

Table SI. Baseline treatment in patients with moderate to severe psoriasis before undergoing bariatric surgery (surgery group), and matched patients not undergoing bariatric surgery (control group)

Treatment	Surgery group <i>n</i> = 50 <i>n</i> (%)	Control group <i>n</i> = 91 <i>n</i> (%)
Acitretin	1 (2)	2 (2.2)
Adalimumab	13 (26)	15 (16.5)
Apremilast	0 (0)	1 (1.1)
Ciclosporin	2 (4.0)	1 (1.1)
Efalizumab	0 (0.0)	1 (1.1)
Etanercept	6 (12.0)	8 (8.8)
Infliximab	3 (6.0)	4 (4.4)
Methotrexate	23 (46.0)	50 (54.9)
Secukinumab	2 (4.0)	0 (0)
Ustekinumab	3 (6.0)	7 (7.7)

Table SII. Differences in mean changes in Psoriasis Area Severity Index (PASI) and Dermatology Life Quality Index (DLQI) during follow-up between the surgery and control groups

Parameters	Model 1		Model 2		Model 3	
	Mean difference (SE)	p-value	Mean difference (SE)	p-value	Mean difference (SE)	p-value
ΔPASI at >0 but <1 years	1.6 (1.2)	0.19	1.4 (1.1)	0.24	2.0 (1.5)	0.19
ΔPASI at ≥1 but ≤2 years	-0.5 (0.7)	0.47	-1.4 (1.0)	0.20	-1.2 (1.2)	0.43
ΔDLQI at >0 but <1 years	0.2 (1.2)	0.87	-0.3 (1.5)	0.85	0.2 (1.9)	0.92
ΔDLQI at ≥1 but ≤2 years	-1.4 (1.0)	0.20	-2.0 (1.4)	0.16	-2.2 (2.1)	0.34

Model 1: Adjusted for baseline values of PASI and DLQI, respectively. Model 2: Additionally adjusted for baseline body mass index. Model 3: Additionally adjusted for smoking, alcohol consumption amount, alcohol consumption frequency, heredity, psoriasis subtype, baseline treatment, psoriatic arthritis. SE: standard error; ΔDLQI: change in DLQI; ΔPASI: change in PASI.

Table SIV. Differences in mean changes in Psoriasis Area Severity Index (PASI) and Dermatology Life Quality Index (DLQI) during follow-up between patients with plaque psoriasis who underwent bariatric surgery and non-operated patients with plaque psoriasis

Parameters	Model 1		Model 2		Model 3	
	Mean difference (SE)	p-value	Mean difference (SE)	p-value	Mean difference (SE)	p-value
ΔPASI at >0 but <1 years	0.4 (1.6)	0.81	0.3 (1.6)	0.84	1.1 (2.2)	0.61
ΔPASI at ≥1 but ≤2 years	-0.8 (0.7)	0.26	-1.3 (1.0)	0.23	-1.0 (2.4)	0.68
ΔDLQI at >0 but <1 years	-0.3 (1.4)	0.85	-1.6 (1.5)	0.31	-0.4 (2.0)	0.86
ΔDLQI at ≥1 but ≤2 years	-0.3 (1.1)	0.80	-0.5 (1.9)	0.81	0.3 (5.6)	0.96

Model 1: Adjusted for baseline values of PASI and DLQI, respectively. Model 2: Additionally adjusted for baseline body mass index (BMI). Model 3: Additionally adjusted for smoking, alcohol consumption amount, alcohol consumption frequency, heredity, psoriasis subtype, baseline treatment, psoriatic arthritis. SE: standard error; ΔDLQI: change in DLQI; ΔPASI: change in PASI.

Table SV. Differences in mean changes in Psoriasis Area Severity Index (PASI) and Dermatology Life Quality Index (DLQI) during follow-up between individuals with psoriasis of all types, operated with Roux-en-Y gastric bypass (RYGB), and non-operated matched individuals; and individuals with plaque psoriasis, operated with RYGB, and non-operated matched individuals

Parameters	Model 1		Model 2		Model 3	
	Mean difference (SE)	p-value	Mean difference (SE)	p-value	Mean difference (SE)	p-value
<i>Psoriasis of all types</i>						
ΔPASI at >0 but <1 years	1.4 (1.5)	0.37	1.0 (1.5)	0.49	2.3 (2.0)	0.26
ΔPASI at ≥1 but ≤2 years	-0.9 (0.8)	0.29	-1.4 (1.2)	0.27	-1.1 (1.8)	0.54
ΔDLQI at >0 but <1 years	0.5 (1.4)	0.73	-0.3 (1.8)	0.89	0.3 (2.2)	0.89
ΔDLQI at ≥1 but ≤2 years	-1.9 (1.2)	0.14	-2.3 (1.6)	0.19	-2.4 (2.3)	0.32
<i>Plaque psoriasis</i>						
ΔPASI at >0 but <1 years	0.6 (1.8)	0.75	0.1 (1.9)	0.96	1.4 (2.6)	0.61
ΔPASI at ≥1 but ≤2 years	-1.1 (0.8)	0.21	-1.8 (1.3)	0.20	-1.8 (2.5)	0.50
ΔDLQI at >0 but <1 years	0.1 (1.6)	0.96	-1.8 (1.9)	0.36	-0.3 (2.2)	0.89
ΔDLQI at ≥1 but ≤2 years	-0.6 (1.3)	0.68	-0.7 (2.2)	0.77	-0.4 (2.5)	0.89

Model 1: Adjusted for baseline values of PASI and DLQI, respectively. Model 2: Additionally adjusted for baseline body mass index (BMI). Model 3: Additionally adjusted for smoking, alcohol consumption amount, alcohol consumption frequency, heredity, psoriasis subtype, baseline treatment, psoriatic arthritis. SE: standard error; ΔDLQI: change in DLQI; ΔPASI: change in PASI.

Table SVI. Baseline and follow-up data on obese patients with moderate to severe psoriasis who underwent bariatric surgery and patients with matching body mass index (BMI) (±2 units) and moderate to severe psoriasis who did not have surgery

	Surgery group (matched BMI)					Control group (matched BMI)						
	Baseline	n	Follow-up >0 but ≤1 years	n	Follow-up ≥1 but ≤2 years	n	Baseline	n	Follow-up >0 but ≤1 years	n	Follow-up ≥1 but ≤2 years	n
BMI, kg/m ² , median (IQR)	34.4 (32.0–36.4)	15	26.5 (25.0–33.7)	11	26.0 (25.8–29.1)	5	34.6 (32.8–38.0)	17	34.6 (31.8–38.2)	15	35.0 (32.8–41.0)	11
Weight, kg, median (IQR)	100.0 (95.0–112.0)	15	82.0 (73.0–100.0)	11	80.0 (76.0–84.0)	5	98.6 (96.0–101.0)	17	100.0 (96.7–108.0)	15	98.0 (91.0–105.0)	11
PASI, median (IQR)	2.7 (1.2–7.3)	14	6.0 (2.4–8.4)	11	3.8 (1.2–6.4)	5	4.8 (1.5–8.5)	17	2.4 (0.4–6.0)	13	2.2 (1.2–4.6)	10
DLQI, median (IQR)	1.0 (0.0–14.0)	15	4.0 (2.0–18.0)	9	2.0 (1.0–6.0)	4	6.0 (2.0–9.0)	17	3.0 (1.0–13.0)	15	2.0 (0.0–8.0)	11
Pso treatment, n (%)		15		15		15		17		17		17
No treatment	3 (20.0)		5 (33.3)		11 (73.3)		1 (5.9)		2 (11.8)		6 (35.3)	
Non-biologic systemic	5 (33.3)		7 (46.7)		3 (20.0)		10 (58.8)		10 (58.8)		4 (23.5)	
Biologic systemic	7 (46.7)		3 (20.0)		1 (6.7)		6 (35.3)		5 (29.4)		7 (41.2)	
PsoA, n (%)		15		11		5		17		15		11
Ongoing	7 (46.7)		4 (36.4)		1 (20.0)		3 (17.6)		3 (20.0)		1 (9.1)	
Previous	1 (6.7)		1 (9.1)		1 (20.0)		0 (0)		1 (6.7)		1 (9.1)	
No	6 (40.0)		4 (36.4)		2 (40.0)		6 (35.3)		5 (33.3)		4 (36.4)	
Unknown	1 (6.7)		2 (18.2)		1 (20.0)		8 (47.1)		6 (40.0)		5 (45.5)	

IQR: interquartile range; DLQI: Dermatology Life Quality Index; PASI: Psoriasis Area Severity Index; Pso: psoriasis; PsoA: psoriatic arthritis. n denotes 100% of participants in each category.

Table SIII. Baseline and follow-up data on obese patients with moderate to severe plaque psoriasis who underwent bariatric surgery and matched patients without history of bariatric surgery

	Surgery group with plaque psoriasis						Control group with plaque psoriasis					
	Baseline	<i>n</i>	Follow-up >0 but ≤ 1 years	<i>n</i>	Follow-up ≥ 1 but ≤ 2 years	<i>n</i>	Baseline	<i>n</i>	Follow-up >0 but ≤ 1 years	<i>n</i>	Follow-up ≥ 1 but ≤ 2 years	<i>n</i>
Body mass index, kg/m ² , median (IQR)	38.9 (35.8–42.1)	34	31.4 (26.9–33.3)	26	29.0 (26.0–32.9)	22	32.5 (31.2–35.6)	60	32.6 (30.9–35.1)	55	33.6 (30.9–37.3)	32
Weight, kg, median (IQR)	118.3 (105.0–134.5)	36	89.4 (82.0–103.0)	26	86.5 (77.0–105.3)	22	100.0 (94.5–109.0)	60	102.0 (94.0–108.0)	55	98.8 (86.6–109.5)	32
PASI, median (IQR)	4.5 (2.1–8.3)	36	4.9 (2.5–7.8)	25	1.8 (0.6–4.4)	22	5.1 (2.3–9.4)	60	3.0 (1.8–7.1)	52	3.0 (1.2–5.6)	31
DLQI, median (IQR)	1.0 (0.0–4.5)	36	2.0 (0.0–4.0)	23	2.0 (1.0–3.0)	21	3.5 (1.0–11.0)	58	2.0 (0.0–9.0)	55	2.0 (0.0–5.0)	31
Pso treatment, <i>n</i> (%)		36		36		36		60		60		60
No treatment	2 (5.6)		11 (30.6)		16 (44.4)		8 (13.3)		9 (15.0)		30 (50.0)	
Non-biologic systemic	19 (52.8)		17 (47.2)		12 (33.3)		34 (56.7)		31 (51.7)		11 (18.3)	
Biologic systemic	15 (41.7)		8 (22.2)		8 (22.2)		18 (30.0)		20 (33.3)		19 (31.7)	
PsoA, <i>n</i> (%)		36		26		22		60		55		32
Ongoing	12 (33.3)		9 (34.6)		4 (18.2)		15 (25.0)		14 (25.5)		11 (34.4)	
Previous	5 (13.9)		4 (15.4)		4 (18.2)		3 (5.0)		2 (3.6)		1 (3.1)	
No	15 (41.7)		10 (38.5)		12 (54.5)		29 (48.3)		29 (52.7)		14 (43.8)	
Unknown	4 (11.1)		3 (11.5)		2 (9.1)		13 (21.7)		10 (18.2)		6 (18.8)	

n denotes 100% of participants in each category.

IQR: interquartile ranges; DLQI: Dermatology Life Quality Index; PASI: Psoriasis Area Severity Index; Pso: psoriasis; PsoA: psoriatic arthritis.

Table SIV. Differences in mean changes in Psoriasis Area Severity Index (PASI) and Dermatology Life Quality Index (DLQI) during follow-up between patients with plaque psoriasis who underwent bariatric surgery and non-operated patients with plaque psoriasis

Parameters	Model 1		Model 2		Model 3	
	Mean difference (SE)	p-value	Mean difference (SE)	p-value	Mean difference (SE)	p-value
ΔPASI at >0 but <1 years	0.4 (1.6)	0.81	0.3 (1.6)	0.84	1.1 (2.2)	0.61
ΔPASI at ≥1 but ≤2 years	-0.8 (0.7)	0.26	-1.3 (1.0)	0.23	-1.0 (2.4)	0.68
ΔDLQI at >0 but <1 years	-0.3 (1.4)	0.85	-1.6 (1.5)	0.31	-0.4 (2.0)	0.86
ΔDLQI at ≥1 but ≤2 years	-0.3 (1.1)	0.80	-0.5 (1.9)	0.81	0.3 (5.6)	0.96

Model 1: Adjusted for baseline values of PASI and DLQI, respectively. Model 2: Additionally adjusted for baseline body mass index (BMI). Model 3: Additionally adjusted for smoking, alcohol consumption amount, alcohol consumption frequency, heredity, psoriasis subtype, baseline treatment, psoriatic arthritis. SE: standard error; ΔDLQI: change in DLQI; ΔPASI: change in PASI.

Table SV. Differences in mean changes in Psoriasis Area Severity Index (PASI) and Dermatology Life Quality Index (DLQI) during follow-up between individuals with psoriasis of all types, operated with Roux-en-Y gastric bypass (RYGB), and non-operated matched individuals; and individuals with plaque psoriasis, operated with RYGB, and non-operated matched individuals

Parameters	Model 1		Model 2		Model 3	
	Mean difference (SE)	p-value	Mean difference (SE)	p-value	Mean difference (SE)	p-value
<i>Psoriasis of all types</i>						
ΔPASI at > 0 but < 1 years	1.4 (1.5)	0.37	1.0 (1.5)	0.49	2.3 (2.0)	0.26
ΔPASI at ≥ 1 but ≤ 2 years	-0.9 (0.8)	0.29	-1.4 (1.2)	0.27	-1.1 (1.8)	0.54
ΔDLQI at > 0 but < 1 years	0.5 (1.4)	0.73	-0.3 (1.8)	0.89	0.3 (2.2)	0.89
ΔDLQI at ≥ 1 but ≤ 2 years	-1.9 (1.2)	0.14	-2.3 (1.6)	0.19	-2.4 (2.3)	0.32
<i>Plaque psoriasis</i>						
ΔPASI at > 0 but < 1 years	0.6 (1.8)	0.75	0.1 (1.9)	0.96	1.4 (2.6)	0.61
ΔPASI at ≥ 1 but ≤ 2 years	-1.1 (0.8)	0.21	-1.8 (1.3)	0.20	-1.8 (2.5)	0.50
ΔDLQI at > 0 but < 1 years	0.1 (1.6)	0.96	-1.8 (1.9)	0.36	-0.3 (2.2)	0.89
ΔDLQI at ≥ 1 but ≤ 2 years	-0.6 (1.3)	0.68	-0.7 (2.2)	0.77	-0.4 (2.5)	0.89

Model 1: Adjusted for baseline values of PASI and DLQI, respectively. Model 2: Additionally adjusted for baseline body mass index (BMI). Model 3: Additionally adjusted for smoking, alcohol consumption amount, alcohol consumption frequency, heredity, psoriasis subtype, baseline treatment, psoriatic arthritis. SE: standard error; ΔDLQI: change in DLQI; ΔPASI: change in PASI.

Table SVI. Baseline and follow-up data on obese patients with moderate to severe psoriasis who underwent bariatric surgery and patients with matching body mass index (BMI) (± 2 units) and moderate to severe psoriasis who did not have surgery

	Surgery group (matched BMI)						Control group (matched BMI)					
	Baseline	<i>n</i>	Follow-up > 0 but ≤ 1 years	<i>n</i>	Follow-up ≥ 1 but ≤ 2 years	<i>n</i>	Baseline	<i>n</i>	Follow-up > 0 but ≤ 1 years	<i>n</i>	Follow-up ≥ 1 but ≤ 2 years	<i>n</i>
BMI, kg/m ² , median (IQR)	34.4 (32.0–36.4)	15	26.5 (25.0–33.7)	11	26.0 (25.8–29.1)	5	34.6 (32.8–38.0)	17	34.6 (31.8–38.2)	15	35.0 (32.8–41.0)	11
Weight, kg, median (IQR)	100.0 (95.0–112.0)	15	82.0 (73.0–100.0)	11	80.0 (76.0–84.0)	5	98.6 (96.0–101.0)	17	100.0 (96.7–108.0)	15	98.0 (91.0–105.0)	11
PASI, median (IQR)	2.7 (1.2–7.3)	14	6.0 (2.4–8.4)	11	3.8 (1.2–6.4)	5	4.8 (1.5–8.5)	17	2.4 (0.4–6.0)	13	2.2 (1.2–4.6)	10
DLQI, median (IQR)	1.0 (0.0–14.0)	15	4.0 (2.0–18.0)	9	2.0 (1.0–6.0)	4	6.0 (2.0–9.0)	17	3.0 (1.0–13.0)	15	2.0 (0.0–8.0)	11
Pso treatment, <i>n</i> (%)		15		15		15		17		17		17
No treatment	3 (20.0)		5 (33.3)		11 (73.3)		1 (5.9)		2 (11.8)		6 (35.3)	
Non-biologic systemic	5 (33.3)		7 (46.7)		3 (20.0)		10 (58.8)		10 (58.8)		4 (23.5)	
Biologic systemic	7 (46.7)		3 (20.0)		1 (6.7)		6 (35.3)		5 (29.4)		7 (41.2)	
PsoA, <i>n</i> (%)		15		11		5		17		15		11
Ongoing	7 (46.7)		4 (36.4)		1 (20.0)		3 (17.6)		3 (20.0)		1 (9.1)	
Previous	1 (6.7)		1 (9.1)		1 (20.0)		0 (0)		1 (6.7)		1 (9.1)	
No	6 (40.0)		4 (36.4)		2 (40.0)		6 (35.3)		5 (33.3)		4 (36.4)	
Unknown	1 (6.7)		2 (18.2)		1 (20.0)		8 (47.1)		6 (40.0)		5 (45.5)	

IQR: interquartile range; DLQI: Dermatology Life Quality Index; PASI: Psoriasis Area Severity Index; Pso: psoriasis; PsoA: psoriatic arthritis. *n* denotes 100% of participants in each category.