



# Outcomes of SASJ - 6 Year Study

Raj Palaniappan, Director & Lead Surgeon

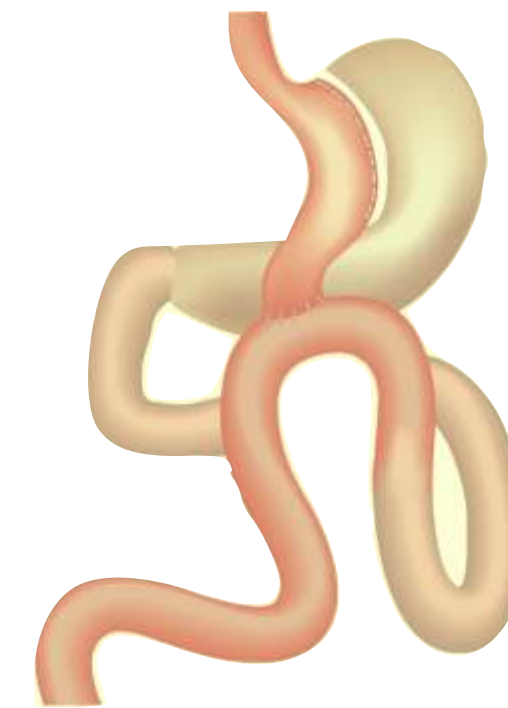


INSTITUTES OF  
BARIATRICS

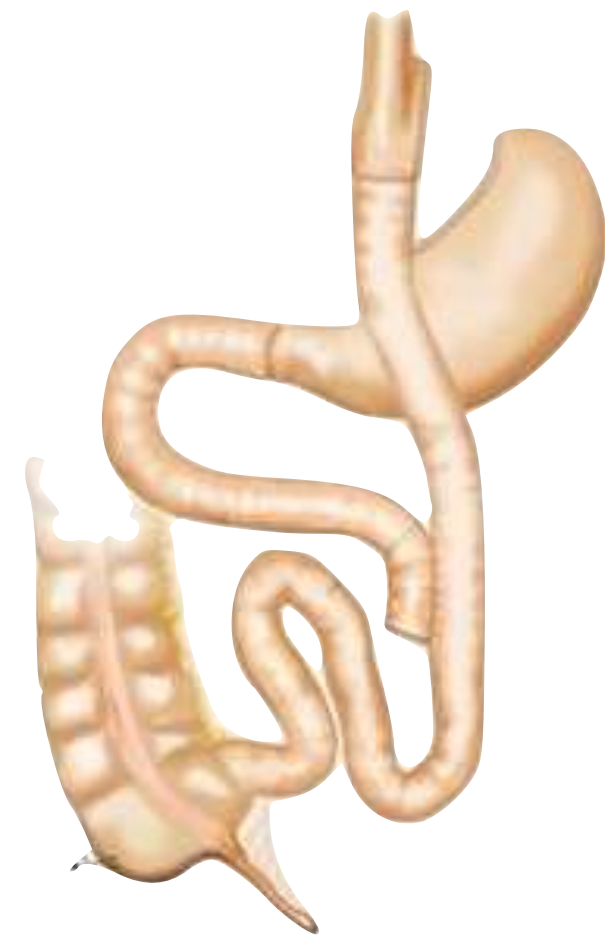
# Background



GERD  
Weight recidivism  
Inadequate DM remission



Severe bile reflux  
Intractable major complications  
Nutritional impairment

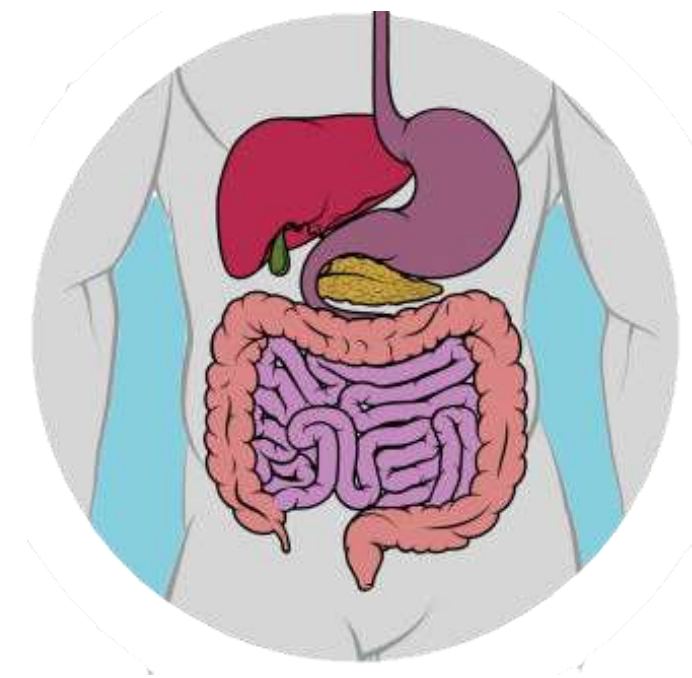


Technical complexity  
Peri-operative complications  
Dumping syndrome

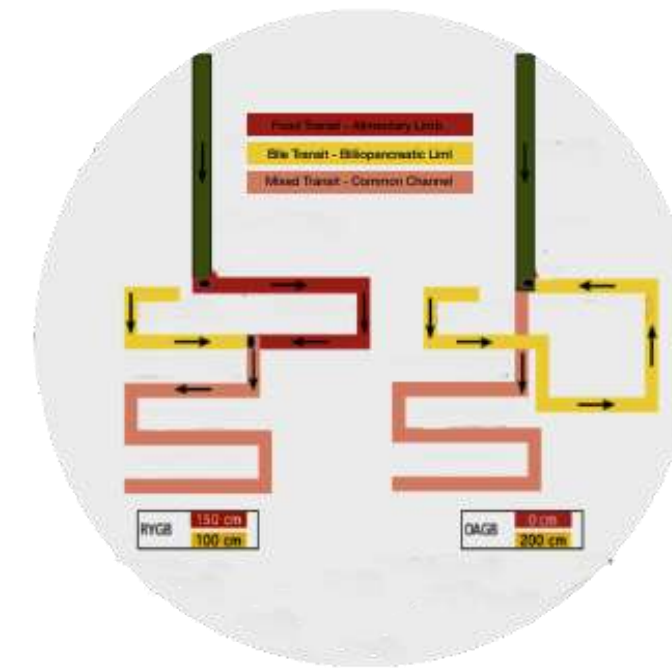


GERD  
Technical complexity  
Severe protein deficiencies

# Why Experiment ?



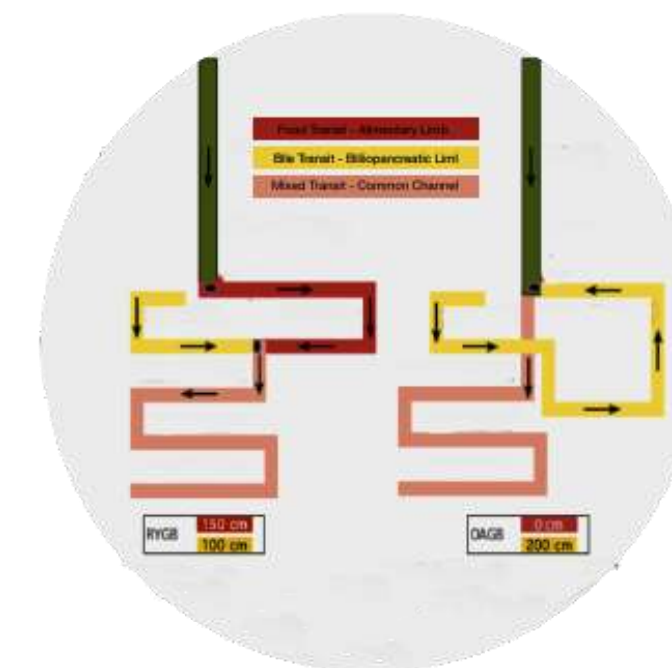
Understanding about the pathophysiology of obesity



Decoding of mechanism of weight loss and metabolic resolution



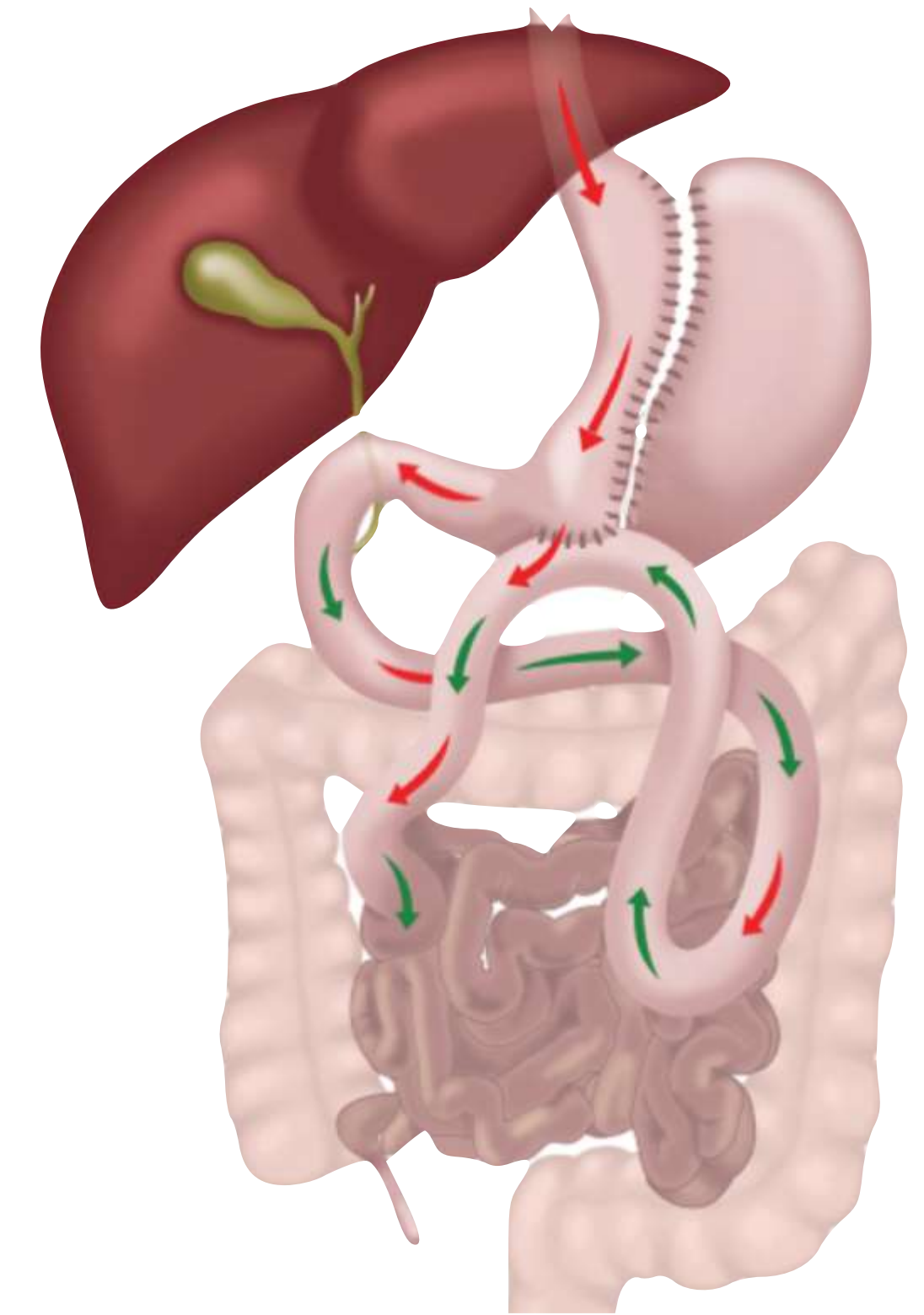
Increased awareness of resolution of weight related comorbidities



Search for the ideal bariatric and metabolic surgery

# Why SASJ ?

- Transit bipartition procedures based on SAS-I bypass
- SASI associated with higher PEM and intractable diarrhoea
- Both restrictive and malabsorptive component
- Malabsorptive component not as severe compared to other bypass
- Maintain continuity of the gastrointestinal tract
- Comparable 6 month results from Egypt



# Reference

Obesity Surgery

<https://doi.org/10.1007/s11695-019-04016-x>

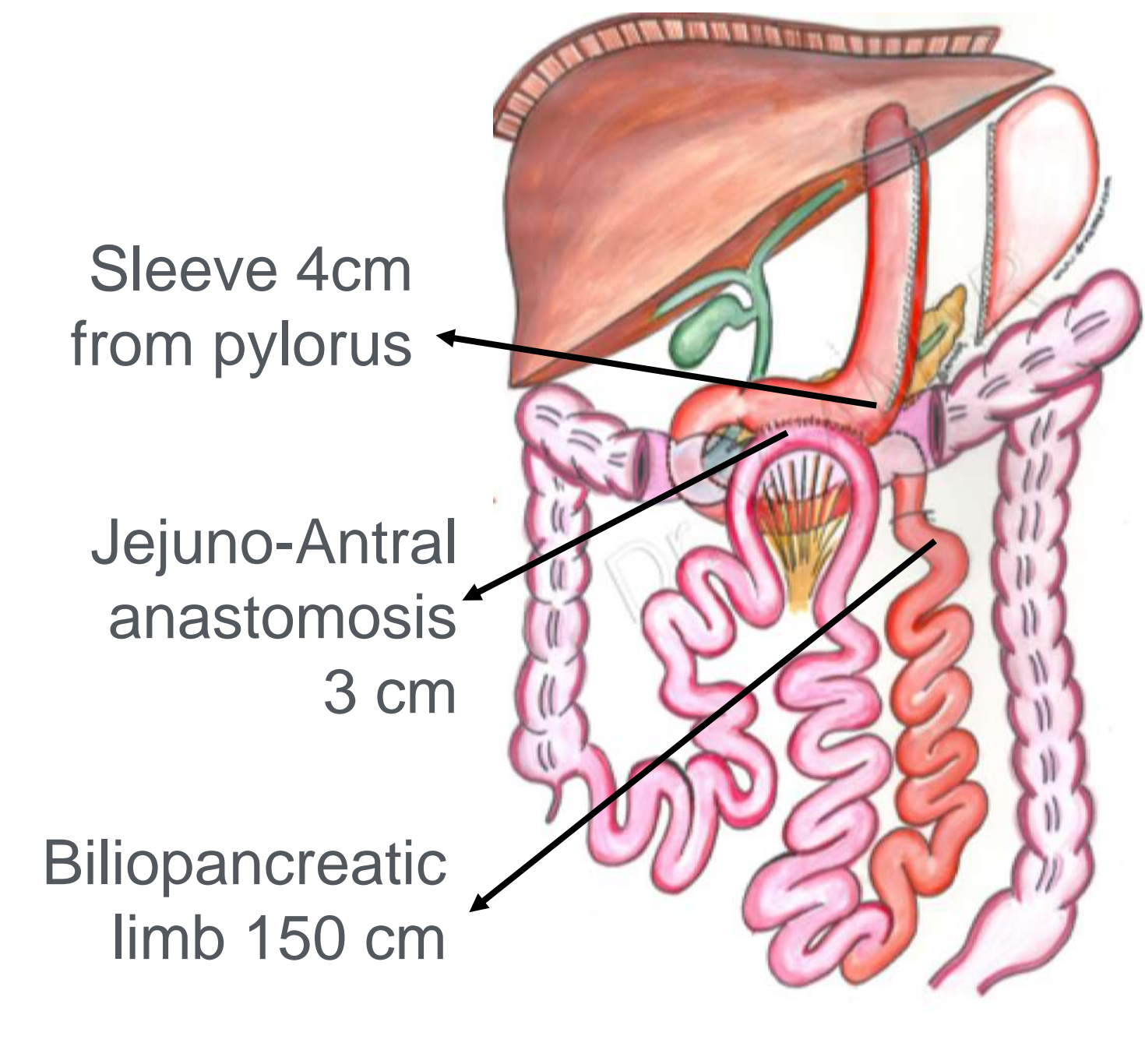


BRIEF COMMUNICATION

## Single Anastomosis Sleeve-Jejunal Bypass: a New Method of Bariatric/Metabolic Surgery

Abdolreza Pazouki<sup>1,2</sup> • Mohammad Kermansaravi<sup>1,2</sup> 

- Prospective cohort study included 150 patients
- %EWL after two years of follow up was approximately 85%
- 100% remission of Type II DM
- No nutritional complications



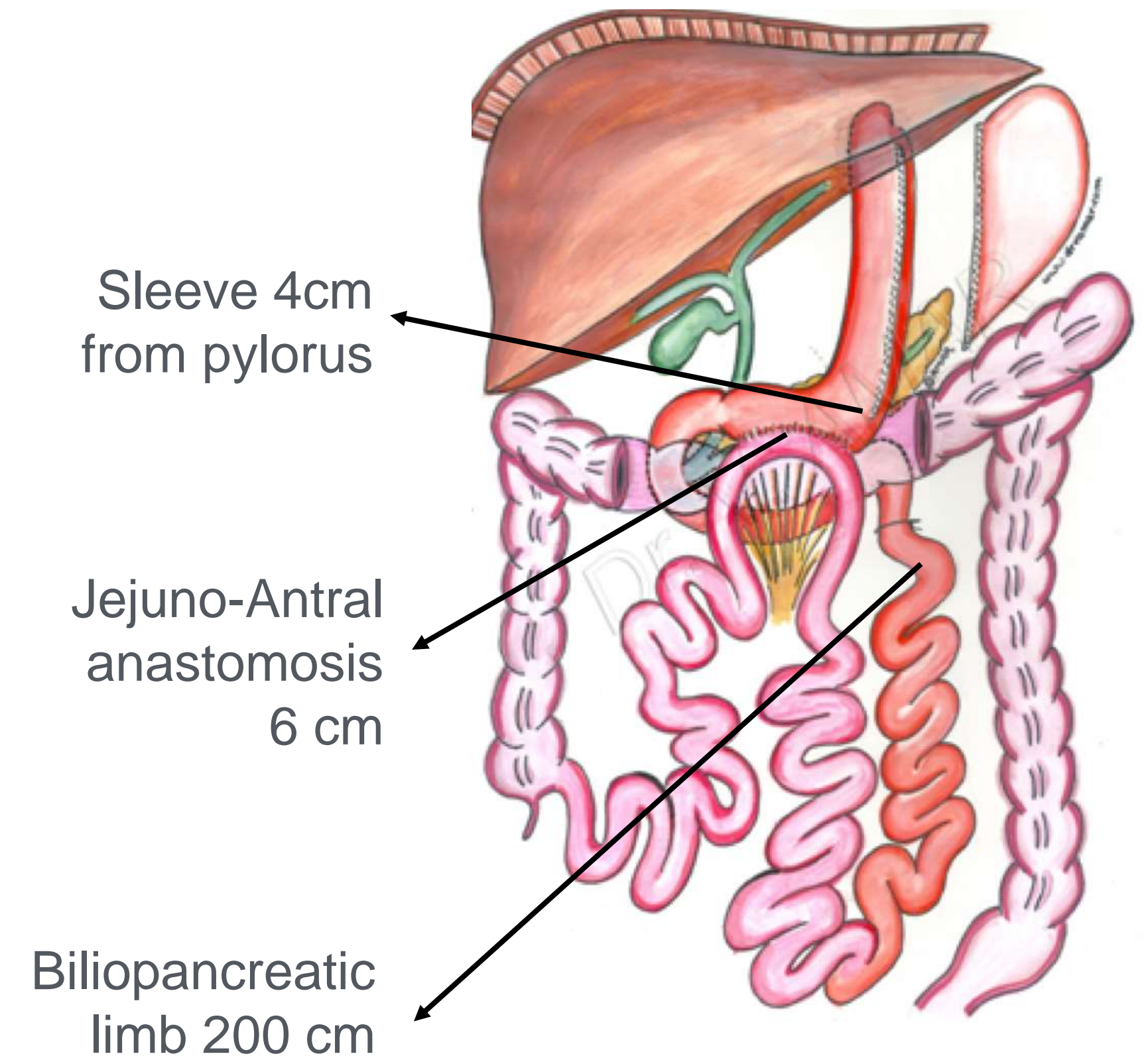
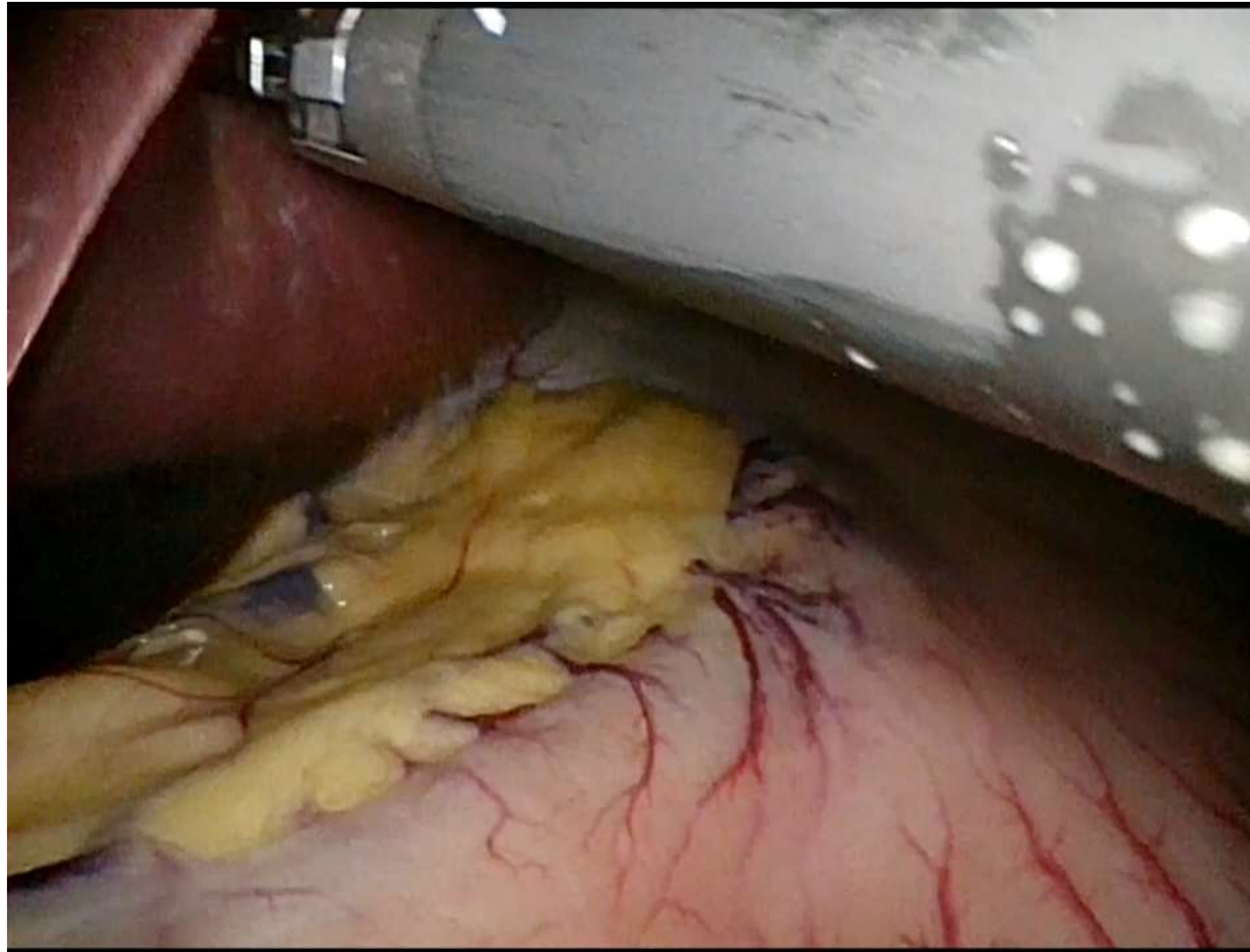
# Materials & Methods

- 6 year prospective study in a single centre from Jan 2017 to Jan 2023
- All the surgeries were done by a single surgical team
- Primary objective is to evaluate % Total weight loss (TWL), BMI and % EWL
- Secondary objective include Perioperative Complications, Nutrition status, Co-morbidities resolution and Weight regain
- 80 patients with regular follow-up at 3, 6, 9 months, 1, 2, 3, 4, 5 and 6 years
  - 72 primary and 8 revisions

# Inclusions & Exclusions

- BMI > 37.5 kg/m<sup>2</sup>
  - BMI > 32.5 kg/m<sup>2</sup> with comorbidities
  - Patients who didn't show willingness
  - Adolescent patients
- 
- 65 Laparoscopy, 9 Robotics and 6 Single Incision (SILS)

# SASJ - Technique





# Follow-up

- 65 Laparoscopy, 9 Robotic surgery and 6 SILS
- 6 year followup data was available for 6 patients
- 5 year follow up data for 14 patients
- 4 year follow-up data for 25 patients
- 3 year follow up data for 38 patients
- 2 year data for 61 patients
- 1 year data for 80 patients

# Results

| Demography | Value ( n = 80 ) |
|------------|------------------|
| Age        | 41.33±13.74      |
| Sex        | F = 74 % (59)    |
|            | M = 26 % (21)    |
| Weight     | 114.9 ±26.5      |
| BMI        | 43.1 ± 10.7      |

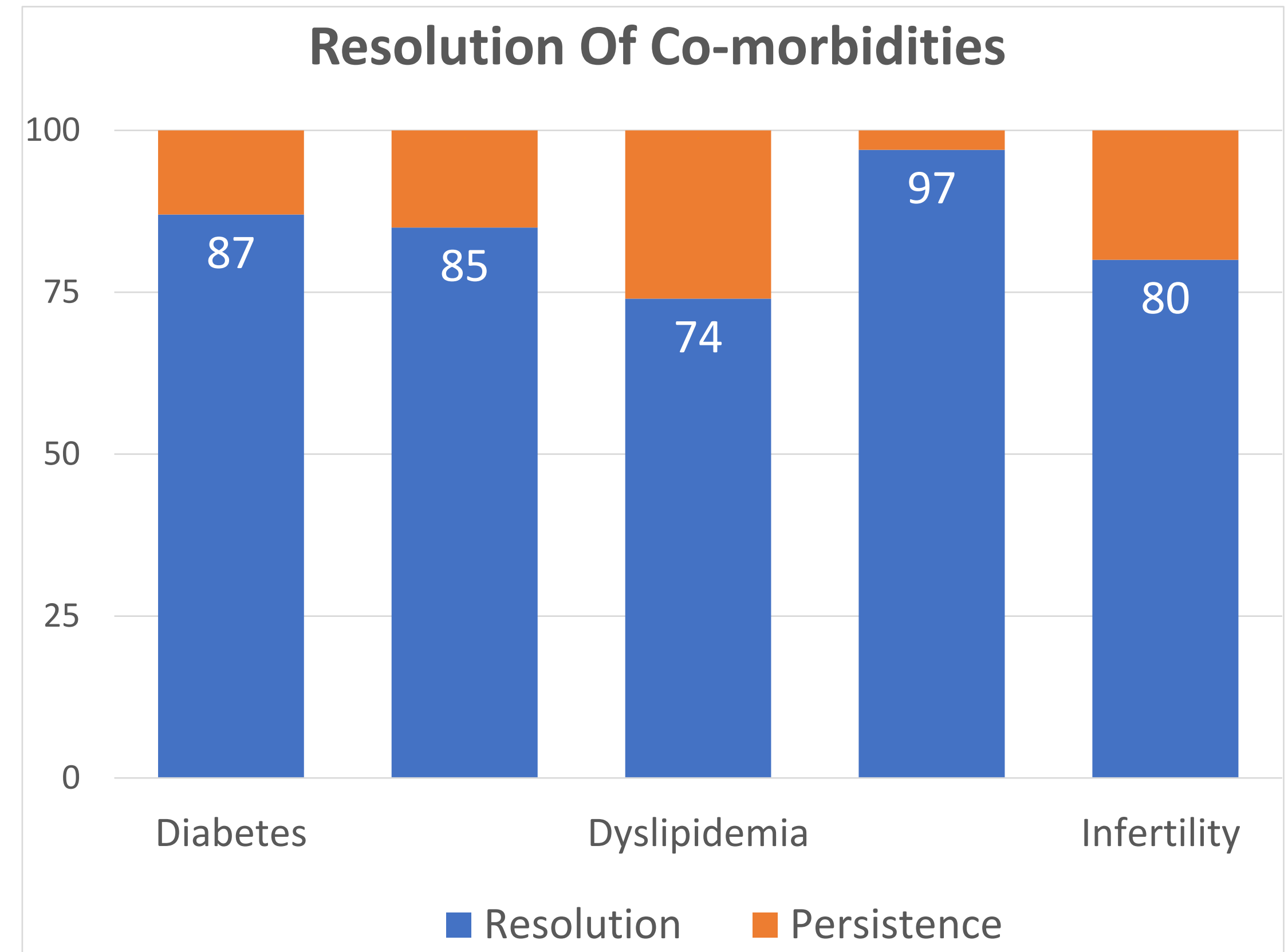
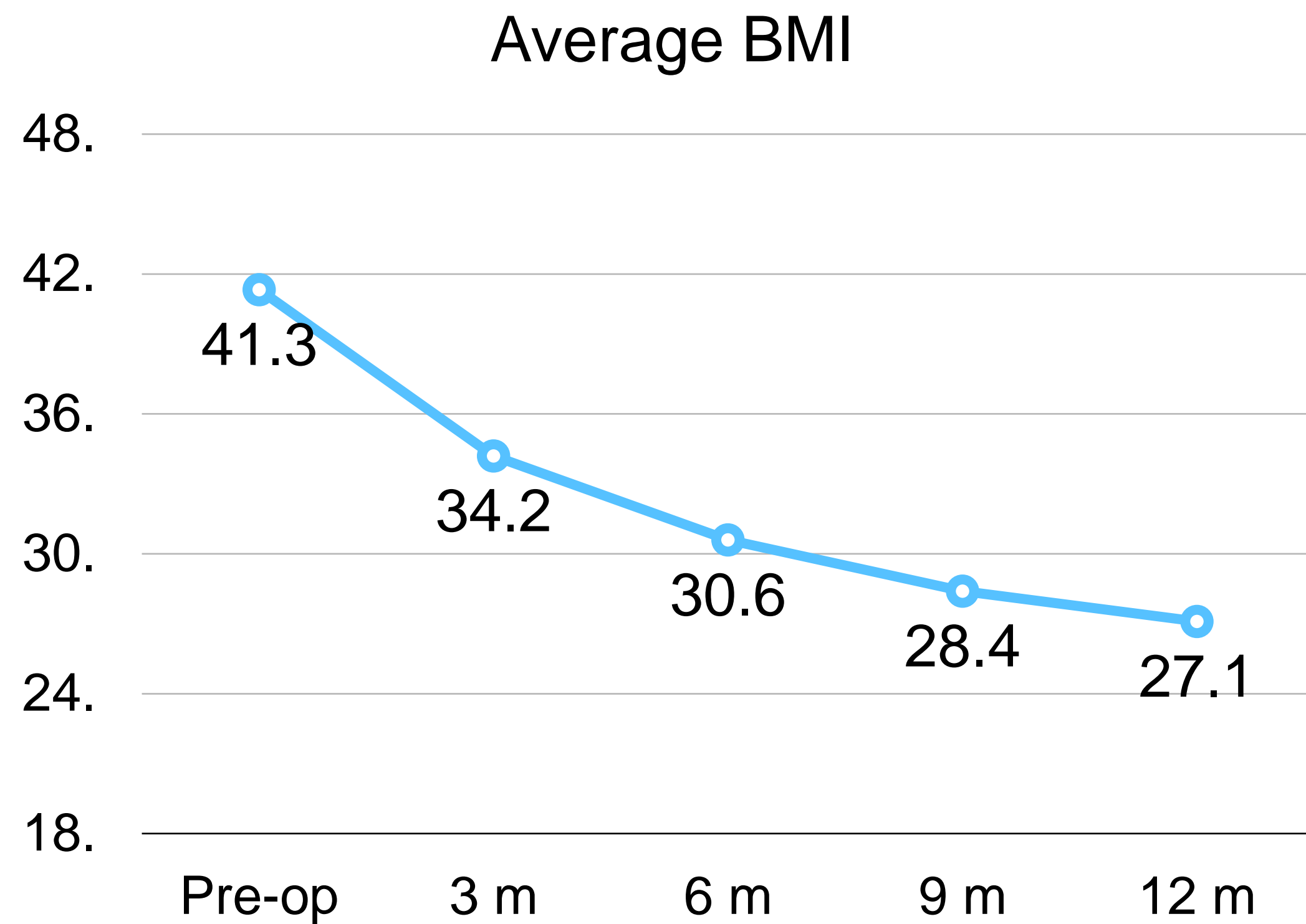
| Parameters     | Value ( n = 80) |
|----------------|-----------------|
| Diabetes       | 38 (47.5%)      |
| Hypertension   | 40 (50%)        |
| Dyslipidemia   | 46 (57.5%)      |
| Sleep Apnea    | 29 (36.25%)     |
| Hypothyroidism | 15 (18.75%)     |
| GERD           | 9 (11.25%)      |
| Infertility    | 5 (6.25%)       |

# Results

| Parameters         | Value ( n = 80) |
|--------------------|-----------------|
| Op. Time           | 34 ±12          |
| ALOS               | 1.8 ± 0.6       |
| Intra.op Compl.    | 0               |
| Bleeding           | 1 (1.25%)       |
| 39 day Readmission | 0               |
| Morbidity          | 0               |
| Mortality          | 0               |

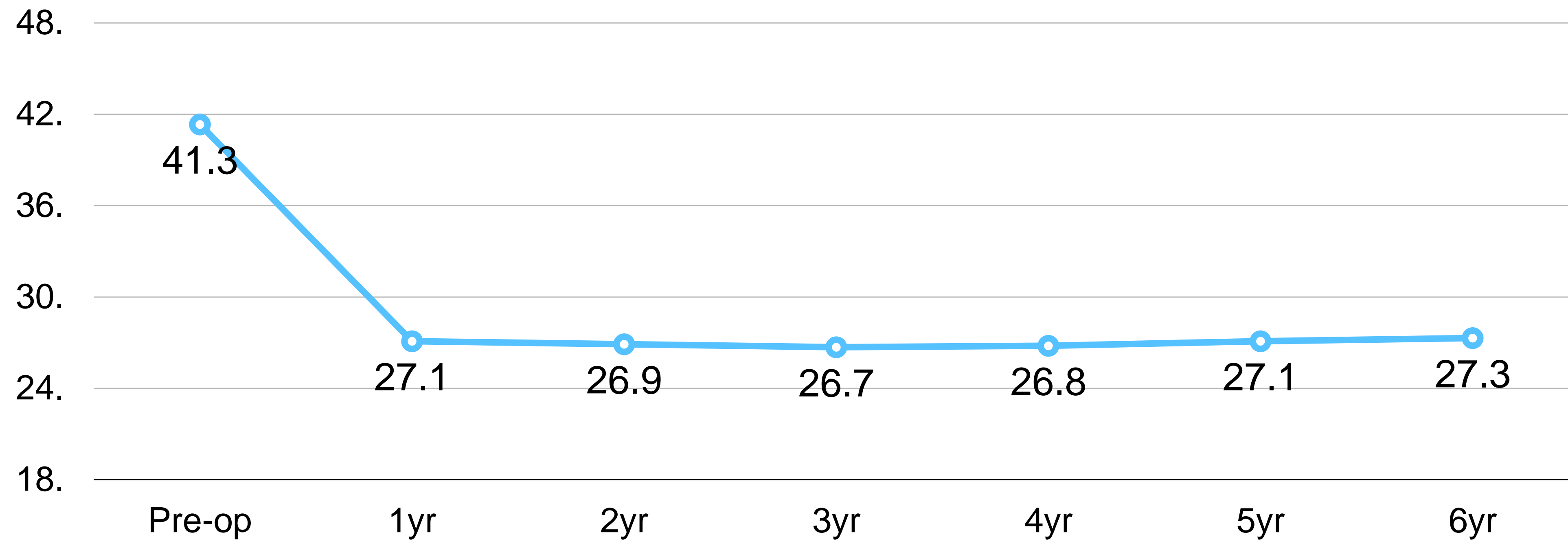
| Concomitent     | Value ( n = 80) |
|-----------------|-----------------|
| Hiatoplasty     | 3               |
| Cholecystectomy | 5               |
| Hernioplasty    | 3               |
| Hysterectomy    | 1               |
| Sterilisation   | 1               |
| Adhesiolysis    | 2               |
| <b>Total</b>    | <b>15</b>       |

# 1 Year Outcome (n =80)

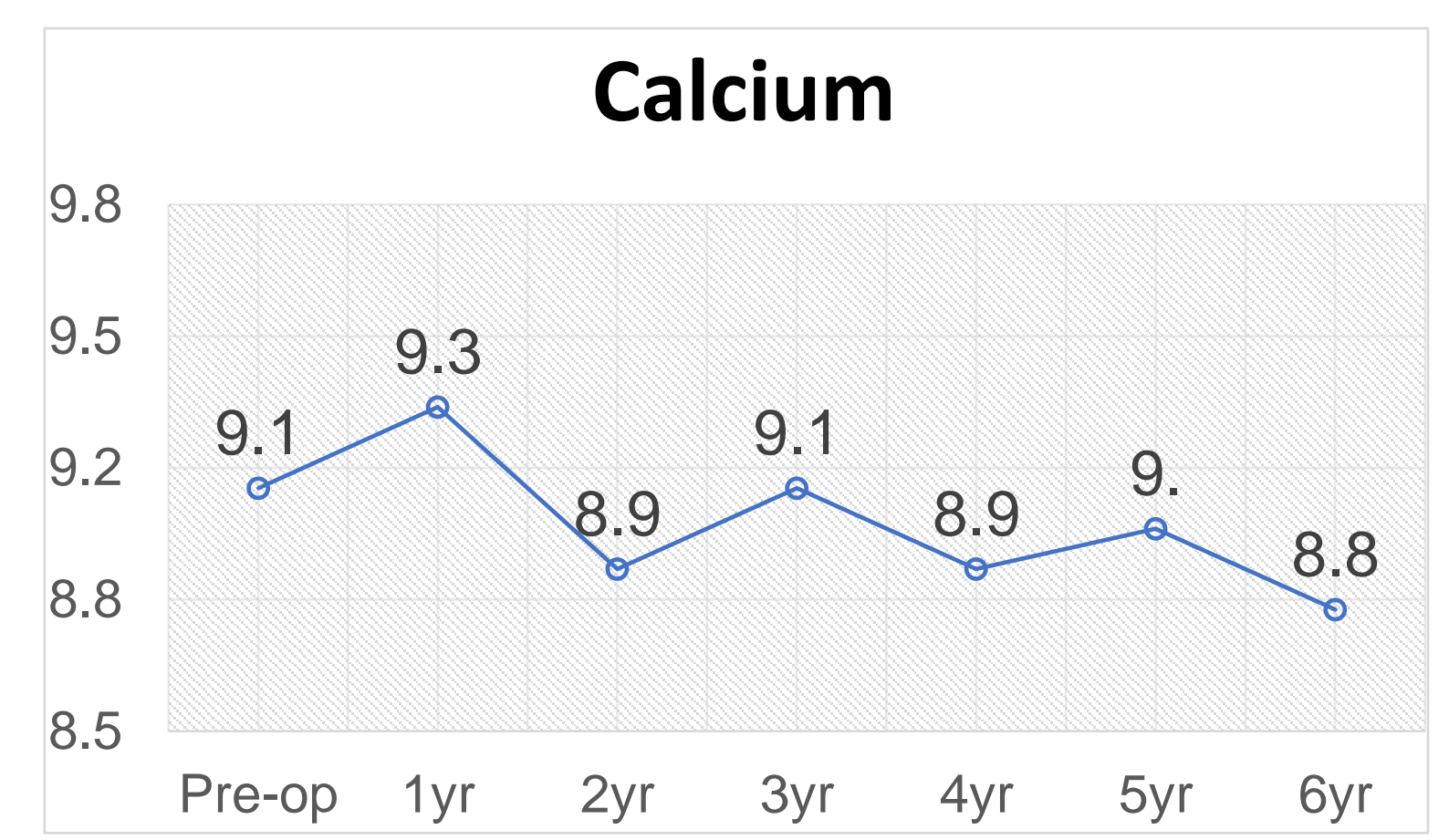
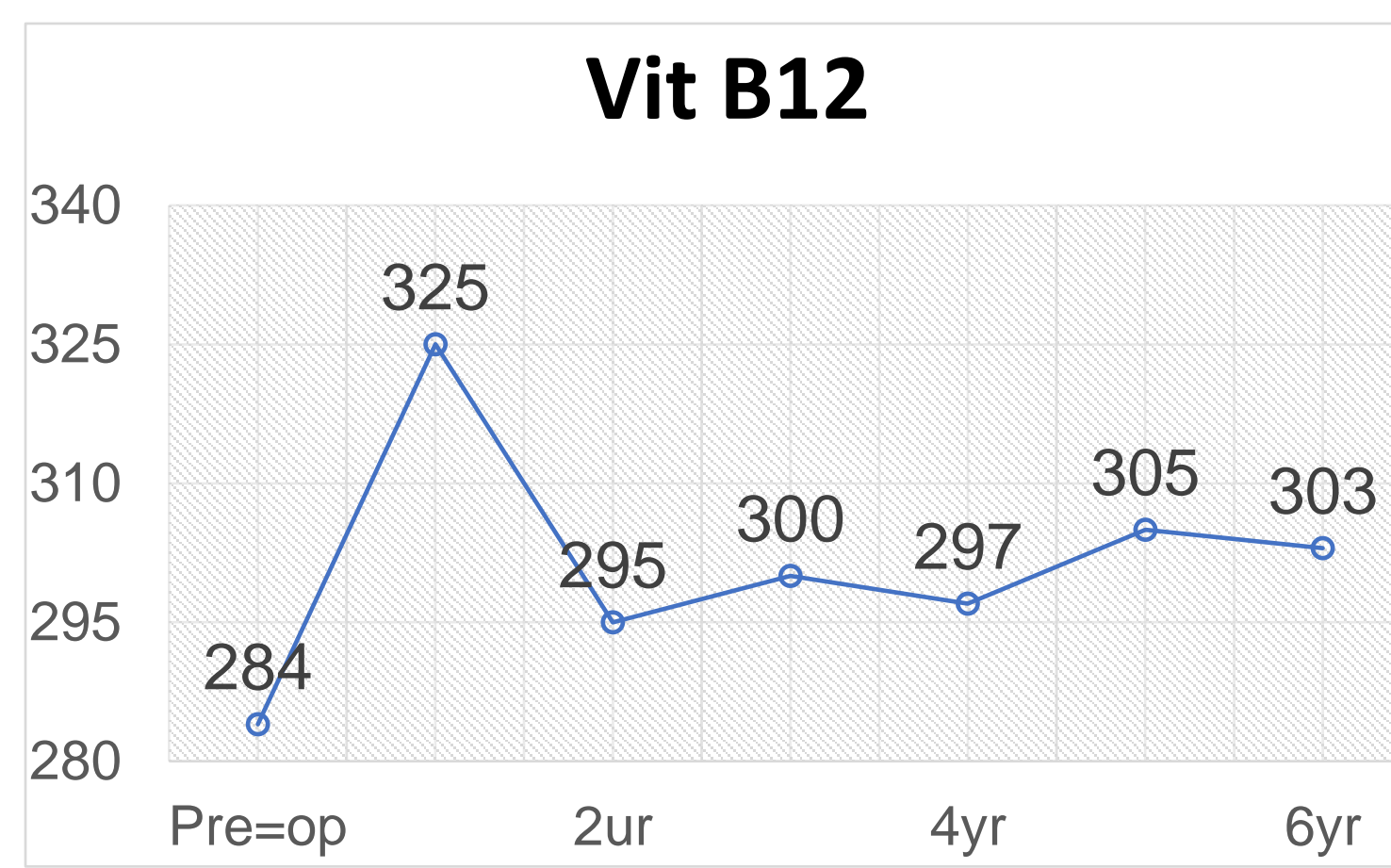
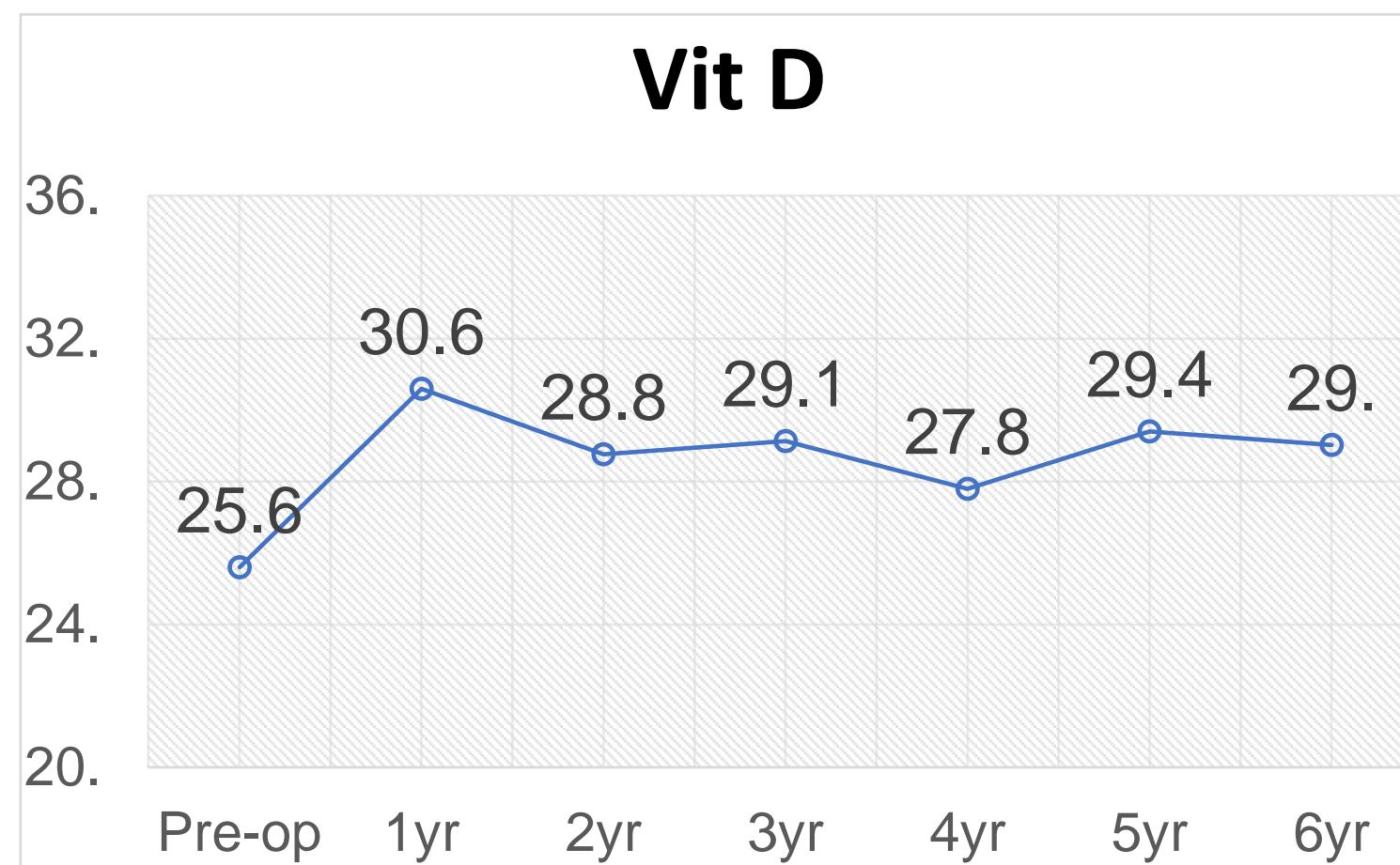
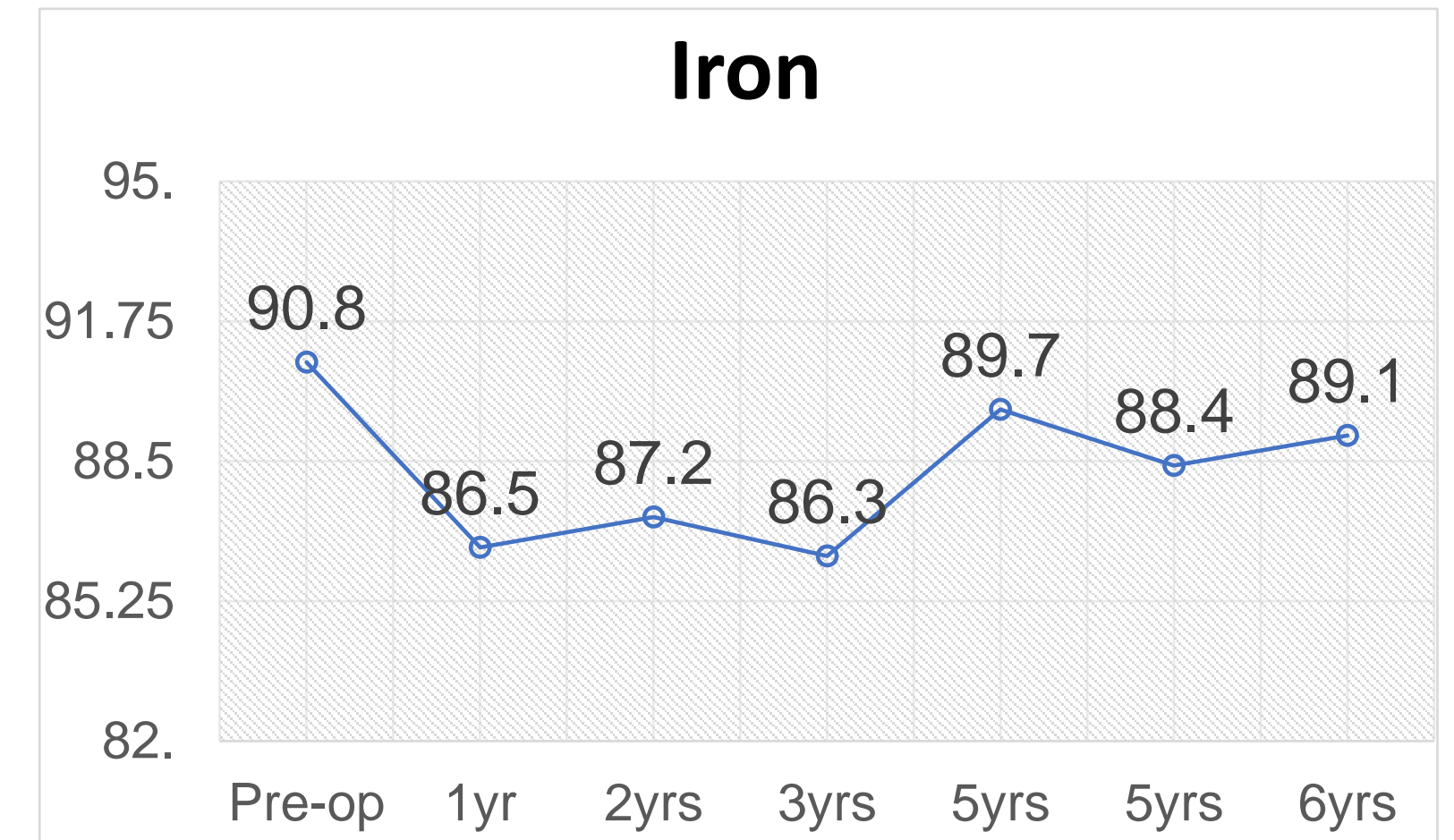
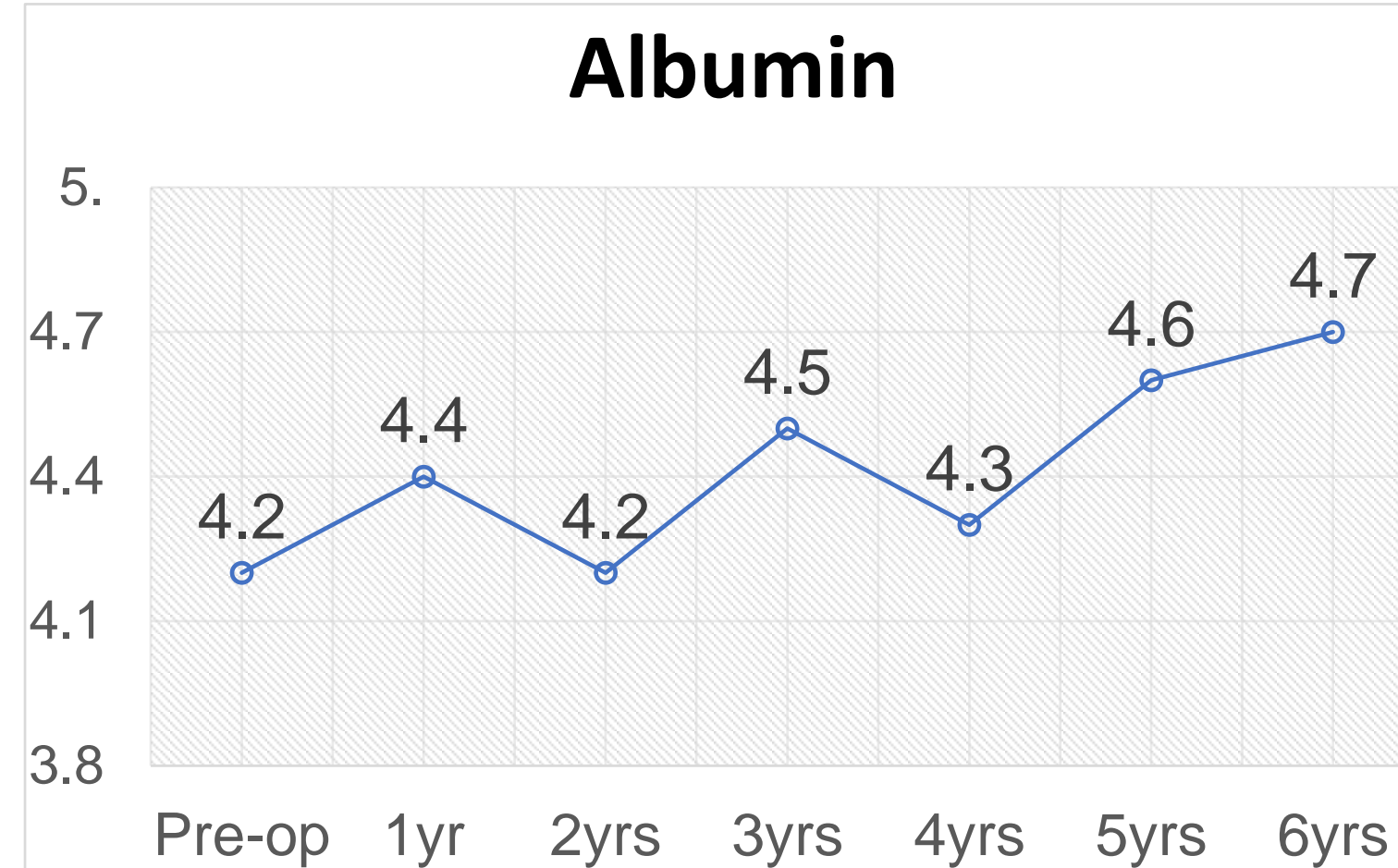
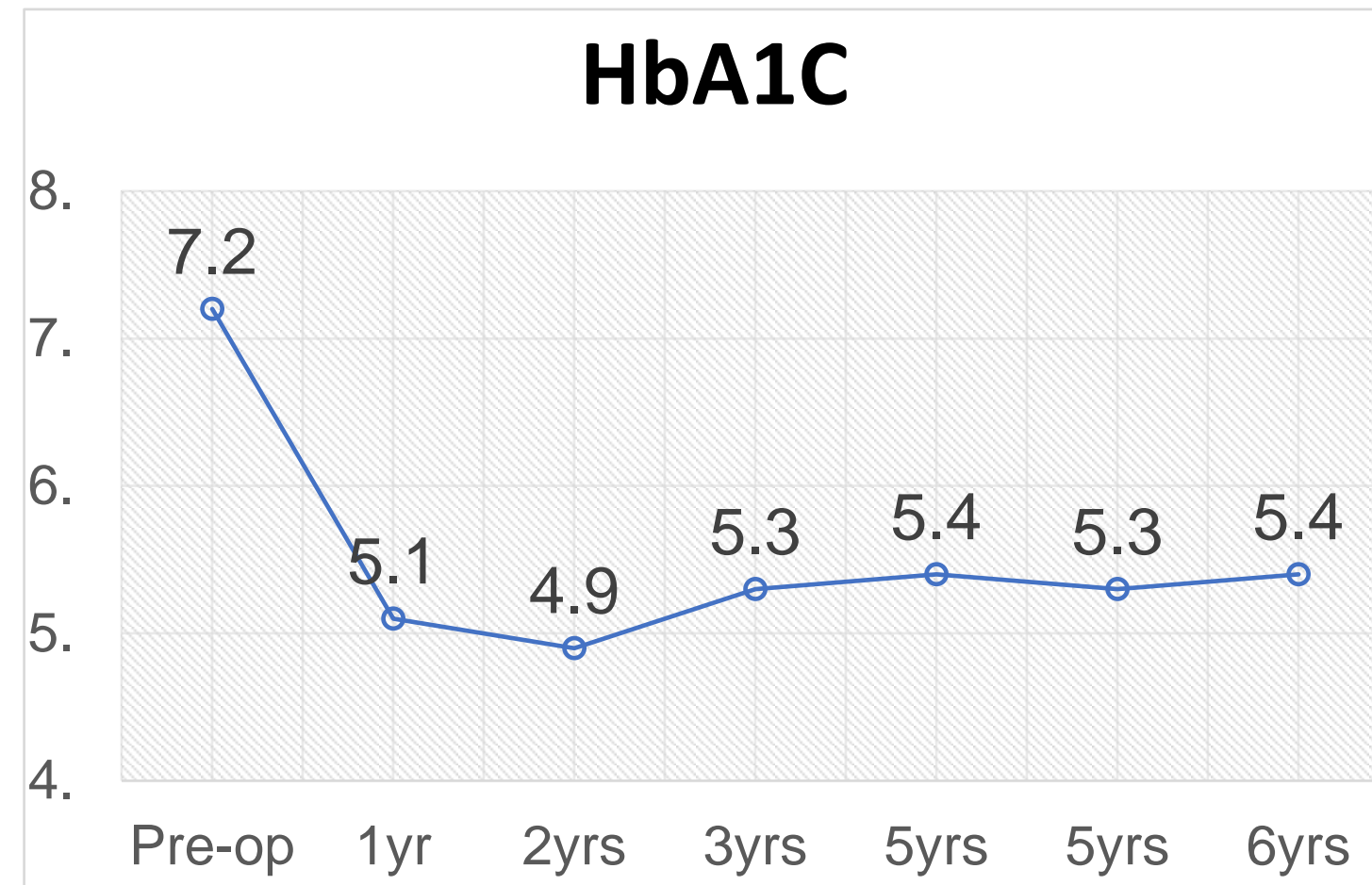


# 6 years Outcome

## Average BMI



# 6 years Outcome



# Post-op Complications

| Parameter              | n = 80           |
|------------------------|------------------|
| Total Complications    | <b>5 (6.25%)</b> |
| Biliary Gastritis      | 3 (3.75%)        |
| Dumping                | 1 (1.25%)        |
| Gallstones             | 1 (1.25%)        |
| Inadequate Weight Loss | 1 (1.25%)        |
| Weight Regain          | 2 (2.5%)         |

# Surgical Observations

- All weight regain / inadequate weight loss patients had a BMI  $> 50$  kg/m<sup>2</sup>
- Weight had no impact on resolution of comorbidities in these patients
- There were no symptomatic nutritional deficiencies in our study
- There were no major complications requiring intervention
- 1 SASJ revised to OAGB for inadequate weight loss



# Nutritional Observations

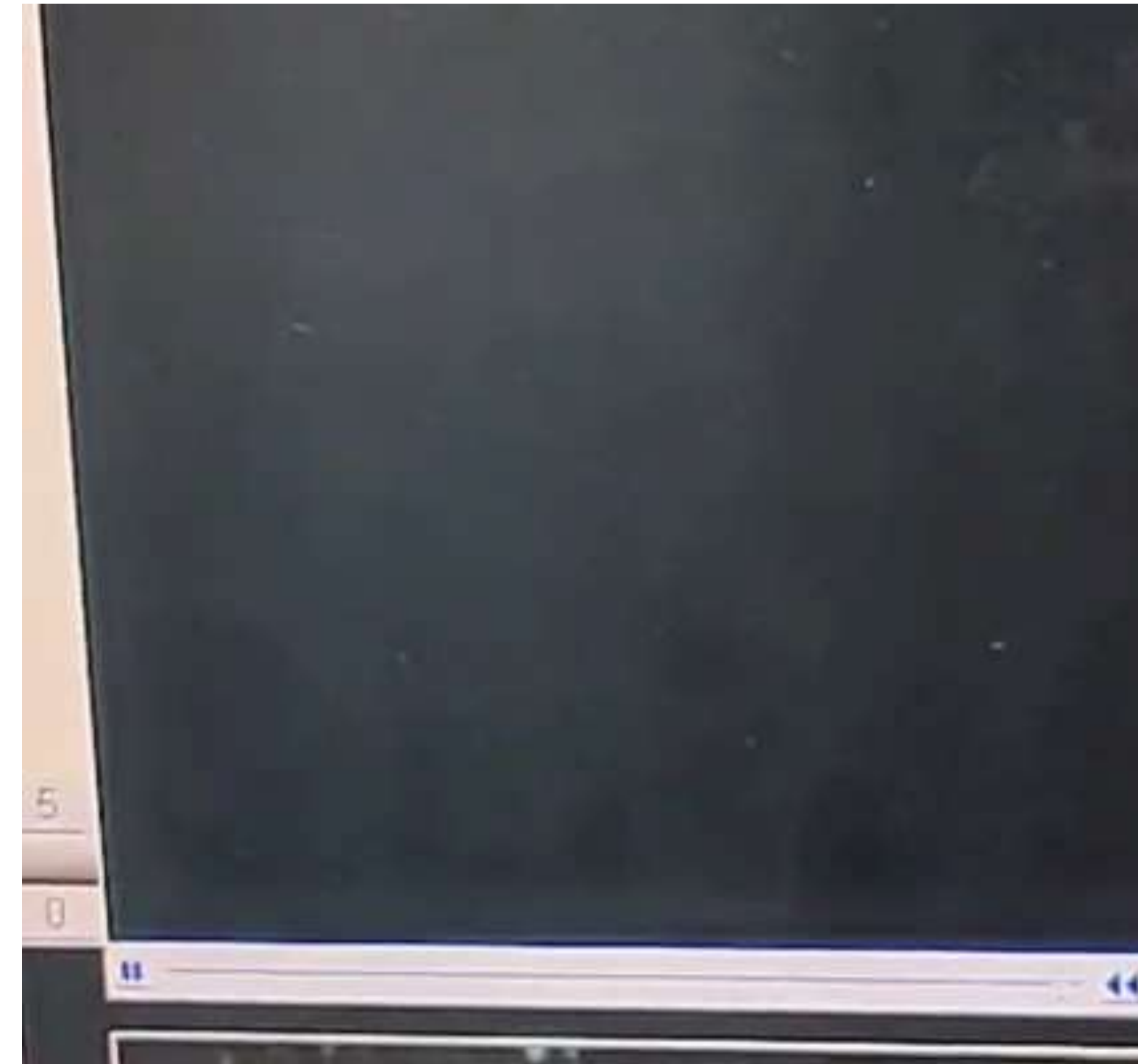
- Vitamin D levels were low in 24 (30%) patients pre-operatively which has shown increase postoperatively in 19 of them because of nutritional supplementation
- 7 (8.75%) patients had anaemia preoperatively against 1 at the end of one year and 1 more at 3 years which were corrected
- 3 (3.75%) of post-op patients had low Hb% at 3 and 6 month follow up which was revealed on blood investigations and improved on medical management
- 5 ( 6.25%) patients had B12 deficiency preoperatively and all were corrected after bariatric supplementation

# Scintigraphy



## One Week

Liquids - 75% through bypass  
Semisolids - 100% through bypass



## One Month

Liquids - 100% through bypass  
Solids - 100% through bypass

# Comparative Study

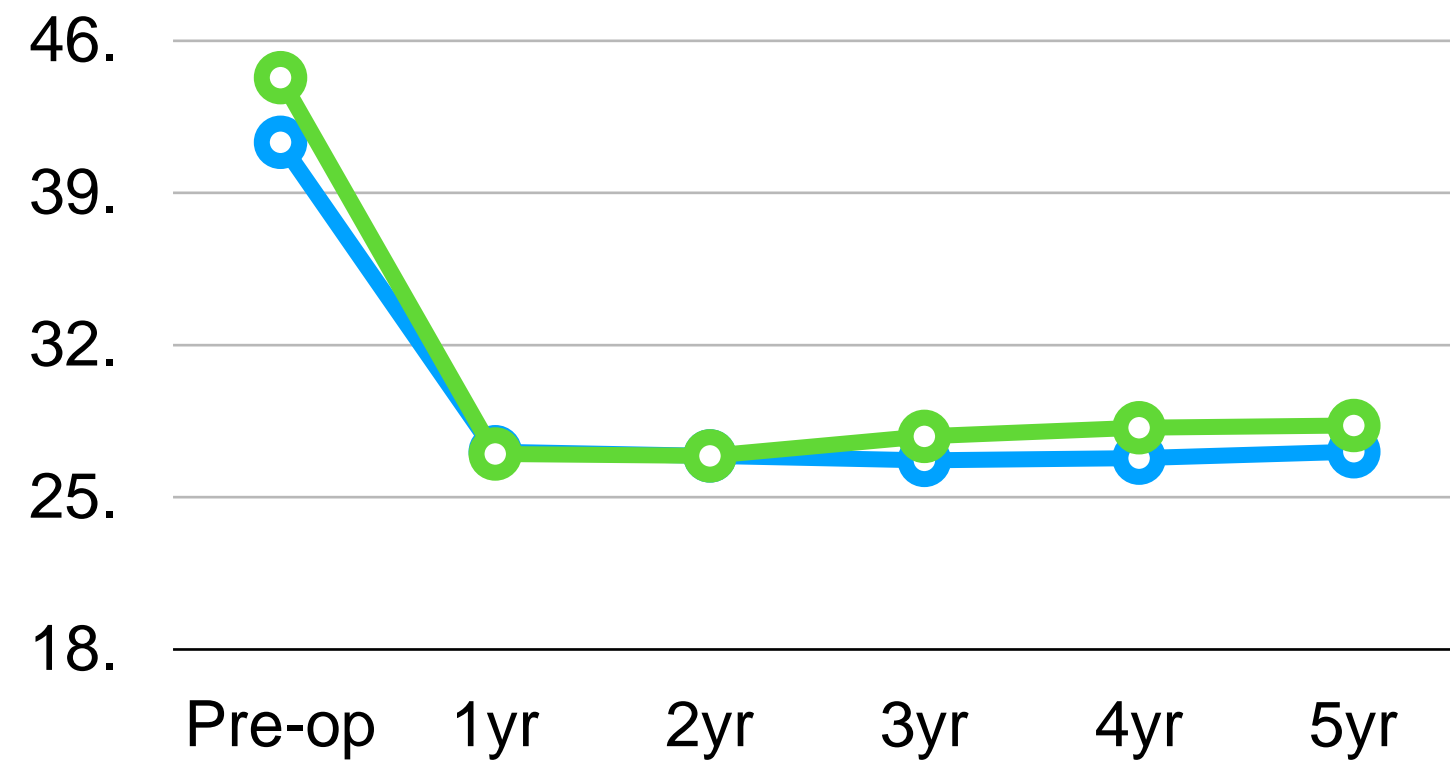
| Parameter                  | SASJ (n=80)      | OAGB (n=758)      |
|----------------------------|------------------|-------------------|
| BMI                        | 41.3             | 44.1              |
| % EWL                      | 80%              | 79%               |
| Resolution of T2D          | 87%              | 86%               |
| Resolution of HT           | 85%              | 84%               |
| Resolution of DL           | 74%              | 76%               |
| Resolution of OSA          | 96%              | 98%               |
| Bile Gastritis             | 3 (3.75%)        | 49 ((6.46%)       |
| Dumping Syndrome           | 1 (1.25%)        | 2 (0.26%)         |
| Stomal Ulcer               | 0                | 1 (0.13%)         |
| Anastomotic Leak           | 0                | 1 (0.13%)         |
| Bowel Obstruction          | 0                | 1 (0.13%)         |
| Intraluminal Bleeding      | 0                | 1 (0.13%)         |
| Diarrhoea                  | 0                | 1 (0.13%)         |
| Malnutrition               | 0                | 1 (0.13%)         |
| <b>Total Complications</b> | <b>5 (6.25%)</b> | <b>57 (7.52%)</b> |

# SASJ Literature Review

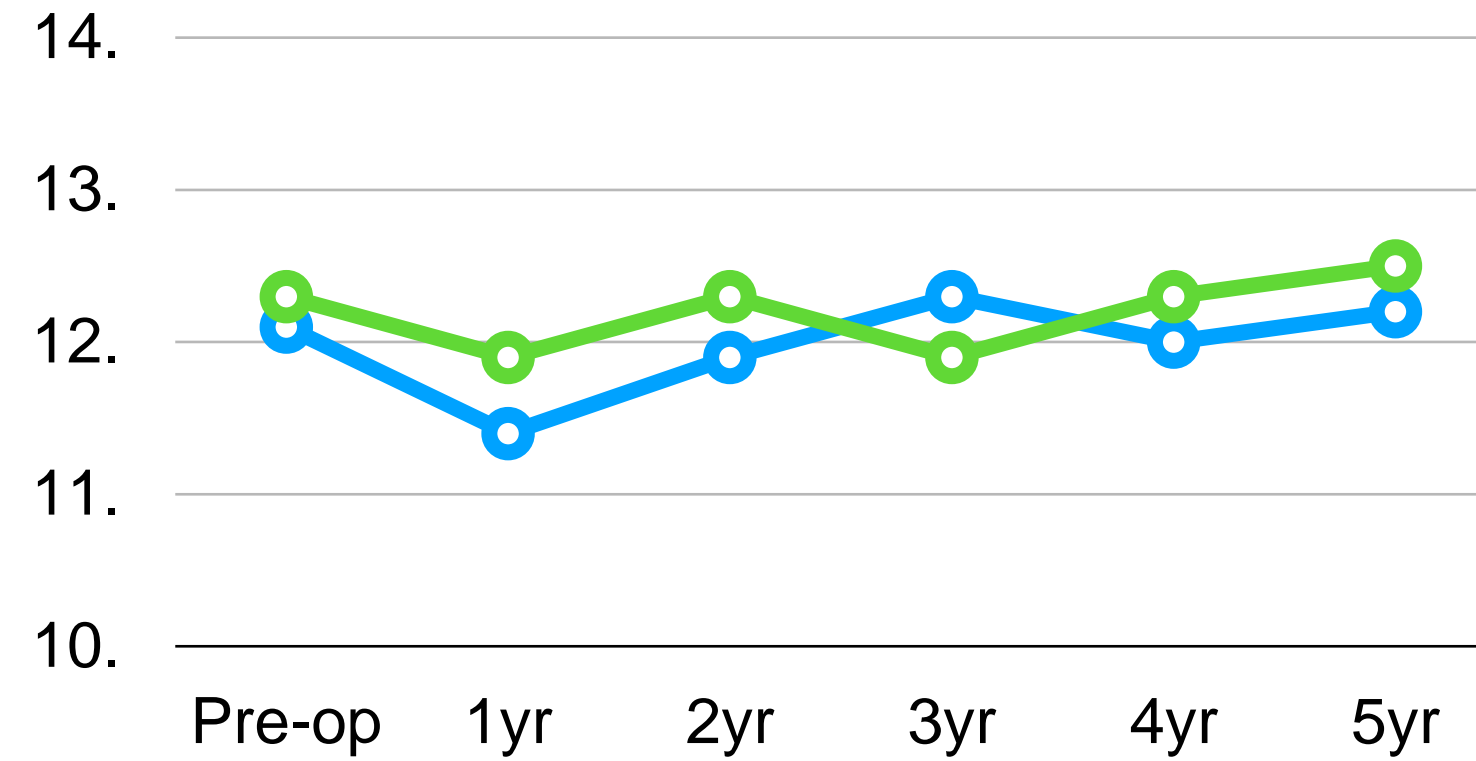
| Parameter                  | Raj et al (80)   | Sewefy et al (1986) |
|----------------------------|------------------|---------------------|
| BMI                        | 41.3             | 44.7                |
| % EWL                      | 80%              | 79%                 |
| 30 day readmission         | 0                | 29 (1.5%)           |
| Resolution of T2D          | 87%              | 86%                 |
| Resolution of HT           | 85%              | 84%                 |
| Resolution of DL           | 74%              | 76%                 |
| Resolution of OSA          | 96%              | 98%                 |
| <b>Total Complications</b> | <b>5 (6.25%)</b> | <b>134 (6.75%)</b>  |
| Bile Gastritis             | 3 (3.75%)        | 85 ((6.6%)          |
| Dumping Syndrome           | 1 (1.25%)        | 12 (0.9%)           |
| Stomal Ulcer               | 0                | 2 (0.15%)           |
| Anastomotic Leak           | 0                | 2 (0.10%)           |
| Bowel Obstruction          | 0                | 1 (0.13%)           |
| Intraluminal Bleeding      | 0                | 9 (0.5%)            |
| Diarrhoea                  | 0                | 1 (0.13%)           |
| Malnutrition               | 0                | 1 (0.13%)           |
| Insufficient Weight Loss   | 1 (1.25%)        | 2 (0.15%)           |

# Comparative 5 yrs Outcome

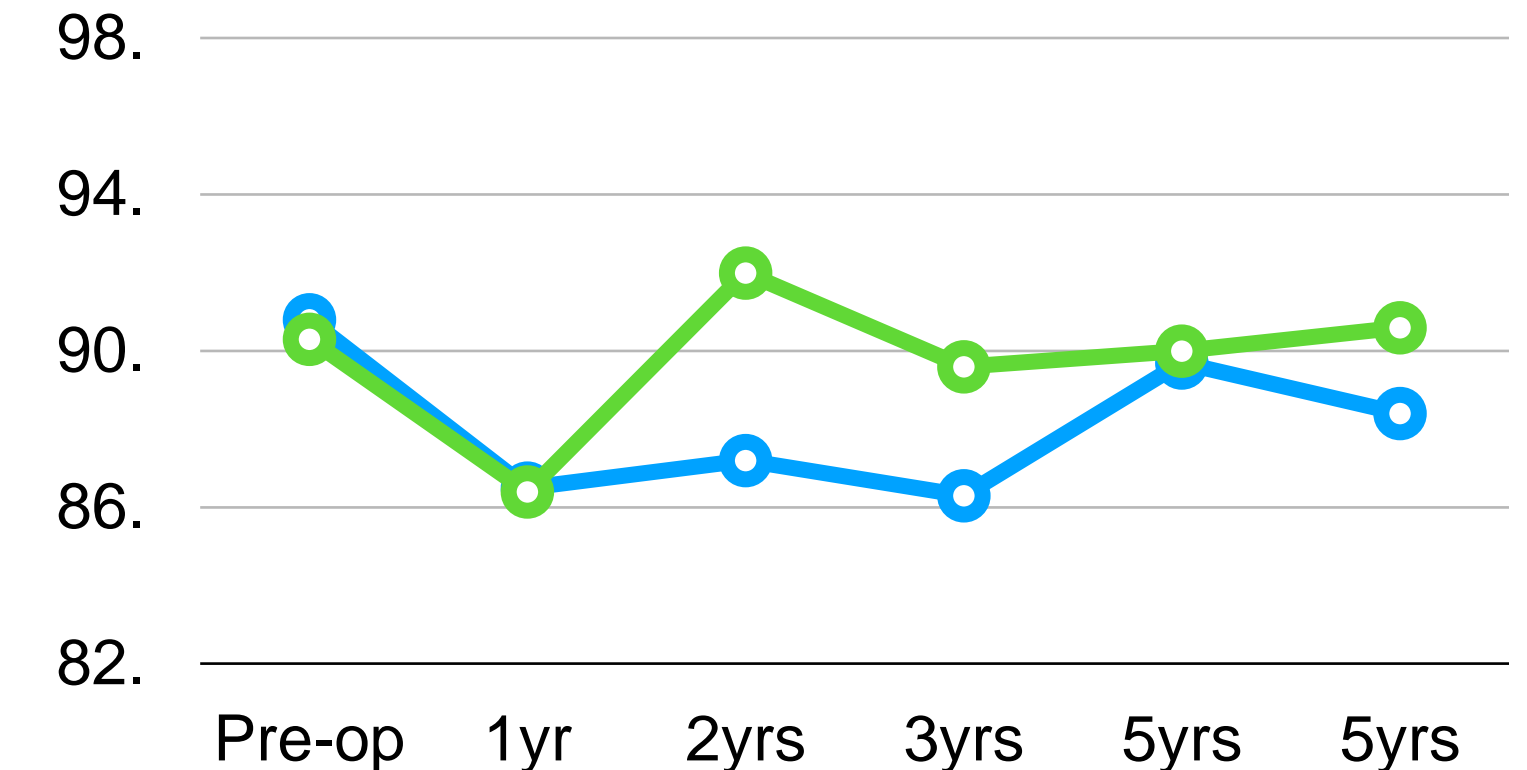
## Average BMI



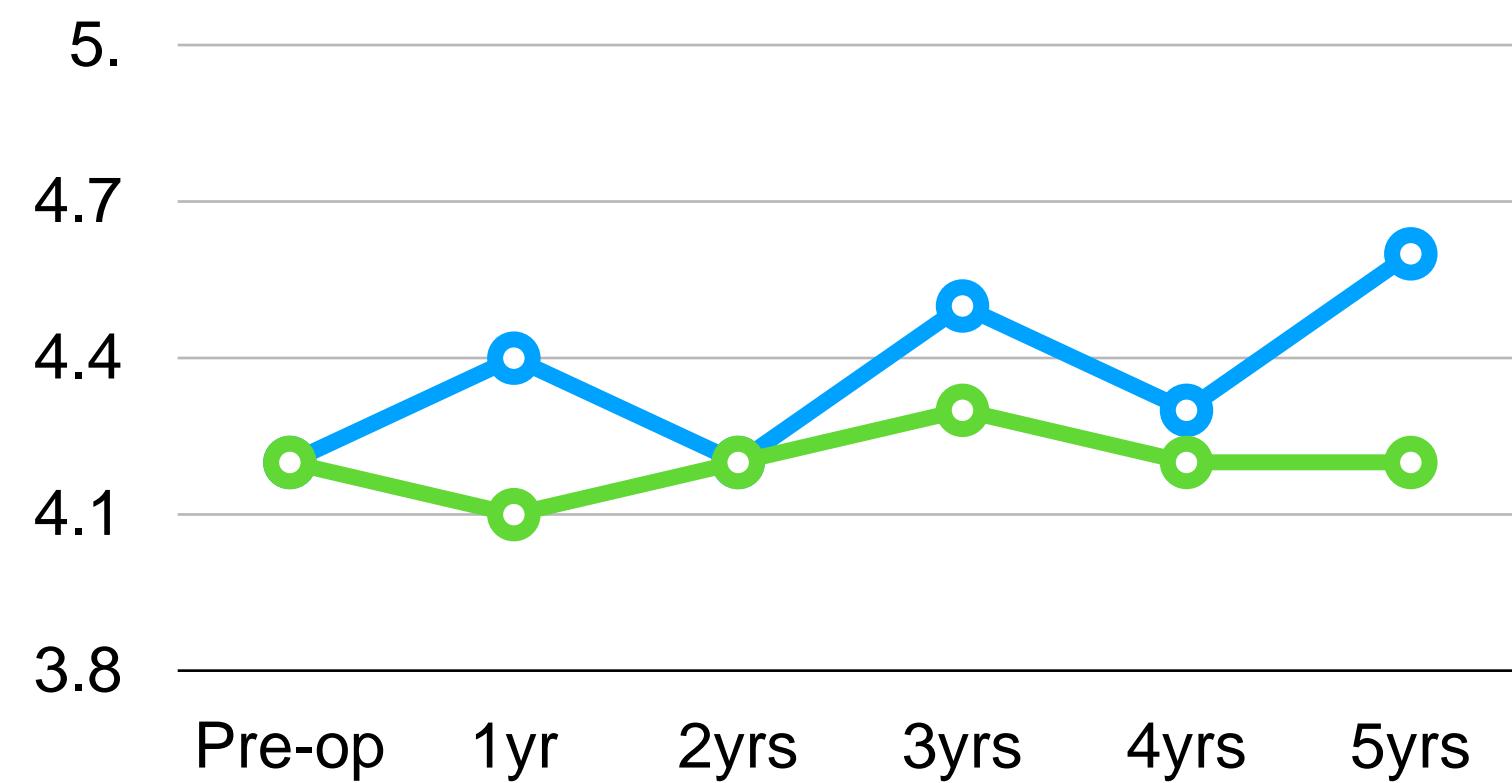
## Hb



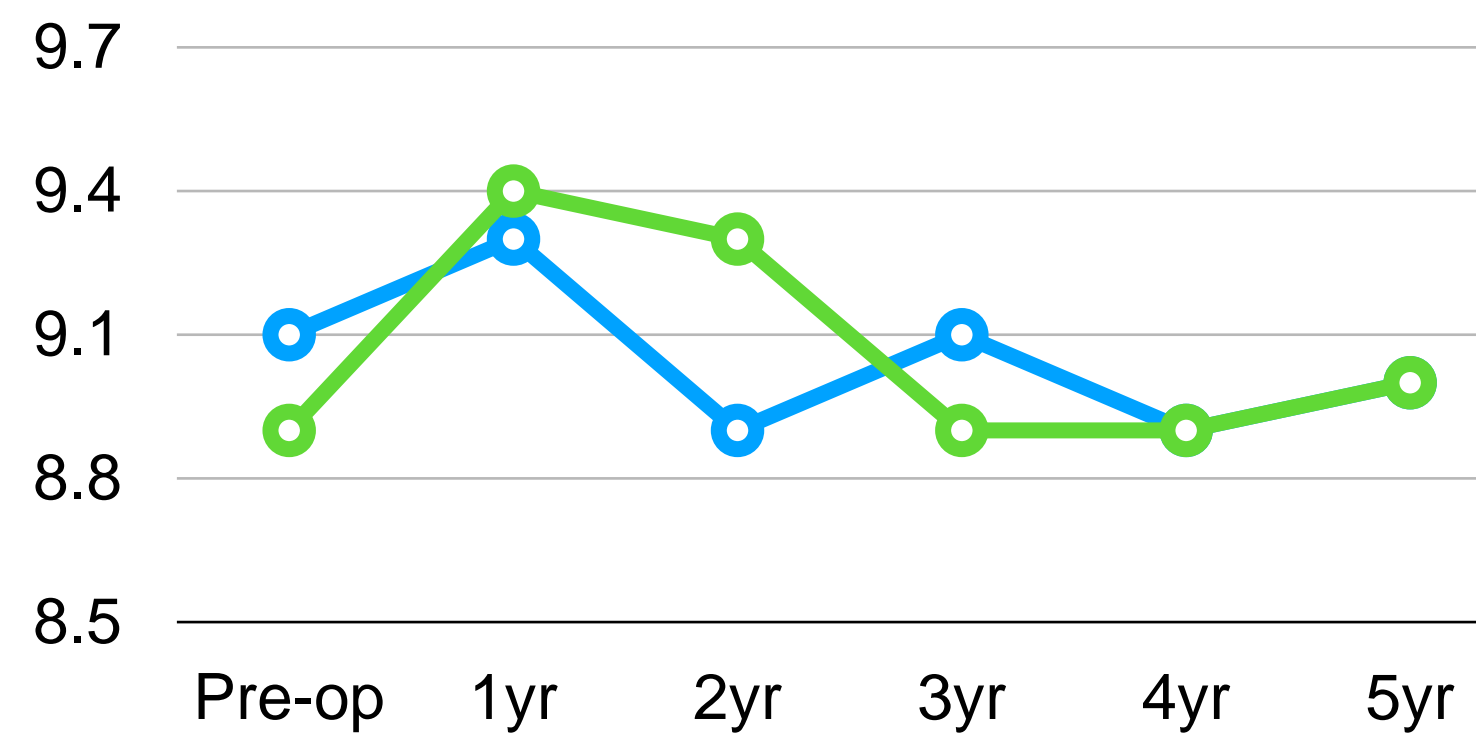
## Iron



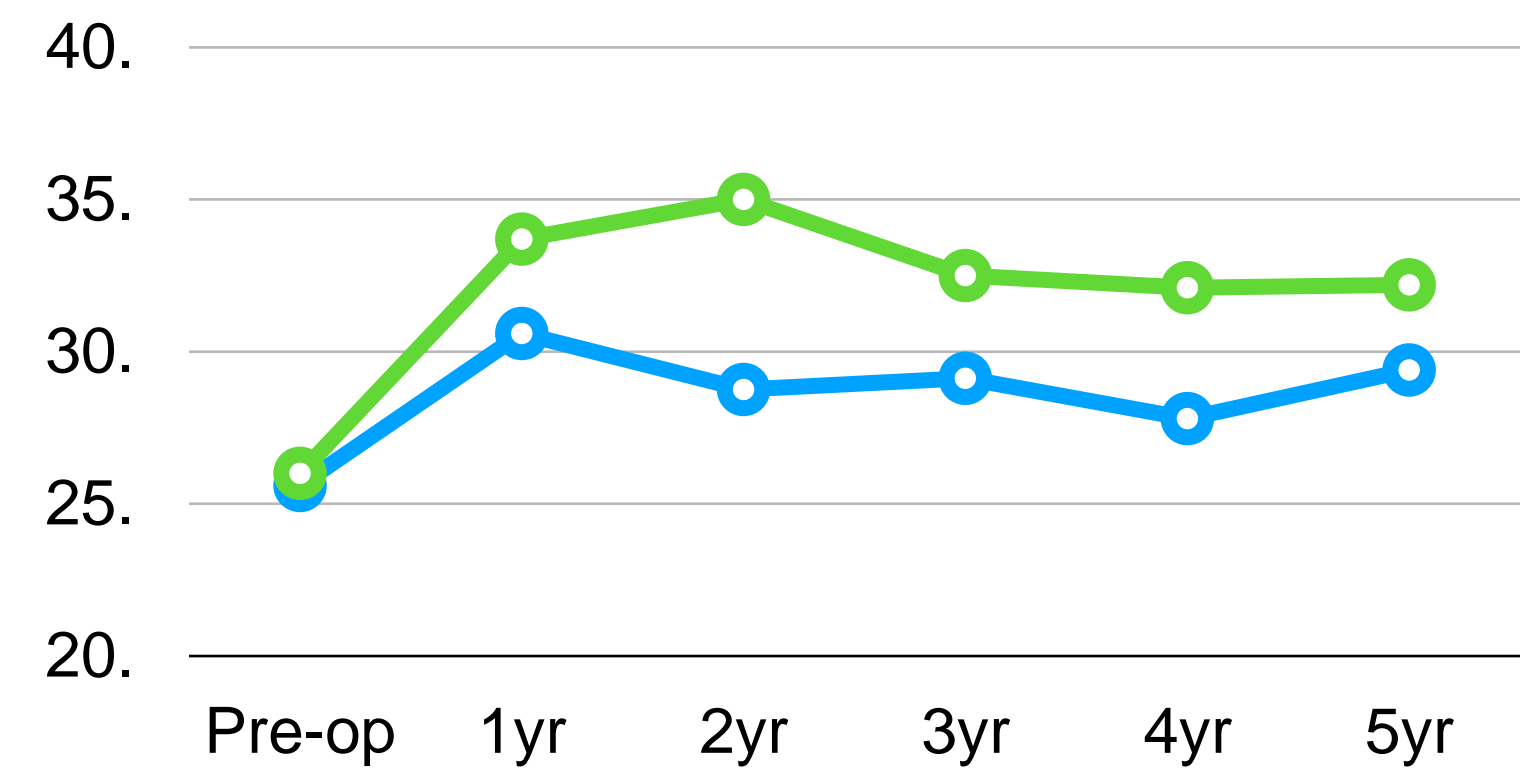
## Albumin



## Calcium



## Vit D



● Raj      ● Sewefy

## Retrospective Cohort Study

# Single anastomosis sleeve jejunal (SAS-J) bypass as a treatment for morbid obesity, technique and review of 1986 cases and 6 Years follow-up. Retrospective cohort

Alaa M. Sewefy<sup>\*</sup>, Ahmed M. Atyia, Mohammed M. Mohammed, Taha H. Kayed, Hosam M. Hamza

*Department of Surgery, Minia University Hospital, Egypt*

## ARTICLE INFO

### Keywords:

Single anastomosis sleeve jejunal bypass  
SASI  
Sleeve loop bipartition

## ABSTRACT

**Results:** In this study, 70.4% of patients were female and 29.6% were male. The mean body mass index (BMI) was 44.7. The mean age was 42 years. Regarding comorbidities, 25.8% of the patients had type 2 diabetes, 31% were hypertensive, 14.2% had sleep apnea syndrome, 6.6% had gastroesophageal reflux disease (GERD), and 39.6% had hyperlipidemia. Of the 1294 patients who complete one-year follow up, %EWL reached 87%. Blood glucose levels were normalized in 98.5% of patients, hypertension remitted in 93%, hyperlipidemia improved in 97%, SAS is improved in all cases, and GERD improved in 89% of patients. After 5 years, 94 patients' BMI decreased from 44.3 to 28.3 without significant nutritional deficiency.

**Conclusions:** Laparoscopic SAS-J bypass is an effective and simple alternative bariatric procedure at short- and long-term follow-up.



## Single-Anastomosis Sleeve Jejunal Bypass, a Novel Bariatric Surgery, Versus Other Familiar Methods: Results of a 6-Month Follow-up—a Comparative Study

Masoud Sayadishahraki<sup>1</sup> · Mohammad Taghi Rezaei<sup>1</sup>  · Mohsen Mahmoudieh<sup>1</sup> · Behrouz Keleydari<sup>1</sup> · Shahab Shahabi<sup>1</sup> · Mostafa Allami<sup>1</sup>

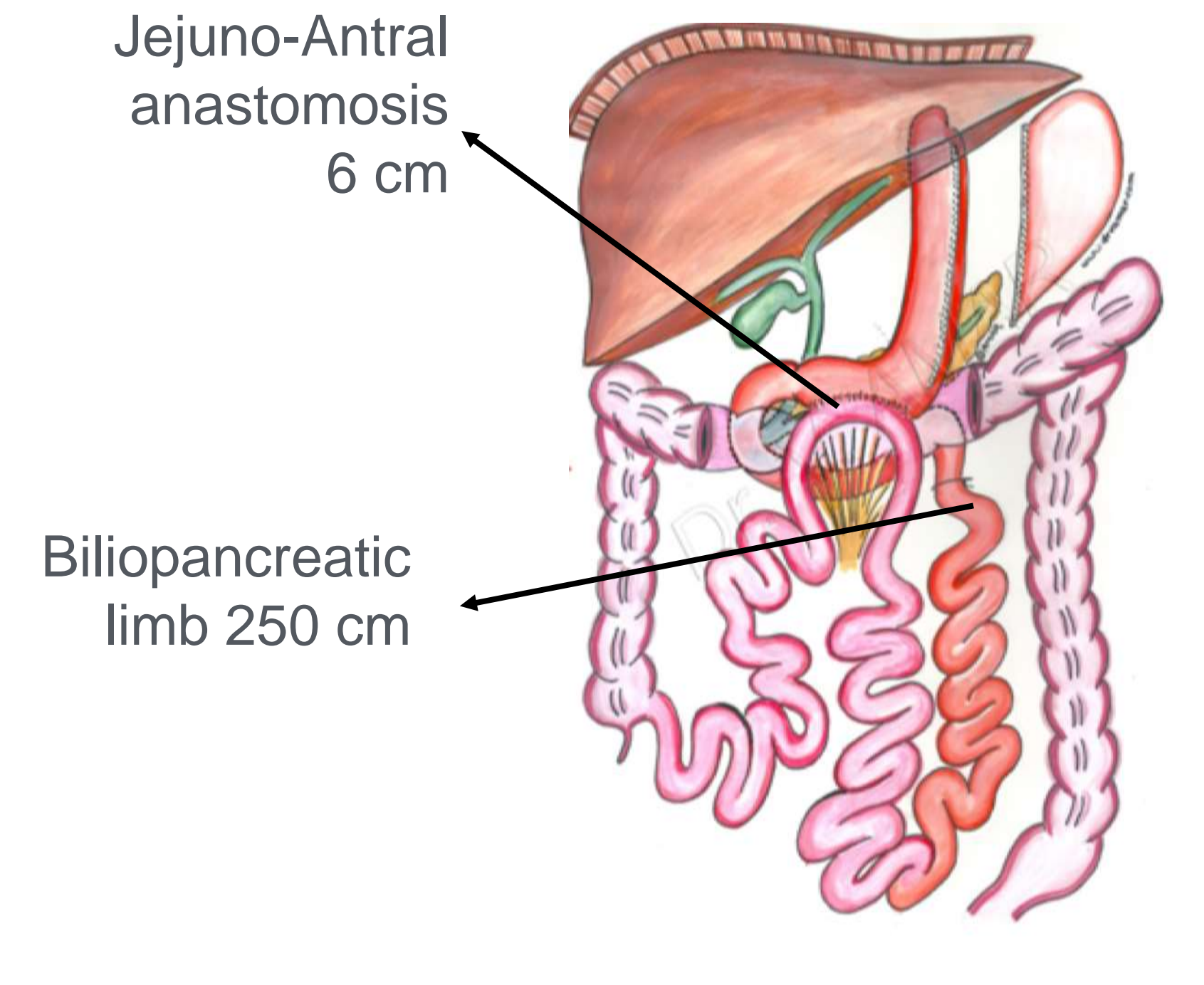
**Methods** This is a non-randomized clinical trial conducted on 100 patients, who underwent four types of bariatric surgery (classic Roux-en-Y bypass, SASJ bypass, omega gastric bypass, and sleeve gastrectomy), and each one of these types contained 25 cases, during the time period of 2 years from 2016 to 2018. Patients' information including age, gender, height, basal weight, body mass index (BMI), serum albumin, and hemoglobin A1C were recorded, within 1, 3, and 6 months after their surgery, and also were compared with each other.

**Results** Members of the four groups were similar due to their age, gender distribution, height, baseline BMI, hemoglobin A1C, albumin, and also excess weight ( $P$  value  $> 0.05$ ); however, the sleeve gastrectomy group baseline weight was significantly higher compared with the other three groups ( $P$  value = 0.013). All of the groups significantly lost weight during this 6-month period, but the comparison between them indicated no statistical difference regarding excess weight loss, BMI, hemoglobin A1C, and albumin ( $P$  value  $> 0.05$ ). The excess weight loss mean during 6 months in SASJ bypass was  $34.2 \pm 5.4\%$ , which was comparable with other groups.

**Conclusions** The weight loss trend after the SASJ bypass was similar to that of older techniques; consequently this technique can be considered for cases with particular indications due to the reversibility and also more accessible gastric follow-up studies in the SASJ approach. Further researches with longer follow-ups are strongly recommended.

# SASJ as Revision

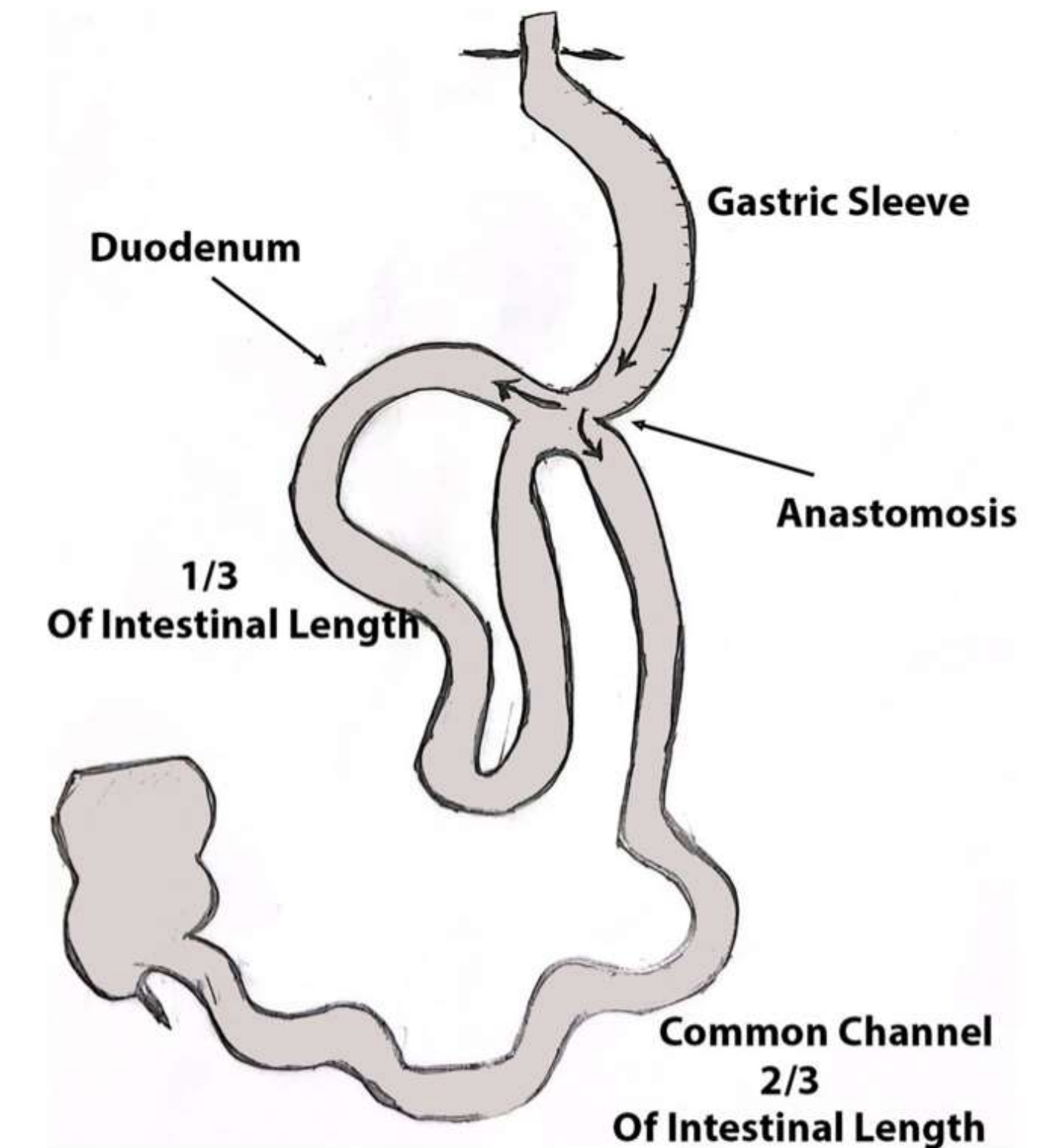
- 8 revisions
  - 2 for VSG complications
  - 5 for VSG weight regain
  - 1 as completion surgery
- Promising alternative for revision bariatric surgery
- Further RCT & large scale clinical trials for long term results





# SASJ Revision Comparison

| Parameter                | Raj et al (8) | Sewefy et al (43) |
|--------------------------|---------------|-------------------|
| BMI                      | 43.8          | 46.3              |
| % EWL                    | 73.1%         | 76.5%             |
| 30 day readmission       | 0             | 0                 |
| Resolution of T2D        | 66.6%         | 100%              |
| Resolution of GERD       | 75%           | 86.7%             |
| Resolution of OSA        | 100%          | 100%              |
| Bile Gastritis           | 1 (12.5%)     | 4 (9.3%)          |
| Dumping Syndrome         | 1 (12.5%)     | 4 (9.3%)          |
| Stomal Ulcer             | 0             | 2 (4.65%)         |
| Intra-abdominal bleeding | 0             | 1 (2.3%)          |
| Intraluminal Bleeding    | 0             | 3 (6.9%)          |
| Malnutrition             | 2 (25%)       | 7 (16.28%)        |
| Insufficient Weight Loss | 1 (12.5%)     | 0                 |



NEW CONCEPT



## Single-Anastomosis Sleeve Jejunal (SAS-J) Bypass as Revisional Surgery After Primary Restrictive Bariatric Procedures

Alaa M. Sewefy<sup>1</sup> · Ahmed M. Atyia<sup>1</sup> · Taha H.Kayed<sup>1</sup> · Hosam M. Hamza<sup>1</sup>

**Material and Methods** This was a prospective cohort study including 43 patients who underwent SAS-J bypass as a revisional surgery for weight regain after laparoscopic sleeve gastrectomy (LSG), laparoscopic adjustable gastric band (LAGB), or laparoscopic gastric plication.

**Results** Of the total patients, 35 (81.4%) were female, and 8 (18.6%) were male. The mean BMI was 46.3 kg/m<sup>2</sup>. The mean age was 41 years. Thirty-two patients (74.4%) had a failed sleeve, 9 (20.9%) had a failed LAGB, and 2 (4.7%) had a failed gastric plication. The mean operative time was 104 min. Intra-abdominal bleeding occurred in 1 case (2.3%), and intraluminal bleeding occurred in 3 cases (7%). No case (0%) developed a leak. The percentage of excess weight loss (%EWL) reached 76.5% after 1 year. Type 2 diabetes mellitus remission occurred in all diabetic patients, hypertension remitted in 80%, hyperlipidemia remitted in 83.3%, and obstructive sleep apnea syndrome improved in all cases. Gastroesophageal reflux disease (GERD) symptoms were improved in 86.7% of patients. Significant biliary gastritis occurred in 4 patients (9.3%). Dumping syndrome was reported in 4 patients (9.3%).

**Conclusions** SAS-J bypass was effective as a salvage surgery after failed restrictive bariatric procedures, but long-term follow-up is needed.

# Conclusions

- SASJ as a choice of surgery for metabolic syndrome appears to be a promising
- %TWBL and resolution of co-morbidities are comparable to OAGB
- No significant malnutrition associated when compared to more aggressive bypass
- Natural GI continuity is maintained, hence endoscopic/biliary intervention feasible
- Lesser incidence of GERD, nutritional deficiencies and weight regain
- Promising alternative for revision bariatric surgery
- Further RCT & large scale clinical trials for long term results

# THANK YOU



**DON'T BE AFRAID OF CHANGE.  
YOU MAY LOSE SOMETHING GOOD,  
BUT MAY GAIN SOMETHING BETTER.**

Unknown