

CONCLUSION

Metabolic and physiological responses to lifestyle intervention are heterogeneous and not fully captured by changes in body weight alone. The integration of bioimpedance-derived parameters with biochemical markers provides a more comprehensive approach to metabolic risk stratification and may support more personalized clinical management in obesity care.

EP_A071

BEYOND BODY WEIGHT: BODY COMPOSITION AND CELLULAR HEALTH IN A WORKPLACE OBESITY INTERVENTION PROGRAMME

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INTRODUCTION

Obesity is a chronic disease characterized by complex alterations in body composition and metabolic health. Traditional reliance on body weight may overlook important physiological adaptations during lifestyle intervention.

METHODOLOGY

A cohort of 99 participants at programme entry underwent body composition assessment using bioelectrical impedance analysis. Parameters included percent body fat (PBF), visceral fat area (VFA), skeletal muscle index (SMI), and phase angle (PhA). Correlation analyses were performed to explore relationships between adiposity, muscle mass, and cellular health.

RESULTS

Participants demonstrated elevated adiposity (PBF $38.9 \pm 8.9\%$; VFA $142.9 \pm 56.1 \text{ cm}^2$). PhA was inversely associated with VFA ($r \approx -0.23$, $p < 0.05$) and positively associated with SMI ($r \approx 0.49$, $p < 0.001$). Notably, a subset of overweight individuals exhibited relatively preserved PhA, indicating heterogeneity in metabolic health despite similar adiposity levels.

CONCLUSION

Body composition and PhA provide complementary insights into metabolic health beyond body weight. These findings support the role of bioimpedance-derived parameters in identifying metabolic heterogeneity and guiding personalized obesity management.

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BLOOD PRESSURE IMPROVES AFTER BARIATRIC SURGERY ACROSS PATIENT SUBGROUPS

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INTRODUCTION

Hypertension is common in obesity and increases cardiovascular risk. Bariatric surgery improves metabolic health, but subgroup differences in blood pressure response remain unclear. This study examined 1-year changes in systolic blood pressure (SBP) and diastolic blood pressure (DBP) after bariatric surgery across sex, age group, and diabetes status.

METHODOLOGY

This study included 32 obese adults undergoing bariatric surgery, with blood pressure measured at baseline, 6 and 12 months. Generalized estimating equation models were used to evaluate changes in SBP and DBP over time, adjusting for age, sex, surgery type, diabetes category, baseline body mass index, antihypertensive medication use, and baseline blood pressure. Interaction terms were tested to assess differences in blood pressure trajectories across subgroups.

RESULTS

Participants were predominantly female (67.4%), with a mean age of 36.9 ± 6.2 years and a mean body mass index of $40.7 \pm 8.8 \text{ kg/m}^2$. Hypertension and diabetes were present in 40.6 and 31.3% of participants, respectively. There was a significant time effect for both SBP ($p < 0.001$) and DBP ($p = 0.004$). At 12 months post-surgery, mean SBP decreased by 15 mmHg and DBP by 7.9 mmHg compared with baseline (both $p < 0.001$). No significant interactions were observed between time and sex, diabetes category, or age category, indicating that blood pressure improvements were comparable across subgroups.

CONCLUSION

Bariatric surgery was associated with clinically meaningful reductions in both SBP and DBP, with similar improvement patterns observed across demographic and metabolic subgroups. These findings support the effectiveness of bariatric surgery as a strategy for blood pressure reduction and cardiovascular risk management in patients with obesity.

EP_A073

A SINGLE-CENTRE MALAYSIAN COHORT STUDY ON PREDICTORS OF GLYCEMIC IMPROVEMENT 12 MONTHS AFTER BARIATRIC SURGERY

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INTRODUCTION

Bariatric surgery is an established intervention for obesity and its metabolic complications, including diabetes mellitus. However, most studies are from Western populations with limited data in Malaysia. This study evaluated glycemic status improvements and identified predictors of hemoglobin A1c (HbA1c) reduction at 12 months following bariatric surgery to contribute regional data to Southeast Asia.

METHODOLOGY

This retrospective analysis included 110 patients who underwent bariatric surgery between 2015 and 2025. Pre- and post-operative parameters, including HbA1c, body mass index (BMI), and lipid profiles, were collected at 1, 3, 6, 9, and 12 months and evaluated as potential predictors of glycemic status improvement at 12 months. Univariate analysis followed by stepwise multivariate linear regression was performed to identify predictors of HbA1c improvement at 12 months. Regression coefficients (B), 95% confidence intervals, and *p*-values were reported.

RESULTS

The mean age was 40.5 years with a mean baseline BMI of 43.49 kg/m²; 58% were female. At baseline, 60.9% (*n* = 67) had diabetes, 30.9% (*n* = 34) prediabetes, and 8.2% (*n* = 9) normal HbA1c. In univariate analysis, baseline HbA1c (*B* = 0.579, *p* < 0.001), age (*B* = -0.051, *p* = 0.034), and sex (*B* = 1.123, *p* = 0.044) were significantly associated with HbA1c change. In multivariate analysis, the final model identified baseline HbA1c, BMI difference at 12 months, and TG difference at 12 months as independent predictors of HbA1c

change. Baseline HbA1c was the strongest predictor (*B* = 0.857, *p* < 0.001) indicating that higher baseline HbA1c was associated with greater change over time. BMI difference at 12 months was also significantly associated with HbA1c change (*B* = 0.046, *p* = 0.016), indicating that greater weight loss contributed to improved glycemic control. Similarly, TG difference at 12 months was a significant predictor (*B* = 0.337, *p* = 0.023). The model explained 86.8% of the variation in HbA1c change (adjusted *R*² = 0.868).

CONCLUSION

Bariatric surgery resulted in significant weight loss and improvement in glycemic status at 12 months, with baseline HbA1c, BMI differences, and TG reductions emerging as key predictors of glycemic improvement in a Malaysian cohort.

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REAL-WORLD EFFECTIVENESS OF SEMAGLUTIDE IN ADULTS WITH OBESITY AND TYPE 2 DIABETES IN A MALAYSIAN DISTRICT HOSPITAL

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INTRODUCTION

Semaglutide has shown clinically meaningful effects on weight and glycemic control in randomized trials, but real-world evidence from Malaysian public healthcare settings remains limited. Local data are particularly relevant because access to glucagon-like peptide-1 receptor agonists may be influenced by cost and availability. We evaluated the real-world effectiveness of once-weekly semaglutide in adults with obesity and type 2 diabetes mellitus (T2DM) managed in routine clinical practice at a Malaysian district hospital.

METHODOLOGY

We conducted a retrospective observational study of adults with obesity and T2DM treated with once-weekly semaglutide at a single district hospital. Demographic, anthropometric, metabolic, and cardiovascular parameters were collected at baseline and follow-up. The primary outcomes were percentage weight change and the proportions of patients achieving at least 5% and at least 10% weight loss. Secondary outcomes included changes in body mass index (BMI), glycated hemoglobin A1c (HbA1c), blood pressure, lipid parameters, and insulin requirements. Paired analyses were performed to compare pre-treatment and post-treatment values.