publication, show that in the area where we had the first uptake, which was primary joint replacement surgery, prehabilitation took a day off the length of stay and reduced hospital-acquired complications. Prehabilitation was very well received by patients. No one complained, and everyone had positive things to say. On that basis, prehabilitation has now been built into business as usual in the orthopedic area. It has also been built into vascular surgery, spinal surgery, and some colorectal cancer surgery, particularly when there is upfront neoadjuvant treatment.

The early data indicate the high likelihood that the costs of a digital prehabilitation approach will be offset by the savings from reducing complications and length of stay with this approach.

### G&H What are the priorities of research in this area?

**JA** One of the priorities involves outcomes with prehabilitation in the IBD space, and some of the early IBD-specific data presented at this year's European Crohn's and Colitis Organisation meeting and Digestive Disease Week have appeared to be positive. It is important to remember that prehabilitation is safe and healthy. When something is safe, can be performed affordably, and is effective, I do not think much more research is needed before the approach can be adopted broadly. I do not think we should wait until we have all the basic science data before implementing prehabilitation at scale; not implementing it is leaving a lot of patients at risk of poor outcomes. I do not think there should be questions anymore about smoking, corticosteroids, and iron deficiency in IBD patients because there is much evidence that perioperative optimization of iron stores helps patients recover faster and better from bowel surgery as well as avoids transfusion. There is no doubt that smoking should be stopped and that corticosteroids should be stopped. I am not sure there is a need for more evidence for those 3 things. If more evidence is desired, it should be for practical evidence in terms of health economics and health service delivery research. The field is not very good at doing that. In IBD research, there is a lot of concentration on basic science

and pharmaceuticals. These are all important areas, but if we are not addressing the big picture, like models of care such as prehabilitation, we are missing easy and simple opportunities to improve patients' lives faster without accruing additional costs and, perhaps, can even save money.

### Disclosures

*Professor Andrews has no relevant conflicts of interest to disclose.*

### Suggested Reading

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