



Adis Summary of Research: The effects of bariatric surgery on the requirement for antihypertensive treatment in type 2 diabetes: insights from a long-term follow-up study

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Abstract

Bariatric surgery is effective in treating obesity and also reduces hyperglycaemia and blood pressure (BP). However, data on its long-term effects on BP remain limited. This Adis Summary of Research reports the findings from a retrospective cohort study assessing the long-term impact of bariatric surgery on BP management in patients with comorbid type 2 diabetes mellitus (T2DM).

This Adis Summary of Research summarizes findings from a retrospective cohort study evaluating the impact of bariatric surgery on BP management over a 10-year follow-up [1].

Background

- Obesity is causally linked with cardiovascular risk factors, including T2DM, hypertension and dyslipidaemia.
- Beyond weight loss, bariatric surgery improves these risk factors and reduces related medication use.
- Bariatric surgery's effects on weight loss and T2DM remission are well reported, but data on its long-term impact on hypertension remain limited.

Study Objective

To retrospectively assess the impact of bariatric surgery on the prescription of antihypertensive agents, as well as on body mass index (BMI) and glycated haemoglobin (HbA1c), over a 10-year follow-up period.

Methods

- *Study population:* 119 adults (aged > 18 years) who underwent bariatric surgery between 1 January 2009 and 31 December 2012 at Salford Royal NHS Foundation Trust, England.
- *Data collection:* Electronic patient records were reviewed (median follow-up 11.5 years) for clinical parameters, including BMI, systolic blood pressure (SBP), diastolic blood pressure (DBP), HbA1c, and the number and type of prescribed antihypertensive agents.
- *Primary outcome:* Rate of prescription of antihypertensive agents over time.
- *Baseline characteristics:* Mean age 51.8 years; 60% female; mean BMI 50.7 kg/m²; 31% normotensive; 69% hypertensive (defined as SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg and/or use of ≥ 1 antihypertensive agent).

Results

- The number of patients prescribed ≥ 1 antihypertensive agent declined for up to 5 years post-surgery, then increased again (Fig. 1). This pattern was driven by a subgroup of patients who were receiving 2–3 antihypertensive agents (Table 1).
- In the hypertensive cohort, a significant and sustained reduction in SBP and DBP was observed for up to 10 years post-surgery, with approximately half of patients remaining in hypertension remission (Table 1).

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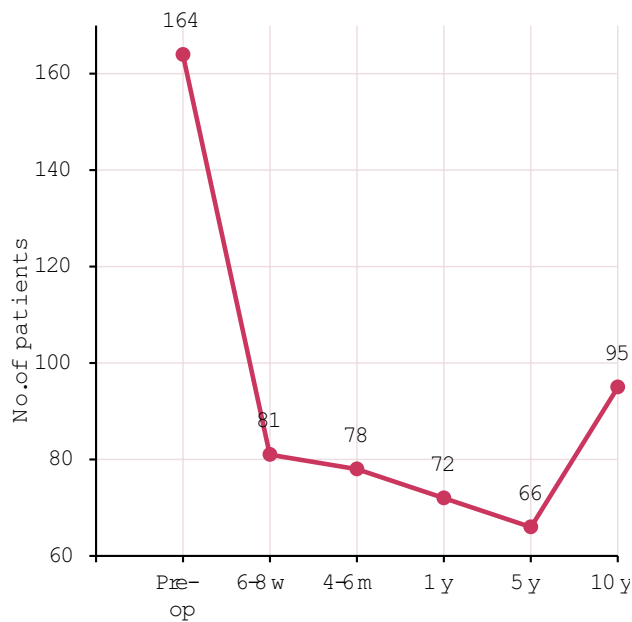


Fig. 1 Number of ≥ 1 antihypertensive prescriptions pre- and post-bariatric surgery in the overall study population ($n = 119$). *m* months, *pre-op* pre-bariatric surgery, *w* weeks, *y* year(s)

- Both BMI and HbA1c decreased significantly over the first year post-operatively, then increased again at 5 years (Table 1).

Other comments

- Strengths:** long follow-up period; real-world, representative bariatric surgery cohort.
- Limitations:** retrospective single-centre design; bias from sequential recruitment; no control of baseline antihypertensive medication number; no data on cardiac structure, function or cardiography; no outcome comparison by bariatric surgery type due to small sample sizes.

Study Conclusion

Bariatric surgery reduces BP and antihypertensive use for up to 5 years. Beyond this point, benefits decline, accompanied by increases in BMI, HbA1c and antihypertensive medication use.

Table 1 Outcomes in the hypertensive cohort ($n = 79$) pre- and post-bariatric surgery

	Pre-op	6 m	1 y	5 y	LFU
Hypertension outcomes					
Remission ^a (% of pts)	-	46	49	37	49*
SBP (mmHg)	154.5	136.3	133.9	134.5	132.8*
DBP (mmHg)	90.7	83.3	80.4	79.7	79.0*
2–3 AH (no. of pts)	27	18	13	9	16
BMI (kg/m ²)	50.8	41.0	35.9*	37.7	-
HbA1c (mmol/mol)	66.0	43.8	41.6*	45.1	47.5

Data are mean values

AH antihypertensives, BMI body mass index, DBP diastolic blood pressure, HbA1c glycated haemoglobin, LFU last follow-up (≈ 10 y after surgery), pts patients, SBP systolic blood pressure

* $p < 0.0001$ vs pre-op

^a SBP ≤ 140 mmHg and/or DBP ≤ 90 mmHg

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Declarations

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Ethics approval, Consent to participate, Consent to publish, Availability of data and material, Code availability Not applicable.

Reference

- Heald A, Mannan F, Wiltshire R, et al. The effects of bariatric surgery on the requirement for antihypertensive treatment in type 2 diabetes: insights from a long-term follow-up study. *Diabetes Ther.* 2024;15(9):2097–107.