BARIATRIC SURGERY IN HEART FAILURE PATIENTS: A FEASIBILITY CASE SERIES STUDY

Intekhab Hossain[1], Simon Laplante[2], Allan Okrainec[1], Satya Dash[3], Juan Duero Posada[3], Yasbanoo Moayedi[3], Vivek Rao[3], Filio Billia[3], Timothy Jackson[1]

BACKGROUND

- Bariatric surgery outcomes in high-risk patients remain poorly understood.
- Obesity is strongly linked to heart failure (HF), with each increase in unit of Body Mass Index (BMI) being associated with increased HF incidence by 5% and 7% for men and women, respectively.
- Patients with end-stage HF and obesity with BMI greater than 35 are precluded from cardiac transplantation.
- This study aims to explore the safety and outcomes of bariatric surgery in HF patients.

METHODS

- This is a retrospective case series review of bariatric surgery on patients with HF at a Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) accredited tertiary care centre between 2021 and 2024.
- Intraoperative complications, length of stay, 30-day and 1-year complications, change in BMI, change in comorbidities, HF function (NYHA, LVEF), and heart transplantation candidacy were assessed.

Patient	Age, Sex	Cardiac disease	Comorbidities	Preop BMI
1	50M	ESHF on LVAD, LVEF20%, NYHAII	Afib, Pulm HTN, HTN, DLD, DM2, Hypothyroid, GERD	41.2
2	57F	ESHF on LVAD, LVEF20%, NYHAIII	HTN, DM2, OA, Hypothyroid, Uterine carcinoma	51.1
3	56F	HFpEF, LVEF50%, NYHAII	HTN, DLD, OSA, Prediabetes, GERD	43.6
4	52M	HFpEF, LVEF67%, NYHAI	HTN, DLD, OSA, GERD	40.1
5	49F	HFpEF, LVEF45%, NYHAII	HTN, DLD, OSA	50.0
6	61M	HFrEF, LVEF25%, NYHAIII	DLD, DM2, OSA	40.4
7	58F	HFrEF, LVEF25%, NYHAIII	Afib, HTN, DLD, DM2, OSA	35.5

Table 1: Baseline patient characteristics

RESULTS

- Seven patients (4 female, median age 56 years, median BMI 41.2kg/m^2) underwent bariatric surgery.
  - 6 laparoscopic sleeve gastrectomy
  - 1 laparoscopic Roux-en-Y gastric bypass
- At last follow-up of median 15 months
  - Median postoperative change in BMI was -7.4kg/m^2
  - Median percent excess weight loss was 48.0%
- Patients' severity of HF was varied
  - n= 3 NYHA III
  - n= 3 NYHA II
  - n= 1 NYHA I
  - Median LVEF 25% (range 20-67%)
- There were no intraoperative complications.
- Median length of stay was 2 days.

Patient	Bariatric Procedure	Length of stay	Postop complications	Last follow-up	Postop BMI (Δ)	%EWL
1	LSG	8d	None	72mo	36.0 (-5.2)	32.1
2	LSG	5d	POD20 transient cecal ischemia	14mo	48.9 (-2.2)	8.4
3	LSG, Repair hiatus hernia	2d	None	12mo	34.1 (-9.5)	51.1
4	LRYGB	1d	None	21mo	25.5 (-14.6)	96.7
5	LSG	1d	None	15mo	36.8 (-13.2)	52.8
6	LSG	2d	POD8mo presyncope, orthostatic hypotension	27mo	33.0 (-7.4)	33.0
7	LSG	2d	None	1mo	32.4 (-3.1)	30.0

Table 2: Outcomes after bariatric surgery

RESULTS CONTINUED

- One patient, a 50-year-old male supported with an LVAD underwent successful cardiac transplantation two years post bariatric surgery.
- Two patients experienced postoperative complications, both secondary to hypovolemia after sleeve gastrectomy.
  - One was a 57-year-old female supported with an LVAD, who presented with localized ascending colon microperforation due to hypovolemia on postoperative day 20 and managed conservatively with intravenous antibiotics. Her BMI remains a contraindication for heart transplantation.
  - Another was a 61-year-old male with HF with reduced ejection fraction, who presented with orthostatic presyncope due to over diuresis eight months postoperatively, and was managed medically.
- Comorbidities improved were HTN (n= 7), DLD (n= 2), & OSA (n= 1).
- Both NYHA classification (n= 2 NYHA III, n= 3 NYHA II, n= 2 NYHA I) and median LVEF 43% (range 20-59%) also improved.

CONCLUSION

- To date, our institutional experience with bariatric surgery in patients with heart failure has been successful.
- In highly selected patients in centres with appropriate multidisciplinary expertise, bariatric surgery may be a useful tool in improving outcomes in patients with HF as well as a potentially effective bridging intervention for cardiac transplantation in patients supported with an LVAD.

All authors have no conflicts of interest or financial ties to disclose.

[1]Division of General Surgery, University Health Network, Department of Surgery, University of Toronto
[2]Division of Metabolic Surgery, Department of Surgery, Mayo Clinic
[3]Peter Munk Cardiac Centre, University Health Network, University of Toronto