

Obesity prehabilitation circuit in patients with abdominal wall defects: pilot program

J.C. Baanante Cerdeña, I. Díaz Cuadrado, J. Landaluce, R. Lobato, R. Termes, C. Mitru, S. Delgado.

Department of General and Digestive Surgery – Hospital Universitari MútuaTerrassa

Barcelona, Spain.

Introduction

It is well established that obesity is a major risk factor for the development and recurrence of primary and incisional hernias. Patients with Body Mass index (BMI) greater than 30 kg/m2 have significantly higher rates of postoperative complications, hernia recurrence and reoperation. Current guideline’s recommendations remark the importance of weight control, as well as other modifiable risk factors, prior to indicate abdominal wall surgery. The clinical evidence of non-operative weight-loss interventions in this scenario is scarce. There is no a definitive consensus for its establishment and outcome evaluation.

Objective

The primary objective of this study is to evaluate the initial outcomes of a pilot prehabilitation and weight management program in patients with abdominal wall defects and concomitant obesity. This prospective study was developed and is being implemented at the MútuaTerrassa University Hospital and its associated Primary Care Centers (PCCs).The primary objective is to achieve a preoperative BMI ≤ 32.

Material & methods

Single-center study

Inclusion criteria

Obesity with BMI > 32  
+  
Abdominal wall defects\*:  
• Inguinal hernia  
• Umbilical hernia  
• Ventral hernia  
• Incisional hernia  
\*primary and recurrences

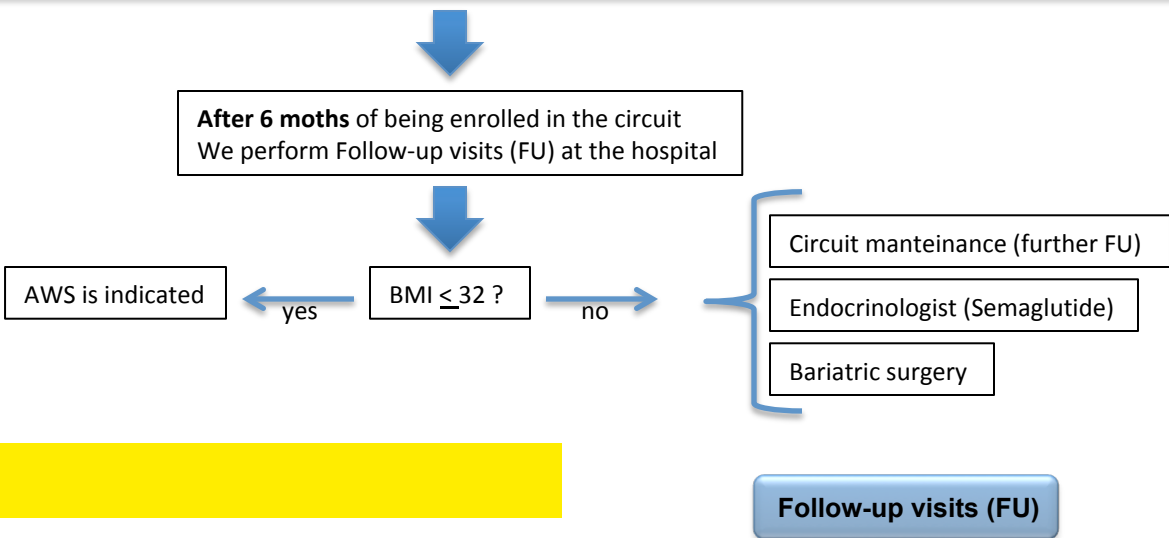
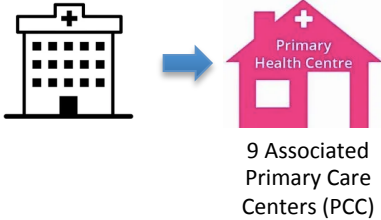
Adult patients willing to participate in the circuit

Prehabilitation circuit:  
Individual & group programme: Comprehensive Support for Obesity patients (SIPO).  
Visits program with dietitian (Visit 0 through visit 8) in a 8-16 week period. Periodic follow-up visits (every 2 weeks or monthly).

	V0	V1	V2	V3	V4	V5	V6	V7	V8
Topic	Welcome meeting	Introduction	Healthy food	Nutritional labels	Psychology (emotional hunger)	Phys. Activity and sports	Culinary techniques. Summary	Individual dietitian visit	Support

Objective: hypocaloric diet (adapted to the needs of each patient) focusing in personalized realistic objectives.  
Maximum daily caloric intake not established

In cases of concomitant complex abdominal incisional hernia (with loose of domain) , abdominal wall prehabilitation and respiratory prehabilitation is performed.



Results



**101 patients** (since February 2023)  
Median age **56 years**  
56% **male sex**

Type of hernia	59 primary 42 incisional
Defect size	3cm (range: 1.5-11cm)
EHS Classiffication (Incisional)	M3W1: 26 patients M2W1: 6 patients M3W2: 2 patients L2W1: 2 patients Other: 7 patients
Initial BMI (V0)	35.6 (range 33-46)

Pending follow-up visits:

1st FU → 38 patients  
2nd FU → 19 patients  
3rd FU → 10 patients

Follow-up visits (FU)

Period between 1st visit and 1FU: 215 days (178 - 262)

51 patients (50%) were visited at 1FU  
Median BMI :34,5 (31,9-37,5)

**15 patients achieved target BMI (14,8%) and surgery was proposed.**

**73 patients cotinued in circuit.**  
**13 patientes: Loss of FU.**

Period between 1FU and 2FU: 153 days (84 - 196)

15 patients (15.8%) needed a 2FU visit

**4 patients (3,9%) reached target BMI at FU2**

**9 patients continued in circuit**  
**2 patients: Loss of FU**

**Total patients reached target BMI: 19 (18.8%)**  
**5 non-responding patients were referred to endocrinology unit and are being treated with Semaglutide or similar.**  
**2 non-responding patients were referred to bariatric surgery unit.**  
**15 patients: Loss of FU**



**Abdominal wall surgery** performed after reaching BMI < 32 : **3 patients**

Conclusions

- In this first analysis we have detected a 18.8% rate of patients reaching the target BMI (< 32) with the incorporation of this obesity prehabilitation program.
- A total of 15 patients (14,9%) have been loss of FU.
- Difficulties that have been identified in the implementation and development of this protocol have been the fulfillment of the appointment plan and the implementation of the derivation of patients by all the involved team. These difficulties are in accordance with the results of studies that have evaluated the difficulties associated with the implementation of prehabilitation programs in abdominal wall surgery(1)
- We consider that this pilot program is feasible and reproducible in similar scenarios that have teams of dietitians in the hospital or affiliated primary care centers.
- A final analysis will be performed when the total follow-up of all included patients is reached.
- In future analysis, the incidence of perioperative complications in those operated after having achieved the target BMI should be assessed.

1. Howard R, Delaney L, Kilbourne AM, Kidwell KM, Smith S, Englesbe M, Dimick J, Telem D. Development and Implementation of Preoperative Optimization for High-Risk Patients With Abdominal Wall Hernia. JAMA Netw Open. 2021 May 3;4(5):e216836.  
Grove TN, Kontovounisios C, Montgomery A, Heniford BT, Windsor ACJ, Warren OJ; AWR Europe Collaborative. Perioperative optimization in complex abdominal wall hernias: Delphi consensus statement. BJS Open. 2021 Sep 6;5(5):zrab082.