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Endoscopic sleeve gastroplasty for obesity: improved body composition and 1-year follow-up

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Endoscopic Sleeve Gastroplasty (ESG) is an incisionless transoral endoscopic procedure whereby a gastric luminal sleeve is fashioned by application of a series of transmural sutures placed along the greater curvature of the stomach resulting in a reduction in functional gastric volume. The study aimed to report on 12-month outcomes following ESG for weight loss.

We analysed 121 consecutive patients who underwent ESG from October 2016 to January 2018. All procedures were performed using the Apollo OverStitch device (Apollo Endosurgery, Austin, TX). Patient outcomes included Total Body Weight Loss (TBWL), weight circumference reduction (ΔWC), body composition change measured by DXA, and immediate and delayed adverse events.

ESG resulted in 17% TBWL and ΔWC 14.8 cm by 12 months (19.6% TBWL and 17.6 cm ΔWC among patients never had endoscopic bariatric procedure). For 77 patients where DXA body composition data were available, fat mass was reduced amongst all patients whereas fat-free mass was increased amongst 61% of patients. By six months, patients lost 29% of their total body fat mass (12.6 kg absolute loss) and 55% reduction in visceral fat mass (1.1 kg) and there was an average increased lean body mass by 3% (1.3 kg). The Fat Mass vs. Fat-Free Mass ratio dropped from 0.7 (baseline) to 0.5 (6 months). Predictors of poor outcomes include being in the learning curve stage and previous experience with endoscopic bariatric treatment; the predictor of better weight loss outcome was higher frequency of consultation with allied health professionals. There were no major intraprocedural or post-procedural complications. The most commonly reported early adverse symptoms included cramping (50.4%), nausea (28.9%), abdominal pain (22.3%), and vomiting (5.8%).

ESG results in clinically significant weight loss and body composition improvements at 12 months follow-up with low risk of major complications. Its efficacy is enhanced by more intensive adjuvant lifestyle intervention.

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The impact of a one week Be-Fit-Food delivered meal program on body composition and blood glucose in Type 2 Diabetes Mellitus patients: Preliminary data

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Dietary intake is a key contributing factor in weight management and blood glucose control of Type 2 Diabetes Mellitus (DM). There exists evidence that structured dietary restriction interventions are effective in supporting positive body composition changes and improved glucose control in DM patients. The aim of the current study was to determine the impact of a short-term delivered meal program on changes to body composition and markers of glucose control in established DM patients.

Conclusions: One week of BFF resulted in a greater body mass loss than SS. But no difference in body fat mass and markers of visceral fat were observed. One week of BFF resulted in lower daily average, daily peak, post-prandial lunch and post-prandial dinner blood glucose levels. However, no difference in fasting and post-prandial breakfast blood glucose was observed between the two weeks. A significantly lower total daily energy and macronutrient (i.e., carbohydrate and fat) intakes were observed on one week of BFF compared with one week of SS.

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Measurement of visceral adipose tissue by dual energy x-ray absorptiometry compared with magnetic resonance imaging

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Introduction: Visceral adipose tissue (VAT) is a strong predictor of cardiometabolic risk. Magnetic resonance imaging (MRI) is recognised as a valid approach to assess VAT, however cost limits use in clinical settings. Instead, waist circumference (WC) is commonly used as a surrogate measure to assess VAT. Dual energy x-ray absorptiometry (DXA) can now estimate VAT, however its reliability and validity to measure change in VAT over time remains unclear. The aim of this study was to compare the measurement of VAT volume from DXA to MRI.

Methods: 29 participants (26 male) with coronary artery disease (64 ± 8 years BMI 27.8 ± 3.5 kg/m^2) were measured at baseline and following a 12-week exercise program. VAT and abdominal subcutaneous fat (SAT) were measured by a 3 Telsa MRI system. Transverse slice images from diaphragm to pelvis (L5/S1) were used to quantify total volumes by semi-automated specialised software. To measure the reliability of DXA to estimate VAT, two DXA scans were performed at baseline and analysed using intra-class correlation. Validity was assessed by Bland Altman analysis.

Results: The reliability of DXA for VAT estimation was excellent with intra-class correlation of 0.997. There was a strong linear correlation between DXA and MRI for VAT volume at baseline ($r = 0.89$; $p < 0.001$, and change over time ($r = 0.72$; $p < 0.001$). However Bland Altman analysis revealed significant underestimation of VAT volume by DXA at baseline (-749 cm^3 [-1633 cm^3–135 cm^3], $p < 0.001$), and change over time (-176 cm^3 [-555 cm^3–203 cm^3], $p < 0.001$). WC had a strong correlation with VAT volume at baseline ($r = 0.80$; $p < 0.001$) but association to longitudinal change in VAT volume was not as strong ($r = 0.43$; $p = 0.020$). Instead, change in SAT showed a strong correlation with change in WC ($r = 0.81$; $p < 0.001$).

Conclusion: DXA significantly underestimates cross-sectional and longitudinal change in VAT volume compared to MRI. However DXA is more predictive of change in VAT than WC.

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