Hypertension improves after bariatric surgery despite the severity of preoperative hypertension

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Background

- Bariatric surgery in the setting of severe obesity refractory to medical interventions is associated with improvement in multiple comorbidities, including hypertension.[1]
- The link between obesity and hypertension has been well-established, and likewise the resulting improvement of hypertension after bariatric surgery.[1]
- **However, some insurance policies stipulate that patients with Class II obesity (BMI 35-39.9) are unable to use hypertension as a qualifying comorbidity** unless they are on at least two to three medications.[2]
- There are a paucity of studies that look at outcomes of hypertension after bariatric surgery stratified by the number of preoperative anti-hypertensive medications. This study investigates the correlation between hypertension severity and improvement of hypertension after bariatric surgery.

Methods

All adult patients with bariatric consultation at any time at the New York University Langone Health campuses during the period 2012 to 2021 were evaluated via electronic medical records.

- **Inclusion Criteria**: patients with hypertension on anti-hypertensive medications preoperatively who underwent primary bariatric surgery were included.
- **Exclusion Criteria**: patients with hypertension but not on medications, undergoing revision surgery, or incomplete data/follow-up were excluded.
- Patients were categorized into 3 groups:
  - On one anti-hypertensive medication (Group 1)
  - On two medications (Group 2)
  - On three or more medications (Group 3).
- A Chi-square test was performed on the difference in number of anti-hypertensive medications taken at 12-months post-bariatric surgery.

Results

- Of the 267 patients with documented hypertension . . .
  - 65 (24.34%) patients took at least 3 anti-hypertensive medications
  - 85 (31.84%) patients took 2 medications
  - 117 (43.82%) patients took 1 medication.
- There was a significant difference in the improvement of hypertension in all three groups of patients (p<0.001, Figure 1).

Figure 1. Improvement in Hypertension at 1 year Post-Op

# Pre-Op meds	N	Remission	Improvement	No Change	Worsen
3+	65	19 (29.23%)	32 (49.23%)	12 (18.46%)	2 (3.08%)
2	85	26 (30.59%)	21 (24.71%)	31 (36.47%)	7 (8.24%)
1	117	53 (45.30%)	N/A	50 (42.74%)	14 (11.97%)
Total	267	98 (36.70%)	53 (19.85%)	93 (34.83%)	23 (8.61%)
				X2	67.729
				P-Value	<0.001

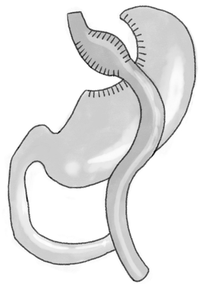
- At one-year follow-up from bariatric surgery . . .
  - the number of anti-hypertensive medications taken by all three groups of patients decreased significantly (p<0.001, Figure 2).

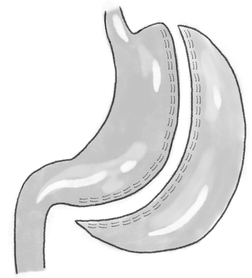
Figure 2. Change in number of medications taken 1 year Post-Op

# Pre-Op meds	N	Mean	Std. Err	t stat	P-Value
3+	65	-1.723	0.160	-10.743	<0.001
2	85	-0.776	0.106	-7.297	<0.001
1	117	-0.324	0.065	-4.971	<0.001

Discussion

- In our study, we found that. . .
  - 56.55% of patients experience resolution or improvement of their hypertension.
  - 45.30% of patients who took 1 anti-hypertensive medication preoperatively experienced resolution of their hypertension at 1-year follow-up.
- Our findings suggest that . . .
  - All patients with Class II obesity (BMI 35-39.9) and hypertension will benefit from bariatric surgery regardless of the severity of their disease.
- We therefore argue that . . .
  - **Limitations imposed by insurance companies to bariatric surgery on the basis of hypertension severity and on sheer number of anti-hypertensive medications should be reconsidered.**





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Disclosures

The authors declare that they have no relevant or material financial interests that relate to the research described in this poster