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Prehabilitation: enhancing the Enhanced Recovery after Surgery pathway

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The introduction of the Enhanced Recovery after Surgery (ERAS) pathway in gynecologic surgery has revolutionized perioperative care, leading to accelerated recovery as demonstrated by improvements in pain control, mobilization, opioid use, morbidity, patient experience, and hospital length of stay with an accompanying reduction in healthcare costs.[1 2] In its original form ERAS interventions began in the 24 hours preoperatively, but more attention is now being directed toward the extended preoperative period to optimize patients' overall fitness for surgery and further accelerate recovery. Prehabilitation is the term used to describe the process of improving physical, emotional, and nutritional status before surgery, a distinct consideration from medical optimization of comorbid conditions.[3] The potential benefits of prehabilitation are highlighted by studies showing that surgical patients with poor nutritional status have longer length of hospital stay, higher readmission rates, and greater healthcare costs. Furthermore, patients with nutritional deficiencies have three times the risk of postoperative morbidity and five times the risk of mortality.[4] Frail patients or those of advanced age also have a higher risk of postoperative complications and prolonged recovery.[5 6] The concept of reversing physiologic deconditioning is particularly relevant to patients with gynecologic malignancies who tend to be elderly, frail, and nutritionally impaired due to poor protein intake and cancer-related catabolism.

In this month's issue of the *International Journal of Gynecological Cancer*, Miralpeix *et al*[7] conduct a thorough review of prehabilitation strategies, including randomized controlled trials and observational studies published from January 2000 to April 2018. Results in general surgery and gynecologic surgery are reported separately. The authors describe the three main pillars of prehabilitation, which consist of physical, nutritional, and psychological interventions, and use this review as a platform to present a standardized prehabilitation program specific to gynecologic oncology patients treated under an ERAS pathway.

Importantly, only a limited number of studies investigated interventions incorporating all three categories, which tended to yield the greatest benefit in recovery. Studies were particularly scarce in gynecologic surgery, a call to action for gynecologic oncologists. An important unanswered question is the minimum duration of prehabilitation required for improvement. Future investigations should be designed to help understand the balance between the potential benefits of prehabilitation with the potential disadvantages of delaying surgery for 2–6 weeks. Such disadvantages include true disease progression, perceived disease progression by the patient, and worsening of cancer-related symptoms and anxiety. Treatment delay is less of a concern for colorectal cancer patients, recognizing that most undergo preoperative chemoradiation, at which time prehabilitation may be implemented. It is critical that future investigations in gynecologic oncology control for improvements in functional status that may occur during neoadjuvant chemotherapy even without prehabilitation are carried out. Recognizing that prehabilitation is resource-intense, those patients most likely to receive benefit (ie, frail, elderly patients undergoing complex laparotomy for advanced disease as opposed to healthy, young patients undergoing laparoscopy for localized disease) should be precisely defined using functional and biologic testing. Investigators should be encouraged to use consistent patient-reported outcomes measures when testing the efficacy of prehabilitation in order to facilitate comparisons and standardize assessments (a white paper will be produced by the Society of Gynecologic Oncology (SGO) on this subject). Lastly, the continuing worldwide obesity epidemic necessitates that our specialty develop a standardized approach to counseling and facilitating weight loss as part of prehabilitation. No obese patient with endometrial cancer should undergo surgery without first discussing the need for weight loss, referring to resources to assist with weight loss, and discussing the option of short-term non-surgical management.

Prehabilitation has a plausible physiological underpinning and is consistent with the basic tenets of ERAS. Thus, these programs may come to represent an extension of existing ERAS pathways. The authors are to be commended for their efforts

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to create a standardized prehabilitation protocol based on the published literature.

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