J Metab Bariatr Surg. 2025 Dec;14(3):174-192
https://doi.org/10.17476/jmbs.2025.14.3.174
pISSN 2287-2930·eISSN 2508-5956

Journal of Metabolic and Bariatric Surgery JMBS

Review Article

Check for updates

One Anastomosis Gastric Bypass in Patients With a BMI ≥50 kg/m²: A Systematic Review and Single-Arm Meta-Analysis of Outcomes

Mostafa Mohammed Saad Mahran,[1] Neha Patel ,[2] Karim Ataya ,[3] Dima Salloum ,[4] Almoutuz Aljaafreh ,[1] Devalia Kalpana,[1] Adam Goralczyk,[1] Kozar Agha,[1] Oday al Asadi,[1] Wah Yang [5]

[1]Department of Upper GI Surgery, Homerton University Hospital, London, UK
[2]Department of Transplant Surgery, University of Texas Southwestern Medical Center, Dallas, TX, USA
[3]Department of Upper GI Surgery, Salford Royal Hospital, Manchester, UK
[4]Department of Obstetrics and Gynecology, American University of Beirut, Beirut, Lebanon
[5]Department of Metabolic and Bariatric Surgery, First Affiliated Hospital of Jinan University, Guangzhou, China

OPEN ACCESS

Received: Oct 20, 2025
Revised: Nov 23, 2025
Accepted: Nov 24, 2025
Published online: Dec 19, 2025

Corresponding author:
Karim Ataya
Salford Royal Hospital, Stott Ln, Salford M6 8HD, Manchester, UK.
Tel: +44-7448220895
Email: karimataya@outlook.com

Copyright © 2025, The Korean Society for Metabolic and Bariatric Surgery
This is an open access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (https://creativecommons.org/licenses/by-nc/4.0/) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ORCID iDs
Neha Patel
https://orcid.org/0009-0004-9722-9027
Karim Ataya
https://orcid.org/0000-0002-9235-5313
Dima Salloum
https://orcid.org/0000-0003-0054-1862
Almoutuz Aljaafreh
https://orcid.org/0000-0003-0345-369X
Wah Yang
https://orcid.org/0000-0003-2341-3310

Presentation
The abstract was presented at the British Obesity and Metabolic Surgery Society (BOMSS) meeting, held on 16-18 June 2025 in Brighton, UK.

ABSTRACT

Purpose: The prevalence of individuals with obesity classes 4 and 5 is increasing, with no optimal surgical approach identified. With the rising popularity of one anastomosis gastric bypass (OAGB), we conducted a single-arm meta-analysis to assess its outcomes in this population.
Materials and Methods: A comprehensive search of PubMed, Scopus, EMBASE, and Cochrane identified studies on OAGB reporting weight loss, comorbidity remission, and complications. Statistical analysis was performed using RStudio 4.4.1. Heterogeneity was assessed using the Cochrane Q test and I^2 statistics.
Results: Seventeen studies including 2,274 patients (mean age, 40.44 years), were identified. The analysis revealed a rising trend up to 24 months, with a pooled excess weight loss (%) of 68.08% (95% confidence interval [CI], 63.64–72.52; I^2=95.6%), and total weight loss (%) of 36.63% (95% CI, 35.34–37.92; I^2=84.6%) at 12 months. Diabetes and hypertension remission rates were 82.02% (95% CI, 70.36–89.77; I^2=59.5%) and 78.06% (95% CI, 59.05–89.77; I^2=84.9%), respectively. The incidence of de novo gastroesophageal reflux disease was 4.38% (95% CI, 0.61–25.59; I^2=91.9%).
Conclusion: OAGB can be a valuable option for this population, awaiting long-term data.

Keywords: Gastric bypass; Obesity; Body mass index; Bariatric surgery; Metabolic surgery

INTRODUCTION

The global obesity epidemic continues to escalate, with the prevalence of obesity class 4 (Body Mass Index [BMI], 50.0–59.9 kg/m²) and 5 (BMI ≥60 kg/m²) rising at a faster rate than other BMI classes, as evidenced by past [1] and recent studies [2]. Baseline BMI remains a crucial prognostic indicator, significantly influencing the likelihood of optimal clinical response, with patients presenting with higher baseline BMIs often achieving suboptimal results post-intervention [3,4].

Generated by Xmlinkpress

Funding

No funding was obtained for this study.

Conflict of Interest

None of the authors has any conflict of interest.

Author Contributions

Conceptualization: Ataya K; Data curation: Mahran MMS, Patel N, Ataya K, Salloum D, Aljaafreh A, Yang W; Formal analysis: Ataya K, Patel N, Mahran MMS; Writing - original draft: Mahran MMS, Ataya K, Aljaafreh A, Patel N, Kalpana D, Goralczyk A; Writing - review & editing: Yang W, Agha K, Asadi OA, Mahran MMS, Kalpana D, Goralczyk A, Patel N, Ataya K, Salloum D.

Metabolic and bariatric surgery (MBS) is recognized as a preferred method of achieving optimal clinical weight loss response in patients with class 5 obesity [5]. However, there remains no consensus on the optimal surgical approach for these individuals [5,6]. These individuals with class 4 and 5 obesity present unique challenges due to several key factors: (1) a higher likelihood of suboptimal clinical response even after MBS, (2) the technical challenges of the procedures, and (3) elevated perioperative risks, including anesthesia-related complications, excessive visceral adiposity, an enlarged liver, a thicker abdominal wall, and the physical strain required to maneuver surgical instruments along with elevated postoperative morbidity and mortality [7-10].

Among a plethora of bariatric techniques, gaining immense popularity in today's world [10], every option, including sleeve gastrectomy (SG), Roux-en-Y gastric bypass (RYGB), and one anastomosis gastric bypass (OAGB), comes with its own set of pros and cons. Among them, OAGB, previously known as mini gastric bypass (MGB) or omega loop gastric bypass, has gained popularity for its relative simplicity, effectiveness, and lower complication profile. Originally introduced by Rutledge [11], OAGB has emerged as the third most commonly performed bariatric procedure worldwide [11,12]. Despite its rising popularity, OAGB remains a subject of debate, with recent consensus indicating that it is not superior to RYGB in patients with a BMI ≥50 kg/m² [13]. However, while it may not be superior, OAGB can still be a valuable alternative due to its simplified bypass [14], which requires less intestinal manipulation and a smaller surgical field [10], making it particularly suitable for patients facing more technical challenges, increased RYGB-related complications, and nutritional deficiencies [15,16].

Given the limited research data available for the obesity classes 4 and 5 [2], only a smaller number of studies have directly compared OAGB and RYGB in this demographic [10,14,15,17], restricting stronger pooled analyses. To address this gap, we aim to conduct a single-arm meta-analysis and comprehensive systematic review to evaluate the safety and efficacy of OAGB in individuals with a BMI ≥50 kg/m², incorporating advanced statistical analyses and subgroup insights for patients with class 5 obesity (BMI ≥60 kg/m²).

MATERIALS AND METHODS

1. Eligibility criteria

This meta-analysis includes studies that meet all the following eligibility criteria: (A) adult patients of any sex with obesity grade 4 or higher (BMI ≥50 kg/m²) undergoing OAGB; (B) reported any of the desired outcomes—percent of Excess Weight Loss (%EWL), percent of Total Weight Loss (%TWL), remission in Type 2 Diabetes Mellitus (T2DM), remission in Hypertension (HTN), remission in Obstructive Sleep Apnea (OSA), and complications after the OAGB; and (C) type of study: Randomized/Non-randomized Controlled Trials (RCTs) or Observational studies. We excluded studies that (a) had study designs not aligned with the inclusion criteria; (b) were grey literature; (c) involved animal subjects; (d) had overlapping populations, preferring studies with the largest number of patients or greater impact; and (e) included fewer than 10 patients.

This meta-analysis paper is based on previously published studies and does not involve any direct participation of human or animal subjects and for this type of study, formal consent is not required.

2. Search strategy and data extraction

We systematically searched PubMed, EMBASE, Scopus, and the Cochrane Central Register of Controlled Trials in September 2024 without date restrictions for studies published in English. The following medical subject headings were included: (OAGB OR "one anastomosis gastric bypass" OR "mini gastric bypass" OR MGB OR "single anastomosis gastric bypass" OR SAGB OR "omega loop gastric bypass" OR "loop gastric bypass") AND ("BMI 50" OR "super obes*" OR "super obese" OR "super obesity" OR "BMI ≥ 50" OR "BMI more than 50" OR "body mass index more than 50" OR "body mass index 50" OR "body weight, excess"[tiab] OR "high bmi" OR "high body mass index" OR "Obesity, Morbid" OR "class 4 obesity" OR "class 5 obesity" OR "severe obesity" OR "severe obes*" OR "class 3 obesity" OR "super super obesity" OR "super super obes*"). Additionally, references from all included studies, previous systematic reviews, and meta-analyses were manually searched. Two authors (Mahran MMS and Patel N) independently extracted data following predefined search criteria and quality assessment methods. Disagreements between them were resolved by consensus among the 3 authors (Mahran MMS, Patel N, and Ataya K). The prospective meta-analysis protocol was registered on PROSPERO on October 9, 2024, under protocol #CRD42024595348.

3. Outcomes and sensitivity analyses

Based on their clinical implications, we included the following outcomes for analysis: (A) Weight loss outcomes: (a) %EWL; (b) %TWL, (B) Comorbidity remission rates: (a) Remission in T2DM; (b) Remission in HTN; (c) Remission/Improvement in OSA, (C) Perioperative outcomes: (a) Operative time; (b) Length of hospital stay (LOS), (D) Complications: (a) De novo Gastroesophageal Reflux Disease (de novo GERD) (b) Surgery required for acid/bile reflux. Interpretation of outcomes related to acid/bile reflux and de novo GERD should be approached with caution, as several included studies did not clearly differentiate these complications. In such cases, classification was based on the author's best possible interpretation following a comprehensive review of the full text. WebPlotDigitizer was used to extract data from graphical plots when required. While many studies did not provide explicit outcome definitions, common definitions of other outcomes are cited in reference [18].

$$\%TWL = [(Initial\ Weight) - (Postoperative\ Weight)]\ /\ [(Initial\ Weight)] \times 100$$

$$\%EWL = [(Initial\ Weight) - (Postoperative\ Weight)]\ /\ [(Initial\ Weight) - (Ideal\ Weight)] \times 100$$

To strengthen our findings, we conducted leave-one-out sensitivity analyses to evaluate each study's influence on the pooled estimate by omitting one study at a time and recalculating the combined estimates for the remaining studies. Subgroup analyses based on biliopancreatic limb (BPL) length and sample size of the included studies were also performed. Analyses restricted to studies with ≥5 years of follow-up were conducted where possible to enhance long-term robustness. In addition, outcomes for patients with BMI ≥60 kg/m² were analyzed separately, alongside their inclusion in the broader analysis of patients with BMI ≥50 kg/m², as the remaining studies included all patients with BMI ≥50 kg/m² without an upper BMI restriction.

4. Quality assessment

The ROBIN-I tool ("Risk Of Bias In Non-randomized Studies – of Interventions") was used for quality assessment of non-randomized studies [19]. Each study was given a score of "low

https://doi.org/10.17476/jmbs.2025.14.3.174

risk," "moderate risk," "serious risk," "critical risk," or "no information" in each of the 7 domains: confounding, selection, classification, performance, detection, attrition, and reporting bias. Studies with at least one domain rated as having a critical or serious risk of bias were classified as having an overall critical or serious risk of bias, respectively. Similarly, studies with a low risk of bias across all domains were categorized as low risk, whereas those with low or moderate risk across all domains were considered to have a moderate risk of bias. Publication bias was assessed using funnel plots of individual study weights against point estimates for primary outcomes, along with Egger's test. No RCTs were identified; therefore, Rob 2 [20] was not applied.

5. Statistical analyses

Our systematic review and meta-analysis were conducted according to the Cochrane Collaboration's tool for assessing risk of bias and the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement guidelines [21]. Proportions with 95% confidence interval (CI) were used for binary endpoints, and means with 95% CI for continuous outcomes. We assessed heterogeneity with I^2 statistics and the Cochrane Q test; P value<0.10 and I^2>25% were considered significant. Statistical analysis was performed using R Studio 4.4.1 (R Foundation for Statistical Computing, Vienna, Austria). Continuous outcomes were pooled using a random-effect model with untransformed means, while binary outcomes were analyzed using a logit transformation within a generalized linear mixed model. For OSA outcomes, the Freeman-Tukey double arcsine transformation with the inverse variance method was used to address extreme proportions. The *ggplot* function was employed to improve the visualization and interpretability of the data. When mean and standard deviation were not reported, values were estimated from medians, ranges, or standard errors using the formulas from the Cochrane Handbook for Systematic Reviews of Interventions [22]; skewed data identified during conversion were excluded to reduce bias. In studies with discrepancies in baseline comorbidity counts [23,24], the largest plausible denominator (i.e., total sample size) was used to estimate remission rates due to unclear reporting. For comorbidity remission, the longest follow-up time was included when multiple time points were available.

RESULTS

1. Study selection and baseline characteristics

Our search strategy across 4 databases identified 2,559 results (**Fig. 1**). After removing duplicates and ineligible studies, 31 articles were fully reviewed against the selection criteria. Finally, 17 studies were included, comprising a total of 2,274 patients across twelve different countries, with a mean age of 40.44 years and 1,438 (63.23%) females. Six studies exclusively included patients with a BMI ≥60 kg/m², while the remaining studies enrolled all individuals with a BMI ≥50 kg/m². Study characteristics are reported in **Table 1** [10,14,15,17,23-35]. The studies were heterogeneous concerning BPL lengths, some outcome definitions, and follow-up periods ranging from 30 days to 15 years.

2. Effect on weight loss

1) %EWL

The meta-analysis of %EWL following OAGB revealed a rising trend up to 24 months postoperatively, plateauing at 36 months, and declining by 60 months–12 months (mean, 68.08; 95% CI, 63.64–72.52; I^2=95.6%; **Fig. 2**), 24 months (mean, 74.20; 95% CI, 67.71–80.69;

https://doi.org/10.17476/jmbs.2025.14.3.174

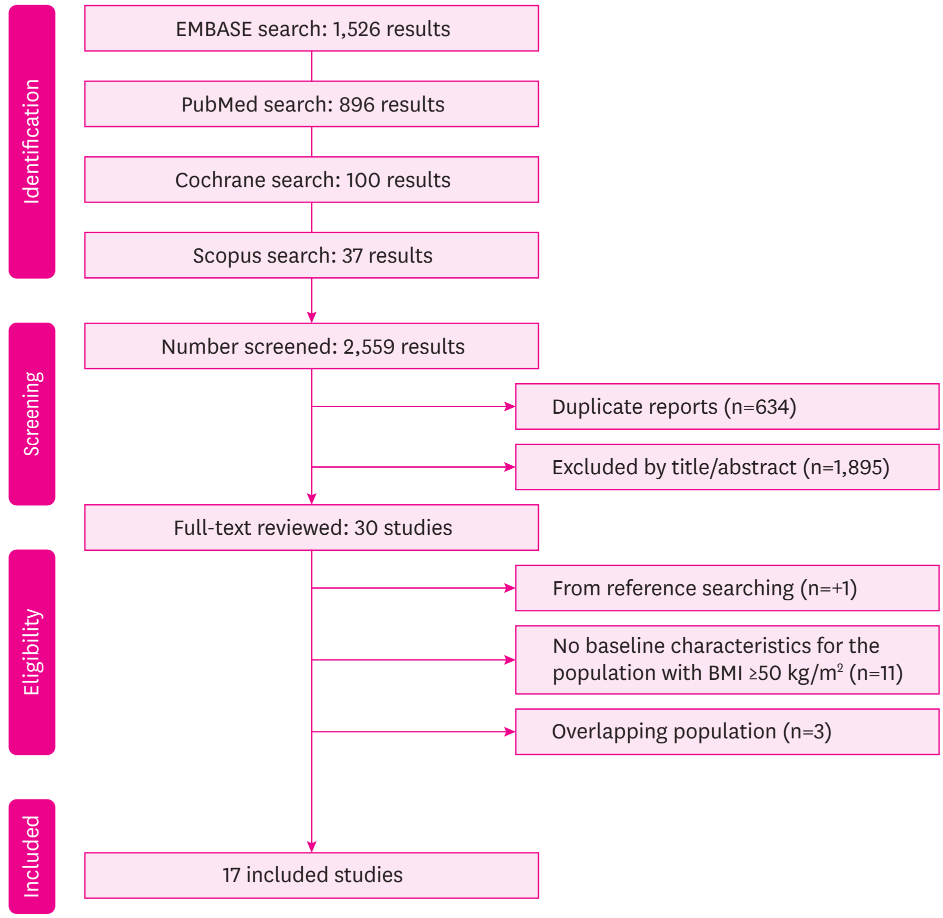

Fig. 1. Preferred Reporting Items for Systematic Reviews and Meta-Analysis flow diagram of study screening and selection.
BMI = body mass index.

I^2=93.2%; **Supplementary Fig. 1**), 36 months (mean, 74.55; 95% CI, 66.28–82.82; I^2=84.8%; **Supplementary Fig. 2**), and 60 months (mean, 70.05; 95% CI, 61.52–78.58; I^2=90.3%; **Supplementary Fig. 3**). For robustness, an analysis restricted to studies with ≥5 years of follow-up showed a mean %EWL of 65.64 (95% CI, 61.86–69.41; I^2=89.2%; **Supplementary Fig. 4**) at 12 months. High heterogeneity persisted despite the leave-one-out analysis (**Supplementary Fig. 5**), and subgroup analyses based on BPL length and sample size also did not reduce heterogeneity, except in the subgroup with BPL length >200 cm (**Supplementary Figs. 6** and **7**). As expected, the mean %EWL was higher in studies with a sample size <50. However, the mean %EWL was lower in the BPL >200 cm subgroup. Notably, neither difference was statistically significant (P value=0.3983 and P value=0.1350, respectively). **Fig. 3** illustrates the %EWL trends over 60 months across all included studies and the pooled meta-analytic estimate.

2) %TWL

The meta-analysis of %TWL following OAGB revealed a rising trend up to 24 months postoperatively, followed by a decline after 36 months—12 months (mean, 36.63; 95% CI, 35.34–37.92; I^2=84.6%; **Fig. 4**), 24 months (mean, 42.33; 95% CI, 39.15–45.50; I^2=97.5%; **Supplementary Fig. 8**), 36 months (mean, 38.28; 95% CI, 34.36–42.21; I^2=74.7%; **Supplementary Fig. 9**), and 60 months (mean, 37.95; 95% CI, 33.75–42.15; I^2=91.8%;

Table 1. Baseline characteristics of included studies

Study	Design	Place	Patients (number)	Female	Age (years)	BMI (kg/m²)	Weight (kg)	T2DM	HTN	OSA	BPL (cm)	Follow up
Abouelela et al. [23], 2020	Prospective	Egypt	25	15 (60)	44.87±10.34	65.12±5.89	NA	12 (48)	17 (68)	18 (72)	160–200	1 year
Bhandari et al. [17], 2019	Retrospective	India	124	56 (45.2)	42.41±11	54.23±3.69	147.25±21.9	41 (33.1)	66 (53.2)	NA	NA	3 years
Carandina et al. [33], 2021	Retrospective	France and Italy	147	NA	NA	NA	NA	NA	NA	NA	200	15 years
Charalampos et al. [34], 2019	Retrospective	Greece	BMI 50–60: 29 & BMI >60: 9	BMI 50–60: 24 & BMI >60: 6	BMI 50–60: 41.5±10.6 & BMI >60: 40.6±9.6	BMI 50–60: 55±2.5 & BMI >60: 62.1±1.9	NA	NA	NA	NA	BMI 50–60: 250 & BMI >60: 300	3 years
Eskandaros [25], 2022	Prospective	Egypt	214	150 (70.1)	38.6±10.1	55.5±2.9	154.8±9	NA	132 (61.7)	NA	250	2 years
Kermansaravi et al. [24], 2022	Prospective	Iran	197	134 (68.02)	38	55.72±11.83	151.6	35 (17.8)	33 (16.8)	41 (20.8)	200	5 years
Liagre et al. [29], 2021	Retrospective	France and Italy	245	170 (79)	39.7±13.2	54±4.9	150±22.3	41 (17)	75 (30)	70 (29)	150	80 months
Parmar et al. [15], 2017	Retrospective	UK	19	9 (47.36)	44.84±10.56	68.52±6.5	204.78±39.82	7 (36.8)	8 (42.1)	NA	200	2 years
Peraglie [35], 2008	Retrospective	USA	16	14 (87.5)	41.33±9.61	63.76±3.67	167.83±12.15	NA	NA	NA	NA	2 years
Plamper et al. [30], 2017	Retrospective	Germany	169	121 (71.6)	43.2±11.1	54.1±6.6	154.2±24.5	70 (41.4)	121 (71.6)	104 (61.5)	250–300	1 year
Sakran et al. [26], 2024	Retrospective	Israel	Class 4: 256 & Class 5: 23	Class 4: 171 (66.9) & Class 5: 17 (73.9)	Class 4: 38.5±12.5 & Class 5: 42.5±13.9	Class 4: 53.3±2.5 & Class 5: 62.23±1.9	NA	Class 4: 51 (19.9) & Class 5: 7 (30.4)	Class 4: 47 (18.4) & Class 5: 8 (34.8)	Class 4: 25 (9.8) & Class 5: 3 (13)	150–200	30 days
Schmitz et al. [28], 2022	Retrospective	Germany and the Netherlands	150	112 (74.5)	39.11	64.14	183.7	51 (34)	98 (65.3)	113 (75.3)	250	3 years
Singla et al. [31], 2019	Retrospective	India	25	21 (84)	39.56±10.09	53.76±3.28	NA	9 (36)	14 (56)	14 (56)	200	1 year
Singla et al. [32], 2024	Retrospective	India	13	8 (61.5)	36.47±5.97	61.98±2.74	160.98±52.15	3 (23.1)	4 (30.8)	9 (69.2)	200	5 years for OAGB
Soong et al. [14], 2021	Retrospective	Taiwan	246	111 (45.12)	31.9±9.7	56.2±5.8	NA	117 (47.6)	NA	NA	250–350	10 years
Tasdighi et al. [27], 2022	Retrospective	Iran	209	176 (84.2)	40.4±10.9	54.9±4.6	143.6±18.7	86 (41.1)	79 (41.1)	NA	160 or 200	3 years
van der Laan et al. [10], 2024	Retrospective	Netherlands	158	123 (78)	44.59±13.46	51±2.99	149.40±19.45	38 (24)	56 (35)	24 (15)	Between 150 and 250	5 years

Values are presented as number (%) or mean ± standard deviation.
Class 4: BMI ≥50–59.9 kg/m², Class 5: BMI ≥60 kg/m².
BMI = body mass index, T2DM = type 2 diabetes mellitus, HTN = hypertension, OSA = obstructive sleep apnea, BPL = biliopancreatic limb, NA = not available, UK = United Kingdom, USA = United States of America, OAGB = one anastomosis gastric bypass.

Journal of Metabolic and Bariatric Surgery JMBS

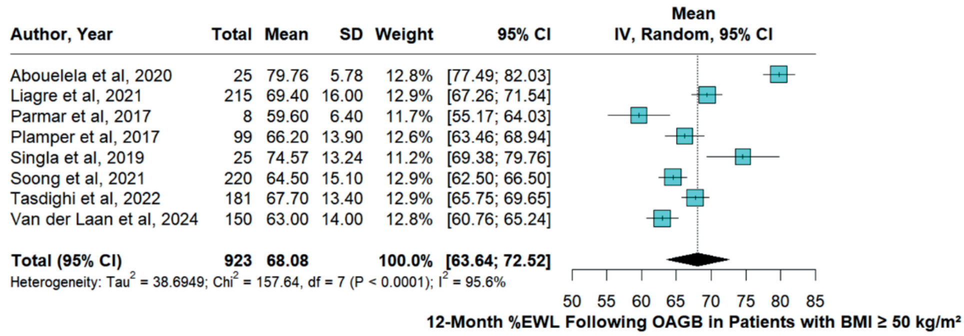

Fig. 2. Pooled analysis of eight studies revealed a mean %EWL of 68.08 at 12 months following OAGB.
%EWL = percent of excess weight loss, OAGB = one anastomosis gastric bypass, SD = standard deviation, CI = confidence interval, IV = inverse variance, BMI = body mass index.

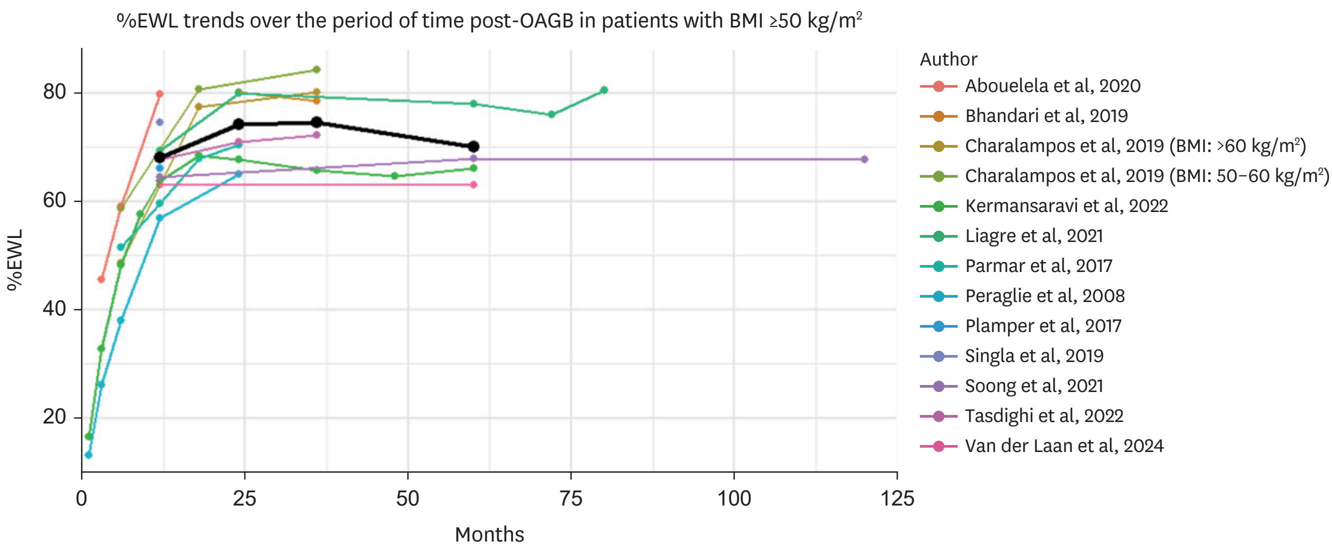

Fig. 3. Pooled %EWL is shown as a solid black line, illustrating an increase up to 36 months followed by a decline. Colored lines represent %EWL trends from all included individual studies at each time point. Note that for time points with data from only 1 or 2 studies, no pooled meta-analysis was performed.
%EWL = percent of excess weight loss, OAGB = one anastomosis gastric bypass, BMI = body mass index.

Supplementary Fig. 10). Similarly, for patients with a BMI ≥60 kg/m², the trend was comparable–12 months (mean, 35.88; 95% CI, 34.48–37.28; I^2=59.4%; **Fig. 4**), 24 months (mean, 42.21; 95% CI, 39.87–44.55; I^2=0%; **Supplementary Fig. 8**), and 36 months (mean, 40.08; 95% CI, 33.48–46.68; I^2=53.7%; **Supplementary Fig. 9**). For robustness, an analysis restricted to studies with ≥5 years of follow-up showed a mean %TWL of 35.63 (95% CI, 31.99–39.27; I^2=92.7%; **Supplementary Fig. 11**) at 12 months. High heterogeneity persisted despite leave-one-out analysis (**Supplementary Fig. 12**), and subgroup analyses based on BPL length and sample size also did not meaningfully reduce heterogeneity (**Supplementary Figs. 13** and **14**). However, the mean %TWL was lower in studies with a sample size <50 and in the BPL >200 cm subgroup. Neither difference was statistically significant (P value=0.7678 and P value=0.6861, respectively). **Fig. 5** shows the %TWL trends over 60 months for all included studies and the pooled meta-analytic estimate.

3. Comorbidity remission rate

1) T2DM

A meta-analysis of 8 studies revealed an 82.02% complete remission rate of T2DM following

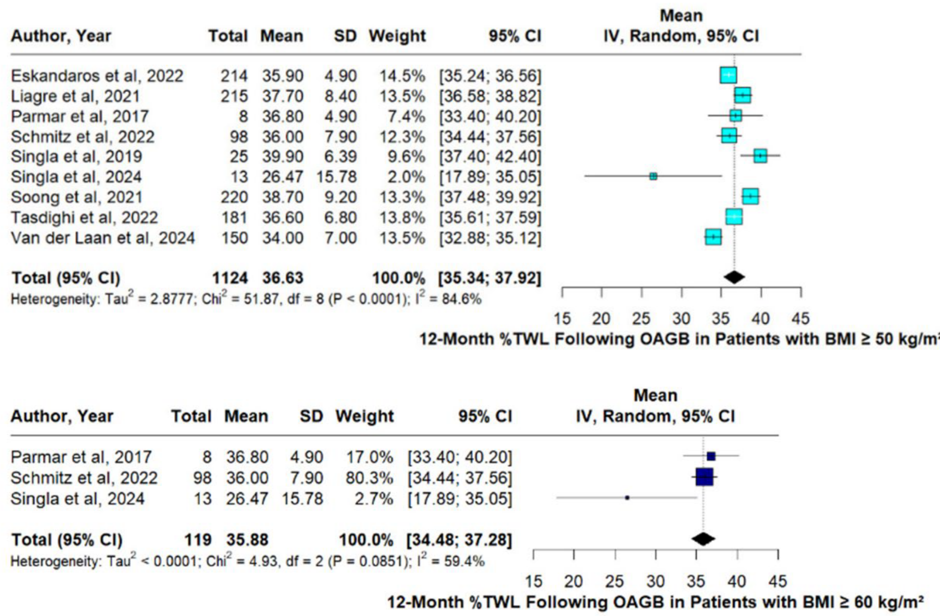

Fig. 4. Meta-analysis of nine studies demonstrated a mean %TWL of 36.63 at 12 months following OAGB in patients with BMI ≥50 kg/m², and 35.88% in patients with BMI ≥60 kg/m² (based on three studies).
%TWL = percent of total weight loss, OAGB = one anastomosis gastric bypass, BMI = body mass index, SD = standard deviation, CI = confidence interval, IV = inverse variance.

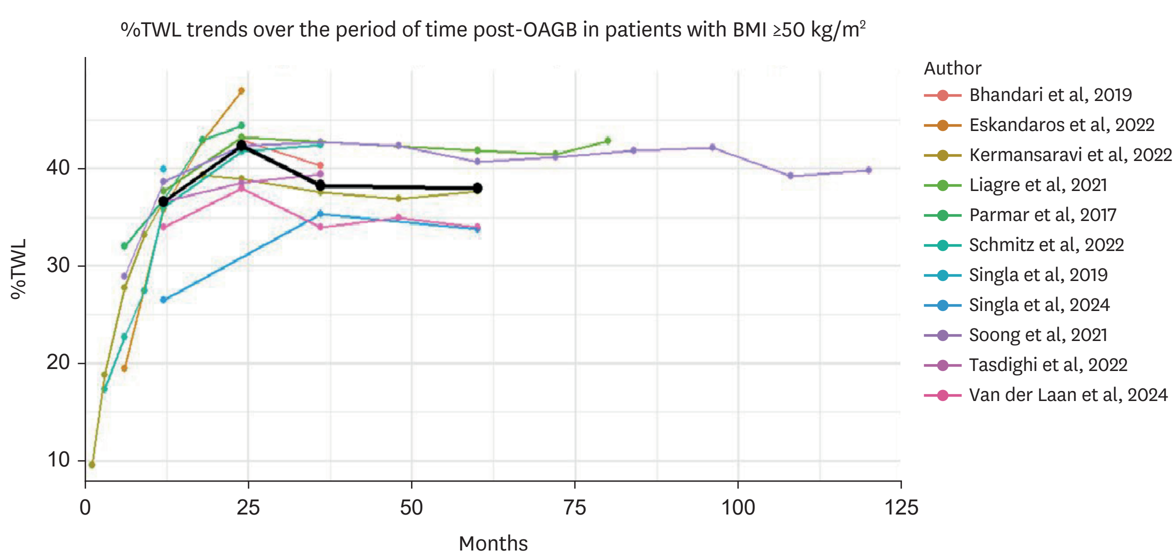

Fig. 5. Pooled %TWL is shown as a solid black line, illustrating an increase up to 24 months followed by a decline. Colored lines represent %TWL trends from all included individual studies at each time point. Note that for time points with data from only one or two studies, no pooled meta-analysis was performed.
%TWL = percent of total weight loss, OAGB = one anastomosis gastric bypass, BMI = body mass index.

OAGB in patients with a BMI ≥50 kg/m² (95% CI, 70.36–89.77; I^2=59.5%; **Fig. 6**), based on varying follow-up durations. The study Soong et al. [14] was excluded despite reporting 100% remission due to missing follow-up data on the number of diabetic patients assessed at 5 years. Among patients with BMI ≥60 kg/m², the pooled complete remission rate was 40.00% (95% CI, 15.83–70.26; I^2=0%; **Fig. 6**). Minor differences in remission definitions may have contributed to variability. For robustness, analysis restricted to studies with ≥5 years

https://doi.org/10.17476/jmbs.2025.14.3.174

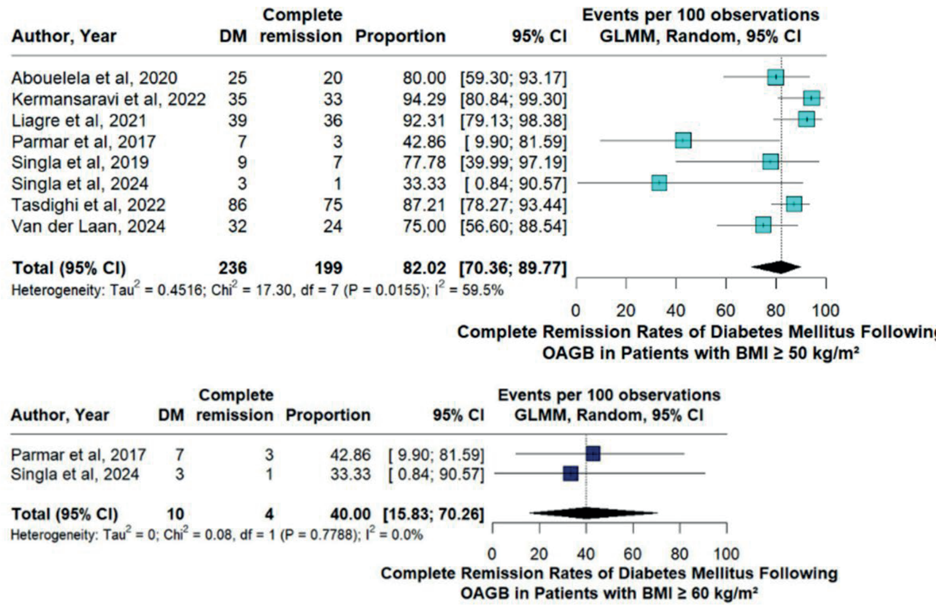

Fig. 6. A pooled analysis of eight studies revealed an 82.02% complete remission rate of type 2 DM following OAGB in patients with a baseline BMI ≥50 kg/m². In patients with BMI ≥60 kg/m² (based on two studies), the complete remission rate was lower at 40.00%.
OAGB = one anastomosis gastric bypass, BMI = body mass index, DM = diabetes mellitus, CI = confidence interval, GLMM = generalized linear mixed model.

of follow-up showed a complete T2DM remission rate of 85.20% (95% CI, 66.44–94.36; I^2=69.7%; **Supplementary Fig. 15**).

2) HTN

Based on outcomes reported at varying follow-up durations, the meta-analysis of 9 studies revealed a 78.06% complete remission rate of HTN following OAGB in patients with baseline BMI ≥50 kg/m² (95% CI, 59.05–89.77; I^2=84.9%; **Fig. 7**). Among patients with BMI ≥60 kg/m², the complete remission rate was 43.48% (95% CI, 14.77–77.34; I^2=58.6%; **Fig. 7**). For robustness, analysis restricted to studies with ≥5 years of follow-up showed a complete HTN remission rate of 75.21% (95% CI, 56.03–87.84; I^2=78.0%; **Supplementary Fig. 16**).

3) OSA

The meta-analysis of 6 studies revealed a 98.83% remission/improvement rate of OSA following OAGB in patients with baseline BMI ≥50 kg/m², based on outcomes reported at varying follow-up durations (95% CI, 93.88–100.00; I^2=55.2%; **Fig. 8**). For robustness, analysis restricted to studies with ≥5 years of follow-up showed an OSA remission/improvement rate of 97.69% (95% CI, 88.71–100.00; I^2=71.8%; **Supplementary Fig. 17**).

4. Peri-operative outcomes

The meta-analysis of 9 studies revealed a mean operative time of 91.11 minutes for OAGB in patients with baseline BMI ≥50 kg/m² (95% CI, 74.64–107.57; I^2=99.4%; **Fig. 9**). Mean operative times ranged from 55.96 minutes [17] to 140.10 minutes [14]. Among patients with BMI ≥60 kg/m², the pooled mean operative time was 81.12 minutes (95% CI, 78.15–84.10; I^2=0%; **Fig. 9**). Six studies reported mean hospital stay duration, with a pooled mean of 3.06 days for patients with BMI ≥50 kg/m² (95% CI, 2.17–3.96; I^2=98.7%; **Fig. 10**).

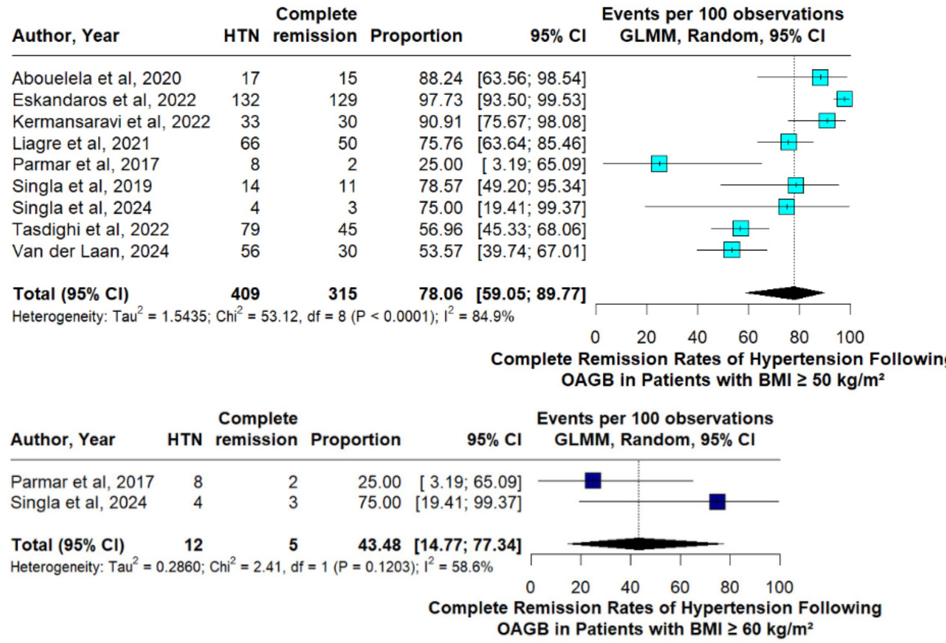

Fig. 7. A pooled analysis of nine studies revealed a 78.06% complete remission rate of HTN following OAGB in patients with a BMI ≥50 kg/m². In patients with BMI ≥60 kg/m² (based on 2 studies), the complete remission rate was lower at 43.48%.
HTN = hypertension, OAGB = one anastomosis gastric bypass, BMI = body mass index, CI = confidence interval, GLMM = generalized linear mixed model.

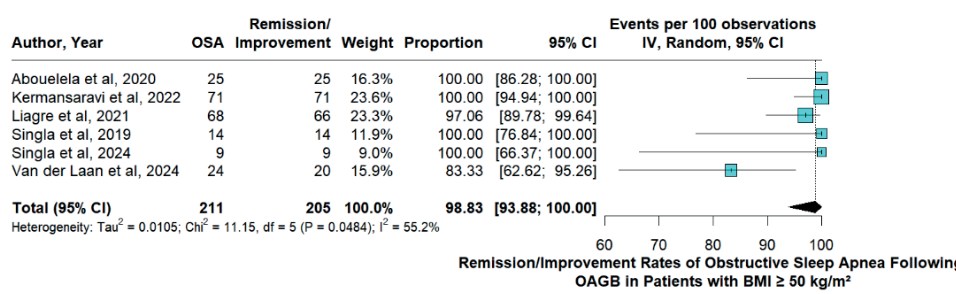

Fig. 8. A pooled analysis of six studies revealed a 98.83% remission/improvement rate of OSA following OAGB in patients with a baseline BMI ≥50 kg/m².
OSA = obstructive sleep apnea, OAGB = one anastomosis gastric bypass, BMI = body mass index, CI = confidence interval, IV = inverse variance.

5. Complications

The meta-analysis of 5 studies found a 4.38% incidence of de novo GERD following OAGB in patients with a baseline BMI ≥50 kg/m², based on outcomes reported at varying follow-up durations (95% CI, 0.61–25.59; I^2=91.9%; **Supplementary Fig. 18**). Similarly, in patients with a BMI ≥60 kg/m², the pooled rate from 3 studies was 6.04% (95% CI, 3.38–10.58; I^2=0.0%; **Supplementary Fig. 18**). Separately, 4 studies reported the number of patients requiring surgery for acid/bile reflux, either revision or conversion to RYGB, with a pooled rate of 1.33% in patients with BMI ≥50 kg/m² (95% CI, 0.69–2.53; I^2=0.0%; **Supplementary Fig. 19**).

6. Quality assessment

In the quality assessment, the study by Eskandaros et al. [25] was considered to have a critical risk of bias due to multiple serious risks across several domains. Three studies—Sakran et al. [26], Tasdighi et al. [27], and van der Laan et al. [10]—were categorized as having a moderate

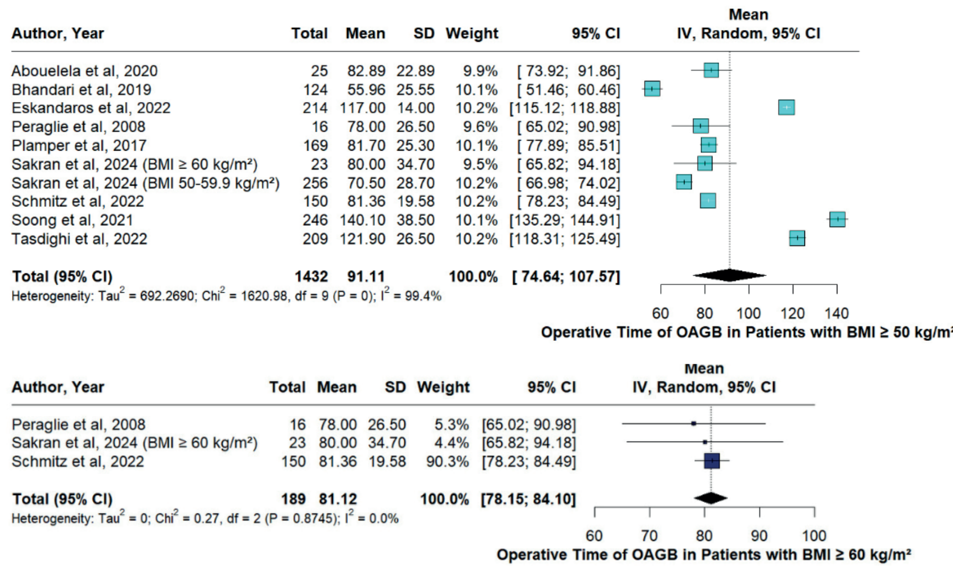

Fig. 9. Meta-analysis of nine studies demonstrated a mean operative time of 91.11 minutes for OAGB in patients with BMI ≥50 kg/m², and 81.12 minutes in those with BMI ≥60 kg/m² (based on 3 studies).
OAGB = one anastomosis gastric bypass, BMI = body mass index, SD = standard deviation, CI = confidence interval, IV = inverse variance.

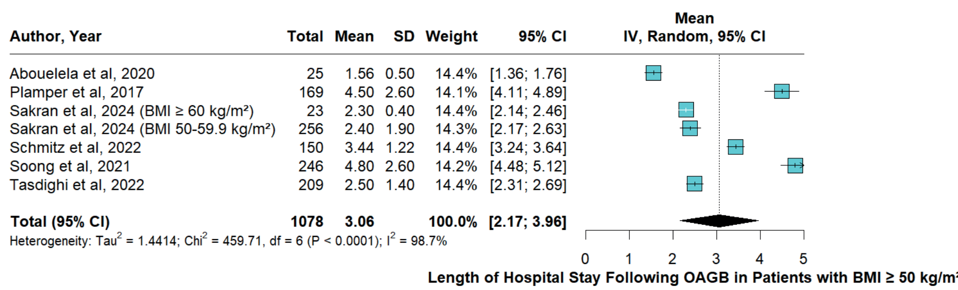

Fig. 10. Meta-analysis of 6 studies revealed a mean hospital stay of 3.06 days following OAGB in patients with baseline BMI ≥50 kg/m².
OAGB = one anastomosis gastric bypass, BMI = body mass index, SD = standard deviation, CI = confidence interval, IV = inverse variance.

risk of bias. The remaining 13 of the 17 studies were assessed as having a serious risk of bias, as summarized in **Table 2** [10,14,15,17,23-35]. There was no definitive evidence of publication bias in the funnel plot for %TWL at 12 months (**Supplementary Fig. 20**). Egger's test was not performed for any outcome due to the number of included studies being fewer than 10 in each case.

DISCUSSION

MBS remains the cornerstone of treatment for individuals with obesity class 4 (BMI, 50.0–59.9 kg/m²) and class 5 (BMI ≥60 kg/m²) [5,16]. However, these individuals are widely recognized as high-risk candidates for MBS [5], necessitating interventions to be performed by highly skilled bariatric surgeons, supported by anesthesiologists experienced in bariatric procedures. Among the plethora of available bariatric procedures, OAGB has recently attracted considerable interest due to its technical simplicity and favorable clinical outcomes [10,12,16]. This systematic review and meta-analysis evaluated OAGB outcomes specifically in adults with

Table 2. Risk of bias summary for non-randomized studies (ROBINS-I)

Study	Bias due to confounding	Bias in the selection of participants	Bias in the classification of interventions	Bias due to deviations from intended interventions	Bias due to missing data	Bias in the measurement of outcomes	Bias in the selection of the reported result	The overall risk of bias judgment
Abouelela et al. [23], 2020	Serious	Low	Low	Low	Low	Low	Serious	Serious
Bhandari et al. [17], 2019	Serious	Low	Low	Low	Low	Low	Serious	Serious
Carandina et al. [33], 2021	Serious	Serious	Low	Low	Low	Low	Low	Serious
Charalampos et al. [34], 2019	Serious	Low	Low	Low	Moderate	Low	Serious	Serious
Eskandaros et al. [25], 2022	Serious	Serious	Low	Low	Low	Low	Serious	Critical
Kermansaravi et al. [24], 2022	Serious	Serious	Low	Low	Moderate	Low	Low	Serious
Liagre et al. [29], 2021	Serious	Low	Low	Low	Moderate	Low	Low	Serious
Parmar et al. [15], 2017	Serious	Low	Low	Low	Moderate	Low	Low	Serious
Peraglie et al. [35], 2008	Serious	Low	Low	Low	Moderate	Low	Serious	Serious
Plamper et al. [30], 2017	Serious	Low	Low	Low	Low	Low	Serious	Serious
Sakran et al. [26], 2024	Moderate	Low	Low	Low	Low	Low	Low	Moderate
Schmitz et al. [28], 2022	Serious	Low	Low	Low	Moderate	Low	Serious	Serious
Singla et al. [31], 2019	Serious	Low	Low	Low	Low	Low	Low	Serious
Singla et al. [32], 2024	Moderate	Low	Low	Low	Low	Low	Serious	Serious
Soong et al. [14], 2021	Serious	Low	Low	Low	Moderate	Low	Low	Serious
Tasdighi et al. [27], 2022	Moderate	Low	Low	Low	Moderate	Low	Low	Moderate
van der Laan et al. [10], 2024	Moderate	Low	Low	Low	Moderate	Low	Low	Moderate

Low: green, Moderate: yellow, Serious: orange, Critical: red.

a BMI ≥50.0 kg/m². Our findings demonstrate that OAGB achieves substantial weight loss, high remission rates of comorbidities, acceptable perioperative outcomes and complications, reinforcing its role as a viable procedure for this challenging patient population.

Similar to patterns seen with other bariatric procedures, both mean %EWL and mean %TWL demonstrated an initial rising trend, followed by a plateau and a gradual decline. Comparable %TWL trends were observed in patients with a baseline BMI ≥60 kg/m²; however, %EWL outcomes for this subgroup were unavailable due to limited data. For both %EWL and %TWL at 12 months, the findings were supported by analyses restricted to studies with ≥5 years of follow-up, despite substantial heterogeneity that persisted even after subgroup and leave-one-out sensitivity analyses. These observed patterns are consistent with those reported by Soong et al. [14] and Schmitz et al. [28], although they are slightly lower than those described by Liagre et al. [29].

Such variations may arise from differences in baseline characteristics, surgical techniques, revisional procedures, and follow-up durations across studies [7]. The length of the BPL is a major key factor influencing these outcomes [36]. However, in our subgroup analyses (>200 cm vs. ≤200 cm), heterogeneity remained high and no statistically significant differences in weight-loss outcomes were observed between subgroups. This aligns with findings by Tasdighi et al. [27], who reported no significant differences between 160 cm and 200 cm BPL lengths. Prior studies in broader bariatric populations have also shown no clear advantage to bypassing >200 cm of small bowel [37]. Notably, the availability of comparison groups—along with other factors such as differences in baseline characteristics, comorbidity severity, and technical variations—may contribute to these findings. For example, in the literature, a significant difference in %TWL—but not %EWL—was observed when comparing 150 cm vs. 250 cm BPL lengths, whereas no significant difference was found when comparing 180 cm vs. 250 cm in patients with BMI >35 undergoing OAGB [38]. These inconsistencies underscore the need for future studies to better elucidate the optimal BPL length in patients with BMI ≥50 kg/m^2.

While 100% of patients achieved adequate weight loss (%TWL ≥20%) at 2–3 years in Bhandari et al. [17], 11% had a suboptimal clinical response (%TWL <20%) in van der Laan et al. [10] at 5 years. In Schmitz et al. [28], 33.3% experienced insufficient weight loss or recurrent weight gain at 36 months of follow-up. Two patients (0.8%) underwent conversion surgery for insufficient weight loss in Liagre et al. [29], and one patient underwent limb lengthening in Plamper et al. [30] for the same reason. These suboptimal clinical responses and late recurrent weight gain—common across many bariatric procedures—highlight the importance of thorough clinical counselling to set realistic expectations regarding the long-term effectiveness of OAGB. While the OAGB is a highly effective intervention, it is not a definitive cure and requires sustained patient engagement and clinical oversight. To optimize long-term outcomes, a structured follow-up strategy incorporating lifestyle interventions, nutritional counselling, and potential need for revision or conversion procedures may help mitigate recurrent weight gain and improve clinical trajectories.

Our meta-analysis demonstrated a complete remission rate of 82.02% for T2DM, consistent with findings from Tasdighi et al. [27]. This improvement is likely attributable to improved insulin sensitivity and reduced insulin resistance following weight loss after bariatric surgery [7]. However, factors such as preoperative disease duration, severity, treatment regimen, variations in OAGB surgical technique, and differences in follow-up duration may influence remission outcomes [7,36] and contribute to heterogeneity across studies. Additionally, the lack of standardized definitions for remission warrants caution in interpretation, as some studies defined remission using HbA1C <6% [24], others used <6.5% [10,27,29,31,32], and several did not provide explicit definitions [15,23]. The complete HTN remission rate in our meta-analysis was 78.08%, similar to that reported by Liagre et al. [29]. Weight loss, hormonal mechanisms, and reductions of systemic inflammation and insulin resistance following bariatric surgery may contribute to improvements in blood pressure [36,39]. As with diabetes, the absence of uniform definitions for remission limits comparability across studies. However, both findings were comparable when the analyses included only patients with BMI ≥50 kg/m^2 undergoing OAGB with ≥5 years of follow-up.

Notably, remission rates declined markedly in patients with a baseline BMI ≥60 kg/m^2, reaching 40.00% for T2DM and 43.48% for HTN, both with wider 95% CIs. These lower rates likely reflect the much smaller sample sizes available for this subgroup; however, suboptimal return toward normal baseline weight, and greater disease severity may also play a role. Higher baseline BMI is associated with reduced weight loss overall [7]. Data indicate that patients with BMI >50 kg/m^2 lose more total weight but still reach a higher nadir BMI compared to those with BMI 40–50 kg/m^2 after bariatric procedures [40]. This failure to achieve near-ideal BMI—and, consequently, a lesser reduction in systemic inflammation and insulin resistance—may partly explain the poorer metabolic outcomes in the BMI ≥60 kg/m² subgroup. Additionally, factors such as more severe or long-standing T2DM, progressive β-cell dysfunction, and preoperative insulin dependence limit the potential for complete reversal even after weight loss [7]. Similarly, use of multiple antihypertensive medications, longer disease duration, and lower %EWL and %TWL have been associated with reduced HTN remission rates [41]. Although patients with a baseline BMI ≥60 kg/m² in our meta-analysis demonstrated %TWL outcomes comparable to those of the overall cohort, further insights into underlying disease severity are needed to draw more definitive conclusions.

For OSA, remission/improvement rate was analyzed collectively due to overlapping definitions, which often relied on symptom resolution rather than objective measures such as polysomnography [24,29,31,32]. Our analysis demonstrated a high remission/improvement rate of 98.83%, consistent with the findings of Liagre et al. [29]. This result was further supported by analysis restricted to studies with ≥5 years of follow-up. Reduced upper airway resistance following bariatric surgery may improve sleep quality and contribute to OSA remission/improvement [36]. However, the lack of standardized objective definitions, or the absence of any definition in some studies [10,23], along with differences in baseline characteristics and OSA severity and duration, may contribute to the substantial heterogeneity observed. Data availability limited the analysis for patients with a baseline BMI ≥60 kg/m².

Our pooled mean operative time was 91.11 minutes overall and 81.12 minutes for patients with a baseline BMI ≥60 kg/m², comparable to operative durations reported for OAGB in broader populations [42-45]. Individual study means ranged from 55.96 minutes [17] to 140.10 minutes [14], with substantial heterogeneity and a wide 95% CI likely reflecting differences in surgeon experience, operative techniques, practice variations across countries and institutes, concurrent procedures, and patient complexity. Additionally, the smaller sample size of the BMI ≥60 kg/m² subgroup warrants further exploration to better understand the shorter operative time observed in this group. The pooled mean LOS was 3.06 days, slightly higher than the average reported for OAGB [42,43]. This extended stay may reflect the higher-risk nature of the patient population or differences in institutional protocols and postoperative care practices.

While a comprehensive analysis of all adverse outcomes was beyond the scope of this article, the safety profile of OAGB in patients with a BMI ≥50 kg/m² appears acceptable [16,46], with low complication rates reported across studies. De novo GERD remains a potential concern following OAGB and, in some cases, may require additional surgery. Our meta-analysis demonstrated a 4.38% incidence of de novo GERD and a 1.33% rate of revision or conversion to RYGB for acid/bile reflux. Importantly, the studies contributing to these 2 analyses largely do not overlap; only Parmar et al. [15] reported both de novo GERD and subsequent surgery. Therefore, the percentage of patients requiring surgery cannot be interpreted as a subset of those developing de novo GERD, and these outcomes should be considered independently. The revision rate in our analysis was comparable to that reported in the broader population [36]. While the pooled incidence of de novo GRED was slightly higher in the BMI ≥60 kg/m² subgroup, the wide and overlapping CIs, together with the high heterogeneity observed in the BMI ≥50 kg/m² group, indicate that these findings require further investigation. Given that OAGB has shown less favorable reflux-related outcomes in the literature [36], direct comparisons with other bariatric procedures are also needed for definitive conclusions.

The incidence of bile reflux ranged from 8 to 16 patients across 6–24 months of follow-up in the study by Eskandaros et al. [25], and 1 patient in Tasdighi et al. [27]. Endoscopic follow-up may be necessary for the early detection of premalignant changes related to chronic reflux [36]. Overall, OAGB appears to have an acceptable safety profile; however, long-term complications—particularly nutritional deficiencies—remain a concern, underscoring the importance of appropriate limb length selection and careful postoperative monitoring. Although uncommon, OAGB is associated with potential long-term complications that may require reoperation, including medically refractory acid/bile reflux, anastomotic ulcers, and internal hernia [47]. These findings highlight the importance of individualized patient selection and careful long-term follow-up to mitigate potential risks while maintaining the metabolic benefits of the procedure.

A key strength of this meta-analysis is its exclusive focus on studies involving patients with a BMI ≥50 kg/m^2, providing targeted, moderate-term evidence for this high-risk population. However, several limitations must be acknowledged, including the predominance of retrospective designs and substantial heterogeneity in surgical techniques, baseline characteristics, follow-up durations, and outcome definitions—or the absence of outcome definitions—in the included studies. These issues limit comparability and caution against indiscriminate data interpretation. Furthermore, long-term pooled outcomes—as well as subgroup analyses and outcomes specific to patients with grade 5 obesity (BMI ≥60 kg/m^2)—were constrained by small sample sizes, resulting in wider 95% CIs and requiring more detailed exploration in future work. While this single-arm meta-analysis lacks direct comparisons, future research should prioritize prospective, randomized trials comparing OAGB with other bariatric procedures, such as RYGB and SG, in patients with class 4 and 5 obesity. Extended follow-up beyond 5 years is essential to evaluate the durability of weight loss and the incidence of late complications, including nutritional deficiencies and recurrent weight gain.

CONCLUSION

Our comprehensive meta-analysis of 2,274 patients indicates that OAGB can be an effective and safe bariatric option for individuals with a BMI ≥50 kg/m^2, offering substantial weight loss, remission of comorbidities, and acceptable perioperative outcomes and complication rates. However, optimizing outcomes requires careful patient selection, surgical expertise, and structured long-term postoperative management.

SUPPLEMENTARY MATERIALS

Supplementary Fig. 1

Pooled analysis of three studies revealed a mean %EWL of 74.20 at 24 months following OAGB.

Supplementary Fig. 2

Pooled analysis of 3 studies revealed a mean %EWL of 74.55 at 36 months following OAGB.

Supplementary Fig. 3

Pooled analysis of 3 studies revealed a mean %EWL of 70.05 at 60 months following OAGB.

https://doi.org/10.17476/jmbs.2025.14.3.174

Journal of Metabolic and Bariatric Surgery JMBS

Supplementary Fig. 4
Pooled analysis of three studies revealed a mean %EWL of 65.64 at 12 months following OAGB in patients with BMI ≥50 kg/m^2 and ≥5 years of follow-up.

Supplementary Fig. 5
Leave-one-out analysis showing persistent high heterogeneity in 12-month percent of excess weight loss outcomes.

Supplementary Fig. 6
Stratification by BPL length eliminated heterogeneity in the >200 cm subgroup for %EWL at 12 months after one anastomosis gastric bypass.

Supplementary Fig. 7
Stratification by sample size failed to reduce heterogeneity meaningfully in %EWL at 12 months after one anastomosis gastric bypass.

Supplementary Fig. 8
Meta-analysis of 6 studies demonstrated a mean %TWL of 42.33 at 24 months following OAGB in patients with BMI ≥50 kg/m^2, and 42.21% in patients with BMI ≥60 kg/m^2 (based on 2 studies).

Supplementary Fig. 9
Meta-analysis of 4 studies demonstrated a mean %TWL of 38.28 at 36 months following OAGB in patients with BMI ≥50 kg/m^2, and 40.08% in patients with BMI ≥60 kg/m^2 (based on 2 studies).

Supplementary Fig. 10
Meta-analysis of 4 studies demonstrated a mean %TWL of 37.95 at 60 months following OAGB in patients with BMI ≥50 kg/m^2.

Supplementary Fig. 11
Pooled analysis of 4 studies revealed a mean %TWL of 35.63 at 12 months following OAGB in patients with BMI ≥50 kg/m^2 and ≥5 years of follow-up.

Supplementary Fig. 12
Leave-one-out analysis showing persistent high heterogeneity in 12-month percent of total weight loss outcomes.

Supplementary Fig. 13
Stratification by BPL length failed to reduce heterogeneity meaningfully in %TWL at 12 months after OAGB.

Supplementary Fig. 14
Stratification by sample size failed to reduce heterogeneity in %TWL at 12 months after OAGB.

Supplementary Fig. 15
Pooled analysis of four studies revealed an 85.20% complete remission of type 2 DM following OAGB in patients with BMI ≥50 kg/m^2 and ≥5 years of follow-up.

Supplementary Fig. 16

Pooled analysis of four studies revealed a 75.21% complete remission of HTN following OAGB in patients with BMI ≥50 kg/m^2 and ≥5 years of follow-up.

Supplementary Fig. 17

Pooled analysis of four studies revealed a 97.69% remission/improvement rate of OSA following OAGB in patients with BMI ≥50 kg/m^2 and ≥5 years of follow-up.

Supplementary Fig. 18

Meta-analysis showed a 4.38% incidence of de novo GERD after OAGB in patients with BMI ≥50 kg/m^2 (5 studies) and 6.04% in those with BMI ≥60 kg/m^2 (3 studies).

Supplementary Fig. 19

Meta-analysis of four studies revealed that 1.33% of patients with baseline BMI ≥50 kg/m^2 required revision or conversion surgery to Roux-en-Y gastric bypass for acid/bile reflux after OAGB. The studies included here largely differ from those in **Supplementary Fig. 16**, with overlap only for Parmar et al. [15]; this reflects differences in outcome reporting rather than differences in the overall study population.

Supplementary Fig. 20

A funnel plot for publication bias testing was symmetrical.

REFERENCES

1. Sturm R, Hattori A. Morbid obesity rates continue to rise rapidly in the United States. Int J Obes 2013;37:889-91. PUBMED | CROSSREF
2. Kachmar M, Albaugh VL, Yang S, Corpodean F, Heymsfield SB, Katzmarzyk PT, et al. Disproportionate increase in BMI of ≥60 kg/m^2 in the USA. Lancet Diabetes Endocrinol 2025;13:463-5. PUBMED | CROSSREF
3. de Raaff CAL, Coblijn UK, de Vries N, Heymans MW, van den Berg BTJ, van Tets WF, et al. Predictive factors for insufficient weight loss after bariatric surgery: does obstructive sleep apnea influence weight loss? Obes Surg 2016;26:1048-56. PUBMED | CROSSREF
4. Higa K, Ho T, Tercero F, Yunus T, Boone KB. Laparoscopic Roux-en-Y gastric bypass: 10-year follow-up. Surg Obes Relat Dis 2011;7:516-25. PUBMED | CROSSREF
5. Eisenberg D, Shikora SA, Aarts E, Aminian A, Angrisani L, Cohen RV, et al. 2022 American Society for Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO): indications for metabolic and bariatric surgery. Surg Obes Relat Dis 2022;18:1345-56. PUBMED | CROSSREF
6. Wang Y, Song YH, Chen J, Zhao R, Xia L, Cui YP, et al. Roux-en-Y gastric bypass versus sleeve gastrectomy for super super obese and super obese: systematic review and meta-analysis of weight results, comorbidity resolution. Obes Surg 2019;29:1954-64. PUBMED | CROSSREF
7. Crozet J, Pasquer A, Pelascini E, Robert M. Factors influencing bariatric surgery outcomes. J Visc Surg 2023;160:S7-11. PUBMED | CROSSREF
8. Parikh MS, Shen R, Weiner M, Siegel N, Ren CJ. Laparoscopic bariatric surgery in super-obese patients (BMI>50) is safe and effective: a review of 332 patients. Obes Surg 2005;15:858-63. PUBMED | CROSSREF
9. Siampalioti A, Karavias D, Zotou A, Kalfarentzos F, Filos K. Anesthesia management for the super obese: is sevoflurane superior to propofol as a sole anesthetic agent? A double-blind randomized controlled trial. Eur Rev Med Pharmacol Sci 2015;19:2493-500. PUBMED
10. van der Laan L, Sizoo D, de Heide LJM, van Beek AP, Emous M. The one anastomosis gastric bypass is a suitable alternative to Roux-en-Y gastric bypass in patients with BMI > 50 kg/m^2: a propensity-score matched analysis. Obes Facts 2025;18:149-56. PUBMED | CROSSREF
11. Rutledge R. The mini-gastric bypass: experience with the first 1,274 cases. Obes Surg 2001;11:276-80. PUBMED | CROSSREF

https://doi.org/10.17476/jmbs.2025.14.3.174

12. Angrisani L, Santonicola A, Iovino P, Vitiello A, Higa K, Himpens J, et al. IFSO worldwide survey 2016: primary, endoluminal, and revisional procedures. Obes Surg 2018;28:3783-94. PUBMED | CROSSREF

13. Salminen P, Kow L, Aminian A, Kaplan LM, Nimeri A, Prager G, et al. IFSO consensus on definitions and clinical practice guidelines for obesity management-an international delphi study. Obes Surg 2024;34:30-42. PUBMED | CROSSREF

14. Soong TC, Lee MH, Lee WJ, Almalki OM, Chen JC, Wu CC, et al. Long-term efficacy of bariatric surgery for the treatment of super-obesity: comparison of SG, RYGB, and OAGB. Obes Surg 2021;31:3391-9. PUBMED | CROSSREF

15. Parmar C, Abdelhalim MA, Mahawar KK, Boyle M, Carr WRJ, Jennings N, et al. Management of super-super obese patients: comparison between one anastomosis (mini) gastric bypass and Roux-en-Y gastric bypass. Surg Endosc 2017;31:3504-9. PUBMED | CROSSREF

16. Parmar CD, Bryant C, Luque-de-Leon E, Peraglie C, Prasad A, Rheinwalt K, et al. One anastomosis gastric bypass in morbidly obese patients with BMI ≥ 50 kg/m²: a systematic review comparing it with Roux-en-Y gastric bypass and sleeve gastrectomy. Obes Surg 2019;29:3039-46. PUBMED | CROSSREF

17. Bhandari M, Ponce de Leon-Ballesteros G, Kosta S, Bhandari M, Humes T, Mathur W, et al. Surgery in patients with super obesity: medium-term follow-up outcomes at a high-volume center. Obesity (Silver Spring) 2019;27:1591-7. PUBMED | CROSSREF

18. Brethauer SA, Kim J, El Chaar M, Papasavas P, Eisenberg D, Rogers A, et al. Standardized outcomes reporting in metabolic and bariatric surgery. Obes Surg 2015;25:587-606. PUBMED | CROSSREF

19. Sterne JA, Hernán MA, Reeves BC, Savović J, Berkman ND, Viswanathan M, et al. ROBINS-I: a tool for assessing risk of bias in non-randomised studies of interventions. BMJ 2016;355:i4919. PUBMED | CROSSREF

20. Sterne JAC, Savović J, Page MJ, Elbers RG, Blencowe NS, Boutron I, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. BMJ 2019;366:l4898. PUBMED | CROSSREF

21. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. PUBMED | CROSSREF

22. Cochrane Handbook for Systematic Reviews of Interventions [Internet]. London: Cochrane; 2024 [cited 2024 Jan 10]. Available from: https://training.cochrane.org/handbook.

23. Abouelela MS, Mourad FA, Reyad HA. Comparison between effectiveness of mini gastric bypass and sleeve gastrectomy in weight reduction in super obese patients. Egypt J Surg 2020;39:338. CROSSREF

24. Kermansaravi M, Daryabari SN, Karami R, Setaredan SA, Valizadeh R, Rokhgireh S, et al. One anastomosis gastric bypass as a one-stage bariatric surgical procedure in patients with BMI ≥ 50 kg/m². Sci Rep 2022;12:10507. PUBMED | CROSSREF

25. Eskandaros MS. Outcomes and effects of 250-cm biliopancreatic limb one anastomosis gastric bypass in patients with BMI > 50 kg/m² with total bowel length > 6 m: a 2-year follow-up. Obes Surg 2022;32:2309-20. PUBMED | CROSSREF

26. Sakran N, Raziel A, Hod K, Azaria B, Kaplan U; Assuta Bariatric Surgeons Collaborative. Early safety outcomes of laparoscopic one anastomosis gastric bypass in patients with class III, IV, and V obesity. World J Surg 2024;48:1458-66. PUBMED | CROSSREF

27. Tasdighi E, Mousapour P, Khalaj A, Sadeghian Y, Mahdavi M, Valizadeh M, et al. Comparison of mid-term effectiveness and safety of one-anastomosis gastric bypass and sleeve gastrectomy in patients with super obesity (BMI ≥ 50 kg/m²). Surg Today 2022;52:854-62. PUBMED | CROSSREF

28. Schmitz SMT, Alizai PH, Kroh A, Schipper S, Brozat JF, Plamper A, et al. Clinical outcomes after one anastomosis gastric bypass versus sleeve gastrectomy in super-super-obese patients. Surg Endosc 2022;36:4401-7. PUBMED | CROSSREF

29. Liagre A, Martini F, Kassir R, Juglard G, Hamid C, Boudrie H, et al. Is one anastomosis gastric bypass with a biliopancreatic limb of 150 cm effective in the treatment of people with severe obesity with BMI > 50? Obes Surg 2021;31:3966-74. PUBMED | CROSSREF

30. Plamper A, Lingohr P, Nadal J, Rheinwalt KP. Comparison of mini-gastric bypass with sleeve gastrectomy in a mainly super-obese patient group: first results. Surg Endosc 2017;31:1156-62. PUBMED | CROSSREF

31. Singla V, Aggarwal S, Singh B, Tharun G, Katiyar V, Bhambri A. Outcomes in super obese patients undergoing one anastomosis gastric bypass or laparoscopic sleeve gastrectomy. Obes Surg 2019;29:1242-7. PUBMED | CROSSREF

32. Singla V, Gupta A, Gupta A, Monga S, Kumar A, Chekuri R, et al. Outcomes of laparoscopic sleeve gastrectomy (LSG) vs one-anastomosis gastric bypass (OAGB) in patients with super-super obesity (BMI ≥ 60 kg/m²). Obes Surg 2024;34:43-50. PUBMED | CROSSREF

33. Carandina S, Soprani A, Zulian V, Cady J. Long-term results of one anastomosis gastric bypass: a single center experience with a minimum follow-up of 10 years. Obes Surg 2021;31:3468-75. PUBMED | CROSSREF

34. Charalampos T, Maria N, Vrakopoulou VGZ, Tania T, Raptis D, George Z, et al. Tailored one anastomosis gastric bypass: 3-year outcomes of 94 patients. Obes Surg 2019;29:542-51. PUBMED | CROSSREF

35. Peraglie C. Laparoscopic mini-gastric bypass (LMGB) in the super-super obese: outcomes in 16 patients. Obes Surg 2008;18:1126-9. PUBMED | CROSSREF

36. Ortíz-Gómez JE, González-Barajas AI, Guevara-Díaz JA, Mancilla-Galindo J, Kammar-García A, Guerrero-Gutierrez MA. One anastomosis gastric bypass (OAGB): a scoping review. BMC Surg 2025;25:471. PUBMED | CROSSREF

37. Tasdighi E, Barzin M, Mahawar KK, Hosseinpanah F, Ebadinejad A, Taraghikhah N, et al. Effect of biliopancreatic limb length on weight loss, postoperative complications, and remission of comorbidities in one anastomosis gastric bypass: a systematic review and meta-analysis. Obes Surg 2022;32:892-903. PUBMED | CROSSREF

38. Ahuja A, Tantia O, Goyal G, Chaudhuri T, Khanna S, Poddar A, et al. MGB-OAGB: effect of biliopancreatic limb length on nutritional deficiency, weight loss, and comorbidity resolution. Obes Surg 2018;28:3439-45. PUBMED | CROSSREF

39. Moriconi D, Nannipieri M, Rebelos E. Bariatric surgery to treat hypertension. Hypertens Res 2023;46:1341-3. PUBMED | CROSSREF

40. Bloomston M, Zervos EE, Camps MA, Goode SE, Rosemurgy AS. Outcome following bariatric surgery in super versus morbidly obese patients: does weight matter? Obes Surg 1997;7:414-9. PUBMED | CROSSREF

41. Dowgiałło-Gornowicz N, Jaworski P, Walędziak M, Lech P, Kucharska A, Major P. Predictors of complete remission of hypertension in patients over 65 years of age after bariatric surgery - a multicenter study. Wideochir Inne Tech Malo Inwazyjne 2024;19:76-82. PUBMED | CROSSREF

42. Cornejo J, Evans LA, Castillo-Larios R, Celik NB, Elli EF. One anastomosis gastric bypass as a primary bariatric surgery: MBSAQIP database analysis of short-term safety and outcomes. Surg Endosc 2024;38:270-9. PUBMED | CROSSREF

43. Jamal W, Zagzoog MM, Sait SH, Alamoudi AO, Abo'ouf S, Alghamdi AA, et al. Initial outcomes of one anastomosis gastric bypass at a single institution. Diabetes Metab Syndr Obes 2018;12:35-41. PUBMED | CROSSREF

44. Musella M, Berardi G, Velotti N, Schiavone V, Manetti C, Vitiello A. Safety and efficacy of OAGB/MGB during the learning curve: setting a benchmark in a bariatric center of excellence. Updates Surg 2023;75:169-74. PUBMED | CROSSREF

45. Carbajo MA, Luque-de-León E, Jiménez JM, Ortiz-de-Solórzano J, Pérez-Miranda M, Castro-Alija MJ. Laparoscopic one-anastomosis gastric bypass: technique, results, and long-term follow-up in 1200 patients. Obes Surg 2017;27:1153-67. PUBMED | CROSSREF

46. Barzin M, Ebadinejad A, Aminian A, Khalaj A, Ghazy F, Koohi F, et al. Does one-anastomosis gastric bypass provide better outcomes than sleeve gastrectomy in patients with BMI greater than 50? A systematic review and meta-analysis. Int J Surg 2023;109:277-86. PUBMED | CROSSREF

47. Petrucciani N, Martini F, Kassir R, Juglard G, Hamid C, Boudrie H, et al. Internal Hernia After One Anastomosis Gastric Bypass (OAGB): Lessons Learned from a Retrospective Series of 3368 Consecutive Patients Undergoing OAGB with a Biliopancreatic Limb of 150 cm. Obes Surg 2021;31:2537-44. PUBMED | CROSSREF