

The Effect of Bariatric Surgery on T2DM and HTN in Korean patients with Obesity

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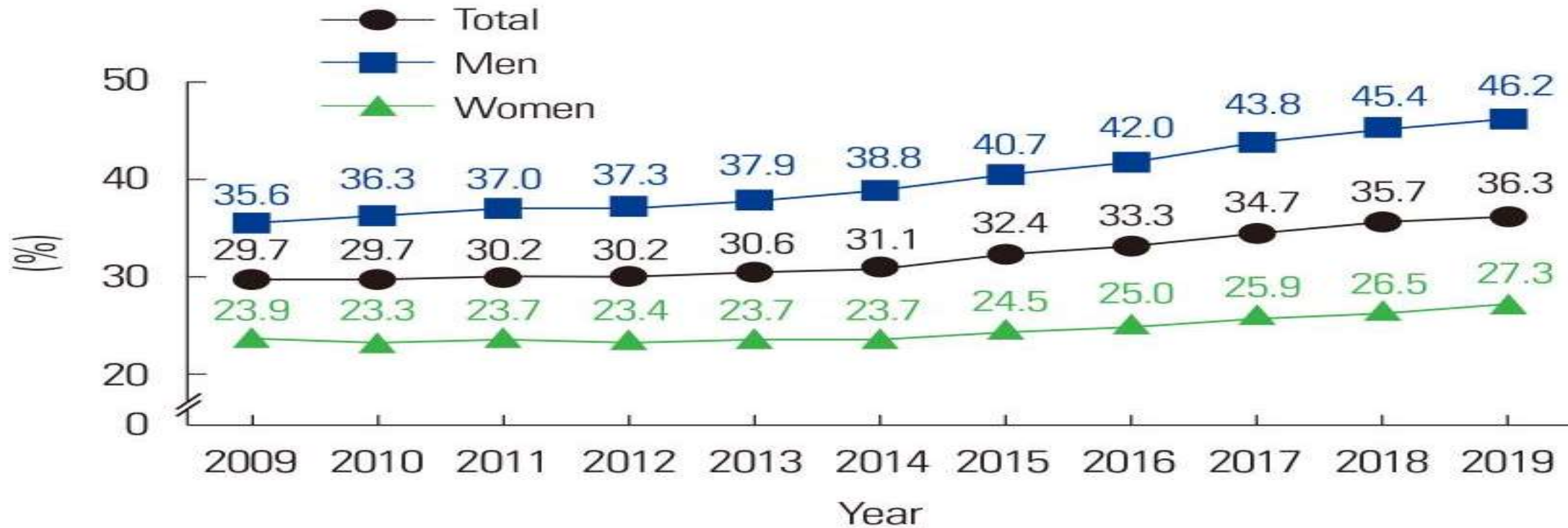
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NO CONFLICT OF INTEREST



Prevalence of Obesity in Korea



J Obes Metab Syndr 2022;31(2):169-177

Prevalence of Diabetes in Korea 2021

Prevalence



1 in 6

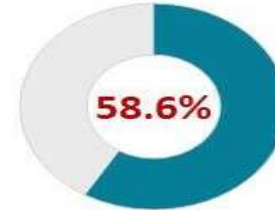
15.8 million
Korean adults* have
prediabetes and are at
risk of developing
diabetes.

6 million
adults* are living with
diabetes in Korea.

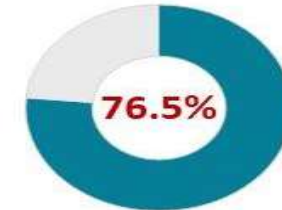


*Aged ≥30 years

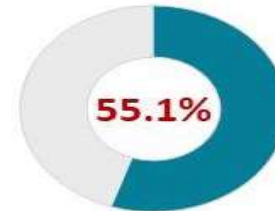
Risk factors and comorbidities



Hypertension



Hyper-LDL-cholesterolemia



Obesity

Only 9.7% of adults
with diabetes
achieved all glycemic,
blood pressure, and
lipid controls.

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Objectives

- To evaluate the clinical outcomes of bariatric surgery on chronic metabolic diseases, especially focusing on the improvement of diabetes, hypertension and dyslipidemia in Korean patients.



Methods

- Data was collected retrospectively on patients underwent bariatric surgery between 2007 and 2021.
- An online questionnaire survey was also conducted to follow up the efficacy of bariatric surgery for chronic metabolic diseases.
- A total of 270 patients responded to the online questionnaire survey.



Baseline Characteristics

	Total	short term (<2yr)	middle term (2yr-5yr)	long term (5yr≤)	<i>p</i> -value
	N = 270	N = 64	N = 141	N = 65	
Sex, male, n(%)	40 (14.81%)	9 (14.06%)	22 (15.60%)	9 (13.85%)	0.929
Age (year)	35.50 ± 8.01	37.234 ± 8.44	36.000 ± 7.70	32.692 ± 7.63	0.002
Weight (kg)	101.84 ± 16.68	98.952 ± 16.75	102.926 ± 17.24	102.343 ± 15.22	0.153
Height (m)	1.65 ± 0.08	1.644 ± 0.08	1.649 ± 0.08	1.650 ± 0.08	0.709
BMI (kg/m²)	37.40 ± 4.75	36.520 ± 4.76	37.736 ± 4.86	37.527 ± 4.43	0.204

Baseline Characteristics ; Bariatric Surgical Methods

	Total	short term (<2yr)	middle term (2yr-5yr)	long term (5yr≤)	p-value
	N = 270	N = 64	N = 141	N = 65	
Primary Sleeve	232 (85.93%)	63 (98.44%)	114 (80.85%)	55 (84.62%)	0.002
Primary Bypass	16 (5.39%)	0 (0.00%)	14 (9.93%)	2 (3.08%)	
Revision Sleeve	13 (4.81%)	0 (0.00%)	7 (4.96%)	6 (9.23%)	
Revision Bypass (Primary Band)	6 (2.22%)	1 (1.56%)	5 (3.55%)	0 (0.00%)	
Revision Bypass (Primary Sleeve)	1 (0.37%)	0 (0.00%)	0 (0.00%)	1 (1.54%)	
Revision Bypass (Primary Bypass)	2 (0.74%)	0 (0.00%)	1 (0.71%)	1 (1.54%)	

Clinical Outcomes ; Bariatric Outcomes

	Total	short term (<2yr)	middle term (2yr-5yr)	long term (5yr≤)	<i>p</i> -value
	N = 270	N = 64	N = 141	N = 65	
% EBMI(%)	80.85 ± 29.13	87.276 ± 26.21	79.660 ± 31.66	77.115 ± 25.25	0.241
% TWL(%)	29.46 ± 9.31	30.341 ± 7.67	29.347 ± 9.92	28.834 ± 9.46	0.596
Δ BMI (kg/m²)	-11.16 ± 4.18	-11.254 ± 3.50	-11.201 ± 4.45	-10.990 ± 4.22	0.927
Δ weight (kg)	-30.31 ± 11.64	-30.238 ± 9.54	-30.588 ± 12.64	-29.789 ± 11.39	0.9

Clinical Outcomes ; Bariatric Outcomes

	% TWL		Δ BMI	
	β (SE)	p-value	β (SE)	p-value
	0(ref.)		0(ref.)	
Sex, male (reference:female)	-1.71(1.59)	0.285	0.76(0.72)	0.286
Age (year)	-0.29(0.07)	<0.001	0.13(0.03)	<0.001
BMI (kg/m²)	0.59(0.11)	<0.001	-0.52(0.04)	<0.001
Diabetes mellitus	-2.50(1.27)	0.05	0.66(0.57)	0.246
Hypertension	-0.11(1.14)	0.926	-0.76(0.51)	0.135
Hyperlipidemia	-0.61(1.17)	0.604	0.05(0.53)	0.918

* Multiple regression analysis, univariate model

Clinical Outcomes ; Metabolic Outcomes

	Total	short term (<2yr)	middle term (2yr-5yr)	long term (5yr≤)	p-value
	N = 270	N = 64	N = 141	N = 65	
Preoperative Diabetes mellitus	67 (24.81%)	17	38	12	<0.001
Worsened, n(%)	2 (2.99%)	0 (0.00%)	0 (0.00%)	2 (16.67%)	
No change, n(%)	4 (5.97%)	1 (5.88%)	3 (7.89%)	0 (0.00%)	
Improved, n(%)	61 (91.04%)	16 (94.12%)	35 (92.11%)	10 (83.33%)	
Preoperative Hypertension	125 (46.30%)	29	68	28	<0.001
Worsened, n(%)	4 (3.20%)	1 (3.45%)	0 (0.00%)	3 (10.71%)	
No change, n(%)	15 (12.00%)	3 (10.34%)	7 (10.29%)	5 (17.86%)	
Improved, n(%)	106 (84.80%)	25 (86.21%)	61 (89.71%)	20 (71.43%)	
Preoperative Hyperlipidemia	134(49.63%)				<0.001
Worsened, n(%)	6 (4.48%)	1 (3.03%)	0 (0.00%)	5 (19.23%)	
No change, n(%)	27 (20.15%)	7 (21.21%)	14 (18.67%)	6 (23.08%)	
Improved, n(%)	101 (75.37%)	25 (75.76%)	61 (81.33%)	15 (57.69%)	

Conclusions

- It suggests good remission of type 2 diabetes, hypertension and dyslipidemia with improvement of obesity in bariatric surgical patients.
- And the effect of bariatric surgery on chronic metabolic disease was maintained over time.
- However, these results cannot fully explain the changes in comorbidity, additional large-scale studies should be followed.



Thank you for your attention.

