Weight Specific Prehabilitation in Elective Complex Abdominal Wall Hernia Repair

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BACKGROUND

- Hernias are common; ventral or incisional hernia repair is one of the most frequent operations performed by general surgeons.[1]
- Complex abdominal wall hernias are those with a size, location, clinical scenario or patient factors that make successful hernia repair significantly more challenging. [2]
- Obesity increases the risk of hernia development and progression, hernia incarceration and hernia recurrence following a surgical repair. [3,4,5]
- Prehabilitation prior to hernia repair has been proposed to decrease complications and recurrence; however, there is limited literature surrounding the best modality or duration of prehabilitation. [4,6]
- The aim of the Alberta Obesity Center (AOC) weight specific prehabilitation program in collaboration with the Complex Hernia and Abdominal Reconstruction Group of Edmonton (CHARGE) was to improve post-operative outcomes, including hernia recurrence in patients undergoing complex hernia repair.
- **The purpose of this study was to determine effectiveness of this prehabilitation program in achieving clinically significant weight loss.**

METHODS

- Through an expedited referral program, preoperative patients from the CHARGE group were referred to Alberta Obesity Centre (AOC) for weight specific prehabilitation.
- Once referred, AOC provided appointments with bariatricians, dieticians/nutritionists, exercise medicine and behavioral medicine at least every 6 months targeting nutrition, pharmacological, lifestyle and psychological treatment of obesity developed in accordance with the Canadian Adult Obesity Clinical Practice Guidelines.[7]
- Patients enrolled in 2021-2023 with a minimum of 6 months of follow up with AOC undergoing elective hernia repair were included. Patients with prior bariatric surgery were excluded.
- The primary outcome was clinically significant weight loss, defined as >5% reduction in body weight at 6 months and 1 year.[8]











RESULTS

Number of patients screened	57
Included	40
Average age (years)	55.6
Male : Female	15 (37.5%) : 25 (62.5%)
Average initial BMI (kg/m^2)	41.0
Number of patients who have had their hernia repair	14 (35%)
Number of patients who did a very low-calorie diet (optifast)	9 (64% of surgical patients)
Number of patients with AOM treatment	32 (80%)
Patients with 1 year follow-up	26 (65%)
Patients with 1.5 year follow-up	22 (55%)
Average time to surgery (months)	10.9

Table 1. Demographics of patients referred to AOC by CHARGE

Excluded (n=17)	
Less than 6 months follow up	47% (8 of 17)
Self-discharge	41% (7 of 17)
Not abdominal wall hernia	12% (2 of 17)

Table 2. Number of patients excluded from analysis and reasons for exclusion

6 MONTHS	**Overall (n=40)**	**Patients who have had surgery (n=14)**
Average body weight reduction at 6 months	5.2%	8.8%
Number of patients with >5% weight loss at 6 months	17 (43%)	10 (71%)
Number of patients with >10% weight loss at 6 months	10 (25%)	6 (42%)
Number patients with >15% weight loss at 6 months	6 (15%)	4 (28%)
1 YEAR	**Overall (n=26)**	**Patients who have had surgery (n=7)**
Average body weight reduction at 1 year	9.6%	18.7%
Number of patients with >5% weight loss at 1 year	18 (69%)	7 (100%)
Number of patients with >10% weight loss at 1 year	11 (42.3%)	7 (100%)
Number of patients with >15% weight loss at 1 year	5 (12.5%)	4 (57%)

Table 3. Weight loss achieved by patients enrolled in the AOC prehabilitation program at 6 moths and 1 year

CONCLUSIONS

- This program through the Alberta Obesity Centre facilitates weight specific prehabilitation in patients undergoing elective complex abdominal wall hernia repair.
- **Clinically significant weight loss, defined as >5% reduction in body weight[8] was demonstrated in 43% and 69% of patients at 6 months and 1 year, respectively.**
- Further reduction in body weight from 6 months to 1 year highlights a sustained, safe and gradual weight reduction program.
- **Patients who had surgery had a greater reduction in body weight.**
- This prehabilitation program allows for **improved patient health and satisfaction while on operative waitlists.**
- Further studies should be conducted to explore the benefits of prehabilitation on postoperative outcomes including hernia recurrence and quality of life.

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