Dietitian-led Very Low Calorie Diet (VLCD) Clinic reduces surgical risk for adults with obesity undergoing elective, non-bariatric surgery

A retrospective cohort study of n=141 patients

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BACKGROUND

- **Obesity increases risk of postoperative complications (**excess blood loss, infections, and lengthy hospital stays).
- Adults with obesity are commonly asked to lose weight prior to elective surgery, despite **poor evidence regarding impact of intentional weight loss on surgical risk.**
- **ASA** (American Society of Anaesthesiogists) Physical Status and **NSQIP** (National Surgical Quality Improvement Program) Surgical Risk Calculator are validated tools which are widely used to evaluate 'fitness' for surgery and estimated risk of complications occurring.

Aim: *to measure the impact of the preoperative dietitian-led 'VLCD Clinic' intervention on surgical risk, using validated ASA and NSQIP tools.*

METHODS

- Eligible patients were referred to VLCD Clinic, began treatment, and discharged between November 2019 and July 2022.
- Dietitians prescribed a VLCD (generally 800kcal – 900kcal/day) using meal replacements and allowed foods to meet individual requirements. Participants were monitored at fortnightly appointments up until surgery.
- Primary outcomes: change in **ASA** and **NSQIP** scores from treatment commencement until surgery.
- Descriptive statistics, paired t-tests/Wilcoxon rank were used, with significance at $p<0.05$.

References

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RESULTS

- 141 participants awaiting a range of procedures (Fig 1.), aged 48±13.4yrs, 76%F, BMI 41.7±6.3kg/m^2 were included. Median length of dietitian treatment was 13 weeks (Interquartile Range 6.2-19.2 weeks).
- Mean weight loss was 7.1±6.1kg ($p<0.001$). (Fig. 2).
- Five participants (3.5%) avoided surgery due to weight loss-related symptom improvements.
- There was statistically **significant reduction in all NSQIP estimated risks,** including surgical site infection, re-admission, and cardiac events ($p<0.05$). (Fig 3).
- NSQIP estimated risk of 'serious' and 'any' postoperative complication reduced from 4.8% to 3.9% ($p<0.001$), and 6% to 5.1% ($p<0.001$), respectively.
- **ASA Physical Status scores improved for 16% of participants** (n=22/141) . (Fig. 4)

Fig 1. Surgical groups treated within the VLCD Clinic

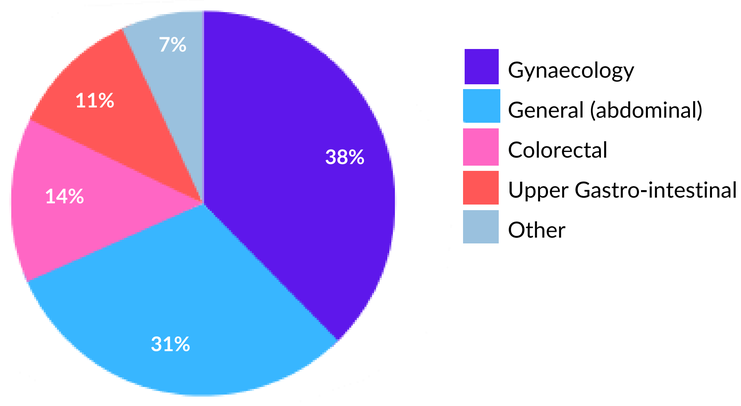


Fig 2. Percentage of participants who lost ≥5% body weight

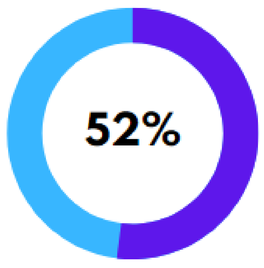


Fig 3. Percentage of participants who reduced risk of surgical complications per NSQIP

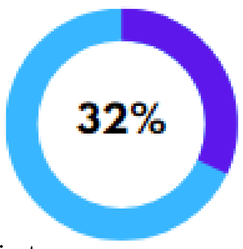
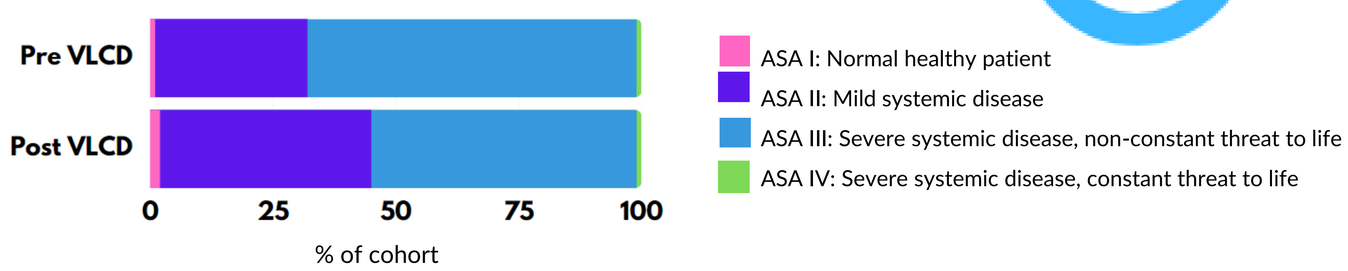


Fig 4. ASA Scores Pre and Post VLCD Clinic treatment (n=141)



CONCLUSION

Preoperative dietitian-led VLCD Clinic elicited clinically significant (≥5%) body weight loss for over half (52%) of participants, resulting in improved ASA physical status and NSQIP risk of complication scores ($p<0.05$), and 3.5% of participants avoiding surgery. Preoperative dietitian-led VLCD Clinics could be considered for adults who require weight loss prior to major elective surgery for the purposes of reducing risk of complications, but more randomised controlled trials are required.